R-AISON D’ETRE
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CONFERENCE PRESENTATIONS

INTERIOR DESIGN EDUCATORS COUNCIL
2008 ANNUAL CONFERENCE
MONTREAL, QUEBEC, CANADA

MARCH 5-8, 2008

Note: This is the final version of the presentation document. Page numbers may have changed as the document was revised and additional material added. No material was deleted from the preliminary version.

TLU May 27, 2008
University of Montreal

Tiiu Poldma, Chair
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INTERIOR DESIGN EDUCATORS COUNCIL
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## CREATIVE SCHOLARSHIP

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R-AISON D’ETRE
reason for being

PAPER PRESENTATIONS

ABSTRACTS AND NARRATIVES
Implementation of a Multi-Disciplinary Framework as a Decision-Making Tool in Store Design Analysis and Design Development: A Case Study

Kyu-Ho Ahn, M.F.A.
Oklahoma State University

Abstract

Purpose

Attention on the store environment/consumer behavior relationship suggests that shopping behavior can be induced by a store’s physical environment, also known as atmospherics. Many empirical studies have examined store stimuli-induced consumer behavior relationships, but most have focused on only one or a limited number of stimuli. As a result, the findings are difficult to implement in design practice because of the lack of a holistic view.

Ahn and Akkurt (2005), however, have suggested an adapted multi-disciplinary framework that conceptualizes a holistic picture of the inter-relationships between taxonomy of atmospherics and emotional dimensions (pleasure and arousal) that is applicable in a design process without impairment of creativity. The purpose of this paper is to demonstrate the implementation of this framework in a design process.

Context/process

The study framework indicates that pleasure and arousal are the emotional dimensions that determine the quality of the shopping experience. In the concept of comfort, which is a condition of pleasure, intermediate arousal can maximize the positive shopping experience. Because pleasure is a pre-condition of enhancing the positive shopping experience, achievement of pleasure is required. Pleasure is determined by ambient factors and physiological factors. Sensory factors are environmental dimensions for arousal. Six elements are proposed as control devices: complexity, novelty, and ambiguity are hypothesized as arousal increasing devices, while coherence, familiarity, and legibility are hypothesized as arousal moderating devices. In determining the intermediate arousal level, selections of control devices are made by the store designers or decision makers.

The proposed framework was applied in an actual design process at the Octagon Shop in downtown Ames, Iowa. In this case study, the analysis and design thinking processes were indicated with “glass box” and “black box” approaches. The glass box concept is understood as a rational view of the design process. In the nature of the store design where predictability is paramount, the glass box approach is critical in the decision-making process for designers, marketers, and storeowners. The black box concept considers the designer as mystic. In this situation, intuition is an important part of the design activities, and at times the design result relies on the designer's artistic sensibility. The thinking process of a designer for the black box approach involves a deeper process of the glass box approach. However, the designer's
responses to environments, or design results by the designer, are rather immediate without formal analysis.

**Summary of Results**

The case study indicated that the proposed framework has significant potential as a guideline in the design process. It helped the author to not only identify the strengths and weaknesses of the existing design of the Octagon Shop, but to control the design composition in advance. The framework exhibited potential as a decision-making tool in the design process and adequately explained the holistic picture of human experience in a store environment. Creativity was not impaired by the use of the proposed framework.

**References**


The notion that shopping behavior can be induced by a store’s physical environment, known as atmospherics, is shared by many researchers (Kotler, 1974). Numerous empirical studies have examined store stimuli-induced consumer behavior relationships, but most have focused on only one stimulus or a limited number of stimuli. As a result, the lack of a holistic view makes the findings difficult to implement in design practice.

Ahn and Akkurt (2005) have suggested an integrated framework that conceptualizes a holistic picture of the inter-relationships between taxonomy of atmospherics and induced feeling, which is applicable to the design process. This paper reviews the multi-disciplinary framework suggested and demonstrates its implications within a design process.

Review of Literature

Ahn and Akkurt (2005) conceptualize typology of environmental stimuli and their relationships to consumers’ induced feelings within a store environment by integrating three theories: stimuli-organism-response theory (Donovan & Rossiter, 1982), preference theory (Kaplan & Kaplan, 1982) and aesthetic theory (Berlyne, 1971).
Donovan and Rossiter (1982) suggest that consumers’ approach-avoidance behaviors (response) are induced as a result of integration between “pleasure,” conceptualized as an induced feeling of good, happy, joyful, or satisfied in a situation, and “arousal,” conceptualized as a feeling state between sleepiness and fantastic excitement, determined by the degree of environmental load (degree of novelty and complexity).

Berlyne (1971) suggests that aesthetics is conceptualized as a “hedonic value” (response), and that the maximum hedonic value (beauty) can be achieved at a moderate level of arousal (organism). Complexity and novelty account for the central concept in determining the arousal level in Berlyne’s aesthetic theory.

Kaplan and Kaplan (1982) suggest that environmental preference (response) is a result of the intellectual desire of knowing, a basic human function. Making sense and involvement are conceptualized as key elements of intellectual needs, and these cognitive processes (organism) responding to the information (stimuli) are based on pre-established experiences. A maximum of four environmental dimensions (coherence, legibility, complexity, and mystery) determines preference.

Each theory has its merits. The S-O-R model is the most applicable and commonly used model in retailing and provides holistic pictures of the environment-behavior relationship. Aesthetic theory suggests methods of controlling stimuli. It describes how different artistic expressions, such as minimalism vs. expressionism, induce the same level of arousal. Preference theory suggests practical implications in a built-in environment. However, studies provide neither the taxonomy of stimuli nor the relationship between stimuli and induced responses.
Ahn and Akkurt’s framework conceptualizes that pleasure and arousal are the emotional dimensions that determine the quality of the shopping experience (see Figure 1). Pleasure is directly associated with the psycho-physiological comfort level within an environment and is a precondition of enhancing the positive shopping experience. Pleasure requires a certain level of environmental stimuli. If that level is exceeded or lacking, unpleasant responses are elicited. Pleasure is determined by ambient factors and spatial factors. Ambient factors are sensory stimuli that allow consumers to complete or continue shopping tasks in a comfortable manner. These factors must meet certain levels for specific tasks. If the factors are lacking or exceeded, displeasure will follow. Ambient factors consist of ambient lighting, temperature, sound, and odor; all are measurable to determine comfort level. Spatial factors refer to the functional elements that allow consumers to continue or complete shopping tasks in a comfortable manner. Spatial factors are associated with the actual usage of space and usually are not noticeable until consumers experience discomfort. Consumers need to feel safe and physically comfortable while shopping; otherwise, displeasure will be elicited.

Arousal is conceptualized as perceived awareness of environmental stimuli that are related to sensory experience. Arousal is strongly associated with established individual experiences and perceived comparisons. Perceived arousal level can be different by individual, culture, and surrounding environments because perceived arousal is comparative. Environmental stimuli affecting arousal consist of short-term factors and long-term factors. Short-term factors include ambient lighting, temperature, sound, and odor (which are also ambient factors affecting pleasure). As short-term factors affecting arousal, these elements can be used to create attention. However,
designers should be careful in using these factors because consumers will not be
tolerant if exposure time is too long. For instance, a cold or warm temperature or loud
music can be used to evoke attention, but if a consumer’s tolerance is exceeded, the
factor becomes an ambient factor. In this case, displeasure will be elicited.

Long-term factors affecting arousal are related to vision. These factors consist of
architectural elements, colors, materials, people, goods, accent lighting, and visual
circulation. Visual circulation is perceived spatial arrangement, both vertical and
horizontal. For instance, the location of a staircase or an escalator and the arrangement
of open and closed spaces can evoke arousal. People and goods are visual resources,
too. For instance, the appearance of store personnel or consumers, even the number of
people in an area, might evoke consumer attention. Products being displayed in a store
are understood as visual factors rather than as part of a price-related concept. Accent
lighting is understood as an attention-creating medium and is distinguished from
ambient lighting. Spotlights or theatrical lighting can create visual attention to heighten
the arousal level.

With the pleasure level achieved, a positive shopping experience can be
maximized by an intermediate arousal level, identified on the inverted U-shape of the
function of arousal (see Figure 2). Intermediate arousal can be achieved with a
combination of arousal increasing devices (complexity, novelty, ambiguity) and
moderating devices (coherence, familiarity, legibility). In determining the intermediate
arousal level, selections of control devices are made by store designers or decision
makers. The desired level of arousal may vary, depending on the targeted consumer
group.
Methodology

The proposed framework was applied in an actual design process at the Octagon Shop in downtown Ames, Iowa. The existing store layout and design were analyzed based on the suggested framework. First, ambient factors and spatial factors affecting “pleasure,” directly associated with induced feelings of psycho-physiological comfort, were analyzed and implemented. Then, existing sensory factors were analyzed and implemented into the design process. Arousal control devices (complexity, novelty, ambiguity, coherence, familiarity, and legibility) were utilized to describe induced arousal level. Interpretation and analysis of sensory factors were based on subjective observation by the designer. In this way, the analysis of arousal enabled the designer to create the intended arousal level without impairing creativity (see Figure 3 and 4).

In this case study, the analysis and design thinking processes were indicated with “glass box” (箱) and “black box” (黑箱) approaches. The glass box concept is understood as a rational view of the design process. In the nature of store design, where predictability is paramount, the glass box approach is critical in the decision-making process for designers, marketers, and storeowners. The black box concept considers the designer as mystic. In this situation, intuition is an important part of the design activities, and at times the design result relies on the designer’s artistic sensibility. The thinking process of a designer for the black box approach involves a deeper process than for the glass box approach. However, the designer’s responses to
environments, or the design results, are rather immediate without formal analysis (see Attachment #5).

**Results**

The proposed framework promises to be useful in design development for stores. In the design analysis, the framework was helpful in identifying unique strengths. For instance, the arousal qualities of ambiguity and familiarity were identified as existing strengths of the Octagon Shop. The concepts of ambiguity and novelty guided the author in manipulating forms, colors, and materials (see Figure 6).

The framework could also be useful in controlling design elements as a whole. The concept of intermediate arousal level was useful in balancing the individual design elements. Particularly, coherence and legibility showed significance in the design development.

In addition, the case study demonstrated how the framework can be useful to enhance creativity in a design process. Particularly, ambiguity and novelty can encourage a designer to find creative solutions in advance. For instance, the study revealed applications of the three-dimensional quality of ambiguity, plus the novelty of lighting effects in the octagonal area and the façade. The case study also illustrated how the framework encourages a designer to consider all possible environmental characteristics to enhance the positive shopping experience of customers.

Finally, novelty over the long-term is shown as an important quality of arousal in store design. Flexibility is important in maintaining an intermediate arousal level, but in the long run it distracts from the total image of the store. The framework identified this possible disadvantage of flexibility and recommended an intermediate arousal level over
a long period.

Conclusions

The case study indicated that the proposed framework has significant potential as a guideline in the design process. It assisted the author in not only identifying the strengths and weaknesses of the existing design of the Octagon Shop, but in controlling the design composition in advance. The framework exhibited potential as a decision-making tool in the design process and adequately explained the holistic picture of human experience in a store environment. Creativity was not impaired by the use of the proposed framework.

References

(APA style)


Figure 1. The Proposed Multi-Disciplinary Framework

**Ambient factors**
- Ambient Lighting
- Temperature
- Sound
- Odor

**Spatial factors**
- Anthropometrics
- Allocation of functional facilities (food, restroom)
- Territoriality (security)

**Sensory factors**

*Long-term factors*
- Architectural elements
- Color
- Materials
- People
- Goods
- Accent Lighting

*Short-term factors*
- Ambient Lighting
- Temperature
- Sound
- Odor

**AROUSAL**

Arousal Control
- Devices
  - Increasing devices
    - Complexity
    - Novelty
    - Ambiguity
  - Moderating devices
    - Coherence
    - Familiarity
    - Legibility

**MOOD**

- Comfort
- Relaxation
- Physiological Desire

**PLEASURE**

**APPROACH**

- Liking
- Excitement
- Exploration
- Desire to Stay
- Attractiveness

**Patron Intention**
Figure 2. Pleasure-Arousal Interaction in Determining Approach (adapted from Berlyne’s theory)
Figure 3. Design Analysis [Pleasure (P) and Arousal (A)]
Figure 4. Design Development (Pleasure and Arousal)
Figure 5. Design Development (Arousal Control)
## Figure 6. Design Proposal

<table>
<thead>
<tr>
<th>Existing Design</th>
<th>Proposed Design</th>
</tr>
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<tbody>
<tr>
<td><img src="image1" alt="Existing Interior Design View from the Counter" /></td>
<td><img src="image2" alt="Proposed Design View from the Counter" /></td>
</tr>
<tr>
<td><img src="image3" alt="Existing Interior Design - Lower Level" /></td>
<td><img src="image4" alt="Proposed Design - Lower Level" /></td>
</tr>
<tr>
<td><img src="image5" alt="Existing View from the Back to the Counter - Upper Level" /></td>
<td><img src="image6" alt="Proposed Design View from the Back to the Counter - Upper Level" /></td>
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</table>
The most recent survey of members of the American Association of Retired Persons (AARP) conducted in 2000 indicates that 89% of Americans age 55 and over would prefer to age in their current homes (Bayer & Harper, 2000). Relating to aging in place, home modifications and repairs have been emerging issues (Pynoos, 1992). Home modifications are adaptations to living environments intended to increase ease of use, safety, security, and independence (Pynoos, Cohen, Davis, & Bernhardt, 1987). Research on person-environment interaction has led experts to conclude that home modification is an important factor related to quality of life and functional autonomy of older people (Cream & Teaford, 1999; Hazen & McCree, 2001).

The purpose of this study was to investigate older people’s behaviors of home modifications. Implications from this study are expected to provide insight useful for residential interior designers in consulting and designing home environments for aging population.

**METHODOLOGY**

The sample for this study was all alumni of a southern land-grant university who were age 55 years and older with e-mail addresses available to the alumni association. On-line questionnaires were distributed and collected in February, 2004. The response
rate was 15.8% with 1,546 eligible returned responses. The Statistical Package for the Social Sciences (SPSS) was used to describe and analyze data of this study.

SUMMARY OF RESULTS

Respondents can be described as Caucasian (97.8%), married (90.0%), men (91.7%), age 55 to 74 years of age (89.9%), with excellent or good health (94.9%) and a post-bachelor degree (60.6%). The majority of the respondents (92%) lived in a single-family detached home and 97% owned their homes. The length of time the respondents lived in their home was evenly distributed 1 to 40 years.

Thirty five percent of the respondents had made home modifications. One hundred five respondents specified the home modifications they had completed. Home modifications were mainly made in the bathroom, bedroom, or kitchen. Ten percent of the respondents added grab bars in their bathrooms and six percent replaced showers with walk-in showers with seats. However, most home modifications that respondents reported were remodeling kitchens (32%) and bathroom (22%). Twenty five percent reported they added additional rooms such additional bedrooms or home offices. Most respondents (43%) noted that reasons for home modifications were for comfort and convenience and only five percent responded for safety. Other reasons are to improve home sale values, have a maintenance-free home environment, and upgrade interiors and exteriors of their homes.

The low rate of home modifications indicates either current housing meets older people’s needs or older people have adjusted themselves to their current home environments. However, it is obvious that home environment cannot always accommodate residents’ changing needs. Therefore, the role of Interior designers or
service providers seems to be critical. They should pay attention to older people’s activities of daily living (ADL) to provide comfort, convenience, and safety in consulting and planning homes for aging population. It is needed for them to encourage older people to do home modifications, although older people just want to upgrade major living areas by replacing materials and finishes.

REFERENCES


NARRATIVE

Purpose

The most recent survey of members of American Association of Retired Persons (AARP) conducted in 2000 indicates that 89% of Americans age 55 and over would prefer to age in their current homes (Bayer & Harper, 2000). Relating to aging in place, home modifications and repairs have been emerging issues (Pynoos, 1992). As recently home modifications are considered as a new functional category of assistive technologies (Hammel, 2004) and attentions to technology and older adults is increasing, home modifications as environmental adaptations have been focused as well.

Home modifications are adaptations to living environments intended to increase ease of use, safety, security, and independence (Pynoos, Cohen, Davis, & Bernhardt, 1987). Research on person-environment interaction has led experts to conclude that home modification is an important factor related to quality of life and functional autonomy of older people. Because the home environment cannot always accommodate residents’ changing needs according to their aging process, the prevalence of environmental hazards in the homes of older people continues to be high (Cook, Yearns, & Martin, 2005). Numerous researchers assert that elderly persons’ activities and safety can be facilitated by educating them about environmental dangers.
and by encouraging them to make adjustments in their home environments (Cream & Teaford, 1999; Hazen & McCree, 2001). The successful implementation of home modifications also may delay the need for more costly services such as personal assistance or relocation (Gitlin, Miller, & Boyce, 1999).

The purpose of this study was to investigate older people’s behaviors of home modifications. Implications from this study are expected to provide insight useful especially for residential interior designers in consulting and designing home environments for aging population.

**LITERATURE REVIEWS**

An survey conducted by AARP in 2000 (Bayer & Harper, 2000) represents the concepts and behaviors that older adults age 45 and over have toward home modifications. According to this survey, most respondents (86%) have made at least one simple change to their home to make it easier for them to live there. Respondents most frequently reported having installed nightlights (63%), non-skid strips in the bathtub or shower (50%), and higher wattage light bulbs (32%). Safety is most often cited as a reason for making home modifications.

Falls are recognized as a leading cause of injury and death, particularly in the elderly population. Researchers indicate, in many cases, that falls can be prevented (Rawsky, 1998). The effects of falls extend beyond obvious physical injury and direct cost. Stairs are one of the most dangerous areas in house. According to Wylde’s telephone survey of those 65 years old and over (1995), 26% reported that none of the essential services (toileting, bathing, sleeping, and eating) were on the ground floor. Among the 256 respondents, 18.3 % had fallen on the stairs in their homes. Sixty-one
percent of the stair-fallers had fallen once, 28% had fallen twice, and the remainder had fallen three or more times.

Although physical changes, safety issues, and housing conditions create the need for modifications, behavior also plays a role (Cream & Teaford, 1999; Gosselin, Robitaille, Trickey, & Maltais, 1993; Pynoos, et al., 1987). According to Lawton (1986), when an older adult demonstrates adaptive behavior in the face of environmental press, he/she will continue to maintain an adequate level of competence; however, at some point, no further changes in behavior can be made or the behavior changes threaten the safety of the person. Based on Lawton’s theory, it can be said that the major barrier to home modification is the fact that older people may modify their behavior rather than make physical changes to their homes. Pynoos (1992) goes on to state that many older people do not alter their environment until an accident has occurred or until they can no longer perform tasks because of chronic health problems.

**METHODOLOGY**

The sample for this study was all alumni of a southern land-grant university who were age 55 years and older with e-mail addresses available to the alumni association. On-line questionnaires were distributed and collected in February, 2004. The potential sample for this study was 9,789. The response rate was 15.8% with 1,546 eligible returned responses. The Statistical Package for the Social Sciences (SPSS) was used to describe and analyze data of this study. A confidence level of $p < .05$ was chosen as the criterion.
SUMMARY OF RESULTS

Respondents can be described as Caucasian (97.8%), married (90.0%), men (91.7%), age 55 to 74 years of age (89.9%), with excellent or good health (94.9%) and a post-bachelor degree (60.6%). The majority of the respondents (92%) lived in a single-family detached home and 97% owned their homes. The length of time the respondents lived in their home was evenly distributed 1 to 40 years.

Thirty five percent of the respondents had made home modifications. One hundred five respondents specified the home modifications they had completed. Most respondents (43%) noted that reasons for home modifications were for comfort and convenience and only five percent responded for safety. Other reasons are to improve home sale values, have a maintenance-free home environment, and upgrade interiors and exteriors of their homes. (See Table 1).

Table 1. Home Modifications

<table>
<thead>
<tr>
<th>Home Modifications</th>
<th>Frequency (n)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home modifications made within the last 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>544</td>
<td>35.2</td>
</tr>
<tr>
<td>No</td>
<td>990</td>
<td>64.0</td>
</tr>
<tr>
<td>No answer</td>
<td>12</td>
<td>0.8</td>
</tr>
<tr>
<td>Home modifications considered within the last 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>310</td>
<td>20.1</td>
</tr>
<tr>
<td>No</td>
<td>640</td>
<td>41.4</td>
</tr>
<tr>
<td>No answer</td>
<td>426</td>
<td>27.6</td>
</tr>
<tr>
<td>Major reasons to have made or considered making home modifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For safety</td>
<td>71</td>
<td>4.6</td>
</tr>
<tr>
<td>For comfort and convenience</td>
<td>667</td>
<td>43.1</td>
</tr>
<tr>
<td>Other</td>
<td>119</td>
<td>7.7</td>
</tr>
<tr>
<td>No answer</td>
<td>689</td>
<td>44.6</td>
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</table>

Home modifications were mainly made in the bathroom, bedroom, or kitchen. Ten percent of the respondents added grab bars in their bathrooms and six percent replaced showers with walk-in showers with seats. However, most home modifications
reported were remodeling kitchens (32%) and bathroom (22%). Twenty five percent reported they added additional rooms such additional bedrooms or home offices (See Table 2).

Table 2. *Specifics of Home Modifications*

<table>
<thead>
<tr>
<th>Location</th>
<th>Specifications</th>
<th>Frequency (n)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior</td>
<td>Add grab bars</td>
<td>10</td>
<td>4.8</td>
</tr>
<tr>
<td></td>
<td>Add walk-in showers (with seats)</td>
<td>6</td>
<td>2.9</td>
</tr>
<tr>
<td></td>
<td>Add higher toilets</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td>Change wheelchair accessible showers and door</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td><strong>Upgrade (floor finishing, and painting)</strong></td>
<td>22</td>
<td>10.5</td>
</tr>
<tr>
<td></td>
<td>Add bathroom downstairs</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td>Bedroom</td>
<td>Move or add downstairs</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>Upgrade</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Kitchen</td>
<td><strong>Renovate (floor finishing and painting)</strong></td>
<td>32</td>
<td>15.3</td>
</tr>
<tr>
<td>Other rooms</td>
<td>Add other rooms</td>
<td>25</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td>Convert existing rooms to other rooms</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td>Others</td>
<td>Change lever door handles</td>
<td>7</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>Install handrails</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td>Install stair way elevators</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td><strong>Renovate whole interiors</strong></td>
<td>24</td>
<td>11.5</td>
</tr>
<tr>
<td></td>
<td>Install advanced HVAC systems</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Exterior</td>
<td>Install ramps</td>
<td>8</td>
<td>3.8</td>
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<tr>
<td>Main entrance</td>
<td>Add wheelchair accessible door</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Other exterior</td>
<td>Redo porch, parking areas, garage, and roof, windows, and land space</td>
<td>18</td>
<td>8.6</td>
</tr>
<tr>
<td>Spaces</td>
<td><strong>Others</strong></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>9</td>
<td></td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>Newly built</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>209</td>
<td>100</td>
</tr>
</tbody>
</table>

*Note.* Total was over 105, because responses reported more than one were included as well.

Statistical analysis showed the age of dwelling \( F (2, 1536) = 17.366, p<.01 \), length in current dwelling \( F (2, 1536) = 3.947, p<.05 \), and the number of physical problems \( F (2, 1497) = 4.596, p<.05 \) as significant factors on home modifications of older adults’ behaviors. The age of dwelling was revealed as the biggest influential factor on home modifications among other variables. Results revealed that people with more physical problems did more home modifications. Among housing variables, it
seems that older people those who had been living longer in a same home or had older-aged homes did more home modifications.

CONCLUSIONS AND DISCUSSIONS

The low rate of home modifications indicates either current housing meets older people’s needs or older people have adjusted themselves to their current home environments. Or another reason might be different understanding of home modifications by older people. Respondents might not count simple changes as home modification behaviors, such as placing non-skid strips in the bathtub or replacing higher wattage light bulbs, that was included in responses from an AARP survey (Bayer & Harper, 2000). They might be confused home remodeling with home modifications, either.

The results from this study have limitations in generalizing to all older adults because a convenience sample was used. However, it is obvious that home environment cannot always accommodate residents’ changing needs. More important result from this research is that, when older people need some environmental changes resulted from either house condition or their health condition, they did some repairs and home modifications. The issue is that they focused on just upgrading their homes rather considering modifying spaces based on their changing needs. This remodeling will result that older people will face the need for changing their environments in near future again. Therefore, the role of Interior designers or service providers seems to be critical. They should pay attention to older people’s activities of daily living (ADL) to provide comfort, convenience, and safety in consulting and planning homes for aging population. It is needed for them to encourage older people to do home modifications,
although older people just want to upgrade major living areas by replacing materials and finishes.

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(APA Style)


Student Design Applications Incorporating Analytical and Critical Thinking in the Context of Interior Design History

Kyu-Ho Ahn, M.F.A. and Mihyun Kang, Ph.D.

Oklahoma State University

ABSTRACT

Through this study, a pedagogical case study was developed, implemented, and disseminated in which students applied interior design historical contexts to a studio project based on Beecher’s design history education framework. This framework states that design history should be taught to engage students in critical and analytical thinking and to integrate the knowledge gained into current design applications (Beecher, 1999). This study provided a comprehensive view of how students responded to interior design history in their design solutions.

Interior design history, including art, architecture, interiors, and furnishings, is recognized as a critical element by the Council of Interior Design Accreditation. However, according to a report titled The Interior Design Profession’s Body of Knowledge (Martin and Guerin, 2006), the perceived value of design history among design practitioners is quite low. Additionally, historical contexts were excluded from the National Council for Interior Design Qualification Exam. This exclusion may have resulted from the use of common pedagogical methods in which history contexts are taught in chronological order focusing on design styles and tested based on memorization. Beecher (1999) and Findeli (1995) proposed a new pedagogical framework that promotes intellectual engagement in the contexts of interior design history. In addition, Beecher (1999) proposed accessibility, analytical/critical thinking, and application of interior design history for better learning outcomes.

In the current study, students were asked to develop an exhibition design installation (Application) as a team project based on the team’s analysis of a design topic or artifact of its choice (Analytical/Critical Thinking) from an interior design exhibition (Accessibility) of the period 1885-1925. An exhibition of three dimensional artifacts and architectural images with descriptions from that era was provided. After viewing the exhibit, students were asked to select and analyze an issue (controversial or educational) or topic (artifact/building/design theory) of their choice from the 1885-1925 design period. Students then planned an experimental exhibition and displayed their applications. A total of ten groups, consisting of three or four members each, participated in the project. Each team had approximately two weeks to complete its project.

Intellectual engagement and learning progress were observed in the students, which may have resulted from the integrated application of the material within an actual design problem. Students tended to apply their new knowledge to a design solution as thematic, which Beecher (1998) suggested as a pedagogical technique to improve learning outcomes. Students engaged in the early process expressed that the project
was challenging for them due to the lack of examples. However, the level of engagement among students was high.

Interior design history application projects in conjunction with existing interior design history classes could enhance student intellectual inquiries for analytical and critical skill improvement. Students suggested that introductory information of critical issues during the era be added to improve accessibility. Development of easy access to curriculum materials, such as a website with introductory critical issues, might reinforce active learning further.

References


Purpose

Through this study, a pedagogical case study was developed, implemented, and disseminated in which students applied interior design historical contexts to a studio project based on Beecher’s design history education framework. This framework states that design history should be taught to engage students in critical and analytical thinking and to integrate the knowledge gained into current design applications (Beecher, 1999). This study provided a comprehensive view of how the students responded to interior design history in their design solutions.

Review of Literature

Interior design history, including art, architecture, interiors, and furnishings, is recognized as a critical element by the Council of Interior Design Accreditation. However, according to a report titled *The Interior Design Profession’s Body of Knowledge: 2005 Edition* (Martin and Guerin, 2006), the perceived value of design history among design practitioners is quite low. Additionally, historical contexts were excluded from the National Council for Interior Design Qualification Exam. This exclusion may have resulted from the use of common pedagogical methods in which history contexts are taught in chronological order focusing on design styles and tested based on memorization.
Beecher (1999) and Findeli (1995) proposed a new pedagogical framework that promotes intellectual engagement in the contexts of interior design history. Design history should be taught to engage students in critical and analytical thinking associated with multidimensional historical contexts such as political, cultural, social, and/or technological factors, and students’ design history knowledge should be integrated into their design applications (Beecher, 1999). Accessibility, analytical/critical thinking, and application of interior design history for better learning outcomes are proposed as a pedagogical framework by Beecher (1999).

In 1983, the Pepin Museum Endowment Fund (PMEF) with the Oklahoma State University Foundation was established to purchase historical artifacts supportive of interior design. Exhibitions of three different eras (1885-1925, 1925-1950, and 1950-1975) were displayed in the Pepin Museum Showcase in the Department of Design Housing and Merchandising (DHM) at Oklahoma State University. Students and visitors of DHM encountered the showcase immediately when they visited the department, as the showcase is located near the building’s elevator. Artifacts and images were displayed with a description on each item. However, despite the exhibition’s location and size, students indicated that they paid little attention to the artifacts. Students who participated in the current study were not experienced with integrated studio projects and associated historical contexts. Therefore, it was necessary to develop a studio project to maximize the artifacts’ exposure to students for better learning within the contexts of interior design history.
**Process**

A total of 32 students enrolled in a junior level interior design studio participated in this project as an outside classroom team assignment. Most students had already taken at least one art history class and were taking an interior design history course concurrently. Each team consisted of three or four members, and a total of ten teams were formed. Two Pepin display showcases were dedicated to this project for students’ project installations. Each team was asked to develop an exhibition design installation (Application) based on the team’s analysis of a design topic or artifact of its choice (Analytical/Critical Thinking) from the existing 1885-1925 exhibition (Accessibility). An exhibition of three-dimensional artifacts and architectural images, including descriptions, from the era was provided (see Figure 1). After viewing the exhibit, teams were asked to select and analyze an issue (controversial or educational) or a topic (artifact/building/design theory) of their choice from the 1885-1925 design period. A guest lecture on design issues in this era was also provided. Teams then planned an experimental exhibition and displayed their design applications, which reflected their analysis and/or possible application of the findings, within a designated display showcase. Each team had approximately two weeks to complete its project and was required to present the project in a PowerPoint presentation during the class.

**Results and Discussion**

Three major learning outcomes were observed from the students: engagement, critical/analytical thinking, and understanding of design history in multidimensional contexts (see Figure 2). Students were highly engaged in the design process and expressed that this project was their first hands-on design installation, which they found
fun and exciting. Students were eager to show their displays to other students and faculty. They felt that they had used a number of design skills and knowledge learned in previous classes and actually integrated those into the design project. Also, students chose topics with which they were familiar and developed more detailed information. This may have engaged students and promoted intellectual curiosity and teamwork.

This project enhanced the critical/analytical thinking process within historical contexts. One student indicated his/her feelings upon seeing another group’s project before his/her group’s work was installed: “I saw that our work is way off. We are not even on the right track, but I learned that there are different styles and that people do think differently and that people have different ideas. You’re not always going to be on the same page, necessarily, but you can still be right.” Limited resources were given to students for problem solving: 1) design period (groups chose their own topics), 2) time limitation (2 weeks), 3) physical site (display showcases), and 4) critical or design issues associated with design history. No specific requirements regarding format of presentations were given. Each group encountered unique challenges to solve, which required teamwork, problem solving skills, time management skills, and communication skills. Also, critical issues in the specified era may have stimulated students’ intellectual curiosities. Although each team’s display arrangements were somewhat influenced by the other teams due to the available visual examples, design applications and approaches to the topics were quite unique. Student outcomes in critical/analytical thinking were observed.

Teams’ design results indicated that students gained more understanding of design history as a holistic view and multidimensional contexts. In the first group,
students tended to focus on specific topics more directly related to interior design, such as design styles or building technology. In the middle group, students tended to pick a topic with a broader range, such as World War I and its impacts on building styles, the light bulb’s technology advancement, or the Chicago World’s Fair. Students began to see connections between multidimensional historical contexts and their influence on design. However, student topics and design applications were still more of a direct implication of the topic they chose. For instance, one group chose incandescent light bulb development as its topic, and the resulting exhibition focused on the bulb’s developmental phases rather than on its influences on current design industries.

Student discussion of issues during each group’s PowerPoint presentation extended students’ cognitive boundaries. In the final group, students successfully demonstrated an understanding of design history as a dynamic system of multidimensional contexts. Students demonstrated that design history is evolving as a result of complex interactions of social, cultural, political, and/or technological factors. The project titled *The Jazz Age* reflected the holistic understanding of design as an art form reflecting social, cultural, and political contextual changes of that era. The topics covered were individualism, alcohol prohibition, women’s rights, Cubism and Dadaism, and the great migration. Students saw the connection between multidimensional contexts and the future of design.

Students tended to apply their new knowledge to a design solution as thematic, which Beecher (1998) suggested as a pedagogical technique to improve learning outcomes. Students engaged in the early process expressed that the project was challenging for them due to the lack of examples. However, the level of engagement
among students was high. Students identified the lack of accessibility to critical issues as a major challenge. Although the artifacts were collected for PMEF, the Pepin collections exhibited for students have not provided critical or multidimensional issues to engage students in analytical and critical thinking, nor have they captured student attention. Therefore, it may be necessary to enhance the Pepin exhibition to increase accessibility and to create links with the critical issues of the era 1885-1925.

Conclusions

This study demonstrated that interior design studio projects incorporating interior design history have benefits for student learning of design history. First, students can be highly engaged in the problem solving process due to hands-on experiences that most students favor. Such problem solving enhances student intellectual skills in analytical and critical thinking. Second, design history is understood as live, ongoing events that are always evolving. Design history is understood as the result of complex interactions of multidimensional factors (social, political, cultural, and/or technological). The purpose of design is to solve human problems within the built-in environment. Therefore, design history knowledge that has examined multidimensional contexts will assist professional interior designers in solving current design problems. Finally, student feedback indicated that introductory information of critical issues during the era should be added to improve accessibility and student engagement. Development of easy access to curriculum materials, such as a website with introductory critical issues, might reinforce active learning.
References
(APA style)


### Figure 1. Pepin Museum Collections (Accessibility)

![Image of museum collection displays](image1.png)

### Figure 2. Student Outcome (Design Application)

<table>
<thead>
<tr>
<th>Showcase #1</th>
<th>Showcase #2</th>
</tr>
</thead>
</table>
| **First Group** | **Title:** The Effects of the Industrial Revolution on Modular Design  
**Topic:** Industrial revolution and its impact on design  
**Design Application Focus:** Building technique – modular construction (Grand Central Station) |
| **First Group** | **Title:** Charles Darwin and His Influence on Art Nouveau  
**Topic:** Scientific discovery (the theory of evolution), its controversy, and its influence on design  
**Design Application Focus:** Style – Art Nouveau |
Middle Group

- Title: Filament Technology Advancements Through the Incandescent Lamp
- Topic: Invention of the light bulb and its technology advancement
- Design Application Focus: Technology and history

Last Group

- Title: Eclectic Revival
- Topic: World War I and the movie industry affecting building styles in California
- Design Application Focus: Style, theme

- Title: Le Corbusier: The New Spirit, Success from Scandal
- Topic: Social issues, styles, technology, controversial reaction
- Design Application Focus: Theme, multidirectional, critical issues

- Title: The Jazz Age
- Topic: Art and culture reflecting critical issues in social and political changes (the great migration, women’s rights movement, Cubism & Dadaism, alcohol prohibition)
- Design Application Focus: Theme, multidirectional, critical issues
Purpose

The purpose of this study was to examine the privacy and social needs of women in the contemporary Kuwaiti home.

Background

In a global economy, designers and design educators should be aware of the impact of culture on the design of the built environment. This research focused on the middle-eastern country of Kuwait, which went through a major transformation following the discovery of oil in 1936. Kuwaitis found they had the financial resources to reconstruct their entire city and most traditional adobe dwellings were leveled to make room for new construction of more popular contemporary styles (Al Mutawa, 1994).

Relevance

This study addressed the privacy and social needs of women in contemporary Kuwaiti homes, with specific attention to the changes in the design of homes in the last 70 years. In a country where over 85% of the population is of Muslim faith, religious doctrine provides the general ethical framework for human behavior (Mahfouz and Ismail, 1990). This doctrine carries over into the design of the built environment, specifically in the design of separate spaces for men and women (Al Mutawa, 1994). During frequent social visits, common in Kuwaiti culture, men socialize in the male diwania, or male salon, while women interact in the female salon (figure 1) (Lewcock &
Islamic principles require that women wear a veil, or *al hejab*, when out in public and in the company of unrelated men (figure 2). This veil not only separates “the female from the male, but also the private from the public, the interior from the exterior, and the invisible from the visible” (Clevenot & Degeorge, 2000, p. 208).

Historically, the home has been a refuge for women, a place to remove the veil, and move freely about the home while revealing their own sense of style and identity to others.

**Method**

A field study visit to Kuwait was conducted to explore the contemporary Kuwaiti architecture and social dynamics of the home using methods of visual documentation, behavioral mapping, and interviews.

**Conclusion**

This study revealed that the design of the contemporary Kuwaiti homes examined often overlooked the needs of the Kuwaiti women in terms of privacy, contact with nature, the ability to move freely within the home while unveiled, and ease of social interaction with family members. There were a number of areas of concern uncovered including loss of the courtyard, limited access to nature, and relegation of the salons to the front of the house, which forced the residents toward the back creating isolated family spaces. The loss of the courtyard led to male visitors passing through the front yard to enter the male guest salon. This restricted the movement of the female members of the family who do not feel free to enjoy the outdoors because they feel exposed to male visitors and the public passing by in the street. The courtyard, the central location interconnecting the surrounding rooms gave women great flexibility and
facilitated free movement between their spaces. Solutions include incorporating some of the traditional architectural elements into contemporary Kuwaiti architecture.

References


Purpose

The purpose of this study was to examine the needs of women in the contemporary Kuwaiti home in regard to privacy, opportunities for social interaction, and respect for the culture and customs of the past.

Background

In a global economy, designers and design educators should be aware of the impact of culture on the design of the built environment. This research focused on Kuwait, a small Middle Eastern country of approximately 2.5 million people, located on the Arabian Gulf. Kuwait went through a major transformation following the discovery of oil in 1936. Almost overnight, Kuwaitis had the financial resources to reconstruct their entire city and most traditional adobe dwellings were leveled to make room for new construction in more popular contemporary styles (Al Mutawa, 1994).

The available materials, economic conditions, manpower, local topographies, and social and cultural norms defined the features of the traditional Kuwaiti home (Al-Mutawa, 1994; Al-Bahei, 1984). In a country where over 85% of the population is of Muslim faith, religious doctrine provides the general ethical framework for human behavior (Mahfouz and Ismail, 1990). This doctrine carries over into the design of the built environment, specifically in the design of separate spaces for men and women (Al Mutawa, 1994).
During frequent social visits, common in Kuwaiti culture, men socialize in the male *diwania*, or male salon, while women interact in the female salon (Lewcock & Freeth, 1978). Islamic principles require that women wear a veil, or *al hejab*, when out in public and in the company of unrelated men. This veil not only separates “the female from the male, but also the private from the public, the interior from the exterior, and the invisible from the visible” (Clevenot & Degeorge, 2000, p. 208). Historically, the home has been a refuge for women, a place to remove the veil, and move freely about the home while revealing their own sense of style and identity to others.

**Procedure**

In December of 2006 a field study was conducted to explore the contemporary Kuwaiti architecture and social dynamics of the Kuwaiti home. The research techniques of observation, visual documentation, and interview were used to explore whether modern design elements meet the needs and preferences of Kuwaiti women in today’s society.

The house selected for the case study was a home that possessed architectural and interior elements common in contemporary Kuwaiti dwellings. Because social visits are such an important part of Kuwaiti culture, care was taken to visit the space when the family and visitors were present.

**Findings**
Although this case study can not be generalized to all Kuwaiti homes, findings are likely applicable to many other houses in contemporary Kuwait. Photo documentation can be found below.

**Overview of the characteristics of the Kuwaiti home.** The location of the interior spaces on each floor of the home is based on the degree of privacy required by the users of the spaces. The need for separation between men and women dictates segregating the residential space into several zones. The most private zone accommodates only the family members while very close relatives and female visitors use a semi-private unit. The public space within the house is utilized only by the male visitors. The semi-private zone is located on the first floor includes reception salons, a bedroom for guests, living and dining areas, as well as the kitchen. Family bedrooms and a living area are placed on the second floor, whereas the *diwania,* and male chauffeur’s bedroom are in the basement.

In contemporary Kuwait, the traditional need for separation of men’s and women’s spaces can be found. However, a range of attitudes about the issue of gender separation can be found. Female and male visitors may be totally divided into separate spaces or sit separately in one large salon, as compared in figure 1. If complete gender separation is desired, the male salon can be located in the basement while the female salon is on the first floor so the women may be closer to the kitchen.
Photo documentation of the Kuwaiti home. The Kuwaiti home chosen for study was photographed in an effort to document the allocation and use of space. Photos and explanations can be found below. Because the windows face outward toward a public space, two-way mirror glass is often used to provide visual privacy and light during the daytime when the curtains are not drawn. The main entrance of the house leads to the front entrance of the female quarters and to the diwania in the basement (see figure 2).

Figure 1. Total vs. partial separation between female and male reception salons

Figure 2. Exterior of contemporary Kuwaiti residence.
As a sign of hospitality, the hostess receives the guests with greetings at the entrance (see figure 3). Before entering the private quarters, the women remain in formal dress due to tradition and religious rules. Wearing black dress (al abayia), and covering their faces in public embody traditional attitudes of modesty and decency.

Figure 3. Receiving guests.

The picture below emphasizes the influence of gender on the house design (see figure 4). The glazed, but not screened, entrance of the diwania allows the interior spaces to be seen from the outside because visual privacy is not required for men.

Figure 4. The front entrance of the male salon, the diwania.
The photograph below shows the women’s reception area with an open double salon that is designed to allow a lower degree of separation between female and male family members (see figure 5). Within private homes in Kuwait, it is common for women to sit in a mixed gender grouping of close relatives as long as they wear the veil. Extended family such as sisters, sister's husbands, brothers, brother's wives, nephews, and nieces can be received in the women’s quarters as well. Female family visitors group in one side of the salon while the male family visitors sit separately in the other half. A hallway separates the two opened salons. For total gender separation, as required of those who are not close relatives, the men sit in the male salon in the basement while women occupy these reception quarters on the first floor.

![Figure 5. A hallway separating two opened salons.](image)

Typically, inside the female salon or Salah, guests feel free to take off their veils, black dress, and face coverings and to expose their elegance and beauty (see figure 6). (It must be noted that all the guests in this field study can not take their veils off while being photographed.)
The purpose of using the curtains in the guest salons is not only to preserve visual privacy for women, but also to enhance the interior space (see figure 7).

Generally, Kuwaitis value the decoration of the salon as an expression of hospitality and the social status of the homeowners. In the past, large rugs covered the guest salon floors while in the contemporary reception area, rugs are scattered on marble, granite, or ceramic tiles for aesthetic reasons and for ease of maintenance (see figure 8). Carpet can be used in male salons when less formal seating is desired.
The photograph below illustrates the traditional posture of eating on the floor from a communal serving dish (see figure 9). The female guests usually prefer sitting on chairs or couches (see figure 8) while male visitors often prefer to sit on the floors, cushions, or low upholstered benches. Men usually like less formality, gathering in small groups to play cards, discuss politics, watch football, etc.

**Figure 8.** A women’s reception salon.

**Figure 9.** The traditional posture of eating which still occurs in the male diwania.

**Conclusion**

This study revealed that the design of the contemporary Kuwaiti homes has changed since the discovery of oil and the total transformation of Kuwaiti architecture. Some of the design features that met the needs of the Kuwaiti women regarding
privacy, contact with nature, the ability to move freely within the home while unveiled, and ease of social interaction with family members have changed and evolved. The loss of the courtyard, as well as limited access to nature, and relegation of the salons to the front of the house, has forced the residents toward the back creating isolated family spaces. The loss of the courtyard requires that male visitors passing through the front yard to enter the male guest salon. With men present in the front yard, the movement of the female members of the family is restricted and they are unable to enjoy the outdoors because they feel exposed to male visitors and the public passing by in the street. The traditional courtyard gave women great flexibility and facilitated free movement between their spaces. This study suggests the courtyard be brought back into the contemporary Kuwaiti home design, along with other traditional architectural elements so that women may easily move about their homes unveiled, enjoy the outdoors, and remain connected with the traditions of the past.

References


Collaboration studio: conceptual design phase under scrutiny

Cherif Amor, Ph.D.

Department of Design, Texas Tech University

Abstract

Purpose

A substantive deficiency of collaboration is encountered between design disciplines—architecture, interior design, and landscape architecture. The National Architectural Accrediting Board (NAAB), the Council for Interior Design Accreditation formerly (FIDER), and the Landscape Architecture Accreditation Board (LAAB) advocate the implementation of collaborative learning within the same discipline and with related disciplines.

In their initial study on collaboration “Collaboration studio: Correlation between design outcome and personality types” Amor and Wilson (2005) found that the use of the Myers Briggs Type Indicator (MBTI), a personality preference indicator, to test design outcomes was not a sufficient indicator. Similarly, while the findings of the early study indicated weak design outcomes, it failed to highlight in which design phase—conceptual, schematic, preliminary or final—this weakness is more pronounced. The purpose of this study is to measure the success of the conceptual phase in a collaboration design setting using the Meyers Briggs Type Indicator and students’ design skills.

Methodology

The research design encompasses three approaches: 1) an individual charette design to detect design skills using four assessment parameters—design, flexibility, completion and originality, 2) The Myers Briggs Type Indicator (MBTI)¹, a personality preference indicator that was administered the first week of class, and 3) a qualitative investigation using a grounded theory² approach based on participant observation and design outcome analysis was utilized. 57 students (12 architects, 27 interior designers, and 18 landscape architects) constituted the sample population that was split into six groups—3 groups of ten students and three group of 9 students. There was an average of four-five interior designers, two architects, and three landscape architects per group.

Data were analyzed using two approaches: 1) analysis and evaluation of conceptual phase using four assessment variables—context, case studies, correlation of analysis to concept, and collaborative measures and 2) open coding (Strauss & Corbin, 1990), which consisted of breaking down, conceptualizing, and reconstructing data in new ways.

¹ The Myers-Briggs Type Indicator (MBTI) form G, self-scorable version, was used to assess personality type and consisted of 94 questions. Personality models included four basic scales with opposite poles. They are 1) Extraversion (E)/Introversion (I), 2) Sensate (S)/Intuition (I), 3) Thinking (T)/Feeling (F), and 4) Judgment (J)/Perception (P).

² Grounded theory is a qualitative research approach that is inductively derived from the study of the phenomenon it represents that is discovered, developed, and verified through systematic data collection and analysis of data pertaining to that phenomenon (Glasser & Strauss, 1990).
Summary
The combination of the Myers Briggs Type Indicator and individual skills resulted in cohesive teams. The students’ design skills permitted the establishment of unbiased groups reflecting sometimes evenhanded concept design outcomes. Corroborating previous research, one significant finding emerged from this study reflected the strong correlation between personality types and design outcomes. Nonetheless, the use of the MBTI led to some complexities that revolved around the amount of time required for discussion, presentation, feedback, and completion of the project. Similarly, the use of students’ design skills led to the emergence of seniority. Another setback of the use of the four assessment variables—design, flexibility, originality, and completion—on individual basis to detect design skills generated in some cases false measurements. Other reflections on the present research pertaining to the schematic and preliminary phases, procedure of the charette and its assessment, lack of understanding of other disciplines' terminology and services, fairness of students' involvement, and process of decision making will be discussed with the conference attendees for feedback and generation of further variables.

References
In this era of global design perspectives, it is almost unrealistic to expect everyone to know and learn everything there is to know about design, design theories, as well as to know about each other discipline and their constant advancement and the peripherals that accompany each. In front of this growing concern, a substantive deficiency of collaboration is encountered between design disciplines—architecture, interior design, and landscape architecture. While early studies have to some extent addressed administrative, management, and team building aspects of collaboration, design issues remained unexplored.

Accreditation boards and advisory councils advocate the implementation of collaborative learning within the same discipline and with related disciplines. The Council for Interior Design Accreditation (CIDA), the National Architectural Accrediting Board (NAAB), and The Landscape Architecture Accreditation Board (LAAB) advocate the implementation of collaborative learning within the same discipline and with related disciplines.

The lack of collaboration, accreditation boards’ recommendations, and the pedagogic exigencies of the era compelled the development of an interdisciplinary course at Texas Tech University that brought together three design disciplines—architecture, interior design, and landscape architecture.
Amor and Wilson’s (2005) findings in their initial study on collaboration “Collaboration studio: Correlation between design outcome and personality types” found that the use of the Myers Briggs Type Indicator (MBTI), a personality preference indicator, to test design outcomes was not a sufficient indicator. This was indicated by the fact that in some groups, although combining a variety of personality types, the groups remained weak as pertaining to design skills and led not only to poor design compositions but also to weak collaboration—leadership, cohesion, and decision making. Similarly, while the findings of the early study indicated weak design outcomes, it failed to highlight in which design phase—conceptual, schematic, preliminary or final—this weakness is more pronounced. This may be of critical interest particularly that the design process suggests slight discrepancies in the three disciplines.

The short term purpose of this study is to measure the success of the conceptual phase using the Meyers Briggs Type Indicator and individual design skills taking into account four assessment variables: context, case studies, correlation of analysis to concept, and collaborative measures.

REVIEW OF PRECEDENTS

The Meriem-Webster Dictionary defines concept as “something conceived in the mind” or “an abstract or generic idea generalized from particular instances”. Yet, the notion of design concept remains one of the most misinterpreted design syntax within and among design disciplines (Rengel, 2003). There are wealth of forms a concept can take; it can be a diagram, an illustration, or a text (Leupenn, Grafe, Koernig, Lampe, Zeeuw; 1997). At the beginning of the 20th century Le Corbusier, very influenced by the machine age,
approached the conceptual design of the Villa Savoye using a textual concept “la maison est une machine a habiter” the house is a machine to live in. The machine age and the industrial development of the beginning of the 20th century coerced the use of the machine to become a motto for his design. However, Alvar Aalto, the Finnish architect and interior designer approached the design of the famous Neue Vahr apartment building in Bremen using a sketch featuring converging forces on the one hand and diverging perspectives on the other hand. The converging lines are to permit the establishment of community life and the diverging perspectives is to ensure a maximum exposure to the sun. Perhaps in contemporary times, “Post Functionalist” like Peter Eisenman looks at a break with classical architecture where he sees concepts such as “abstraction, atonality, and a temporality” the rule that should guide future built environment production. Instead of permitting the culture to impact the built form, Eisenman perceives the designer as the creator of the culture.

The early works on collaborative efforts go back to the social psychologist and proponent of the advent of environmental psychology, Kurt Lewin, who stressed the importance of group dynamics as a way to understand the behavior of those involved in collaborative works. More recently, Guerin (1991) brought to light that collaboration and interdisciplinary efforts will be among the key issues that will shape interior design education. “Design of human environments requires an awareness of related disciplines, an understanding of interdisciplinary processes, and competency in teamwork” (Guerin, 1991, p. 12).
Student-student interactions and student-faculty interactions, both essential components in teamwork, are the most important influences on academic success and satisfaction (Astin, 1993; Cooper, Robinson, & McKinney 1990).

Teamwork among divisions within the field and with other disciplines (Hassel & Scott 1996; Russ & Dickinson, 1999; Webb & Miller, 2004) develops critical thinking, self-esteem, multicultural relations and positive social behaviors (Cooper, Robinson, & McKinney 1990). Similarly, collaboration helps to socialize students, provide a setting for active participation, and create opportunities to offer and receive (Sten & Hurd, 2000), as well as to respond to the current challenges and to look forward to the next century (Muir and Rance 1995).

Portillo (2002), studying creativity, compared implicit theories in the professions of interior design, architecture, landscape architecture and engineering. Although the finding suggested disciplinary differences in 21 traits of the ACL Cr$^3$ scale in areas of artistic creativity, scientific creativity, intelligence, self-confidence, and task orientation, major conclusions indicate that “the creative practitioner is perceived as multi-faceted with shared traits and discipline specific characteristics” (p. 23).

Collaborative works establish group loyalties that counteract the sense of anonymity students often feel in large classes (Markov, 2000; Chai, 2000). Collaboration mediates between students’ disciplines and individual experiences, providing opportunities for shared reflections, and helps to develop acceptance from allied professions (Guerin & Thompson, 2004; Russ & Dickinson, 1999). Partnership

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3 ACL: Adjective Check List that is a standardized test composed of alphabetically ordered adjectives and adjectival phrases that commonly describe personality types (Gough & Heilbrun, 1983).
attracts youth and develops their knowledge of the profession; hence, it ensures the profession’s continuity, vitality and growth (Clemons 2002).

Precedent studies on team building, motivation, acceptance among allied disciplines, and development of critical thinking, self-esteem, multicultural relations and positive social behaviors as pertaining to collaborative learning are very reminiscent and suggestive for this research. However, a paucity of data is sensed at the level of interdisciplinary team design performance, specifically at the conceptual level.

**METHODOLOGY**

The research design encompasses three approaches: 1) an individual charette design to detect design skills using four assessment parameters—design, flexibility, completion and originality, 2) The Myers Briggs Type Indicator (MBTI)\(^4\), a personality preference indicator that was administered the first week of class to increase self-awareness but also to enhance understanding and appreciation of individual differences and ultimately to test design outcomes according to personality types, and 3) a qualitative investigation using a grounded theory\(^5\) approach based on participant observation and design outcome analysis was utilized. 57 students (12 architects, 27 interior designers, and 18 landscape architects) constituted the sample population that was split into ten groups—3 groups of ten students and three group of 9 students. There was an average of four-five interior designers, two architects, and three landscape architects per group.

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\(^4\) The Myers-Briggs Type Indicator (MBTI) form G, self-scorable version, was used to assess personality type and consisted of 94 questions. Personality models included four basic scales with opposite poles. They are 1) Extraversion (E)/Introversion (I), 2) Sensate (S)/Intuition (I), 3) Thinking (T)/Feeling (F), and 4) Judgment (J)/Perception (P).

\(^5\) A grounded theory is a qualitative research approach that is inductively derived from the study of the phenomenon it represents that is discovered, developed, and verified through systematic data collection and analysis of data pertaining to that phenomenon (Glasser & Strauss, 1990).
Data were analyzed using two approaches: 1) analysis and evaluation of conceptual phase using four assessment variables—context, case studies, correlation of analysis to concept, and collaborative measures and 2) open coding (Strauss & Corbin, 1990), which consisted of breaking down, conceptualizing, and reconstructing data in new ways.

**DISCUSSION/FINDINGS**

The combination of the Myers Briggs Type Indicator and individual skills resulted in cohesive teams. Pedagogically, the MBTI permitted the grouping of different personality types, reflecting real world team experience that engendered not only diverse composition of student preferences but also rich diverse design outcomes. The individual design skills permitted the establishment of unbiased groups reflecting sometimes evenhanded concept design outcomes. For instance 49 students (86%) of the student population indicated in their conceptual design a reference to the context, case studies, correlation of analysis to concept, and collaborative measures. Likewise, the fair repartition of individual design skills on the six groups resulted on a very competitive studio setting.

Corroborating previous research, one significant finding emerged from this study reflected the strong correlation between personality types and design outcomes. There was a strong correlation between feelings and built form. Another finding, which also supports previous research, is that the presence of different personality types within the same group permitted the students to be learners and teachers at the same time.

Nonetheless, the use of the MBTI led to some complexities that revolved around the amount of time required for discussion, presentation, feedback, and completion of
the project. This may be understood by the large group size. Similarly, the inconvenience of the use of design skills is the emergence of seniority. This automatic leadership position trivialized the design diversity within the group offered at early stages of the conceptual phase. Another setback of the four assessment variables—design, flexibility, originality, and completion—on individual basis to detect design skills generated in some cases false measurements. Perhaps the simultaneous use of the four variables could generate better design skills assessment.

Other reflections on the present research pertaining to the schematic and preliminary phases, procedure of the charette and its assessment, lack of understanding of other disciplines' terminology and services, fairness of students' involvement, and process of decision making will be discussed with the conference attendees for feedback and generation of further variables.

REFERENCES


Redefining Beauty in Interior Design

Barbara G. Anderson
Kansas State University

Abstract

Interior design educators have taken a leadership role in the sustainability movement. We teach ecological design and prepare graduates to be a force in the sustainability revolution. There is a nagging conflict, however, between the traditional role of interior designers and the achievement of a sustainable future. Interior designers provide services to an affluent clientele. Interior design work often includes excessive spaces with lavish furnishings, fixtures, and finishes. These are the interiors that get both professional and public acclaim. The opulence of today’s admired interiors is a striking contrast to the restrained consumption that will mark the sustainability revolution. What must change in the way interior designers think, work, and are educated to transform the profession and make sustainability possible?

David W. Orr (2002) says that “. . . ecologically smarter design . . . does not amount to a fix for all that ails us”(134). Orr eloquently writes of “. . . the eventual collision between unfettered human desires and the limits of the earth”(134). He proposes a solution to materialistic excesses:

In the largest sense, what we must do to ensure human tenure on the earth is to cultivate a new standard that defines beauty as that which causes no ugliness somewhere else or at some later time (134).

If beauty must be redefined as that which creates no social or environmental ugliness, how do we apply Orr’s new standard of beauty to interior design? How should interior design educators respond to this call to redefine beauty so that we can achieve sustainability? Orr challenges us to see differently the consumption excesses that distinguish our time.
This paper considers the meaning and implications of beauty, style, and fashion in interiors. It examines the essential or intrinsic qualities of beauty, such as proportion and symmetry that are timeless—possibly even biologically determined—and the culturally constructed interpretations of beauty that change over time and are often associated with style and fashion. The paper explores the ways beauty, style, and fashion might be understood in what Daniel Pink (2006) describes as the “Conceptual Age.”

How beauty is understood and taught by interior design educators is significant in interior design’s advancement toward professionalization. As social theorist David Sciulli (2007) so clearly states,

. . .some credible epistemology remains central today to distinguishing professions from other expert occupations. Professions cannot base their instruction or their delivery of expert services on cultural relativism without becoming vulnerable to de-professionalization. This is what separates medicine, law and engineering today not only from art but also from haute couture and haute cuisine; the latter are clearly expert occupations, but they are not professions (52).

Ultimately, the paper presents a two-fold challenge to interior design educators. The first and most significant challenge is to redefine our culturally-constructed understanding of beauty. The second challenge is for interior design educators to teach universally recognized principles of beauty rather than to venerate fashion-driven aesthetic trends. A sustainable future and interior design’s professional integrity are at stake.
Redefining Beauty in Interior Design

Barbara G. Anderson

Kansas State University

Narrative

Purpose

Interior design educators, as responsible leaders, are preparing our graduates to be agents of change in the sustainability revolution. The conflict between our desire to make possible a sustainable human existence on earth and the traditional role of interior designers as service providers to affluent clients with nearly insatiable material wants requires us to take a hard look at the realities of our work. Excessive spaces richly finished and filled with lavish possessions are the interiors that get professional and public acclaim. However, the opulence of today’s admired interiors is a striking contrast to the restrained consumption that will mark the sustainability revolution. Changes in the way interior designers think, work, and are educated are necessary to transform the profession’s role in society and make sustainability possible. This paper addresses ideals that are imbedded in our understanding of beauty that must change to achieve sustainability.

Context

There is a cultural transformation taking place in affluent societies because of the failure of material abundance to satisfy our deepest needs (Berry, 1999; Cohen, Conrov, & Hoffner, 2005; Edwards, 2005; Pink, 2006). Pink (2006) asserts that abundance has created a greater desire for “...beauty, spirituality, emotion” (33). In this new age, interior designers have the opportunity to shift their priorities from enabling
excessive consumption to “...designing physiologically and psychologically supportive interior environments that enhance quality of life” (Anderson, Honey, & Dudek, 2007, vi).

In assessing what must be done to achieve sustainability Orr (2002) says “…ecologically smarter design...does not amount to a fix for all that ails us”(134). Orr writes of “…the eventual collision between unfettered human desires and the limits of the earth”(134). Orr proposes a solution that requires us to see the excesses of consumption that distinguish our time differently:

In the largest sense, what we must do to ensure human tenure on the earth is to cultivate a new standard that defines beauty as that which causes no ugliness somewhere else or at some later time (134).

Orr was writing about our cultural understanding of beauty—the form of beauty that is instituted by human opinion, custom, and taste and is exemplified in fashion. Orr was not using “beauty” to describe the aesthetic distinctions Père André (1843) made in describing essential beauty or natural beauty. The theory of beauty based on intrinsic qualities such as symmetry and proportion is a truth that is not in question here. These timeless conceptions of beauty are part of interior design’s foundational knowledge and they must continue to be central to design education. As Sciulli (2007) so clearly puts it, 

...some credible epistemology remains central today to distinguishing professions from expert occupations. Professions cannot base their instruction or their delivery of expert services on cultural relativism without becoming vulnerable to de-professionalization (52).

Discussion
Interior design educators have an ethical obligation to take leadership in changing unsustainable culturally-constructed perceptions of beauty. The work ahead for interior design in redefining beauty is what Csikszentmihalyi (1996) characterizes as real creativity “. . . any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one” (28). Interior design students have the potential to be agents of change toward a sustainable future but not if we continue in our preoccupation with fashion and the material excesses it fosters. Where do we start?

First, we must know that culturally-constructed perceptions of beauty change over time and are generally linked to desirability based on economic, political, or moral value (Holm, 2006). Culturally-constructed perceptions of beauty are the origin of fashion. We must reshape our culture’s view of fashion through economic, political, and/or moral lenses.

Second, we cannot ignore the reasons we consume as we do. Scholars who study the nature of consumer culture and its impact on sustainable consumption have much to contribute to our understanding of consumption motivations. Dolan (2002) posits

The assumption is that once people consume beyond [basic] needs, they are being irrational, greedy, immoral, or manipulated. …needs are not so simply defined and located outside of their social and cultural contexts of enactment (172).

Dolan (2002) provides a way of thinking about the psychological and social roles of consumption: “Through the process of consumption, people are able to make visible the social and cultural differences between people”(175). Dolan (2002) says “We need
more objects to communicate more subtle, nuanced differences in identities, social statuses, roles, subcultural allegiances, and subjective dispositions”(175). Dittmar (2008) describes the ideal identity of “…the ‘good life’, where an affluent lifestyle, studded with expensive consumer goods, possessions, and activities, is heralded as a material ideal”(14). Do not assume that only the most affluent are influenced by the consumer culture. Dittmar (2008) further states:

This material ideal . . .is profiled now more than ever by idealized models who are celebrities and who make it appear possible that ‘ordinary’ people can actually achieve a super-affluent ideal (14).

To summarize the social and psychological role of material acquisition and possession:

. . . consumer culture and material goods have become modern means of acquiring, expressing, and attempting to enhance identity: they signify social status, express unique aspects of the person, and symbolise [sic] hoped for, better, more ideal identities (Benson, 2000, 2006; Dittmar 2004a, 2004b, as cited in Dittmar, 2008, 12).

To bring about real change, the interior design profession must transform the economic, political, and moral implications of consumer choices in interior environments that are driven in part by desires for self-expression and self-identity.

Third, we must honestly assess the scope of our current efforts to address sustainability in interior design. We are primarily concerned with 1) “green” material choices for furnishing and finishes, 2) efficiency in energy and water use, and 3) enhancing quality of life through universal design, daylighting, and increasing indoor air quality by reducing toxic chemicals in building materials and maintenance practices.
While these are important issues that help us progress toward a sustainable future, there are serious omissions in our thinking and teaching about sustainable interiors.

Affluence and material abundance have had a profound—and mostly unexamined—impact on our aesthetic sensibilities including our understanding of beauty in interiors. In introductory courses beginning design students learn the principles of design, which are based on timeless aspects of beauty. Thereafter the focus of our attention in both education and the profession is nearly entirely on fashion—a continually changing and culturally-constructed definition of beauty. This focus on what is “in fashion” and how we might use innovation to create a new fashion trend are ever-present and insidious. Our unquestioned preoccupation with fashion has blinded us to the realities we must face to achieve sustainability. First, we must rely to a great extent on conservation of existing buildings/interiors as they are (without significant modification to meet current fashion trends), and second, we must redefine the size of space in interiors that is adequate to meet our needs.

The first profound shift we must make in our thinking is about how we assign value to and work with the built environment that exists. Carl Elefante (2007) states it succinctly: “We cannot build our way to sustainability; we must conserve our way to it” (27). Interior designers will need to respect existing interiors and work from the context of existing buildings with great sensitivity resulting in little or no demolition. To achieve a sustainable future, existing interiors that are functional (and even beautiful) but are not necessarily in fashion must be retained and reused. If we choose to demolish and replace such interiors to meet current fashion trends or trivial differences in function, it should be understood to be causing “ugliness” because of the resulting
waste of embodied energy\textsuperscript{iii}, the unnecessary contribution of otherwise useful materials
to the waste stream\textsuperscript{iv}, and the unnecessary consumption of materials used to create a
new “in-fashion” interior. This will be difficult because designers glorify the complete
reinvention of existing space—we gut and remake interiors to express our genius and/or
to satisfy the greed, hedonism, or need for self-expression/self-identity of our clients.
Even if designers can overcome our biases against styles of the past and our need to
leave our mark through complete redesign, can we convince out clients to live
contentedly with what generations past have bequeathed to us?

The second profound shift we must make to achieve a sustainable future is our
sensibility of what size and scale of interior space is appropriate to our needs. In the
United States with abundant land and considerable affluence, expectations about how
much space is enough for our daily lives is unparalleled in human history. As world
population increases and developing countries take on the material consumption
patterns of affluence, interior designers must design spaces that are smaller, more
efficient, and more flexible than the interiors that have been common for the last fifty
years.

Our desire to be part of the sustainability revolution and our obligation to serve as
ethical models to those who aspire to the “good life” will require designers to shift from
being fashion-driven to being focused on timeless beauty. With that shift, we will
respect both well-designed existing and small interior spaces because they cause no
ugliness at any time or in any place.
References

(APA)


End Notes

1Ponting (2007) describes the reason as follows: “The United States contains about 5 per cent of the world’s population yet it consumes every year about 40% of the resources used in the world” (417). He continues: “If some attempt was made to combat the glaring inequalities in the world and the standard of living of the poorest countries were to rise to current European (not American) standards then the world’s consumption of resources would have to rise more than 150-fold. It is unlikely that there are enough resources in the world to sustain this level of consumption” (417-418). The problem we face is that China, India, and Brazil are industrializing rapidly and are developing the material values of American and Western European cultures. The affluent people of the world must achieve sustainable consumption practices to realize social justice and to model appropriate lifeways for those who aspire to affluence.

2Research in human perception is providing evidence of the truth of these principles of beauty. For example research has shown that humans perceive beauty in facial symmetry—and in fact that the preference for facial symmetry may be biologically determined (Rhodes, Proffitt, Grady, & Sumich, 1998). We are learning that humans prefer specific qualities in the natural environment that may also be biologically determined. For example people from a wide range of cultures prefer trees with spreading forms like the trees our ancestors lived with on the African savanna (Lohr & Pearson-Mims, 2006; Orians, 1986; Sommer 1997).

3Jackson (2005) defines embodied energy as “…the sum of all the energy required to extract, process, deliver, and install the materials needed to construct a building”(47).

4An option would be to salvage the components and finish materials for reuse, however this is not typically 100% efficient meaning some materials find their way to the waste stream and recycling of building materials frequently results in downcycling, which is not sustainable—it simply prolongs the useful life of raw materials until their eventual disposal as waste.
Abstract

Introduction

In a survey conducted by the authors to understand the status of inclusion of multicultural perspective in Interior Design curriculum in 2006, 24% of IDEC members indicated lack of availability of teaching materials and 18% indicated lack of faculty expertise as the major contributory factors for non inclusion of multicultural perspective in Interior Design curricula. This paper presents precedents from Yoruba and Gujarati cultures as references for discussing design to promote an inclusive design perspective. The authors analyze Yoruba and Gujarati traditional and contemporary spaces through an examination of form and space; ornamentation and color; interior/exterior relationships; courtyards and verandahs; and material and construction techniques.

Methodology

This paper will analyze and compare Yoruba and Gujarati traditional and contemporary interiors. For example, authors will discuss residential dwellings from Yoruba, one of the largest ethnic groups in West Africa found in Southwestern Nigeria, as well as, the
neighboring countries of Benin, Togo, and Sierra Leone and compare them with Gujarati Havelis, located in Northwest part of India. Archeological studies indicate that traditional Yoruba and Gujarati towns comprised several compounds and each compound consisted of houses built around a series of open courtyards of different sizes. Authors will analyze traditional Yoruba and Gujarati spaces that depict extensive utilization of decorative embellishments. The comparison of interior elements will show how in villages, cultural and social symbols adorned huts and palaces. In both cultures, many palaces had elaborately carved entrance doors, the beams, lintels and boards of ceilings were carved with human, mythological and animal figures and geometric patterns. Yoruba traditional interiors consisted of walls with murals, so did Gujarati interiors, however, mural work enhanced spatial experience in Gujarati homes.

The authors will discuss the impact of colonialism on these cultures. For instances, traditional Yoruba forms were abandoned, while Gujarati interiors adopted Islamic and British influences and developed a combination style that still prevails. Muslim invaders brought onion domes, four square gardens styles and jalis to Gujarat, while bungalow forms developed during the British Raj became the primary dwelling style. In Yoruba spaces, nineteenth century colonialism brought numerous international styles influences which lead to a major abandonment of traditional forms. Today, Yoruba designers are striving to recapture elements from traditional African architecture lost since colonial rule, in order to integrate them in contemporary practices.
Conclusion

The authors bring to light similarities and differences between both cultures and show the importance of building elements such as courtyards and verandahs; ornamentation and color; and natural materials and construction techniques in both cultures. Like Western design traditions, Yoruba and Gujarati interiors offer similar precedents for teaching interior design.

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Publishing Company.


Figure 1 – King’s Palace, Owo, Nigeria largest palace in Yorubaland covers 44 hectares. Images depict elaborately carved entrance doors. The beams, lintels and boards of ceilings are carved with human, mythological and animal figures and geometric patterns.
Figure 2 - Contemporary adaptation illustrated in the church design by Demas Nwoko in the 70’s. The major elements from the Yoruba culture in this region can be seen in the engravings on columns and the wall treatments in the sanctuary. The woodwork on the altar, seats and ironmongery are reminiscent of the traditional artistry of this region.
Fig. 3: Gondal Palace: Photographs by author. Traditional stone and wood carvings, decorative patterns sculpted into walls, verandah and columns. Human mythological and animal symbols were also sculpted on columns, beams, arches, lintels, doors, windows and walls. Earth tones dominated, wood carvings were painted at times. In the palace interiors, one can see various cultural and religious influences including traditional Hindu carvings, Persian rugs, and English furniture. Paths, verandahs, large and small courtyards, and balconies served as transitional spaces to clearly define public and private spaces. Carved Jalis and courtyards also provided privacy for female wing of the palace.
Fig. 4 Decorative elements, such as carved columns, arches, windows and doors, recall traditional artistry. Simplicity of Ramakrishan order matched in the use of natural materials (wood and stone) and warm earth tones. Use of orange color for exterior walls symbolizes sacrifice, sanctity and service to community. Materials left unfinished for simplicity. Open Pradakhshina path around the temple allows for a relationship with nature, cross ventilation.
Introduction
This paper presents precedents from Yoruba and Gujarati cultures as references for discussing design to promote an inclusive design perspective. The authors analyze Yoruba and Gujarati traditional and contemporary spaces through an examination of form and space; ornamentation and color; interior/exterior relationships; courtyards and verandahs; and material and construction techniques.

Methodology
Yoruba Spaces and Forms

Traditional Yoruba Spaces
Yorubas are one of the largest ethnic groups in Africa. They reside in Southwestern Nigeria, as well as, the neighboring countries of Benin, Togo, and Sierra Leone. The traditional architecture of the region includes rectilinear clay structures, tents, round houses, obelisks, palaces, and monumental structures. The Yorubas trace their origin to
Ile-Ife, located in present day Nigeria. Archeological and ethnographical studies indicate that traditional Yoruba towns comprised several compounds and each compound consisted of houses built around a series of open courtyards of different sizes. This Yoruba traditional dwelling type was commonly referred to as the Impluvium style. In the Yoruba monarchial system, the King's (Oba) palace was designed as a larger version of the Impluvium style house. Denyer 1978 notes “Yoruba palaces sometimes had as many as a hundred courtyards, and each of them could be larger than an ordinary house”. Today, the largest palace in Yorubaland is in Owo, Southwestern Nigeria (Figure 1) and covers 44 hectares (4,400 acres).

Traditional Yoruba spaces depict extensive utilization of decorative embellishment. For example, verandah columns in ordinary houses were decorated with religious symbols and Kings palaces had caryatids in the form of human figures supporting the verandah roofs. Many palaces had elaborately carved entrance doors. The beams, lintels and boards of ceilings were also carved with human, mythological and animal figures and geometric patterns. Yoruba traditional interiors consisted of walls with murals, carved doors and columns, and geometric patterns sculpted on the walls.

Colonial and Post Colonial Yoruba Spaces

In Africa, Western influence began with the Greeks in 333 B.C. continuing through the settlements of Romans in 146 B.C. to the Europeans in mid 14th century. This resulted in the proliferation of classical style influences across African countries, as well as Yoruba societies. In the late nineteenth and early twentieth century, before most
African countries gained their independence from colonial rule, expatriate architects or builders who practiced in many African Nations designed and built numerous International style buildings. These buildings were utilized for governmental offices, schools and institutions of higher learning. International style buildings designed by various expatriate architects like Maxwell Fry, Godwin Hopewood, and Ove Arup dominate the skyline of major Yoruba cities, like most African countries today. Most of these designs are a tropical version of the International style common in temperate climates. The buildings are predominantly white with the main structural frame constructed from reinforced concrete. Emphasis is on continuous fenestration, sun shading devices, and courtyards to allow cross ventilation.

Since the era of independence from colonial rule in the 1960s, there has been a cultural revival in many African nations. Today, designers are striving to recapture elements from traditional African spaces lost since colonial rule in order to integrate them in contemporary design practices. Nigerian architect Demas Nwoko’s Catholic Church in Ibadan, Nigeria (Figure 2) is an example. African forms are integrated in Nwoko’s church design through the use of natural materials; the concrete masonry unit wall is left exposed and unfinished, the steeple on the roof is roughly fashioned, and the walkway around the perimeter of the church is finished in cobbled stone. A pond around the perimeter of the church relates to the Yoruba's appreciation of natural forms.
Gujarati Spaces and Forms

Traditional Gujarati Spaces

Gujarat state is located in the North West part of India, close to Pakistan Boarder. Chalcolithic, Autochthonous, and Harapa cultures flourished in Gujarat. Approximately eighty-eight proto historic sites have been found in various towns and villages of Gujarat. Archeological excavation brought in light remains of two ancient cities: Lothal and Dholavira of the Indus Valley culture, dating back to 3000 B.C. According to Rao (1979),

The neatly laid out platforms, streets and drains, the provision for public wells, the separation of the industrial area from the residential localities, the arrangements of houses in rows, the erection of peripheral walls of uniform width, construction of the dock, wharf and warehouse in Lothal, clearly suggest careful planning and efficient execution with utmost precision…..The leader was held in high regard, and occupied the best mansion having civic amenities and was well protected against natural calamities. The “Acropolis” was a seat of authority, is situated in the southwestern corner of the town overlooking the dock. The lower Town was designated for the living quarters of merchants, craftsmen and others (p.25).

Furthermore, Roa (1979) notes

Generally the houses (in Harappan era) consisted of three to four rooms including a spacious kitchen. The bath was paved with burnt bricks, and the streets flanked by houses varied in width from ten to twenty-two feet. Each house had a bathroom that was always located on the street side of the house for the
convenient disposal of water. A brick-lined channel flowed down every street and into this main drain ran smaller tributary drains from the houses on either side. The large brick culverts were part of the drainage system and arrangements were made to carry away storm water (p. 28).

In Dholavira, the larger fortressed city than Lothal, one can see brick-lined wells, and small mud brick lined houses. Wood, stone and bricks were used for construction of palaces to pole houses and temples. Master craftsman depicted the essence of nature, interpreted mythological stories and religious beliefs and created awe inspiring forms, motifs and patterns. Elaborate decorative embellishments adorned façades and interior spaces of palaces, havelies (residential dwellings), temples and civic structures. For example, doors were decorated with religious symbols and particular God’s sculptures. Palace gateways had form of human figures supporting the verandah columns (Figure 3). Entrance doors, beams, lintels and boards of ceilings were carved with human, mythological and animal figures. Traditional Gujarati interiors consisted of walls with murals and mirror work (Figure 4), carved doors and columns, and geometric patterns sculpted on the walls. Parmar (1990), notes that Gujarat borrowed its construction technique from West Asia with whom it had trade contacts since the ancient times. Thakkar (2004), suggests

Todala, a saddle piece, located at the corner of the door frame of a Gujarati House is not found else where in India but are evident in the Coptic Churches of Abyssinia (a former name of Ethiopia) of 11the Century AD. Religious ideologies also played a major role in the development of art and architecture of Gujarat and
helped in the manifestation of a wide arena of its decorative motifs and patterns.

(p. 16).

Hinduism, Jainism, Buddhism, Islam, and Christianity influenced Gujarati architecture and interior spaces. Hindu and Jain temple architecture utilized same structural system but patterns and motifs used for ornamentation revealed the differences between the two. Islamic ideologies exercised by Muslim Sultans of Gujarat also influenced development of Gujarati architecture. Thakkar (2004), notes “the artisans of Gujarat skillfully blended Islamic ornamentation with the existing vocabulary of Hindu ornaments (p. 22). Muslim invaders also brought onion domes, four square gardens and Jalis to Gujarat. Islamic influence declined in Maratha reign.

Colonial and Post Colonial Influence

Trade guild system during British Raj declined due to lack of patronage and forms were imported from colonial countries which slowly corrupted the traditional motifs and patterns. Nineteenth century colonialism led to major changes in architecture of Gujarat. British brought bungalow form to India and Gujarat adapted this style of dwelling. After India gained freedom from British in 1949, Javaharlal Nehru, the first prime minister of India invited Le Corbusier to design Chandigarh, and the International style flourished in India. Corbusier was invited to Gujarat by wealthy industrialists to design private residences and the Mill Owners Association’s headquarter. B. V. Doshi, a Gujarati architect, worked with Corbusier and later with Louis Kahn who designed Indian Institute of Management campus in Ahmedabad. International movement flourished in Gujarat and to date, dominates Gujarati architecture and interior spaces. Recently a
new movement has started to preserve the ancient architectural heritage of Gujarat and architects and designers are trying to revive the traditional style.

Conclusion

Traditional spaces in both cultures utilize building elements such as courtyards and verandahs; ornamentation and color; and natural materials and construction techniques. In both cultures, symbolism plays an important role. It is depicted in the application of decorative elements such as symbols sculpted on wall, embellished surfaces and wood carvings. Transitional spaces serve as threshold changes and provide privacy barrier and connection with nature. Climate affects building orientation and material selection. Similarly, in both cultures contemporary spaces exhibit influences from Western traditions with a proliferation of International style buildings. Today, both cultures are actively engaged in creating an identity informed by the past. The authors hope that the Yoruba and Gujarati design precedents discussed here will provide multicultural design perspectives for students who will practice in a culturally-diverse and ever-shrinking global village. Like Western design traditions, Yoruba and Gujarati spaces offer similar precedents for teaching interior design.
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Table 1 - illustrates design precedents from Yoruba and Gujarati Spaces

<table>
<thead>
<tr>
<th>Culture</th>
<th>Form and Space</th>
<th>Ornamentation and Color</th>
<th>Interior/Exterior</th>
<th>Courtyard/Verandah</th>
<th>Material and Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Yoruba Space</td>
<td>Yoruba cities are clustered in form. Yoruba Compounds are based on lineage, occupation in town. Society was monarchical. Compounds accommodated extended family, building were based on a central courtyard system. Houses were Impluvium style with spaces arranged around central courtyard.</td>
<td>Woodcarvings, decorative patterns sculpted into walls, verandah and columns. Human mythological and animal symbols were also sculpted on walls.</td>
<td>Transitional spaces between public and private spaces were clearly defined. Paths, verandahs, large and small courtyards, and balconies served as transitional spaces to clearly define public and private spaces. The Parlor in residences represented the transitional space from outside inside.</td>
<td>Courtyards allow for cross ventilation in the hot arid regions. It serves as a transitional space, for communal activities, climatic, and social functions. Used primarily for cooking, meeting and socialization.</td>
<td>Traditional buildings were built of Adobe and sometimes wood.</td>
</tr>
<tr>
<td>(Figure 1 King’s Palace, Owo Nigeria by unknown designer)</td>
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<tr>
<td>Contemporary Yoruba Space</td>
<td>Round plan. Sanctuary radiates around altar, serving as central focus and reinforcing the concept of community similar to traditional Africa societies.</td>
<td>Decorative elements, such as woodwork on altar, seats, carved columns recall traditional artistry. Simplicity of Dominican order matched in the use of natural materials (wood and stone) and warm earth tones. Use of brown and green tones. Materials left unfinished for simplicity.</td>
<td>Existence of a gradual transition from outside to vestibule to the sanctuary and altar.</td>
<td>Verandah around the sanctuary allows for a relationship with nature, cross ventilation thus reinforcing simplicity.</td>
<td>Stone, Concrete Masonry Unit (CMU); Reinforced concrete; Carved doors and columns; Wooden stools and ironmongery; and Long span aluminum roof.</td>
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<td>(Figure 2 Dominican Church Ibadan, Nigeria designed by Demas Nwoko)</td>
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<tr>
<td>Traditional Gujarati Space</td>
<td>Ancient Gujjarati cities and towns were protected by fort. Within the fort, a large palace would be located on high grounds. Rectangular spaces were arranged around central courtyard system. Palace’s private and public spaces were clustered together and courtyards and verandahs provided privacy and refuge from harsh climatic conditions. Other dwellings in the city were also clustered according to occupation and cast system.</td>
<td>Wood and stone carvings, decorative patterns sculpted into walls, verandah and columns. Human mythological and animal symbols were also sculpted on columns, beams, arches, lintels, doors, windows and walls. Earth tones dominated, wood carvings were painted at times, and mud work employed various natural colors. Mirror work adorned walls.</td>
<td>Paths, verandahs, large and small courtyards, and balconies served as transitional spaces to clearly define public and private spaces. Carved Jalis and courtyards also provided privacy for female wing of the palace.</td>
<td>Palaces were built of wood, stone and burnt bricks. Mud, clay, bamboo, burnt bricks and wood was used for construction of other dwellings. Post and beam construction was common.</td>
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<td>Gondal Palace</td>
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<tr>
<td>Contemporary Gujarati Space</td>
<td>Combination plan: Sanctum: octagonal, prayer hall rectangular. Inner sanctum serves as central focus while open pradakshina path around the temple can be compared to cloister walk.</td>
<td>Decorative elements, such as woodwork on altar, carved columns, arches, windows and doors, recall traditional artistry. Simplicity of Ramakrishan order matched in the use of natural materials (wood and stone) and warm earth tones. Use of orange color for exterior walls symbolizes sacrifice, sanctity and service to community. Materials left unfinished for simplicity.</td>
<td>Existence of a gradual transition from outside to vestibule to the prayer hall and altar.</td>
<td>Open Pradakshina path around the temple allows for a relationship with nature, cross ventilation.</td>
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<td>Ramakrishna Mission Temple</td>
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The dock is said by some to be the greatest work of maritime architecture before the birth of Christ. It was excavated besides the river Sabarmati, which has since changed course. The structure's design shows a thorough study of tides, hydraulics and the effect of sea water on bricks. Ships could have entered into the northern end of the dock through an inlet channel connected to an estuary of the Sabramati during high tide. The lock gates could then have been closed so the water level would rise sufficiently for them to float. After a ship would have unloaded its cargo, the gates would have opened and allowed it to return to the Arabian sea waters in the Gulf of Combay.

Archaeological finds from the excavations testify to trade with ancient Egypt and Mesopotamia. The hydraulic knowledge of the ancient Harappans can be judged by the fact that boats could dock at Lothal in the 1850's.

Capital city of Pujab State.
From Poverty to Prosperity: Making a Difference with Participatory Design

Rula Awwad-Rafferty, Ph.D.*

University of Idaho

Narrative

Purpose

This presentation highlights a significant partnership between interior design program, rural sociology and outreach, and five rural communities, who are participants in the Horizons Program. This partnership aimed at combating poverty through participatory design.

Method and/or Framework or Concept

Design is one of the central pathways for social change, specifically when it is seen in the context of making a difference and addressing social and environmental problems. Robert Peck, former Commissioner for the Public Buildings Service, General Services Administration stated "Our cities and towns need leaders who understand that vital, active places are critical to their health and long term sustainability."

With projected populations shifts, significant impacts on resources and livelihood, losses of ranch, farm, and open-space land and major impact on economic well being are already being witnessed. The Horizons program is a community leadership program aimed at reducing poverty in rural and reservation communities with populations of 5,000 or fewer and with histories of economic decline and significant population change. The Horizons program is about the changes a community can make to move from waiting to leading, from decisions by a few to the participation of many, and from indifference to pride. Five rural communities who are participants in the Horizons program, through a Community Vision Rally and Community Vision launch, identified the need for a Community place as a way to address social and economic poverty within the community, two identified a need for intergenerational place, while one needed a central place for the community services.

The interior design program partnered with the five communities, teams of students engaged in researching best practices, facilitation, and worked with the communities to understand the needs, issues resources, and assist in participatory design of a public community place. Through participatory design, decision making moved from the realm of the few to the majority, and a community leadership emerged.

Through participatory design of a community place in each of the five communities, the major key issues that were visible included:

1. Evidence of strong community pride and inclusive culture (diversity celebrated)
2. Invest in the future
3. Participatory approach to community decision making
4. Creatively build new economic, cultural, and social opportunities

Outcomes

Attendants will gain a pedagogical approach to situating interior design projects in a context of social justice and impact, while simultaneously learning about tools and resources that communities have used to develop a common understanding about poverty, place making, and participation. Ultimately, the environments we design and create will impact the health and sustainability of a community. “A community can be sustainable over the long term only if it is not degrading its environment or using up finite resources & Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Minnesota Office of Environmental Assistance).

* This project is in collaboration with and great support from the University of Idaho Horizons Program. Special thanks to Mary Schmidt (Horizons’ program director), Priscilla Salant (University Outreach and Engagement Director), Debbie Gray, Lori Higgins (Agricultural Economics & Rural Sociology faculty and facilitator), Horizons coaches and participating community members, and the Bioregional Planning team.
From Poverty to Prosperity: Making a Difference with Participatory Design

Rula Awwad-Rafferty, Ph.D.*

University of Idaho

Narrative

Purpose

This presentation highlights a significant partnership between interior design program, rural sociology and outreach, and six rural communities, who are participants in the Horizons Program. This partnership aimed at combating poverty through participatory design. Steeped in principles of engagement theory and participation, this project is a service learning opportunity that affords contextual problem solving, mutual engagement, and exercise of professional expertise and conduct as outlined in CIDA standards.

Method and/or Framework or Concept

Design is one of the central pathways for social change, specifically when it is seen in the context of making a difference and addressing social and environmental problems. Robert Peck, former Commissioner for the Public Buildings Service, General Services Administration stated ""Our cities and towns need leaders who understand that vital, active places are critical to their health and long term sustainability."

With projected populations shifts, significant impacts on resources and livelihood, losses of ranch, farm, and open-space land and major impact on economic well being
are already being witnessed. The Northwest Area Foundation exists to help communities in an eight-state region reduce poverty, through several areas of investments and programs; one of which is the Horizons Program. The Horizons program is a community leadership program aimed at reducing poverty in rural and reservation communities with populations of 5,000 or fewer and with histories of economic decline and significant population change. The Horizons program is about the changes a community can make to move from waiting to leading, from decisions by a few to the participation of many, and from indifference to pride. Six rural communities who are participants in the Horizons program, through a Community Vision Rally and Community Vision launch, identified the need for a Community place as a way to address social and economic poverty within the community, two identified a need for intergenerational place, while one needed a central place for the community services.

The interior design program partnered with the six rural communities out of the many Idaho Horizons communities who desired a “Community Center” to bring a change into the community. These communities were: Troy, Kendrick-Juliaetta, Emida, Fernwood, Cottonwood, and Kamiah. Students in teams of two engaged in researching best practices, facilitation, and worked with the communities to understand the needs, issues resources, and assist in participatory design of a public community place.

Through community visioning process (Figure 1), capacity building, and sustainable leadership ideas, communities identified areas that can move them from poverty to prosperity. In particular, visible assets and interests included:
1. Evidence of strong community pride and inclusive culture (diversity, although defined in specific terms in each community, is celebrated)

2. Invest in the future

3. Participatory approach to community decision making

4. Creatively build new economic, cultural, and social opportunities

Through participatory/co-authored design of a community place in each of the six communities, decision making moved from the realm of the few to the majority, and a community leadership emerged.

Outcomes

The outcomes of this collaborative participation between communities, students, and Horizons program leaders are multifaceted. The community center in each scenario is envisioned as a symbolic and physical “Third Place” that brings community members together; building capacities, improving assets, bridging age, economic, cultural, and resource gaps and mobilizing the community as a whole to intentionally and collectively move from poverty (economic, social, emotional, … etc) to prosperity.

Seniors Sara Londos and Rachel Van Hoose called the Troy community center “The Beacon-- A Place of Connection; A Place for Guidance; A Place of Strength (Figure 2). In their concept statement they stated “ Nearly 100 years has passed since the doors of Troy’s “Old” High School first opened; it was a pillar of strength, a beacon of light, and a
place where many of Troy’s community members were educated and made a difference. A hundred years later the shell of the “Old” High School remains standing, but it stands as a broken down memory; a place of nostalgia and dreams unrealized. Horizons brought an opportunity for rebuilding those connections, recreating prospects for guidance and collaboration, and establishing places of strength. The Troy Intergenerational Community center becomes the new beacon of light connecting the old high school with the aspirations of the community, a new pathway from poverty to prosperity is realized”. Co-authored design process and ownership was evident when stakeholders engaged in defending specific design solutions because they met their needs, aspirations, and way of life, as happened with the Kamiah Community center (Figure 3).

The project final presentations (Figure 4) honored a journey of relating, creating, and donating; a journey of engagement with a complex context. The results of the studio (research, process, and final products as well as reflections) will be edited and provided for the other Horizons program participants to highlight lessons learned, best practices, and suggested applications.

Attendants will gain a pedagogical approach to situating interior design projects in a context of social justice and impact, while simultaneously learning about tools and resources that communities have used to develop a common understanding about poverty, place making, and participation. Ultimately, the environments we design and create will impact the health and sustainability of a community. “A community can be sustainable over the long term only if it is not degrading its environment or using up
finite resources & Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Minnesota Office of Environmental Assistance).

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Figure 1: Facilitated community visioning session

Figure 2: Community center as a third place. Sara Londos and Rachel Van Hoose working with Troy’s artisans.
Figure 3: Flexing and Connecting: concept communicating parallel narratives through interior design. Heather Porter and Tess Nally working with Kamiah.

Concept Reflections

**Flexing...**
- of space usages
- of walls and doors
- of furniture arrangements

**Connecting...**
- to the community of Kamiah
- to the Nez Perce Heritage
- to the American Legion Building
- to the natural resources of the community for materialization
- the exterior façade through interior reflections of structure.
- the upper and lower levels
- all users and usages

Materials Overview

- Horizontal and Vertical Elements
- Influence of Nez Perce Flag
- Incorporation of Timber
- Horizontal and Vertical lines & Connective points derived from our concept overlays
- Inlaid stone to represent NW crossing of the Clearwater River
- Color Palette
- Influenced by: American Legion & gold mining industry
- 3-Form® Chroma Mai Tai
- Wood Trends® Wall Paneling
- 3-Form® Glass Panels
- Mohawk® Riverstone
- Reclaimed Rope
- Milliken® Consumer environment
- 3-Form® Hydrangea Thatch
- Represents the blood that created the Nez Perce People in the Heart of the Monster Legend
- Kamia Rope
- Clearwater River Influence
- 3-Form® Hydrangea Thatch
- "Kamia" Rope
- 3-Form® Glass Panels
- Reclaimed Rope
- Milliken® Consumer environment
- 3-Form® Hydrangea Thatch
- Represents the blood that created the Nez Perce People in the Heart of the Monster Legend

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Figure 4: Final presentation open invitation

You Are Invited...

December 12, 2007
2:00-7:00 pm
UI Commons
Clearwater Room

Horizons Community Centers:
An Engaged Participatory Community Based Design

Relate > Create > Donate

Please join us as the Interior Design ID 451 Studio seniors present design solutions for community centers in 6 Idaho Horizons Communities. These centers are designed to assist communities move toward sustained prosperity by strengthening partnerships and engaging students and community stakeholders to discover meaningful solutions.

You may attend as many or as few as your schedule permits.

2:00-2:30 Welcome & Introduction
2:30-3:00 Cottonwood - Amy Ashley & Abbey Christensen
3:00-3:30 Fernwood - Tami McDonald & Emily Kowits
3:30-4:00 Kamiah - Tab Carraw & Tina Garretti
4:00-4:30 Emmet - Lindsay Thompson & Alyssa Vernon
4:30-5:00 Kamiah - Tess Nally & Heather Porter
5:00-5:30 Troy - Jill Solgrove
5:30-6:00 Kendrick/Julietta - Ray Skoulbers
6:00-6:30 Troy - Sara London & Rachel Van Hoos
6:30-7:00 Wrap-up

REFRESHMENTS WILL BE SERVED

Many thanks to our participating communities...

Cottonwood
Emmet
Fernwood
Kamiah
Kendrick/Julietta
Troy

HORIZONS
COMMUNITY LEADERSHIP TO REDUCE POVERTY

University of Idaho Extension

UNIVERSITY OF IDAHO COLLEGE OF
Art & Architecture

Interior Design Program
The Magic of Puzzles: Freedom to Design and Play

Rula Awwad-Rafferty, Ph.D.

University of Idaho

Abstract

Context and Significance

How is identity manifested and affirmed through play especially in the context of “the other”? And, how can we as design educators engage play as a tool for achieving a paradigm of inclusive excellence?

Purpose/Goals/Objectives

This presentation highlights two interconnected components:

1. An interdisciplinary research project that investigated identity, play, inclusion, and creativity; the results of which were employed in facilitating creative and grounded design thinking and engagement in an interior design service learning project.
2. The service learning project which became the canvas for students’ creative play, imagination, and grounding of design solutions.

Background/Literature

Play is an essential part of the learning process, both cognitively and affectively. As children, we are curious about our world; we explore and engage in frivolous play, and through such self initiated games and role play we learn about respect, cooperation, negotiation, and creativity (Elkind, 2007). However, play is often times neglected or over shadowed as a mean of fostering venues of creative problem solving and intentional learning in academe. Modern learning theory ascertain that play that is intentional, focused within a learning environment, and adaptable to emerging narratives can help learners construct a more internalized and reflective understanding (Csikszentmihalyi, 1996 and Lytle, 2003).

Method

A hybrid qualitative/quantitative approach is used to examine how participants experience play and determine how specific demographic characteristics may impact those experiences. Questionnaires, narratives and audio/video interviews explore richer context of players and play. The results include patterns of meaning and process of creating bounded-ness with environment, others, and behavioral setting. Those patterns of meaning were utilized to foster engagement of a senior interior design studio in a service learning project.
Outcomes

This project was a creative canvas for the senior interior design students. The students were fully prepared to solve interior design problems, with programmatic constraints and complex dimensions. Stepping back and being playful while exploring issues of space and place, and conceptually communicating a deep meaning of a place to the people who interact with it on a daily basis was a challenge. The students delved deep into history, geography, literature, sociology, economy and politics to understand the region's "sense of place" and communicate meaning in their projects. The result was "Interior Design Expressions: Innovations of Place, Space and Identity," an exhibit in the small town historic building gallery, which showcased 14 different, innovative, and inclusively engaging ideas about how to manifest a sense of place about the small town where the project is located (Figures 1, 2, 3, 4).**

This project is seen by many spectators as a means of sustaining life and new economy through older downtown areas, and provides insight into the importance of culture in design, but for designers it was a means of rediscovering the magic of play in design; one that is open to everyone. "How we play is related, in myriad ways, to our core sense of self. Play is an exercise in self-definition; it reveals what we choose to do, not what we have to do. We not only play because we are. We play the way we are. And the ways we could be. Play is our free connection to pure possibility" (Marano, 1999)

References


* Special thanks to “Power of Play” research team: Dr. Tarci Craig (Psychology) and Dr. Grace Goc Karp (Health, Physical Education, Recreation and Dance), both from the University of Idaho, and to Mr. Nelson Duran, artist and owner of Bank Left gallery, Palouse, Washington whose idea was to explore place, art, and the interior domain of the gallery.

** Figures included in narrative.
The Magic of Puzzles: Freedom to Design and Play

Rula Awwad-Rafferty, Ph.D.
University of Idaho

Narrative

Context and Significance

This presentation tackles two core concepts that together are powerful tools for engaging in institutional change toward social justice and simultaneously reinvigorating creative discourse through engaging and evoking meaning. These concepts are play as subversion and inclusive excellence, and how together they inspire an emergence of meaning. The specific investigative questions are: How is identity manifested and affirmed through play especially in the context of “the other”? And, how can we as design educators engage play as a tool for achieving a paradigm of inclusive excellence?

Purpose/Goals/Objectives

Addressing the questions posed took the form of two interconnected research and engagement projects:

3. An interdisciplinary research project that investigated identity, play, inclusion, and creativity; the results of which were employed in facilitating creative and grounded design thinking and engagement in an interior design service learning project.
4. The service learning project which became the canvas for students’ creative play, imagination, and grounding of design solutions.

**Background/Literature**

Play is an essential part of the learning process, both cognitively and affectively. As children, we are curious about our world; we explore and engage in frivolous play, and through such self initiated games and role play we learn about respect, cooperation, negotiation, and creativity (Elkind, 2007). Play is central in how we learn and adapt; in one sense it evokes a “parallel universe” or a set of scenarios created and reacted to by the players. However, play is often times neglected or over shadowed as a mean of fostering venues of creative problem solving and intentional learning in academe. Modern learning theory ascertain that play that is intentional, focused within a learning environment, and adaptable to emerging narratives can help learners construct a more internalized and reflective understanding (Csikszentmihalyi, 1996 and Lytle, 2003). Play that is intentional, focused within a learning environment, and flexible to adapt to emerging narratives and “new scenarios” can help learners construct a more internalized and reflective understanding. This form of play can be seized and capitalized upon to investigate deep meaning and invigorate dialogue.

Simultaneously, the academic culture in its tendency to mainstream practices that are deemed appropriate or worthy of exploration and, by virtue of approach and result, standards of excellence, affords a culture of exclusion. Current standards, methods of engagement in learning, and traditional practices when not examined stand
in the way of fostering an environment of inclusive excellence. Play becomes a natural approach to mitigate exclusion of thought or perspective, to reveal boundaries and identities, and forms of subversive play, when the faculty also becomes a player, inspire a breakdown of barriers and silos. As educators, part of our mission, and simultaneously challenge, is to enable an environment of inquiry, exploration, and assist the learners in articulating personal and reflective understanding of who they are and their place and role in the world.

**Method**

A hybrid problem demanded a hybrid interdisciplinary approach. Engaging “play as subversion” as a tool for fostering Inclusive Excellence and exploring the power of play in design education and meaning generation followed a systematic process, which “subverted” some of the traditional modes of inquiry and design expressions.

**Research:** The process began with the formation of an interdisciplinary faculty research team under the auspice of “University of Idaho Humanities Fellows Seminar”. This specific research team included three diverse faculty members from Psychology, Health, Physical Education, Recreation and Dance, and from Architecture and Interior Design. The team set out to investigate play as resistance/subversion and creative process of social justice. The team’s research design approach incorporated lengthy questionnaire (both web based and hard copies), focused interviews, and video taping. The Respondents sample represented ethnic, gender, age, sexual orientation, and religious diversity.
A hybrid qualitative/quantitative analysis is used to examine how participants experience play and determine how specific demographic characteristics may impact those experiences. The questionnaires, narratives and audio/video interviews explored richer context of players and play. The results included patterns of meaning and process of creating bounded-ness with environment, others, and behavioral setting.

**Engagement:** The assumption that patterns of meanings affect cognition and subsequently affect behavior was then elaborated upon by introducing the second segment of the project: design application. Those patterns of meaning were utilized to foster engagement of a senior interior design studio in a unique and symbolically rich service learning project. A project about engagement, giving back, building upon, and play was the first design project in the Fall 2007 senior interior design studio.

The project was introduced by an alumnus of the college and dealt with breaking down barriers of many types, evoking meaning, and stimulating dialogue through interior design. In preparation for the project, the students visited a gallery exhibit communicating a tumulus history of a nearby area through sculpture; they heard narratives of experiences from former residents, a poet, and a journalist who described the landscape as a primary culprit of that history. The students listened to, read, saw and experienced a woven tapestry of rich place context. The site visit for the Bank Left Gallery, the site of the project, was a beginning of a new integrative way of seeing and thinking, this place was to become a stage for many stories about place and design. Making sense of a puzzle about place, history, people, and rural town psych` revealed by the space held behind closed doors for more than 60 years unraveled some traditional approaches to seeing, thinking, creating, and communicating.
Outcomes

This project was a creative canvas for the senior interior design students. The students were fully prepared with appropriate sanctioned skills to solve interior design problems, with programmatic constraints and complex dimensions. Stepping back and being playful while exploring issues of space and place, and conceptually communicating a deep meaning of a place to the people who interact with it on a daily basis was a challenge. The students delved deep into history, geography, literature, sociology, economy and politics to understand the region's "sense of place" and communicate meaning in their projects. The result was "Interior Design Expressions: Innovations of Place, Space and Identity," an exhibit in the small town historic building gallery, which showcased 14 different, innovative, and inclusively engaging ideas about how to manifest a sense of place about the small town where the project is located.

Tess Nally, a senior in the class saw his project as an opportunity to redefine place, by rediscovering nature and design (Figure 1). “The Second Floor of the Bank Left Gallery exhibits the --rural, unsophisticated, and rough-- characteristics which define Palouse. This initial connection led me to synthesize how interior design is seen as an expression of art through defining nature and design. “Nature [is] the material world…existing independently of human activities” while “Design [is} the structure of formal elements”. The second floor is a material space that has existed independent of human interaction for many years and has become rough and exposed due to this time lapse, it has become nature. Through this structural exposure, formal elements are
expressed throughout the space. Therefore, design and nature present themselves across our canvas.” (Nally, 2007). Other students explored other narratives and made other discoveries and connections. Tab Carman (Figure 2) made references to happenings in other places in the world, where this rural town took center stage and focus. Emily Rawls (Figure 3) and Lindsay Thomson (Figure 4) both aimed to create an experience that explores the process and outcome of interior design in the second floor of the Bank Left gallery, exposing and challenging perceptions, informing of alternatives, and engaging play on a personal and dynamic level.

This project was seen by many of the 200 visitors to the gallery and other spectators as a means of sustaining life and new economy through older downtown areas, as it examined potential of spaces from a non-threatening and creative perspective. It was also seen as providing an intimate insight into the importance of culture in design. However, this project or designers was a means of rediscovering the magic of play in design; one that is open to everyone. Although initial struggles with “what are we asked to do” and “how do we communicate this outcome” persisted longer than anticipated, a richer connection and meaningful dialogues emerged. “How we play is related, in myriad ways, to our core sense of self. Play is an exercise in self-definition; it reveals what we choose to do, not what we have to do. We not only play because we are. We play the way we are. And the ways we could be. Play is our free connection to pure possibility” (Marano, 1999)
References
(APA Style)


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Figure 1: Tess Nally’s explorations connection land, wind, light and place

**Horizontal Elements**

- **Rolling Hills**
  - Horizon line, expansive

- **Winds**
  - Invisible,
  - Creates movement

- **Palouse**
  - Layering, color
Figure 2: Small Town, Big City, Parallels and Stories. Interior Design senior Tab Carman’s exploration of place, identity and design innovations in the Bank Left Gallery exhibit.
Figure 3: Interior Design senior Emily Rawls’ take on “Alice in Wonderland” as she challenges Perception and remind a viewer of meanings lost through design and art.
Figure 4: Design process, looking both ways, and freedom of choice exploded into negotiated spaces and scales is Interior Design senior Lindsay Thompson’s entry “The Puzzle that is Design”
Color Education in the Interior Design Curriculum

Jessica Bantom
Marymount University

Abstract

Purpose

This study provides insight into the level of importance undergraduate interior design programs attribute to color education and the extent of color knowledge these programs impart upon their students. The results of this study could be used to define standards for color education in the undergraduate interior design curriculum to ensure that students attain the knowledge necessary to create and implement successful color plans according to the function of the space and the needs of the inhabitants. The findings may also serve as a frame of reference for structuring a color application course within interior design programs.

Method

The research for this study consisted of the following: 1) an evaluation of the curriculum of 96 accredited interior design programs and several course syllabi and supporting materials; 2) a survey of senior-level interior design students regarding their views of color education; 3) an interview with a former Council for Interior Design Accreditation (CIDA) site visitor to define criteria for assessing color proficiency in a design program; and 4) a color exercise administered to senior-level interior design students to examine their practical color application skills. The standards of color
education were compared and contrasted against the actual content addressed in the evaluated interior design programs, and the perceived and assessed knowledge of the students completing those programs.

Importance of the Topic/Relevance to Interior Design

The purpose of this study is to call attention to the lack of emphasis on color education in interior design education. It is not uncommon to find that many undergraduate interior design programs feature a segment of a course – if not a whole course – on color theory. Students generally come away from these courses with an enhanced understanding of how colors work together, how colors can be manipulated to achieve a desired visual effect, and the basic aesthetic properties of color. However, color education encompasses more than color theory. Those whose knowledge of color does not extend beyond color theory are deprived of proven color research in areas such as color psychology and the biological effects of color that could help them to enhance their designs and to develop a solid basis for their color selections. The ability to utilize supporting research is practical for aspiring designers and strengthens the reputation of interior design as a credible field of study. In this context, color education also encompasses the application of color knowledge in interiors, another subject that is often overlooked.
Appendix – Supporting Information

**Figure 1** Existing and Evaluated Undergraduate Interior Design Programs (by Region)
Table 1

Content Analysis Results – Frequency of Use of Terms in Color Course Descriptions

<table>
<thead>
<tr>
<th>Term</th>
<th>Frequency of Use</th>
</tr>
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<tbody>
<tr>
<td>color theory</td>
<td>26</td>
</tr>
<tr>
<td>design</td>
<td>26</td>
</tr>
<tr>
<td>psychology/psychological</td>
<td>23</td>
</tr>
<tr>
<td>light</td>
<td>21</td>
</tr>
<tr>
<td>space/spatial</td>
<td>17</td>
</tr>
<tr>
<td>application</td>
<td>16</td>
</tr>
<tr>
<td>interior design</td>
<td>12</td>
</tr>
<tr>
<td>principles</td>
<td>11</td>
</tr>
<tr>
<td>art</td>
<td>9</td>
</tr>
<tr>
<td>color systems</td>
<td>9</td>
</tr>
<tr>
<td>perception/perceptual</td>
<td>9</td>
</tr>
<tr>
<td>interior environment/interiors</td>
<td>8</td>
</tr>
<tr>
<td>aesthetic/aesthetically</td>
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<td>harmony</td>
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<tr>
<td>emotional</td>
<td>3</td>
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<tr>
<td>history/historical</td>
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</tr>
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<td>three-dimensional</td>
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<td>color wheel</td>
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<td>human response</td>
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<td>research</td>
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<td>terminology/nomenclature</td>
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<td>plan/planning</td>
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### Table 2

**Results of Interior Design Student Survey on Color Education**

<table>
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<tr>
<th>Question</th>
<th>TOTAL</th>
<th>Accredited</th>
<th>Non-accredited</th>
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</thead>
<tbody>
<tr>
<td><strong>1. Has any of your interior design education focused on color?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>89%</td>
<td>83%</td>
<td>93%</td>
</tr>
<tr>
<td>No</td>
<td>11%</td>
<td>17%</td>
<td>7%</td>
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<tr>
<td><strong>If Yes, in what type of course was color addressed?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fundamentals of design</td>
<td>60%</td>
<td>50%</td>
<td>67%</td>
</tr>
<tr>
<td>Color theory class</td>
<td>44%</td>
<td>33%</td>
<td>51%</td>
</tr>
<tr>
<td>Other</td>
<td>26%</td>
<td>53%</td>
<td>7%</td>
</tr>
<tr>
<td>Residential studio</td>
<td>23%</td>
<td>13%</td>
<td>30%</td>
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<tr>
<td>Commercial studio</td>
<td>12%</td>
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<td>16%</td>
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<tr>
<td>Hospitality studio</td>
<td>10%</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Healthcare studio</td>
<td>10%</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Office planning studio</td>
<td>5%</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>2. Have you sought information about color outside of your interior design program?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>75%</td>
<td>73%</td>
<td>77%</td>
</tr>
<tr>
<td>No</td>
<td>25%</td>
<td>23%</td>
<td>23%</td>
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<tr>
<td><strong>If Yes, what resources did you try?</strong></td>
<td></td>
<td></td>
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<tr>
<td>Books</td>
<td>59%</td>
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<td>Magazines</td>
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<td>47%</td>
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</tr>
<tr>
<td>Internet</td>
<td>36%</td>
<td>40%</td>
<td>33%</td>
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<td>Classes at another institution</td>
<td>18%</td>
<td>13%</td>
<td>21%</td>
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<tr>
<td>Classes in another department at your school</td>
<td>15%</td>
<td>13%</td>
<td>16%</td>
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<td>Journals</td>
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</tr>
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<td>Workshop</td>
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<td>0%</td>
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</tr>
<tr>
<td>Other</td>
<td>1%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>3. On what basis do you generally select colors for your design projects?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application to design concept</td>
<td>85%</td>
<td>93%</td>
<td>79%</td>
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<tr>
<td>Psychological factors</td>
<td>66%</td>
<td>70%</td>
<td>63%</td>
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<tr>
<td>Functions performed in the space</td>
<td>63%</td>
<td>63%</td>
<td>65%</td>
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<tr>
<td>Personal preference</td>
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<td>57%</td>
<td>56%</td>
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<td>Color theory</td>
<td>42%</td>
<td>47%</td>
<td>40%</td>
</tr>
<tr>
<td>Physiological factors</td>
<td>26%</td>
<td>27%</td>
<td>26%</td>
</tr>
<tr>
<td>Color research</td>
<td>16%</td>
<td>20%</td>
<td>14%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
<td>3%</td>
<td>5%</td>
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<tr>
<td><strong>4. At what point in the design process do you most often integrate color into your design?</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Design development</td>
<td>54%</td>
<td>73%</td>
<td>41%</td>
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<tr>
<td>Schematic design</td>
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<td>33%</td>
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<td>Programming</td>
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<td>13%</td>
<td>26%</td>
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<tr>
<td>Final documentation</td>
<td>3%</td>
<td>7%</td>
<td>0%</td>
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<tr>
<td><strong>5. When working on a design project, do you specifically allot time to develop a color concept?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>63%</td>
<td>43%</td>
<td>77%</td>
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<tr>
<td>No</td>
<td>37%</td>
<td>57%</td>
<td>23%</td>
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<tr>
<td><strong>6. Have you been taught a method for selecting colors for a space in your interior design program?</strong></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>38%</td>
<td>13%</td>
<td>56%</td>
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<tr>
<td>Question</td>
<td>TOTAL</td>
<td>Accredited</td>
<td>Non-accredited</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------</td>
<td>------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Do you think that color is sufficiently covered in your interior design program?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>36%</td>
<td>10%</td>
<td>53%</td>
</tr>
<tr>
<td>No</td>
<td>64%</td>
<td>90%</td>
<td>47%</td>
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<td>If No, which color subject areas do you think deserve more attention?</td>
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<td></td>
<td></td>
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<tr>
<td>Psychology of color</td>
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<td>63%</td>
<td>16%</td>
</tr>
<tr>
<td>Physiological effects of color</td>
<td>36%</td>
<td>53%</td>
<td>23%</td>
</tr>
<tr>
<td>Color research</td>
<td>33%</td>
<td>57%</td>
<td>16%</td>
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<tr>
<td>Color and light</td>
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<td>43%</td>
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<tr>
<td>Color association</td>
<td>25%</td>
<td>37%</td>
<td>16%</td>
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<tr>
<td>Color theory/color systems (e.g., color wheel)</td>
<td>23%</td>
<td>33%</td>
<td>16%</td>
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<tr>
<td>Other</td>
<td>3%</td>
<td>3%</td>
<td>2%</td>
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<tr>
<td>Has color selection ever been addressed in your studio critiques?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>81%</td>
<td>70%</td>
<td>88%</td>
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<tr>
<td>No</td>
<td>19%</td>
<td>30%</td>
<td>12%</td>
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<tr>
<td>If Yes, in what context was it discussed?</td>
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<td></td>
<td></td>
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<tr>
<td>Color combination/harmony</td>
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<td>47%</td>
<td>77%</td>
</tr>
<tr>
<td>Appropriateness for function of space</td>
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<td>33%</td>
<td>51%</td>
</tr>
<tr>
<td>Concept development</td>
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<td>30%</td>
<td>37%</td>
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<tr>
<td>Psychological considerations</td>
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<td>Other</td>
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<tr>
<td>What type of project was being critiqued?</td>
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<td></td>
<td></td>
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<tr>
<td>Commercial (e.g., retail)</td>
<td>41%</td>
<td>53%</td>
<td>33%</td>
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<tr>
<td>Residential</td>
<td>33%</td>
<td>30%</td>
<td>35%</td>
</tr>
<tr>
<td>Hospitality (e.g., restaurant, hotel)</td>
<td>27%</td>
<td>20%</td>
<td>33%</td>
</tr>
<tr>
<td>Healthcare</td>
<td>19%</td>
<td>23%</td>
<td>16%</td>
</tr>
<tr>
<td>Office</td>
<td>16%</td>
<td>20%</td>
<td>14%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
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<tr>
<td>Do you think you are prepared to make informed color decisions in design practice based on the education you have received in your interior design program?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>56%</td>
<td>40%</td>
<td>67%</td>
</tr>
<tr>
<td>No</td>
<td>40%</td>
<td>57%</td>
<td>28%</td>
</tr>
<tr>
<td>Undecided</td>
<td>4%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>If a client asked you to explain the basis for your color selections, do you think you would be prepared to defend your selections based on the color education you have received in your interior design program?</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>59%</td>
<td>43%</td>
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</tr>
<tr>
<td>No</td>
<td>38%</td>
<td>54%</td>
<td>28%</td>
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<tr>
<td>Undecided</td>
<td>3%</td>
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Color Education in the Interior Design Curriculum

Jessica Bantom
Marymount University

Narrative

Purpose

This study provides insight into the level of importance undergraduate interior design programs attribute to color education and the extent of color knowledge these programs impart upon their students. The results of this study could be used to define standards for color education in the undergraduate interior design curriculum to ensure that students attain the knowledge necessary to create and implement successful color plans according to the function of the space and the needs of the inhabitants. The findings may also serve as a frame of reference for structuring a color application course within interior design programs. The results of this study include a recommended color course syllabus.

Method

The research for this study consisted of the following: 1) an evaluation of the curriculum of 96 accredited interior design programs and several course syllabi and supporting materials; 2) a survey of senior-level interior design students regarding their views on color education; 3) an interview with a former Council for Interior Design Accreditation site visitor to define criteria for assessing color proficiency in a design program; and 4) a color exercise administered to senior-level interior design students to
examine their practical color application skills. The standards of color education were compared and contrasted against the actual content addressed in the evaluated interior design programs, and the perceived and assessed knowledge of the students completing those programs.

The purpose of evaluating the interior design programs was to determine which, if any, accredited programs feature a required color course, and then to analyze the subject matter of the identified courses. In this study, this evaluation is limited to interior design programs that are accredited by the Council for Interior Design Accreditation due to the fact that the Council is the accrediting agency for interior design programs in the United States and Canada, and sets the standards for interior design education. The assumption is that evaluating accredited programs provides a view of what is considered the “norm” in interior design education as a whole.

The survey that was used as a part of this study was distributed to seniors in undergraduate interior design programs (and to those in their final design studios in Associate’s programs). The survey was limited to these students in order to obtain an assessment of their feelings about their color education as they neared the end of their programs and how prepared they feel to enter the design profession with the color education they have acquired, as well as to identify areas of color education that students felt required more attention and to identify common color design practices among students. The survey was distributed to students in accredited and non-accredited programs in the Washington DC metropolitan area with the intention to compare the color education experiences of those in accredited versus non-accredited programs. The color exercise component of this study, which was conducted to test
students’ color application skills and to test the effectiveness of the exercise itself as a potential course exercise, was limited to seniors in an accredited interior design program to compare the results against the Council standards for accreditation.

Importance of the Topic/Relevance to Interior Design

This study was intended to call attention to the lack of emphasis on color education in interior design education. It is not uncommon to find that many undergraduate interior design programs feature a segment of a course – if not a whole course – on color theory. Students generally come away from these courses with an enhanced understanding of how colors work together, how colors can be manipulated to achieve a desired visual effect, and the basic aesthetic properties of color. However, color education encompasses more than color theory. Those whose knowledge of color does not extend beyond color theory are deprived of proven color research in areas such as color psychology and the biological effects of color that could help them to enhance their designs and to develop a solid basis for their color selections. The ability to utilize supporting research is practical for aspiring designers and strengthens the reputation of interior design as a credible field of study. In this context, color education also encompasses the application of color knowledge in interiors, another subject that is often overlooked.

In researching the subject of color education in the interior design curriculum, there was very little available material from which to draw information. The major sources of existing information regarding color education focus on architecture as opposed to interior design, such as a study involving European students of architecture.
Only two sources connect color education and interior design, one of which is the curriculum of the North American Association of Color Consultants/Designers (IACCNA), a professional organization that offers seminars to those interested in pursuing color knowledge and accredits color consultants in the United States and Canada. The other is a study that focuses on the approach to the color design process among students in one particular accredited interior design program. As this study is based upon the evaluation of accredited interior design programs, the Council standards and accreditation guidelines also provide a frame of reference for understanding the expectations related to color education. Additional sources include European architecture-based color educational programs offered through a technical school and a university, respectively. Together, these sources serve as the basis for background information for this study. Their varied nature alone is an indication of the limited knowledge that has been compiled on the subject.

The findings of this study, however, present a fairly complete depiction of color education in the interior design curriculum – from the standpoint of institutions and educators in the form of course descriptions and syllabi, from the standpoint of students in the form of survey and color exercise results, and from the standpoint of the accrediting body in interview responses. Each of these perspectives was incorporated into this discussion to help answer the question ‘What constitutes color education in the interior design curriculum?’

The study revealed that almost half of the interior design programs evaluated feature a required color course. The existing courses cover more than color theory and other aesthetic color principles but color theory remains the focus of most instruction,
including class exercises and texts. The Council requirements for color education are not very well-defined and evaluations for accreditation also tend to focus more on color theory-related works, such as color studies, than actual design projects in order to assess a program’s color education component.

The study also showed that students are fairly knowledgeable about color upon completing their programs but they are not necessarily trained in the application of color in interiors. Students’ color work demonstrated that students develop a basic understanding of color and its aesthetic properties and they can utilize that knowledge in design projects but they do not know how to use color as a tool to satisfy the requirements of a project, suggesting a disconnect between theory and practice. Students would prefer that their design programs cover more color subject areas such as the psychological and physiological effects of color, which implies a desire to achieve a better understanding of its impact on humans and an appreciation for how we experience color. This need for further color education is presumably the cause for half the respondents’ expressed belief that they are not prepared to make informed color decisions and would not be able to defend their color selections based on the color knowledge they have gained in their programs.

Based on the results of this study, color education does not necessarily represent a gap in the interior design curriculum, but it is definitely an area that requires some modification. This study reveals a great lack of consistency in how color is taught across interior design programs, mostly in terms of the emphasis of the course. Color is not always taught in its own course, as indicated by several students who reported learning color in a class on the fundamentals of design. It is sometimes taught in
combination with lighting as well. However, given the many subject areas that are relevant to color in interior design, an entire course dedicated to color and interiors is definitely within reason.

It is impossible to ignore the prevalence of color in interiors, yet it does not receive the attention it deserves in interior design education. This study identifies many areas for improvement as well as suggestions for making those improvements in an effort to prepare aspiring designers to successfully design with all of a client’s needs in mind – not just the visual but the emotional and psychological needs as well. An interior designer’s mission is to create a space that meets the needs of the inhabitants and to design with their well-being in mind. Without proper knowledge of the role and functions of color in interiors, that mission cannot be successfully achieved.
Reference List

(APA)


Haus der Farbe (n.d.) Retrieved June 12, 2006 from http://64.233.179.104/translate_c?hl=en&u=http://www.hausderfarbe.ch/30_Bildung/31_Index.htm&prev=/search%3Fq%3Dhaus%2Bde%2Bfarbe%26hl%3Den%26lr%3D


Packaged Kitchens: Understanding Prefabricated Manufactured Units as Mid-Century Interiors

Mary Anne Beecher
University of Oregon

Abstract

In 1946, a string of articles in *Architectural Forum* promoted the designs of so-called “packaged kitchens.”¹ The purpose of this paper is to analyze a series of radical mid-twentieth-century kitchen designs that relied upon the use of modular components to create functional domestic workspaces. In place of traditional cabinetry hung from stud walls, these extreme designs relied on prefabricated consolidated panels and alternative structures to support the need for food storage and preparation space in post-war American housing. The documentation of the “packaged kitchens” and others like them is derived from published examples of post-war kitchen prototypes printed in the pages of professional trade journals such as *Architectural Forum*, *Architectural Record*, and *Interiors*, or in archival materials that document designers’ prototype kitchen projects.

This paper articulates the production of prototype units used to “make” modern interiors that were essentially independent from the buildings in which they were housed shaped new attitudes toward interior space for educators, designers, and the consuming public alike. It asserts that these attitudes reinforced the perception that interiors are separate, and therefore temporary, elements within buildings, and that the cultivation of this perspective influenced the ways that American interior designers have approached their work since the post-war period.
The popularity of this approach in the post-war era may be credited to shifts in the public’s attitude toward objects. When historian David Potter titled his 1954 historical analysis of the American economic condition *People of Plenty*, he characterized a culture of accumulation that had begun in the nineteenth century and flourished with wartime employment and with the market redistribution that occurred following the Depression.\(^2\) Citizen consumers, as Lisbeth Cohen has called them, supported their country in this era with their purchases, creating a new set of consumer perceptions and behaviors.\(^3\) These analyses, and others like them, paint a vivid picture of mid-century Americans’ growing obsession with products and shopping.

The contents of mid-century design journals reflected this condition by documenting the production of exploratory designs for “units” that could be used to enhance smaller post-war houses and apartments. These experimental components exploited the properties of new materials and processes to generate new forms and configurations for interior components and spaces. Several designers published in the journals promoted prefabricated utility cores that consolidated the kitchen, bathroom and laundry areas of a dwelling. Others developed designs for prefabricated modules that could be configured to create customized spaces. One university even published a book documenting its prototype for mobile kitchen units that could be transported from house to house as evidence of design instructors’ and students’ effort to reinvent the conventional kitchen.

The relevance of this research is that it analyzes historical kitchen designs that, although rarely made available as part of the popular market of kitchen components, significantly challenged American designers’ concept of what interior space is and how
it might be created. It provides a historical context for understanding the role that prefabrication, modularity, and mobility have played on the shaping of the contemporary interior.
Narrative

In 1946, a string of articles in *Architectural Forum* promoted the designs of so-called “packaged kitchens,” a series of radical mid-twentieth century designs that relied upon the use of modular components to create functional workspaces. In place of traditional cabinetry hung from stud walls, these extreme designs relied on prefabricated consolidated panels and alternative structures to support the need for food storage and preparation space in model examples of post-war American middle-class housing. Pictorial and technical documentation of “packaged kitchens” can be seen in the published examples of post-war kitchen prototypes printed in the pages of professional trade journals such as *Architectural Forum, Architectural Record,* and *Interiors,* and in archival materials that document designers’ prototype kitchen projects.

One of the most interesting aspects of these kitchen designs is the manner in which designers used prototype units to “make” modern interiors that were essentially independent from the buildings in which they were housed. While not an entirely new idea, this radical disconnection between architecture and “the room” shaped new attitudes toward interior space for educators, designers, and the consuming public alike. This circumstance promoted an attitude among these cohorts that reinforced the perception that interiors are separate, and therefore temporary, elements within buildings. This acceptance of the notion of an entirely independent interior influenced
the ways that American interior designers have approached their work since the post-war period.

Part of the reason behind the popularity of this approach to understanding interior space in a new way in the post-war era may be credited to shifts in the public's attitude toward objects. When historian David Potter titled his 1954 historical analysis of the American economic condition *People of Plenty*, he characterized a culture of accumulation that had begun in the nineteenth century and flourished with wartime employment and with the market redistribution that occurred following the Depression.\(^5\) Citizen consumers, as Lisbeth Cohen has called them, supported their country economically and patriotically in this era with their purchases, creating a new set of consumer perceptions and behaviors that included a craving for change and justifications for waste.\(^6\) These analyses, and others like them, paint a vivid picture of mid-century Americans’ growing obsession with products and shopping.

The contents of mid-century design journals reflected this condition by documenting the production of exploratory designs for “units” that could be used to enhance smaller post-war houses and apartments. These experimental components exploited the properties of new materials such as aluminum and vinyl and new industrial processes to generate new forms and configurations for interior components and spaces. Several designs published in the trade journals promoted prefabricated utility cores that consolidated the kitchen, bathroom and laundry areas of a dwelling. One of the earliest published examples is Canadian Comstock Company’s prefabricated kitchen-bath-laundry called “Unitility,” which entered the building market in Canada in late 1945.\(^7\) In America, the Reynolds Metal Company produced a seven foot long
aluminum “strip kitchen” designed by Guyon L.C. Earle. With a specially-designed
drawer-style refrigerator and cabinetry inset into the backsplash space, this
prefabricated kitchen maximized the quantity of storage in a small space.

Others developed designs for prefabricated modules that could be configured to
create customized spaces. One example is Toledo, Ohio’s J.J. Little Associates’ design
for a compact unit that employed a power unit for accessories inspired by dental
equipment. The free-standing “cast” unit divided the kitchen into two back-to-back
distinctive workspaces—one for meal preparation and one for clean-up. A flexible metal
shaft as a single power source for all mechanical operations performed (scrubbing,
washing, even stirring!) hung on an overhead track that also provided lighting.

Charles C. White’s design labeled “The White Kitchen Compact” (also seen in
the pages of Architectural Forum) combined an interest in customization with smaller
repetitive modular forms—in this case circular cabinets with revolving self-supporting
internal components and doors that disappeared instead of intruding into the kitchen
workspace. Made of enameled steel, this engineered system also included a circular
oven, sink, and refrigerator along with a ventilation system that took advantage of the
unavoidable spaces created between the adjacent cylinders.8

The prospect of developing self-contained prefabricated room units also caught
the imaginations of design educators who sometimes responded to research findings
that documented the housing needs of over-looked populations. For instance, Cornell
University Professor Glenn H. Beyer and his housing and interior design students
surveyed rural New Yorkers in 1947 to document the living conditions of farm families.
The findings from this study are described in the report entitled “Study of Space, Facility, and Structural Requirements for Farm Houses in the Northeast Region.”

There is no doubt that the home economists at Cornell were aware of the radical manufactured unit designs produced by architects, engineers, and industry. In February and March, 1946—the same year that the so-called “packaged kitchens” were published—Architectural Forum also published the results of kitchen research produced by Cornell extension specialists Mary Koll Heiner and Helen E. McCullough. Based on information collected through research sponsored by the American Central Manufacturing Company, these women “dissected the American kitchen, pre-war and post.” With what was described as “the care and precision of an entomologist at work on a bug,” they measured, weighed, and analyzed what a housewife does and what she needs in the kitchen. The results, presented in a series of photographs and diagrams of work-center mock-ups and lists of goods to be stored, communicate the researchers’ desire to correct the vantage point of most kitchen designers: that they should begin with the user and not with the tool in mind. In two sequential articles, the journal proposed to clarify what Koll Heiner and McCullough described as “flaws in the masculine logic often employed in the production of kitchen designs”.

The manifestation of new ways of thinking about interior space can be easily seen in the merger of research and industrial design efforts that occurred at Cornell. By combining Beyer’s research with the expertise of Home Economics Professor Mary Koll Heiner, Cornell’s Housing Research Center developed and produced its own design for a modular prefabricated kitchen system in the late 1950s. They documented the results of this effort in Product Design through Research, a self-published book that explained
and illustrated their prototype for mobile kitchen units that could be transported from house to house.\textsuperscript{11}

The prototype produced by Beyer and his students reflected the premise that kitchens should be made free-standing and portable to accommodate the ease of retrofitting existing spaces and the increased mobility of middle-class Americans who might desire to take their kitchens with them. Rather than being permanently attached to the walls of a house, the “Cornell Kitchen” relied on an independent steel framework that acted as a self-leveling base and studs from which the storage cabinets could hang.

Participants in the university’s 1952 “Farm and Home Week” saw the full-scale prototype units on display, and offered a favorable response. Cornell promoted the freestanding nature of the system as well-suited to tenant farmers who could relocate, taking their kitchen with them.\textsuperscript{12}

There is no evidence that the Cornell kitchen was ever mass-produced and distributed. There are, however, examples of manufactured kitchens that incorporate some of the features of Beyer’s proposed design. For instance, cabinets manufactured by the Sears Roebuck Company in 1956 appear in the collection of extension photographs of kitchens with a note that they are the “Cornell design,” although they incorporate standard sliding doors, sliding wooden shelves, and do not appear to be self-supporting. They do include backsplash storage and the distinct angled form of the prototype, however.

The growing prevalence of contemporary rooms as products demonstrated by the popularity of manufacturers such as IKEA is grounded in the exploration of
“packaged kitchens” and “unit designs” in the mid-twentieth century. Flat packaging, modularity, and even portability have come to define new furniture designs and designers’ perception of the interior as a temporary container to be installed within a building characterizes much of contemporary practice activity. Using the lens of sustainability, one can easily perceive both positive and negative characteristics of this condition, since the prospect of frequent change to an environment bares implications of waste while the possibility of taking your interior with you encourages potential reuse for materials and products that might otherwise find the way into a landfill. Although there is little evidence that most of these radical prototypes from the past ever made their way into production and popular consumption streams, the framework for conceiving interior space they helped to create has established a legacy that continues to challenge and inspire interior designers today.

Reference List
(Chicago Style)


Abstract

Purpose

The purpose of this study was to develop and test a conceptual framework for investigating light's interaction with interior space. Because the act of composing interior environments is an exercise, whether deliberate or not, in shaping an interaction between light and space, an understanding of light is critical to the successful, comprehensive design of a space. A review of the literature reveals that light's application within the realm of interior design is far-reaching; design research has contributed to new knowledge concerning light’s technical capabilities (Kesner, 1997; Moran, 1990) and behavioral implications (Park & Farr, 2007; Veitch & Gifford, 1996), and design writing has explored light’s poeticymbolic nature (Millet, 1996; Plummer, 1987). Within the area of aesthetics, i.e. visual composition, however, there appears to be an inconsistency in the way light is understood, investigated and taught (Brown, 2004). The current state of ambiguity regarding light’s aesthetic role in designed space calls for the development of a framework for understanding light from a compositional perspective.

The framework tested here proposes that language, as a compositional system, may serve as a conceptual model for investigating light. Suggesting that language and design are analogous in that they are both governed by rules of syntax—the orderly and
systematic arrangement of parts—this study uses language as a model for investigating the role of light in spatial compositions.

Method

Findings are presented from an exploratory study in which upper-level interior design students were asked to respond to a series of photographs of compositions of light. A questionnaire was designed to measure participants' ability to categorize light into linguistic roles, i.e. noun, verb, adjective, and adverb. Participants were asked to scale their level of agreement with the 4 linguistic conditions (noun, verb, adjective, and adverb) for each photograph. Descriptive and inferential statistical analyses revealed that some images elicited significant differences in the way they were perceived; in some images light was perceived to be noun-like, while in others, adjective-like. Interestingly, none of the images were seen to be highly verb-like or highly adverb-like.

Relevance

The objective of this study was to begin to test a new framework for understanding light's interaction with space. Preliminary findings suggest that light may in fact be perceived to have language-like traits and that the linguistic model may be useful in the design process for exploring light's role as a compositional element in interior space. More work is needed to isolate the specific characteristics of a light-space composition, e.g. contextual detail, light intensity, etc., that may be contributing to participants' ability to perceive differences between linguistic functions.
Introduction

An understanding of light’s interaction with space is critical to the successful, comprehensive design of interior environments. A review of the literature reveals that light’s application within the realm of interior design is far-reaching; design research has contributed to new knowledge concerning light’s technical capabilities (Kesner, 1997; Moran, 1990) and behavioral implications (Park & Farr, 2007; Veitch & Gifford, 1996), and design writing has explored light’s poetic/symbolic nature (Millet, 1996; Plummer, 1987). Within the area of aesthetics, i.e. visual composition, however, there is a gap in the way designers investigate and communicate about light. A study by Brown (2004) found an inconsistency in the language used by interior design textbooks to describe light compared to other basic design elements. Whereas authors discussed design elements such as form, color, and texture in terms of their contributions to spatial composition, their discussion of light focused on technical and functional issues (e.g. lamp technology, photometrics, luminaires). In addition, the same study found noticeable differences in the vocabulary used by the disciplines of art, interior design and architecture to evaluate light and its aesthetic effects (as evidenced in trade magazines) (Brown, 2004).
In response to these challenges, the objective of this exploratory study was to test a new way of understanding light as a compositional element. The framework introduced here proposes that language, because it is inherently a compositional system, may serve as a conceptual model for investigating light's interaction with space. Suggesting that language and design are analogous in that they are both governed by rules of syntax—the orderly and systematic arrangement of parts—this study uses language as a model for investigating the role of light in spatial compositions. Driving this study is the question: Can the light/space relationship be deconstructed like a sentence, such that light is perceived to play one or more linguistic roles, i.e. noun, verb, adjective, adverb?

Contextual Framework

As a structural system that assembles, arranges, and organizes components, language offers an exquisite comparison to the processes and products that characterize art and design. Of specific importance within the context of interior design, and to this study in particular, is the way in which both language and design are compositional. Both engage a process of arranging parts into a cohesive whole. And while the parts can be arranged with infinite variation—it is possible, even expected, that sentences, paragraphs, designs will be composed that have never been spoken, written, or created before—both language and design are governed by rules of syntax, the orderly or systematic arrangement of parts.

While a composition is defined by the whole, each component has a specialized role and exists in a dynamic relationship with other components. This holds true in both
language and design. As linguist Noam Chomsky (1975) has demonstrated, the natural complexity of language can be analyzed into simple, almost algorithmic components, which combine to generate meaningful sentences. In English grammar, the core components, also known as form-class words and more commonly referred to as the parts of speech, have specific tasks or identities within a sentence's composition. Grammarians suggest that we divide our experiences into two basic categories: objects and actions (Klammer and Schulz, 1992). Things that we perceive are placed in one category, while the action those things perform or undergo are placed in another and this is reflected in the way we use words. Based on traditional methods of classification, all major form-class words can be identified by their relationship to these two major categories. In the most simplified terms, objects are nouns, words that modify objects are adjectives, actions are verbs, and words that modify actions are adverbs.

Like language, design can also be dissected into basic components known as design elements. Serving as the major components of interior space, design elements are ordered by a three-dimensional syntax; organizing principles (e.g. balance, rhythm, emphasis, etc.) “permit the efficient and informative ordering” of design elements (e.g. line, shape, texture, etc.) (Malnar & Vodvarka, 1992). Like words, each design element has an identity that is distinguishable from the others. Form, for example, can be understood and manipulated separately from color and texture. And in most cases, certain roles are inherent to an element’s unique spatial characteristics; line may suggest direction while typically it does not suggest warmth. As a result, design elements are selected based on their intended use and function and their particular contribution to a composition. We can assume then, that light, as a design element,
contributes to the aesthetic and functional quality of a space in a way uniquely
distinguishable from the other design elements.

In contrast to Brown’s (2004) findings that design texts fail to discuss light from a
compositional perspective, Millet (1996), in her book on the relationship between light
and architecture, clearly describes light in various roles of spatial composition. She
suggests, for example, that light can create a focus, produce a sense of movement, and
emphasize form. Her intuitive observations challenge the current lack of literature on
light’s compositional role in interior space and further demonstrate the need for
systematic investigation.

Method

Thirty-nine upper-level interior design students were asked to respond to a series
of photographs of compositions of light, i.e. light box models. A questionnaire was
designed to measure participants’ ability to categorize light into four linguistic roles:
noun, verb, adjective, and adverb. Using a Likert scale, participants were asked to
indicate their level of agreement for four linguistic conditions: “light is an object” (noun
condition); “light implies action or change” (verb condition); “light modifies an
object/form” (adjective condition); “light modifies an action” (adverb condition) (see
Figure 1). Mean Likert scale scores were analyzed for each image (20 images X 4
linguistic conditions). A one-factor, four-level analysis of variance (ANOVA) was used
to examine the data, and post-hoc comparisons were used to find significant differences
between the four linguistic conditions (noun, verb, adjective, and adverb) for each
photograph.
Findings

Descriptive and inferential statistical analyses revealed that some images elicited significant differences in the way they were perceived; in some images light was perceived to be noun-like, while in others, adjective-like (see Table 1 for examples). Interestingly, none of the images were seen to be highly verb-like or highly adverb-like.
Table 1. Sampling of results.

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<thead>
<tr>
<th>Images receiving significantly high noun scores</th>
<th>df</th>
<th>F</th>
<th>p*</th>
<th>Images receiving significantly high adjective scores</th>
<th>df</th>
<th>F</th>
<th>p*</th>
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<tbody>
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<td></td>
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<td>7.43</td>
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<td>.003 (adj)</td>
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<td>.002 (verb)</td>
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<td>.002 (adv)</td>
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* p < .05 is considered significant.

Based on further analysis of the data, additional observations emerged that are worth noting. For instance, in the case of nouns, images receiving high noun scores differed from images receiving low noun scores in spatial context and light intensity. The results would suggest that the perception of light as an “object” (the noun condition) may be related to a spatial composition’s level of abstraction and the intensity of the light source. In the case of verbs, images with the highest mean verb scores shared characteristics of line and rhythm. In the case of adjectives, compared to the other three linguistic conditions, the adjective condition received the highest mean score. Because the highest scores were given in the adjective category, the findings suggest that light may be perceived most commonly as a “modifier of objects or forms” (adjective condition). While these observations have not yet been empirically tested, they open the door for future inquiries.
Conclusion

The objective of this exploratory study was to begin to test a new framework for understanding light's interaction with space. Within the limitations of this goal, the findings are yet to be fully generalizable. However the initial results are intriguing. Preliminary findings suggest that light may in fact be perceived to have language-like traits. As such, the linguistic model may be useful in the design process for exploring light's role as a compositional element in interior space. Defining light by its linguistic characteristics could provide an understandable way to talk about and manipulate light and could perhaps challenge the student/designer to consider the different effects of light from a compositional perspective: Should light be objectified in the space? Should it have a dynamic quality implying action? Or will light be used to emphasize an important form or texture in the space?

As designers continue to shape interactions between light and space, the development of a conceptual framework for studying light is crucial. Future studies should aim to isolate the specific characteristics of a light-space composition, e.g. contextual detail, light intensity, etc., that may be contributing to participants’ ability to perceive differences between linguistic functions.


Inhabiting Risk: The Female Decorator in the Public Sphere

Nancy Blossom and John Turpin

Washington State University – Spokane

Abstract

This paper explores the idea of “risk” by examining the role of women in the field of interior design throughout the twentieth century. Women’s roles as arbiters of taste was consistent with the social construction of the female gender at the turn of the century;\(^1\) that this role involved risk—the possibility of loss or injury—is, for the most part, overlooked. Yet, the risk faced by women throughout the development of the profession is significant.

To discuss this more clearly, we establish a context through the literature on gender and sex typing in the work place in the twentieth century. Next, we examine the concepts of taste and the interior decorator. Finally, we look at the personal stories of four female interior decorators/designers: Elsie de Wolfe (1865-1950), Dorothy Draper (1888-1969), Sister Parish (1929-1994) and Florence Knoll Bassett (1917- ). Our position is that it is not enough to categorize women as trailblazers only if they occupy positions typically sex typed as male in the workforce (e.g., woman as architect). Even within the perceived “woman’s realm” (in this case domesticity), women incurred considerable social, economic and/or professional risk in pursuit of their careers.

De Wolfe, the oft-claimed “first interior decorator,” enters a career path and claims it because of women’s roles as purveyors of taste. Draper takes that entrée

into the working world but demonstrates an entrepreneurial spirit, which always involves personal economic risk as well as professional risk. Despite Draper’s successes, when Parish follows in the world of interior decoration, she still faces (and overcomes) considerable social risk. Finally, Bassett, well trained in architecture, is “sex-typed” into interiors as a female.

These stories weave a compelling picture of the complexity of what is often viewed as a superficial profession. De Wolfe’s celebrity status provided a female visage for a new profession and validated women’s daily decorating activities as a valuable, marketable service. While de Wolfe opened doors to the male-dominated business realm, women such as Draper and Sister Parish changed the profile from the unmarried socialite to the working mother; they also demonstrated considerable business acumen and entrepreneurial spirit. As members of the conservative wealthy class, both Draper and Parish chaffed against an unspoken contract of deportment and conservatism. Finally, Bassett—as the only female in architectural offices early in her career—was assigned to the few interiors required. She turned those relegated duties into the beginning of the Knoll Planning Unit and the introduction of the modern aesthetic in the work place.

The analysis of risk from within each story reveals an unsurprising theme—the presentation and the representation of the female in the public realm. Paralleling the Women’s Suffrage Movement, the early interior decorators forged an equally significant path in the profession of interior design. Their risks and their successes should be an integral part of our historical narrative.

Inhabiting Risk: The Female Decorator in the Public Sphere
Nancy Blossom and John Turpin
Washington State University – Spokane

NARRATIVE

This paper explores the idea of “risk” by examining women in the role of interior decorator or designer throughout the twentieth century. Women as arbiters of taste was consistent with the social construction of the female gender at the turn of the century;¹ that this role involved risk—the possibility of loss or injury—is, for the most part, overlooked. By examining the careers of four women, the complexity of the early history of the field of interior design is viewed as part of a larger process of social and economic change.

The Stories

Elsie de Wolfe (1865-1950), Dorothy Draper (1888-1969), Sister Parish (1929-1994) and Florence Knoll Bassett (1917- ) are easily recognized by scholars and laypersons alike as renown in their field. Of the four, only one, Florence Knoll Bassett, follows the pattern of women professional pioneers (in fields such as those in medicine, education, science and social work) challenging a male profession (architecture) through education and training. The other three carved successful careers by both challenging and exploiting the social construction of gender and taste that surrounded them. Our position is that it is not enough to categorize women as trailblazers only if

they occupy positions typically sex typed as male in the workforce (e.g., woman as architect). Even within the perceived “women’s realm” (in this case domesticity), women incurred considerable personal, social and/or professional risk in pursuit of their careers by challenging existing constructs.

Socio-economic Context

The story begins during the rapidly changing, industrializing society of the late nineteenth century America. The prevailing attitude toward women in this society was one of domesticity. A woman’s consciousness was infused in the appearance of her home and good decisions about design were critical to her reputation. Cultivating taste through the home was part of a woman’s social and moral responsibility.

During the twentieth century, America was a study of dichotomies, many of which only became clear through the perspective of time. While boundaries between public and private were being broken down in production and economics, gender roles were both challenged and reinforced. Modernism was demonstrated through consumption at the same time tradition dominated the pursuit of good taste. The illusion that stratification of class and gender was crumbling was at once vivid and hazy. As science and rationalism eclipsed less logical argumentation, sex typing and gender construction pervaded society.

The authority of the existing social constructs hindered the development of the female experience in the public realm. Only women who challenged the patriarchal structures—or took risks—had the ability to express their identity and achieve selfactualization. By working outside of the margin of accepted gender-based behavior
these women created new social constructs that supported and paralleled the efforts of the Women’s Movement and the developing profession of interior design. Therefore, we believe that by filtering their intentional actions and choices through the lens of “risk” a richer history of women and interior design will unfold and give rise to a more meaningful narrative.

**Elsie de Wolfe**

Elsie de Wolfe was one of the first women to merge her reputation as a tastemaker with her entrepreneurial spirit to create a career in interior decoration. She fostered a distinctly feminine pastime (the care and decoration of the home), into a profitable trade and made public that this woman of fashion was entering the decorating business. Yet, she challenged the idea of gender/sex typing in the home through both her personal and public life, which were intimately intertwined. She was a lesbian and a feminist, who proclaimed that “men are forever guests in our homes, no matter how much happiness they may find there.”

For a business entrepreneur with a service to sell, reputation was a major concern, especially those who worked for the generally conservative upper class. De Wolfe was at an even greater level of risk since interior decoration was her source of income. Had she failed to make this venture financially successful, she would have had few alternatives as an unmarried woman at the turn of the century.

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Dorothy Tuckerman Draper and Sister Parish (Dorothy May Kinnicutt)

Contrary to de Wolfe, these two were raised in a rarified atmosphere of close-knit friends and family. Both demonstrated personal grit in carving a path that diverged from the expectations of their class and wealth. Neither Draper nor Parish completed high school although both attended exclusive boarding schools. Both women made the requisite trips to Europe, summered in family enclaves, came out to society and married well. Early in their marriages, the opportunity to “decorate” changed the course of their lives. Draper and Parish began to diverge from their socially prescribed path the moment they considered decorating as a career in two ways. First, upper class women had the time and resources to engage in conspicuous consumption. The woman’s position and availability to participate in this phenomenon was a direct reflection on the husband’s success. When women diverged from this path, they were not the only ones being affected; the entire family, extended family included, risked being re-evaluated by their peers. Second, women’s primary roles in society consisted of being a good wife and capable mother. For the wealthy, the role of the wife was to maintain and enhance the reputation of the husband through the supervision of the home and children. Society labeled mothers who abandoned the domestic environment as “neglectful.” The risk was real for both of these women and manifested itself bluntly. Draper was divorced in 1930 and Parish admitted that she was plagued by an overwhelming sense of remorse, as if all her life she had done something wrong. One can theorize the conflict between career and home served at least as part of the source for this.

Florence Schust Knoll Bassett (1917- )

If risk is a recurring theme in the lives of these four women, it is reasonable to consider it the springboard for Bassett. Very early in life she experienced both personal injury and loss; her very existence endured risk. Orphaned at the age of 13, Bassett faced very different life choices than the other three women. She attended Kingswood School for Girls located in the newly forming Cranbrook Academic Community. Here, she was mentored, first by Rachel de Wolfe Raseman⁶ and next by Eliel and Loja Saarinen, whose family became a surrogate to Bassett. In this atmosphere, among these role models of creative professional women, the pursuit of education and training in a field such as architecture must have seemed a natural course for Bassett, although one not many of her female contemporaries were seeking in 1934. A safer choice would have been in the fields of education or social work where women were expected and where they faced less competition with men. She apprenticed in the offices of Walter Gropius and Marcel Breuer in Cambridge, Massachusetts before landing a job with Harrison and Abramowitz, the architects of the Rockefeller Center and the Lincoln Center. She worked on the firm’s interior design projects as befitted her gender.⁷ Her marriage to Hans Knoll resulted in a partnership that launched one of the most successful businesses in modern furniture and planning in the twentieth century. When

⁶ Rachel de Wolfe Raseman was Kingswood’s Art Director and was among the first women graduates of the Cornell School of Architecture.
⁷ Although educated alongside men in the classroom, women graduates in architecture were typically directed to the interior as their domain in the workforce.
Hans was killed in an untimely automobile accident, Bassett became the driving force behind both the business and the planning unit. A safer social and professional choice would have been to turn the company over to male leadership.

**Reflections**

Risk—as defined by the challenging of existing social constructions—is an unrecognized attribute of the female experience during the twentieth century. The previous stories provide ample proof that each of these women faced risk as a result of the social and economic climate that surrounded them; it is also clear that for each it was unique and personal and at some level affected their professional lives. Whether the risk was social, economic and/or professional level, the common theme was one of success and change. No matter what the circumstance, these women continued to demonstrate how they could adapt to a new situation in order to survive or adapt a situation to meet their needs.

Each risk, whether imposed or undertaken, was the seed of change. By taking social risks, three of them altered the profile of the female decorator from the dilettante to the professional. By taking professional risks, they all challenged the gender typing of women in business. These women defined and redefined the developing profession of interior design. De Wolfe gave the profession a face; Draper shifted the balance of power from male to female as business tycoons yielded to her expertise; Parish opened one of the most successful firms of the twentieth century; and Bassett, was innovative and visionary in developing the Knoll Planning Unit and then in leading the company forward.
Risk for women did not decline during the twentieth century. In fact, it mounted. For women, the struggle was always a collision with patriarchal social constructs. Because these four women, along with many others, challenged the status quo, greater opportunities have been available to countless women. In the end, it was worth taking the risk.

Reference List
(Chicago Manual of Style)


The student as software developer:
Engaging interior design students in shaping their educational experiences

Lori A. Brunner
Iowa State University

Abstract

Purpose and Context

The purpose of this paper is to present an application of a constructivist learning strategy for interior design students. In an upper level undergraduate seminar course, *Technology and Design Thinking*, students were asked to develop a digital learning tool that would assist them in the design studio. Entrepreneurial in nature, this class challenged students to think about an instructional technology tool/tutor/tutee application that they would want to use in the studio. What is lacking in the existing studio environment that might be also useful to their fellow classmates? Is there a niche that they might be able to fill that could help many people in their design thinking? This course required design students to integrate readings and discussions from educational psychology, instructional technology, and interior design education. Central to this project was a seminal work by Taylor (1980), which positioned the learner and computer relationship into one of three main categories—computer as tool, tutor, or tutee.

Theoretical Framework

Jonassen, Peck, and Wilson (1999) argue that computers should be seen as cognitive partners for amplifying and reorganizing information, as well as assisting in practice—but the right kind of practice. In addition, technologies should be thought of as tools to help learners transcend the limitations of their minds, such as memory,
thinking, or problem solving limitations. When learners use technologies as partners, they off-load some of the unproductive memorizing tasks, allowing them to think more productively (Jonassen, Carr & Yueh, 1998). The goal in using technologies should be to allocate to the learners the cognitive responsibility for the processing they do best while allocating the processing that technology does best. Learners should be responsible for recognizing and judging patterns of information and then organizing them, while the computer should perform calculations, and store and retrieve information.

Importance of Topic

As we ask our design students to be prepared to practice with the breadth and depth of knowledge required to solve complex interdisciplinary problems of human behavior and design (Guerin & Thompson, 2004), the tasks of storing, organizing, categorizing, and retrieving various pieces of the design project become overwhelming. Thus, instructional technology that acts as a partner in this knowledge construction process (Jonassen, Peck, and Wilson, 1999), where the students actually develop their own learning tools is a powerful learning and teaching strategy for interior design education.

Relevance to Interior Design

Matthews (2004) notes that the problem of knowing digital technology and design is not the lack of qualified people to operate such systems and machines; rather, “it is the lack of the same creative and thoughtful energies used to design environments used to imagine and invent new technological ideas that further enhance the quality of design for the designer, client, and user” (vii.). What better way to motivate and involve design
students in their own learning than by inviting students to help create tools that will assist in their own learning and designing experiences.
References


The student as software developer: 
Engaging interior design students in shaping their educational experiences

Lori A. Brunner 
Iowa State University

Narrative

Purpose and Context

The purpose of this paper is to present an application of a constructivist learning strategy for interior design students. In an upper level undergraduate seminar course, Technology and Design Thinking, students were asked to develop a digital learning tool that would assist them in the design studio. Entrepreneurial in nature, this class challenged students to think about an instructional technology tool/tutor/tutee application that they would want to use in the studio. The students’ course projects were based upon weekly assigned readings and class discussions. Two guiding questions posed to the students as they began to think about a possible learning tool were, 1) what is lacking in the existing studio environment that might be also useful to their fellow classmates? and 2) is there a niche that they might be able to fill that could help many people in their design thinking? This course required design students to integrate readings and discussions from educational psychology, instructional technology, and interior design education. The course project objectives included the following: 1) To apply knowledge and skills of cognitive and educational technology theories and models through a hands-on learning project, 2) To better understand the intersections and challenges of design thinking, digital technology, and cognitive and educational technology theories, 3) To develop students’ awareness and knowledge of basic
aspects of entrepreneurship, and 4) To enable students to advance in the range of visual and verbal communication techniques.

Theoretical Framework

Constructivism and technology

Jonassen, Peck, and Wilson (1999) argue that computers should be seen as cognitive partners for amplifying and reorganizing information, as well as assisting in practice—but the right kind of practice. In addition, technologies should be thought of as tools to help learners transcend the limitations of their minds, such as memory, thinking, or problem solving limitations. When learners use technologies as partners, they off-load some of the unproductive memorizing tasks, allowing them to think more productively (Jonassen, Carr & Yueh, 1998). The goal in using technologies should be to allocate to the learners the cognitive responsibility for the processing they do best while allocating the processing that technology does best. Learners should be responsible for recognizing and judging patterns of information and then organizing them, while the computer should perform calculations, and store and retrieve information.

The Technology and Design Thinking course embodied Honebein’s (1993) goals for the design of constructivist learning environments. These include:

- *Provide experience with the knowledge construction process.* Students take responsibility for determining the subtopics, learning methods, and problem-solving strategies. Each student determined a particular need for the student in the design studio, based on their prior experiences.
• Provide experience in and appreciation for multiple perspectives. In the course, the students were exposed to some of the major learning theories in educational psychology from Behaviorism, to constructivism, to the computer information processing view of learning. In their course projects, they were to base their learning tool on one of these theories.

• Embed learning in realistic and relevant contexts. This course structure maintained the authentic context of the learning task. Students learned to impose order on the complexity and solve the core problem.

• Encourage ownership and voice in the learning process. The course emphasized the student-centeredness of constructivist learning. Rather than the instructor determining what students learned, students played a central role in identifying their issues and directions, as well as their goals and objectives for their particular learning tool.

• Encourage the use of multiple modes of representation. This course encouraged additional media, such as video, computer, photographs, and sound that assisted in providing richer experiences and final projects.

Tool, Tutor, Tutee

Central to this paper and course projects was a seminal work by Taylor (1980), which positioned the learner and computer relationship into one of three main categories—computer as tool, tutor, or tutee. When a computer is functioning as a tutor, the computer presents subject matter to the student, the student responds, and then the computer evaluates the response. From the results the evaluation determines what to present next. The computer program can customize the student’s lesson plan
individually, making the tutor mode very useful for large groups. The tool mode is considered to be a timesaver and efficiency expert. Functions such as data processing and calculation are commonly used in the tool mode. The computer as tutee is where the human user is the one teaching the computer. The human must learn the computer’s language and program in order to teach the computer new concepts, skills, etc. Each student in the course was asked to reflect on which mode their course project would embody.

Results

The collection of final course projects that emerged from the class discussions, readings, and students’ own prior experiences and areas of interest were a diverse compilation of digital learning tools for the interior design student in the studio. Each focused on an area of possible weakness that they might have experienced from prior design studio projects. While it may have directly assisted that particular student, these tools could easily be refined and then offered to their design peers. It should be noted that since these students did not have a computer programming background, some of the details of actual technical refinement was not feasible for a one-semester course. Therefore, some of the projects were more conceptual in nature. An interface and actions were developed for the tool that could then be translated by a computer software engineer to make it fully functional.

One student focused on the importance of students’ knowledge and skills associated with client relations as it pertains to their design project. While there opportunities for students to work with “real” clients later in their program of study, the earlier level studios do not typically involve such persons. The purpose of her
technology learning tool, called “The Client Connection,” was to provide a student designer with a client or a client simulation. The learning tool works by either simulating or connecting the student with a “client.” The user of this tool can choose from three “types” of clients: 1) a generated client, 2) an alumni member client, or 3) an anonymous student client. A generated client is a computer generated model where the designer is given a general profile and then given a 40 question/answer profile of the client. The alumni client is a member who will act as a client for the student designer. The alumni will fill out a general profile and a 40 question detail profile for the student. The alumni client and the student will also be able to interact through email and live web messaging. The anonymous student client is where another student will take on the role of the client and fill out the general profile and 40 question questionnaire. The tool also incorporates a way for the client and student to interact throughout the design project. See appendix A for more details.

Another student project decided to focus on information sharing and feedback during the student’s design process. His project was titled, RAW, as he wanted to be able to put his “raw” design for people to see, evaluate, and reflect on. He wanted a tool that would assist him in building this community; where he could express his designs in pictures, words, sounds, and motion. The tool evolved into a web-based tool for online presentation, sharing, and feedback. Elements that are incorporated into this project include progress report functions, blogs, multiple project capabilities, pictures and links to name a few. See appendix B for more information about this project.
Importance of Topic

As we ask our design students to be prepared to practice with the breadth and depth of knowledge required to solve complex interdisciplinary problems of human behavior and design (Guerin & Thompson, 2004), the tasks of storing, organizing, categorizing, and retrieving various pieces of the design project become overwhelming. Thus, instructional technology that acts as a partner in this knowledge construction process (Jonassen, Peck, and Wilson, 1999), where the students actually develop their own learning tools is a powerful learning and teaching strategy for interior design education.

Relevance to Interior Design

Matthews (2004) notes that the problem of knowing digital technology and design is not the lack of qualified people to operate such systems and machines; rather, “it is the lack of the same creative and thoughtful energies used to design environments used to imagine and invent new technological ideas that further enhance the quality of design for the designer, client, and user” (vii.). What better way to motivate and involve design students in their own learning than by inviting students to help create tools that will assist in their own learning and designing experiences.
References


Appendix A: *The Client Connection* Project

**Welcome to the Client Connection**

**Please Sign In**

Username: 
Password: 
Submit

**Introduction**

**What does this program do?**

This program is meant to provide a student designer with a client, or a client simulation. By having a client, the student designer is forced to let the client drive the design of their project or space, just as in the career world of Interior Design.

**How does it work?**

The program works by either simulating or connecting the student designer with a "client." There are three "kinds" of clients used in this program, they are a generated client, an alumni-member client, and an anonymous student client. The client types are described in detail on the following page.

**Continue**

**Participant Information**

name: 
age: 
sex: 
Job title/education level: 
your role: Student Designer, Student Client, Alumni Client
Client Options
what kind of a client would you like to connect with?

- Generated Client: A generated client is a computer-generated model. The designer will be given a general profile, as well as a 40 question and answer profile of the client.

- Alumni Member Client: An alumni member client is an alumni member who will act as a client for the student designer. The alumni member will fill out a general profile and a 40 question detailed profile for the designer. The client and designer will also be able to interact through email and live web messaging (text and media sharing).

- Anon Student Client: The Anonymous student client is a randomly assigned student who will act as the client for the student designer. The client will fill out a general profile as well as a 40 question detailed profile for the designer. The client and student designer will be able to interact through email and live messaging (text only).

Generated Client

You have been assigned a 46 year old female client.

Please name your client:

Submit

Client Information:

Name:
Sex:
Age:
Occupation:
Height:
Marital Status:
Children:
Ages:
Pets:
Client Profile

SPECIAL CONSIDERATIONS:
1. Is entertainment (TV, reading, movies, music) a high priority?
2. Do you need storage for CDs, DVDs, VHS or any other media?
3. Do you like to have things at home? Do you require special lighting or magnification?
4. Are there any rooms that you need to have complete light control (such as darkening blinds, dimmer switches etc.?)
5. How much cooking do you do?
6. What kind of assistance do you need?
7. Do you have a large library of cookbooks?
8. What is your laundry time?
9. Do you entertain groups of people? Large or small?
10. Do you or anyone in the family have any special hobbies that need special accommodation such as storage or display area?
11. Does anyone in the family have any movement/mobility disorders?
12. Do you ever work from home?

Client Profile

MAINTENANCE:
1. Do you like hard surface flooring such as hardwood or tile?
2. Do you have any pets?
3. Do you have any young children?
4. Do you have any allergies to animals or materials?
5. Does the architecture of your home follow a certain style?
6. Must everything in the home conform to the same style?

LIVING:
1. What type of house do you live in?
2. How would you describe your lifestyle?
3. What are your eating habits?
4. Do you smoke?
5. How long do you see yourself living in your current home?
6. Where do you live?
7. Do you have pleasant views from your windows?
8. Do you need to provide for best/coldest insulation?
9. What do you consider your personality to be?

Client Information:

Name:

Sex:

Age:

Occupation:

Height:

Marital Status:

Children:

Ages:

Pets:
Appendix B: RAW Design Project

**Objectives**

- **Timely**
  - Being able to use the design tool when needed
  - Updating the information should take short periods of time
- **Flexible**
  - Use of the tool with different design media
  - Able to store information for further review and updating
- **Feedback**
  - The tool allows feedback from others for the projects
- **Ease of use**
  - Be able to make changes to the tool and customize the style and content for each person
- **Replicate**
  - The tool should be able to be reproduced by people with a minimal amount of technical help

**Custom Banner**
- Using a web page allows any different ways to make your pages unique.

**Links**
- Added links for each project

**Information**
- Place to add Bio and information on each project as well as the designer.

**One space to rule them all**
- This home page will give me a single spot to be able to link to multiple objects

**Project sites**
- Multiply projects
  - You can have many projects running at the same time
- **Timeline**
  - This allows you to see changes over time
- **Information**
  - You can have other spots for base information beyond just the timeline entries.
- **Pictures**
  - This does not have to be just photos you can use anything that can be digitized
A Phenomenological Approach to Textile Education

Damon E. Caldwell

Louisiana Tech University

Abstract

Introductory interior-design textile classes are usually rooted in lecture-based information which coordinates with small samples of textiles, often supplied with a textbook. While these exhaustive compendiums of facts about composition, strength, manufacturing, etc. are undoubtedly useful as reference material, they fail to encourage understanding of material properties, possibilities, and differences as they relate to actual design use. This paper discusses an alternate pedagogical approach utilized in a recent class which established an experiential framework for direct discovery and application of knowledge.

The subject is explored through three categories: making, testing, and use. This subdivision is paralleled by a discussion of the process of textile production from components (e.g. fiber), through production (e.g. dyeing), to product (e.g. fabric).

Making: Since one of the most common means of textile production is the assembly of fibers, discussion begins with what is a fiber, and students are charged with the collection of exemplars of potential fibers, both common (e.g. yarn, rope) and uncommon (e.g. wire, straw). This is followed by a demonstration by a local weaver, and a discussion of how various traditional patterns arise out of the weaving process. Students then use their exemplars in the creation of a hand-made woven object or surface.

To explore color and pattern that is applied rather than intrinsic to the structure of the
textile, students dye, paint, and print their own fabrics. They are encouraged to explore how different effects can be achieved through organic vs. synthetic dyes, stamping techniques, variations in resists, etc. These hands-on creations occur simultaneously with discussions of these techniques in various times and cultures, from indigenous peoples to modern-day manufacturing techniques.

**Testing:** Students often choose textiles for their aesthetic value, neglecting to consider the practical stresses a selection may encounter. Here, students discover the qualities and deficits of various textile types under varied stress conditions. Each student procures a quantity of a specific textile, which is shared to create a common sample base. Each student is then randomly assigned a different stressor from a variety of stains, physical abuses, and natural entropies. They perform stress simulations and post-stress analyses, which are presented for group discussion.

**Use:** Because “a material without context is no more than a boring toy,”

students discover how textiles behave through upholstery of various objects. They explore varieties of padding, workability of different material types, and how finishing affects the edges and lines of a piece. Flooring is explored in a similar manner. As a consolidation of their class experience, they coordinate and assemble a large array of textiles into a compositional presentation from which new qualities of contrast and harmony arise. Through these methods, students develop an appreciation for the tactile and visual properties of textiles, and an understanding of how these affect the creation, selection, coordination, and maintenance of interior finishes and materials. This direct connection enhances their confidence when using textiles, and their willingness to conceive and customize textiles in a studio setting.
A Phenomenological Approach to Textile Education

Damon E. Caldwell
Louisiana Tech University

Narrative

The common pedagogy of introductory textile classes utilizes an information-heavy format “to present a consolidated and comprehensive coverage of the textile products available for use in residential and commercial interiors.” (Yeager and Teter-Justice 2003, xi) However, the assumption of attainment of extensive factual knowledge as a precondition for textile use reinforces the notion of a designer as simply possessing special knowledge as opposed to possessing creative abilities which are reinforced by knowledge. When this knowledge is primarily verbal, with direct experience of actual textiles relegated to small samples collected and pre-organized to coincide with the textbook, the pedagogy then bypasses actual sensory experience, which is ultimately how textiles are utilized by designers and encountered by the public. While exhaustive compendiums of facts about composition, strength, manufacturing, etc. are undoubtedly useful as reference material, they fail to encourage understanding of material properties, possibilities, and differences as they relate to actual design use.

In Bloom’s classic educational taxonomy, the pre-condition of knowledge to creativity is built into the system, where receiving and knowledge are the first steps of the affective and cognitive domains. It is noteworthy that Bloom’s third domain, psychomotor, has no categorical subdivisions or structural parallelism to the other two. (Clark 1999) Yet for many young designers, it is a direct visual and haptic connection to light, color, surface,
material, and assembly which drives the desire to design, and a pedagogy which starts from this pre-existing interest and skill can create a need-to-know in the student which can drive later, more exhaustive knowledge attainment. This essay discusses an alternate pedagogical approach utilized in a recent textile class which established an experiential framework for direct and immediate discovery and application of knowledge. The subject was explored in three stages: making, testing, and use. This subdivision was paralleled by a discussion of the process of textile production from components (e.g. fiber), through production (e.g. dying), to product (e.g. fabric).

(Hargrave 1997)

Making

Since the most common means of textile production is the assembly of fibers, class investigation and discussion began with this component. While initial attempts to define fiber centered on the traditional or common examples of yarn and thread, brainstorming with the definition as “a pliable strand having a minute diameter in relation to its length” (Interior Décor Inc) yielded an expanded palette of potential exemplars such as wire, straw, and plastic tubing. Students were charged with assembling a diverse collection of these exemplars and deriving organizational categories from a direct analysis of their origins and properties. Examples include natural vs. synthetic, stiff vs. pliant, smooth vs. rough, etc.

Next, a workshop class with a local weaver established basic strategies of fiber assembly. Various traditional patterns -- such as herringbone, plaid, and hound’s-tooth -- arise out of the weaving process. Students gained understanding of the connection of pattern to assembly, and using the materials of their fiber taxonomy, they each crafted a
hand-made woven object or surface for themselves (figure 1).

To explore color and pattern that is applied rather than intrinsic to the structure of the textile, students next created their own patterned fabrics. Techniques of dyeing, painting, and printing from various times and cultures – Indian and Asian to modern-day manufacturing techniques -- were researched and presented, with Sue Beevers Off-The-Shelf Fabric Painting provided a wealth of strategies. (Beevers 2004) Students selected from these techniques and over a series of days produced a wide variety of samples for analysis and discussion. They were encouraged to explore how different effects can be achieved through organic vs. synthetic dyes, stamping techniques, variations in resists, etc. (figure 2). These hands-on creations provided an appreciation for the larger industry of manufacturing, and insight into their roles as creators and consumers of pattern.

Lastly, assembled differences in flooring textiles are discovered through the sectional
examination of an array of appropriate samples. The previous experience with fiber weaving established a base of understanding for these specialized assemblies which, while ubiquitous, had not previously been deemed worthy of differentiation by most students.

**Testing:**

Designers and students often choose textiles for their aesthetic value, neglecting to consider the practical stresses a selection may encounter. Therefore, during this stage of the class, explorations focused on the discovery and comparison of the attributes and deficits of various textiles. First, a list of textile types and materials was developed. This list included material variety in jute, cotton, silk, wool, suede, polyester, leather, polyurethane, and vinyl. Types were represented with a range of weights from sheer through to corduroy and upholstery fabrics, as well as carpet types from shag to tight loop. Each student was assigned a specific textile to procure, enough to distribute to classmates and create a common sample base. Each student was then randomly assigned a different stressor from a variety of staining substances, physical abuses, and natural entropies that might reasonably occur in the lifecycle of interior textiles. They were required to methodically and creatively test all samples using the assigned stressor, with emphasis on rigorous empirical staging of the “real world” natures of the stressor. An especially illustrative example is the cigarette burns stressor. The student subdivided the samples into smaller testable patches. The difference between a held cigarette and a dropped cigarette was explored, as well as different time exposures within each category. Also dramatically illustrative was the broader notion of flammability. (figure 3) The pronounced yet varied disruptions that were caused to the
samples imprinted this important code issue in the students’ minds more permanently than memorizing the equivalent facts in a specifications chart. All stress simulations were accompanied by detailed post-stress analyses, which were presented along with the experiment’s methodology to the class for group experience and discussion.

Use:

“A material without context is no more than a boring toy.” (Van Hinte 2003) As a practical matter, different textiles are made and commonly used for specific interior conditions. In this stage of the class, the basics of the commonly encountered application of upholstery are learned. By this point, the students have attained knowledge of what types and weights of textiles are best suited to this performance. They upholstered various objects, hard and soft, angular and rounded. They explored varieties of padding, workability of different textiles, and how methods of finishing affected the edges and lines of a piece. The aesthetics of the crafted conditions were compared and evaluated as a group.

As a consolidation of their class experience, each student was required to coordinate and assemble a large and varied array of textiles into a compositional presentation from which new qualities of contrast and harmony arose. (figure 4) Accompanying this board
was a detailed legend of materiality, fabrication, and use for each sample. The goal was to provide an encapsulated physical resource readily available for use in future design studios. Because the resource was created by the student, a proprietary aura may develop, and the importance of exhaustive reference information established.
This democratic, less hierarchical approach to making, testing, and use allows students to develop an appreciation for the tactile and visual properties of textiles, and an understanding of how these affect the creation, selection, coordination, and maintenance of interior finishes and materials. Knowledge can be more deeply appreciated and retained because it was gained by the students’ active participation in its attainment. This direct connection continues to enhance their confidence when selecting and using textiles, and their willingness to rethink and customize textiles in a studio setting. This makes them a better designer, not simply a more knowledgeable one.
Reference List

(Chicago Manual of Style)


Interior Décor, Inc. Popular Textile Fibres and Their Properties.


Purpose

In 1977, The National Trust for Historic Preservation established the Main Street Program to revitalize historic downtowns and central business districts across the nation. Today, 1200 communities across 40 states participate in Main Street programs (About the, 2008). Yet an observation of Main Street communities nationwide suggests that to date, most of the efforts in the design area have focused on the exterior or façade of the building. There is a dearth of information on the sensitive treatment of historic interiors, and a sense of place related to interior spaces is being lost. The purpose of this project was to determine the types of information needed to assist Main Street managers and downtown property owners in the revitalization of interior spaces in Main Street communities and to develop a format for the delivery of this information.

Process

Although design is highlighted as one of the foci in the National Main Street Center’s four-point approach (The four points, 2008), 77% of the Main Street managers surveyed (N=441) indicated that they needed moderate to extensive training in the design area to work more effectively with their constituents. Further, 54% of the managers indicated that they were either unqualified or only moderately qualified to identify the character-defining elements of the building’s interior that are vital for tax-credit purposes. This does not bode well for our historic structures since National Register historian Patrick Andrus has suggested: “Any alteration to an interior should be undertaken only after
the building has been thoroughly evaluated and the contributions of the interior to the building’s historic significance fully understood” (Andrus, 1988, p. 1-2). Thus, the need for an increased level of design information to promote the sensitive revitalization of downtown interior spaces led to the development of this project. Specifically, design guidelines are being written for the adaptive reuse of interior spaces for contemporary applications, addressing such issues as life safety, universal design, and successful integration of new technology into old spaces. Seven buildings were documented as design exemplars, and students are creating design prototypes including retail, office, residential, government, and cultural uses, leading to web-based publication of the information. The project has become interdisciplinary and has fostered active involvement from undergraduate and graduate-level interior design students.

Importance of Topic and Design Relevance

With current emphasis on sustainability and an increasing number of buildings sitting empty in our nation’s downtowns, opportunities exist for students to engage with communities to explore ways to revitalize their deteriorating urban cores. Specifically, this project has been important in introducing students to historic preservation theory and practice as well as basic research skills. Student sensitivity has increased in designing interior spaces for contemporary use in older buildings while preserving the character-defining elements of the space. Additional outcomes have been an increased discussion of sustainability issues and application of theory. Design guidelines and exemplars for the revitalization of interior spaces will be available to Main Street managers and property owners nationwide through web-based publication.

Revitalization of these downtown interior spaces will lead to increased economic
development, help maintain a sense of place within the community, and enhance quality of life for Main Street property owners and users nationwide.

References


Main Street by Design
Allison Carll White, Ph. D. and Terry D. Rothgeb
University of Kentucky

Purpose

In 1977, The National Trust for Historic Preservation established the Main Street Program to revitalize historic downtowns and central business districts across the nation. “The underlying premise of the Main Street approach is to encourage economic development within the context of historic preservation in ways appropriate to today’s marketplace” (What is, 2008, n.p.). Not only does Main Street stimulate the revitalization of downtown buildings for retail operations and other types of business endeavors, but the program also promotes downtown living with upper-level housing. Today, 1200 communities across 40 states participate in Main Street programs (About the, 2008). Yet an observation of Main Street communities nationwide suggests that to date, most of the efforts in the design area have focused on the façade of the building. There is a dearth of information on the sensitive treatment of historic interiors, and a sense of place related to interior spaces is being lost. The purpose of this project was to determine the types of information needed to assist Main Street managers and downtown property owners in the revitalization of interior spaces in Main Street communities and to develop a format for information delivery.

Context

The Main Street philosophy centers on a four-point approach and is recognized as critical to successful Main Street programs (The four points, 2008). Namely, the approach consists of (1) organization of partnerships between vested public and
private sector constituencies, (2) economic restructuring of resources that support revitalization, (3) promotion of successful Main Street ventures, and (4) design of historically significant buildings. The overarching goals of this project correlate closely with Main Street’s agenda in that the focus is on stimulating economic development, strengthening the sense of community, and enhancing quality of life for people both in the state and nation through the revitalization of downtown interior spaces.

Review of Literature

In a 2001 study, Robertson (2004) examined how Main Street communities actually apply the four-point approach. He found that promotion received the largest percentage of the Main Street effort (37%), while approximately 22 percent of the managers’ time was devoted to the design focus. Robertson’s findings confirmed that “design plays a critical role in determining the strength of a downtown’s sense of place” (p. 65) and suggest that the three greatest obstacles to achieving successful design outcomes are uncooperative property owners, uncooperative building owners, and out-of-town owners. He concludes that “educating the community of the value of good design is an important component of a successful Main Street program” (p. 66).

This study examined the need to expand the design directive of Main Street’s four-point approach to include guidelines specific to the interiors of historic properties. The Secretary of the Interior has fairly detailed standards for rehabilitation (Morton, Hume, Weeks, & Jandl, 1992). These standards and guidelines emphasize the exterior architecture and surrounding streetscapes of historic commercial properties. In 1988 and 1993, the National Park Service held conferences focused on the interiors of historic buildings with the intent of developing a holistic approach to preserving historic
interiors including interior architecture, finishes, furnishings, and other interior components (Auer, Fisher, Jester, & Kaplan, 1993; Fisher, Auer, & Grimmer, 1988). This initial effort established a baseline that has not been significantly expanded since 1993 and the holistic approach has yet to be realized. Yet according to Patrick Andrus, historian for the National Register of Historic Places, “Any alteration to an interior should be undertaken only after the building has been thoroughly evaluated and the contributions of the interior to the building’s historic significance fully understood” (Andrus, 1988, p. 1-2). A conversation with the state’s Main Street Director further confirmed the researchers’ belief that that the design emphasis appears to be the least understood by the managers and most questioned by those individuals interested in acquiring historic properties. Thus, it appeared that Main Street managers as well as potential property owners needed information on how to capitalize on interesting historic attributes of interior spaces while optimizing the space for contemporary use.

Process

To determine if indeed there was a lack of knowledge on how to implement Main Street’s design focus, a total of 1,049 surveys were mailed to Main Street managers nationwide, with 441 returned surveys eligible for analysis (44% response rate). Although design is highlighted as one of the foci in the National Main Street Center’s four-point approach (The four points, 2008), 77% of the Main Street respondents indicated that they needed moderate to extensive training in the design area to work more effectively with their constituents. Further, 54% of the managers indicated that they were either unqualified or only moderately qualified to identify the character-defining elements of the building’s interior that are vital for tax-credit purposes. The
importance of design to Main Street programs in the future was ranked at the highest level by 78% of those surveyed. A second, smaller survey of Main Street downtown property owners (N=20) yielded almost identical results. On the positive side, 85% (N=17) of the property owners indicated that they had done “quite a bit” to “extensive” research on their property’s history, and they recognized the significance of interior elements such as ceiling details, historic woodwork and lighting, wall finishes, and room arrangement. Areas of greatest concern for the property owners in sensitively renovating their interiors included making their properties ADA accessible, integrating technology into historic buildings, selecting appropriate finish materials, and complying with building codes. The respondents to both surveys agreed that web sites and training sessions would be the most useful formats for providing information. Thus, the need for an increased level of design information to promote the sensitive revitalization of downtown interior spaces led to the development of this project.

Specifically, design guidelines are being written for the adaptive reuse of interior spaces for contemporary applications, addressing such issues as life safety, universal design, and successful integration of new technology into old spaces. These guidelines, encompassing both a visual and written format, are being published on a website designed to support the project. In addition, data focusing on a range of building types found in downtown areas was gathered using methods such as measured drawings, photographic documentation of interior spaces, written descriptions of building conditions, and archival research. Seven buildings have been documented as design exemplars, with previous uses ranging from an auto dealership and garage to a theater and a warehouse. In the studio, students are creating design prototypes including retail,
office, residential, government, and cultural uses, leading to web-based publication of
the information. Emphasis is given to creating interior spaces that support sustainable
design concepts, thus preserving and protecting the state’s natural resources. The
project has become interdisciplinary and has fostered active involvement from
undergraduate and graduate-level interior design students.

Importance of Topic and Design Relevance

With current emphasis on sustainability and an increasing number of buildings
sitting empty in our nation’s downtowns, opportunities exist for students to engage with
communities to explore ways to revitalize their deteriorating urban cores. Specifically,
this project has introduced students to historic preservation theory and practice as well
as basic research skills. Student sensitivity has increased in designing interior spaces
for contemporary use in older buildings while preserving the character-defining
elements of the space. Additional outcomes have been an increased discussion of
sustainability issues and application of theory. Design guidelines and exemplars for the
revitalization of interior spaces will be available to Main Street managers and property
owners nationwide through web-based publication. Revitalization of these downtown
interior spaces will lead to increased economic development, help maintain a sense of
place within the community, and enhance quality of life for Main Street property owners
and users nationwide.
Reference List

(APA Publication Style)


Abstract

Issue

Among the deadliest fires in United States history, most have occurred in eating or drinking establishments (nightclubs), theaters, elementary schools, facilities for older adults, prisons or jails, and hotels (National Fire Protection Association [NFPA], 2002). The NFPA (2006) identifies several fire investigation reports dating back to 1903 and as recent as 2004. Occupant behavior within these establishments is influenced by the building layout and the threat to life safety such as fire and/or panic. Several factors influence the safe exit of occupants and depend on the group size, occupant profile, and time required to exit (Purser & Bensilum, 2001). A review of this literature suggests many of these factors contribute to deaths time and time again.

Context

Professional standards set forth by the Council for Interior Design Accreditation (CIDA) require students to “apply the laws, codes, regulations, standards, and practices that protect the health, safety, and welfare of the public” (CIDA, 2006, p.16). A research project was developed for interior design students in a program accredited by CIDA to ensure that student projects “demonstrate understanding of the impact of fire and life safety principles on space planning…” (CIDA, 2006, p.16).
Students learned about standards and regulations using the reference textbooks International Building Code (IBC, 2006) and The Codes Guidebook for Interiors (Harmon and Kennon, 2005) in a nine-week course offered for the first time in the 2006 fall semester. The research project was assigned during the first week of the course, with the intent for the class to identify interior design decisions that directly influence human behavior and life safety. Each student was required to research an interior-related tragic event in history that prompted a modification in building code requirements, adoption, and/or enforcement. Minimum requirements for the paper and presentation included:

- identification of the event and location,
- identification of the occupancy classification,
- building codes adopted and established (if any) at the time of the event,
- description of the event (i.e. fire, panic, casualties, etc.),
- identification of contributing interior element(s) to the event (i.e. adoption of codes, means of egress, materials used, citations not enforced, etc.),
- litigation (i.e. who was determined at fault, consequences, etc.), and
- subsequent modification of building codes.

After identification of these elements, students were required to locate current code regulations in the IBC (2006) for future reference and to become familiar with its sections. Information identified and discussed was provided in a written paper and verbal presentation using Microsoft PowerPoint. A grading rubric was used to assess student learning outcomes.
Summary
Identification of insufficient interior elements that contributed to past tragic events will be presented. Assessment outcomes proved that the project brought focus to the relevance of codes, standards, and regulations and helped students to reference current code requirements. Whether preparing to enter the design field or currently a practicing professional, learning from past tragedies will help designers make safer decisions that directly influence human behavior and life safety.

References


Among the deadliest fires in United States history, most have occurred in eating or drinking establishments (nightclubs), theaters, elementary schools, facilities for older adults, prisons or jails, and hotels (National Fire Protection Association [NFPA], 2002). The NFPA (2006) identifies several fire investigation reports dating back to 1903 and as recent as 2004. Occupant behavior within these establishments is influenced by the building layout and the threat to life safety such as fire and/or panic. Several factors influence the safe exit of occupants and depend on the group size, occupant profile, and time required to exit (Purser & Bensilum, 2001). A review of this literature suggests many of these factors contribute to deaths time and time again.

Professional standards set forth by the Council for Interior Design Accreditation (CIDA) require students to “apply the laws, codes, regulations, standards, and practices that protect the health, safety, and welfare of the public” (CIDA, 2006, p.16). The purpose of this study was to develop a research project for interior design students in a program accredited by CIDA to ensure that student projects “demonstrate understanding of the impact of fire and life safety principles on space planning…” (CIDA, 2006, p.16). The project was to serve as a basis for understanding how codes
were developed, why they exist today, and how the codes are used in the design process.

Process

Students learned about standards and regulations using the reference textbooks International Building Code (IBC, 2006) and The Codes Guidebook for Interiors (Harmon and Kennon, 2005) in a nine-week course offered for the first time in the 2006 fall semester. The research project was assigned during the first week of the course, with the intent for the class to identify interior design decisions that directly influence human behavior and life safety. Each student was required to research an interior-related tragic event in history that prompted a modification in building code requirements, adoption, and/or enforcement. Minimum requirements for the paper and presentation included:

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- litigation (i.e. who was determined at fault, consequences, etc.), and
- subsequent modification of building codes.

After identification of these elements, students were required to locate current code regulations in the IBC (2006) for future reference and to become familiar with its
sections. Information identified and discussed was provided in a written paper and verbal presentation using Microsoft PowerPoint.

A table was compiled based on the results of the student’s findings, outlining the contributing interior elements for each event. Twelve contributing interior elements were categorized into five code concepts as it corresponds with organization of chapters in *The Codes Guidebook for Interiors* (Harmon and Kennon, 2005). These five categories included construction type, means of egress, fire-resistant materials and assemblies, fire protection systems, and finishes (Table 1).

Student findings were entered into the table and totals were calculated to determine the sample of occupancy classifications, casualties, events that reported contributing code concepts and each contributing interior element, and what percentage of the events reported design-related contributors versus operational. The term *operational* was used to define elements that were controlled by the occupants or employees of the facilities. For example, obstructed exits due to items/furnishings placed in front of exit doors, chain locked exits doors to prevent people from entering building, or protective door openings left open in a fire allowing fire and smoke to spread throughout the building.

Results of the student findings were shown graphically and discussed in class. Student learning outcomes were evaluated based on a comparative assessment of senior comprehensive projects completed by students the years previous to the research project (2006) and comprehensive projects completed after the research project was implemented (2007). The assessment was completed by the student’s faculty advisor at the completion of the comprehensive project and evaluated on all
aspects of the design process. The evaluation was rated using the following scale: very high (5), high (4), average (3), low (2), and unacceptable (1). Assessment of building and life safety code application was used for this study.

Results

Table 1 illustrates the completed sample of 18 tragic events studied and contributing code concepts, ranging in years from 1903 to 2003. A total of 95 contributing interior elements were reported throughout the events. A mark was placed in a code concept category if at least one interior element was reported as a contributing factor of the event. Each code concept category was then tabulated. The average number of contributing code concepts reported per event was 3.28 (N = 5). The average number of contributing interior elements reported per event was 5.28 (N = 12).

Table 2 lists all occupancy classifications, uses, and casualties of the sample. Nightclubs and hotels were among the highest represented. Theaters and nightclubs were calculated as the highest occupancies reporting casualties.

Of the five contributing code concept categories, fire protection systems were reported most frequently among the sample at 15 out of 18 or 83.33% (Fig. 1). 38.89% of the events studied reported contributing interior elements as design-related, while 61.11% were reported as a combination of operational and design (Fig. 2).

Table 3 lists the 12 contributing interior elements reported among the 18 tragic events. Lack of extinguishing system and flammable finish materials were calculated as the most frequently reported contributing interior elements of the tragic event sample.
Means of egress and fire-resistant materials and assemblies were the only code concepts reporting contributing interior elements as operational.

Table 1. Fire disaster data.

<table>
<thead>
<tr>
<th>Building</th>
<th>Year of Event</th>
<th>Location</th>
<th>Occupancy Class. / Use</th>
<th>Deaths</th>
<th>Code Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iroquois Theater</td>
<td>1903</td>
<td>Chicago, IL</td>
<td>Assembly (A-1) / Theater</td>
<td>602</td>
<td>X</td>
</tr>
<tr>
<td>Lakeview Grammar School</td>
<td>1908</td>
<td>Collinwood, OH</td>
<td>Education / Elementary</td>
<td>175</td>
<td>X X</td>
</tr>
<tr>
<td>Rhodes Opera House</td>
<td>1908</td>
<td>Boyertown, PA</td>
<td>Assembly (A-1) / Theater</td>
<td>170</td>
<td>X X X</td>
</tr>
<tr>
<td>Triangle Shirtwaist</td>
<td>1911</td>
<td>Manhattan, NY</td>
<td>Factory Industrial (F-1) / Clothing</td>
<td>146</td>
<td>X X X</td>
</tr>
<tr>
<td>Ohio State Penitentiary</td>
<td>1930</td>
<td>Columbus, OH</td>
<td>Institutional (I-3) / Prison</td>
<td>320</td>
<td>X X X</td>
</tr>
<tr>
<td>Rhythm Night Club</td>
<td>1940</td>
<td>Nachez, MS</td>
<td>Assembly (A-2) / Nightclub</td>
<td>207</td>
<td>X X X</td>
</tr>
<tr>
<td>Cocoanut Grove Nightclub</td>
<td>1942</td>
<td>Boston, MA</td>
<td>Assembly (A-2) / Nightclub</td>
<td>492</td>
<td>X X X</td>
</tr>
<tr>
<td>LaSalle Hotel</td>
<td>1946</td>
<td>Chicago, IL</td>
<td>Residential (R-1) / Hotel</td>
<td>61</td>
<td>X</td>
</tr>
<tr>
<td>Hotel Winneff</td>
<td>1946</td>
<td>Atlanta, GA</td>
<td>Residential (R-1) / Hotel</td>
<td>119</td>
<td>X X X X X X</td>
</tr>
<tr>
<td>Our Lady of Angels School</td>
<td>1958</td>
<td>Chicago, IL</td>
<td>Education / Elementary</td>
<td>93</td>
<td>X X X X X</td>
</tr>
<tr>
<td>Beverley Hills Supper Club</td>
<td>1977</td>
<td>Southgate, KY</td>
<td>Assembly (A-2) / Nightclub</td>
<td>165</td>
<td>X X X</td>
</tr>
<tr>
<td>MGM Grand Hotel</td>
<td>1980</td>
<td>Las Vegas, NV</td>
<td>Residential (R-1) / Hotel</td>
<td>61</td>
<td>X X X X X</td>
</tr>
<tr>
<td>Dupont Plaza Hotel &amp; Casino</td>
<td>1986</td>
<td>San Juan, Puerto Rico</td>
<td>Residential (R-1) &amp; Assembly (A-2) / Hotel &amp; Casino</td>
<td>97</td>
<td>X X X X X</td>
</tr>
<tr>
<td>Happy Land Social Club</td>
<td>1990</td>
<td>New York, NY</td>
<td>Assembly (A-2) / Nightclub</td>
<td>87</td>
<td>X X X</td>
</tr>
<tr>
<td>Food Chicken Processing Plant</td>
<td>1991</td>
<td>Hamlet, NC</td>
<td>Factory Industrial (F-1) / Food Processing</td>
<td>25</td>
<td>X X X X X</td>
</tr>
<tr>
<td>Fraternity House</td>
<td>1996</td>
<td>Chapel Hill, NC</td>
<td>Residential (R-2) / Dormitory</td>
<td>5</td>
<td>X X X X X</td>
</tr>
<tr>
<td>Apartment</td>
<td>1997</td>
<td>Bremerton, WA</td>
<td>Residential (R-2) / Apartment</td>
<td>4</td>
<td>X X X</td>
</tr>
</tbody>
</table>
Table 2. Occupancy classifications, uses, and casualties (N = 18)

<table>
<thead>
<tr>
<th>Occupancy Classifications &amp; Uses</th>
<th>Occupancy Classifications</th>
<th>Casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>Percentage</td>
</tr>
<tr>
<td>Assembly / A-1 (Theater)</td>
<td>2</td>
<td>11.11%</td>
</tr>
<tr>
<td>Assembly / A-2 (Nightclub)</td>
<td>4</td>
<td>22.22%</td>
</tr>
<tr>
<td>Education (Elementary School)</td>
<td>2</td>
<td>11.11%</td>
</tr>
<tr>
<td>Factory Industrial / F-1</td>
<td>2</td>
<td>11.11%</td>
</tr>
<tr>
<td>Institutional / I-2 (Nursing Home)</td>
<td>1</td>
<td>5.56%</td>
</tr>
<tr>
<td>Institutional / I-3 (Prison)</td>
<td>1</td>
<td>5.56%</td>
</tr>
<tr>
<td>Residential / R-1 (Hotel)</td>
<td>4</td>
<td>22.22%</td>
</tr>
<tr>
<td>Residential / R-2 (Apartment / Fraternity)</td>
<td>2</td>
<td>11.11%</td>
</tr>
</tbody>
</table>

| No. | 18 | Total 2,845 |

Figure 1. Contributing code concepts. (N = 18)
Figure 2. Comparison of events reported contributing interior elements as design-related and/or operational. (N = 18)

<table>
<thead>
<tr>
<th>Code concept</th>
<th>Contributing interior element</th>
<th>No. of events reporting element</th>
<th>Percentage of events reporting element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Protection Systems</td>
<td>Lack of extinguishing system</td>
<td>14</td>
<td>77.78%</td>
</tr>
<tr>
<td>Finishes</td>
<td>Flammable finish materials / production of toxic smoke</td>
<td>14</td>
<td>77.78%</td>
</tr>
<tr>
<td>Means of Egress</td>
<td>Unmarked exit(s) / no evacuation plan</td>
<td>11</td>
<td>61.11%</td>
</tr>
<tr>
<td>Fire Protection Systems</td>
<td>Lack of detection systems / alarm systems</td>
<td>10</td>
<td>55.56%</td>
</tr>
<tr>
<td>Means of Egress</td>
<td>(Operational) Obstructed exit(s) – locked or blocked</td>
<td>9</td>
<td>50.00%</td>
</tr>
<tr>
<td>Means of Egress</td>
<td>Capacity in relation to exit width, number of exits, arrangement of exits, and travel distance</td>
<td>9</td>
<td>50.00%</td>
</tr>
<tr>
<td>Fire-Resistant Materials &amp; Assemblies</td>
<td>Compartmentation: Lack of Vertical Shaft Enclosure- stair, elevators, dumb waiters, and mechanical chases</td>
<td>7</td>
<td>38.89%</td>
</tr>
<tr>
<td>Fire-Resistant Materials &amp; Assemblies</td>
<td>Compartmentation: Unprotected corridors and separation of occupancies (horizontal exits and corridors)</td>
<td>6</td>
<td>33.33%</td>
</tr>
<tr>
<td>Construction Type</td>
<td>Combustible Materials: Wood Construction &amp; Flammable Insulation (flammable construction materials)</td>
<td>6</td>
<td>33.33%</td>
</tr>
<tr>
<td>Means of Egress</td>
<td>Inward swinging door</td>
<td>5</td>
<td>27.78%</td>
</tr>
<tr>
<td>Means of Egress</td>
<td>Exit access narrowed toward exits/ exit discharge</td>
<td>2</td>
<td>11.11%</td>
</tr>
<tr>
<td>Fire-Resistant Materials &amp; Assemblies</td>
<td>(Operational) Opening protective left open by occupants</td>
<td>2</td>
<td>11.11%</td>
</tr>
</tbody>
</table>
The comparative assessment consisted of mean score values of interior design graduates from 2002 through 2007 (Table 4). Interior design graduates from 2006 and prior had not taken the new course or the research project, while 2007 interior design graduates had taken the new course and the research project. The mean score for 2006 graduates averaged 4.08 and 2007 graduates averaged 3.36.

Table 4. Senior interior design assessment of building and life safety code application

<table>
<thead>
<tr>
<th></th>
<th>Very High 5</th>
<th>High 4</th>
<th>Average 3</th>
<th>Low 2</th>
<th>Unacceptable 1</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002 (N = 14)</td>
<td>.36</td>
<td>.43</td>
<td>.21</td>
<td>--</td>
<td>--</td>
<td>4.14</td>
</tr>
<tr>
<td>2003 (N = 20)</td>
<td>.35</td>
<td>.55</td>
<td>.10</td>
<td>--</td>
<td>--</td>
<td>4.25</td>
</tr>
<tr>
<td>2004 (N = 18)</td>
<td>.28</td>
<td>.50</td>
<td>.22</td>
<td>--</td>
<td>--</td>
<td>4.06</td>
</tr>
<tr>
<td>2005 (N = 17)</td>
<td>.35</td>
<td>.42</td>
<td>.24</td>
<td>--</td>
<td>--</td>
<td>4.12</td>
</tr>
<tr>
<td>2006 (N = 12)</td>
<td>.33</td>
<td>.42</td>
<td>.25</td>
<td>--</td>
<td>--</td>
<td>4.08</td>
</tr>
<tr>
<td>2007 (N = 28)</td>
<td>.07</td>
<td>.57</td>
<td>.04</td>
<td>.29</td>
<td>.04</td>
<td>3.36</td>
</tr>
</tbody>
</table>

Conclusion

Results from the student findings indicated the importance of understanding and applying codes, standards, and regulations to the design process. The significance of the relationship between human behavior and life safety was acknowledged and helped the students to understand the relevance of providing the following factors to a design solution:

- fire extinguishing systems,
- fire-resistant finishes and materials,
- adequate signage and evacuation plans,
• clear, consistent, and unobstructed means of egress,
• fire-resistant compartmentation, and
• educating clients and occupants on the value of life safety.

While the comparative assessment of student learning indicated a decrease in the mean score, a significant portion (68%) of the 2007 graduates scored average and above. Limitations of this assessment include higher standards set by CIDA requirements, higher expectations by instructors, and prior to 2006 building codes and life safety issues were integrated into studio and lecture courses instead of being offered as a separate course.

To further the investigation, a more in-depth tool should be developed to compare senior comprehensive projects completed prior to the research project and after the research project was implemented into the course. This will ensure a more accurate comparative assessment. The project should be continued over the following years to add to the pool for a more representative sample.

In conclusion, the research project brought focus to the relevance of codes, standards, and regulations and helped students to reference current code requirements. Whether preparing to enter the design field or currently a practicing professional, learning from past tragedies will help designers make safer decisions that directly influence human behavior and life safety.


Creating Mature Thinkers: Inquiry on the Intellectual Development of Design Students

Candy Carmel-Gilfilen and Margaret Portillo, PhD

University of Florida

Abstract

Purpose

Design students often display frustration in new learning situations and appear to compartmentalize disciplinary knowledge (Carmel-Gilfilen, 2005). Yet, critical thinking skills appear increasingly essential to designing for the economic, sustainable, and social challenges of the future (http://www.accredit-id.org/). This study examines interior design students using the Perry scheme of cognitive development (Perry, 1968). The Perry scheme illustrates how thinking progresses from black and white absolutes to a more contextual understanding of knowledge. Perry has been widely used to understand student development in professional fields such as engineering, medicine, and education.

Method

The sample of thirty two sophomore and junior interior design students were administered two instruments for data collection, the Measure of Intellectual Development (MID) (Widick & Knefelkamp, 1974) and the Measure of Designing (MOD) (Portillo, 1987). Both measures were scored by trained raters, reaching acceptable levels of inter-rater reliability. The study examined:

1.) What positions of thought development characterize lower and upper division interior design students?
2.) Do developmental differences exist between design thinking (MOD) and global thinking (MID)?

3.) What is the relationship, if any, between thought development (MOD and MID) and student performance (course grade and class standing)?

Findings

The results of the study showed clear progression of thought development from more dualistic, black and white thinking to an acceptance of multiple ways of understanding knowledge. As predicted, a positive but weak relationship \((r = .38)\) emerged between design-specific thinking (MID) and global thought development (MOD) indicating, while related, these measures tap into different types of thinking. The MOD demonstrated a significant finding to class standing \((p = .00)\) and grade \((p = .03)\); similarly the MID significantly related to class standing \((p = .04)\) and course grade \((p = .00)\) (Refer to Appendix A). This illustrates that those with more advanced thinking generally had higher grades and were further along in the program. Similar to Wise, Lee, Litzinger, Marra, and Palmer (2006), findings showed that even more advanced thinkers displayed some misconceptions about the discipline, including the design process. To further represent these learning stages, each of the three Perry levels (dualism, transition, and multiplicity) used in the study will be illustrated with student reflections in their own words and examples of their studio work (see Appendix B & C).

Conclusion

When cognizant of the Perry scheme and related research, educators can tailor student learning experiences to encourage the highest levels of critical thinking in their students. Recommendations for promoting thought development will conclude the presentation.
References


Purpose

Future Vision, sponsored by the Council for Interior Design Accreditation (CIDA), prioritized critical thinking as an essential learning outcome for future interior design graduates (http://www.accredit-id.org/). One avenue of studying critical thinking is through the Perry scheme that identifies levels of thought development. The Perry scheme gives insight into the transition from fundamental to more discipline specific knowledge. In interior design a critical shift occurs between basic and advanced design problem solving. Negotiating this transition poses a challenge for design students and educators alike. Students often struggle to understand the relationship between the abstract concepts previously learned and their application to a ‘real’ setting with constraints of the user, space, and clients, while educators struggle to underscore connections between basic design knowledge and application. The failure to develop critical thinking skills leads to an overemphasis of two-dimensional designing and a reliance on design precedent that diminishes creativity in the process and in finalized design projects (Carmel-Gilfilen, 2005).

Review of Literature

Based on a series of open-ended interviews conducted with Harvard undergraduates over a ten year period, William Perry developed a comprehensive model of epistemic
cognitive development. This model, referred to as the Perry Scheme, proposes that one’s basic assumptions about learning and knowledge evolve as a function of a developmental process. “The Perry model reflects the critical intertwining of cognitive and affective perspectives at the heart of a college education--a difficult journey toward more complex forms of thought about the world, one’s discipline/area of study, and one’s self” (http://www.perrynetwork.org). This work emphasizes that the most influential learning involves significant developmental changes in the way learners approach their learning and their subject matter (http://www.perrynetwork.org).

The Perry model consists of four broadly defined developmental stages ranging from simplistic to complex. This developmental trajectory illustrates how thinking progresses from black and white absolutes to a more contextual understanding of knowledge (Perry, 1968). As students’ progress along the continuum they initially see knowledge as absolute, right versus wrong, good versus bad. Within this stage the professor is an authority figure and the dispenser of knowledge (dualism). In later stages the student’s view broadens where truth is perceived as personal and knowledge is uncertain and subject to interpretation. The student perceives the teacher may not have all of the answers, but all opinions are valid (multiplicity). As students continue knowledge is seen as relative or contextually bound, values are disconnected from absolute truth. Students shift responsibility for learning to themselves (contextual relativism) (Kinard, 1993). Finally, students experience an evolution in thinking and establish their own identity by understanding knowledge is constructed not given. Students seek to adopt
their own personal world view as they make choices and commitments (commitment in relativism) (Nappo, 1998).

To understand student development, researchers have applied the framework to professional fields such as engineering, medicine, and education (Wise et al, 2004; Thomas, 1990; Ciabocchi, 2006; Reid, 1986). Yet, little research exists regarding the specific intellectual levels of students in allied art and design fields. The few studies that have been conducted suggest interesting relationships between thought development, learning styles and creativity. In previous work, Durling, Cross, and Johnson explored thinking and learning styles of art-based design students using a personality survey. Findings indicated designer’s strategies for problem-solving differed from many other professionals. A study on developmental positions of thinking in beginning design students found a significant relationship between more advanced cognitive development and past creative experience (Portillo, 1987; Portillo & Dohr, 1989). Additionally, a pilot study by Carmel-Gilfilen (2005) found the Perry framework useful for understanding paths of student development in the transition from learning basic design foundations to interior design problem solving.

Framework

The purpose of this study is to test the Perry scheme in interior design and to focus in particular on student styles of thinking during the transition between lower and upper division design studios. Recognizing the considerable role of critical thinking and intellectual development in design, this study examines the following research questions:
1.) What positions of thought development characterize lower and upper division
interior design students?

2.) Do developmental differences exist between design thinking (MOD) and global
thinking (MID)?

3.) What is the relationship, if any, between thought development (MOD and MID)
and student performance (course grade and class standing)?

Methodology

During the spring of 2007, thirty two sophomore and junior interior design students were
administered two instruments for data collection, the Measure of Intellectual
Development (MID) (Widick & Knefelkamp, 1974) and the Measure of Designing (MOD)
(Portillo, 1987). The MID assesses a student’s global epistemology based on the
defined stages of the Perry scheme and contains three major essay stems that
courage the student to reflect on previous learning experiences. In coordination with
the Center for Intellectual Development, the essay protocol was adapted to tap into
interior design thinking. Students were given the following prompt to respond to:

Look back on your experiences in your studio courses and reflect on your
learning in studio as well as discoveries about yourself as a learner. Please be specific and concrete; provide as much detail about what stood out for you as you think is necessary to offer a clear idea of your learning experience. For example, you might want to discuss any or all of the following topics: the content/ subject matter, the kinds of teachers and teaching you experienced, the classroom atmosphere, your role as a student, the evaluation procedures that were used. What elements made a difference in your learning, and why?

The adapted instrument also contained three additional questions aimed at
understanding the transition between design foundation and discipline specific courses.
These questions asked students to consider both challenges and coping strategies in
the transition period. Responses to the MID were scored by two trained raters from the
Center for Intellectual Development who achieved an acceptable level of inter-rater reliability.

While the MID measures global thought development, the MOD assesses design-specific stages of thinking. The MOD was administered via nine essay questions on design processes and assumptions, design production and project perception, and design evaluation. The MOD protocols were scored by two trained raters who achieved an inter-rater reliability of .81.

Findings
The results of the study showed clear progression of thought development from more dualistic, black and white thinking to an acceptance of multiple ways of understanding knowledge. As predicted, a positive but weak relationship ($r=.38$) emerged between design-specific (MID) and global thought development (MOD) indicating, while related, these measures tap into different ways of understanding knowledge. The MOD demonstrated a significant finding to class standing ($p=.00$) and grade ($p=.03$); similarly the MID significantly related to class standing ($p=.04$) and course grade ($p=.00$). This indicates that those with more advanced thinking generally had higher grades and were further along in the program. The following excerpt from the MID represents an example of an upper division student in the Perry stage of multiplicity:

“Unlike my previous educational experiences (high school), there was usually a right way to do things and my teachers could normally tell me what I should do, and how I should do it. This learning experience proved to be very different from that of my studio courses. I later learned that our studio projects have two equal lessons to learn. One is that how you create your conclusions is equally important as the actual conclusion. The
second is that although there are certain aspects of design that are considered right or wrong, a lot of design is subjective.”

The findings of the study support distinct levels of thought development in interior design; however even students with more mature thinking still appear to display some misconceptions about the discipline and the design process. Advanced students appeared to compartmentalize their learning experiences rather than recognize the continuum of knowledge within design education. In this quotation, we see a failure to recognize connections between allied learning experiences:

“The main difference between the architectural and interior design studios are the conceptual ideas and how we follow through with these concepts. In architectural studio, our concepts were more about geometry and abstract ideas. In interior studio, the concepts were more focused on human dynamics and is validated by its effectiveness on the programming.”

These findings support previous longitudinal research in engineering that found graduating seniors still exhibited some mistaken beliefs in regard to the field and had not reached the highest levels of thought development on the Perry scheme (Wise, Lee, Litzinger, Marra, and Palmer, 2006).

Conclusion

Understanding intellectual development in interior design reveals patterns of student learning that suggest new teaching strategies and methods as well as possible curriculum reforms. When cognizant of the Perry scheme and related findings, educators can tailor learning experiences to encourage the highest levels of critical thinking in their students. Recommendations for supporting student development in interior design will be posed as well as directions for future research.
References
American Psychological Association Manual


Toward a Retail Pattern Language: Bridging Security and Good Design

Candy Carmel-Gilfilen

University of Florida

Abstract

“[A retail space designed like this] is a little more difficult, wide open is bad when it comes to [shoplifting], cause there’s too much visibility. . . you have obstruction after obstruction after obstruction.” Ian, professional shoplifter

Purpose

The retail environment has been identified as one that is subject to a high volume of crime yet has great potential for crime reduction through enhanced design solutions (Carmel-Gilfilen, 2007). Retailers, manufacturers of retail goods, and customers who purchase these goods are potential victims to a variety of crimes including theft, burglary, fraud, counterfeiting, vandalism, violence, and robbery (Press et al, 2001). The purpose of this study is to understand how spatial and design attributes can improve security within a retail environment. This study incorporates the general planning principles identified in the classic, A Pattern Language (Alexander, 1977), to examine retail settings. The development of a retail pattern language will create design and security guidelines that can be identified, enhanced, and transferred to multiple retail contexts.

Methodology

Exploring the considerable role security can have in retail interior environments this study examines the following research questions:
The process first involved securing permission by the retailer at the national, state, and local level. The protocol was also approved by the Internal Review Board. Next, advertisements were placed to attract expert and novice shoplifters who completed an anonymous self report. Twenty-four shoplifters were selected to provide continuous verbal reports by “thinking aloud” about aids and obstacles of the physical environment. Data collection excursions took on average thirty minutes and were completed in one large department store. The research team of two investigators accompanied and recorded participants as they analyzed the environment. The interview transcripts were independently scored by trained raters who achieved acceptable levels inner-rater reliability.

Results
Similar to Carroll & Weaver (1986) findings indicated that shoplifters focused attention on the physical layout of the store, security devices, and people present both employees and other consumers. Findings directly tapping into shoplifter perceptions about physical features including aisle widths, fixture height and design, and lighting will be further explored. The study also found significant differences between expert and novice shoplifters. Three profiles of shoplifters emerged based on low, medium, and high environmental deterrence. Each demonstrated a different thought process and justification for their actions. Research gathered will be illustrated via qualitative
interviews that capture overall perceptions, diagrams and photographs of identified “weak” and “fortified” zones. General store planning recommendations will be illustrated by three-dimensional models.

Conclusion

Creation of a new pattern language can be utilized by disciplines including interior design, architecture, and criminology to improve strategies to deter shoplifters. Future application-oriented research can be done by the development of prototype models focusing on store types, and deterrence strategies at the store, fixture, and product level.

References


Toward a Retail Pattern Language: Bridging Security and Good Design

Candy Carmel-Gilfilen
University of Florida

Narrative

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The retail environment has been identified as one that is subject to a high volume of crime yet has great potential for crime reduction through enhanced design solutions (Carmel-Gilfilen, 2007). Retailers, manufacturers of retail goods, and customers who purchase these goods are potential victims to a variety of crimes including theft, burglary, fraud, counterfeiting, vandalism, violence, and robbery (Press et al, 2001). The purpose of this study is to understand how spatial and design attributes can improve security within a retail environment. This study applies the general planning principles identified in the classic, A Pattern Language (Alexander, 1977), to examine security in retail settings. The development of a retail pattern language will create design and security guidelines that can be identified, enhanced, and transferred to multiple retail contexts.

Review of Literature

Alexander (1977) defines a pattern as, “any general planning principle, which states a clear problem that may occur repeatedly in the environment, states the range of contexts in which this problem will occur, and gives the general features required by all
buildings or plans which will solve this problem." He went on to describe how these patterns are related to one another, function together and to the language as a whole, which creates the pattern language. Alexander, who focused on the design and the construction of buildings and towns, offered a general method which has been used extensively within many disciplines including design, computer science, software engineering, and education. The creation and extension of a retail pattern language will also generate a valid language for measuring and testing shoplifting.

In order to extend this comprehensive research analysis a prototype pattern language of shoplifting need to be identified. A pilot study, utilizing a written survey and phone interview, examined perceptions of crime prevention and design techniques of 20 nationally recognized retail companies. Findings from this study will be used to identify a pattern language of shoplifting which highlights design and crime prevention techniques.

While a fair amount of research exists on shoplifter perceptions (Butler, 1994; Tonglet, 2000), security related products (Hayes, 1993; Hayes & Blackwood, 2006; Welsh & Farrington, 2001), and retail environments (Baker et al, 1992; Gilboa & Rafeli, 2003; Moore & Lochhead, 1998), there has been little if any integration between issues of security and interior design. However, strategic design solutions to combat these issues appear to be a promising deterrent to theft, “Innovative store design can increase convenience and excitement for the customer while simultaneously allowing for more staff efficiency and better product protection . . . effective retail design can both
enhance sales and safeguard against shrinkage” (Moussatche et al, 2004; pg. 5). Little systematic data exist regarding the specific environmental cues potential shoplifters use when making judgments about crime opportunities in a retail setting. A landmark study by Carroll & Weaver (1986) investigated expert and novice shoplifter thought processes using the verbal protocol methodology in real life shopping situations. Findings indicated that shoplifters focused attention on the evidence of security devices, the physical layout of the store, and the number of people present. A limitation of this study was that the environment was assumed to be static quality rather than an attribute that has the ability to be strategically manipulated. The study remains extensively cited in the field (Dabney et al, 2004; Farrington, 1999; Farrington et al, 1993; Hayes, 1999; McGuire, 2000), but its findings need to be revisited in today’s environment to examine the extent to which shoplifters see the store environment as a deterrent and to be extended to propose design solutions to retailer needs.

Framework

The creation of a retail pattern language will bridge the gap between design and criminology studies by advancing hybrid research methods for studying shoplifting and will propose strategies for designing secure retail environments. Exploring the considerable role security can have in retail interior environments this study examines the following research questions:

1. What are the potential deterrents to crime indicated by shoplifters in a physical environment?

2. What relationships exist between the physical design features and the loss prevention techniques?
Methodology

The process first involved securing permission by the retailer at the national, state, and local level. The protocol was also approved by the Internal Review Board. Next, advertisements were placed in a local newspaper recruiting paid volunteers, both nonshoplifters and shoplifters, to participate in a study of shopping. In response to the advertisement, participants provided an anonymous self-report of shoplifting activity by telephone. Twenty-four shoplifters were selected to participate in the study, 12 expert and 12 novice shoplifters. A subject was considered an expert shoplifter if he/she reported having shoplifted either: (a) 25 times or more ever, or (b) 10 times in the past year. Subjects who did not meet these qualifications were novices. Experts reported shoplifting more than 400 times in their lifetime while the median novice had not shoplifted at all.

Participants in the study were asked to provide continuous verbal reports by “thinking aloud” about aids and obstacles of the physical environment. This process tracing technique is designed to elicit verbal report of people’s thinking when actively engaged in assessing information and making decisions. In addition, subjects were randomly selected to form an intention to shoplift, but cautioned not to remove anything without paying for it. Data collection excursions took on average thirty minutes and were completed in one large department store. The research team of two investigators accompanied and recorded participants as they analyzed the environment. The interview transcripts were content coded for key phrases which discuss the environmental techniques as either strategies or deterrents for shoplifting.
Results

The research findings indicated that shoplifters focused attention on the physical layout of the store, security devices, and people present both employees and other consumers. These results supported the classic research by Carroll & Weaver (1986). Further, the current study found that participants often remarked on areas of the store that successfully combined design and security techniques. “[An area] like this you just avoid like the plague. . . on the main circulation path and open. . . with domes [cameras]”. Findings also indicated that shoplifters perceived that physical features including aisle widths, fixture height and design, lighting, and signage would deter stealing. “The first thing I notice when I go in a store is the racks, like how close they are together and does it give somebody the ability to get between racks, like, to get in between two racks, they can not be seen”.

In other cases no matter how successful the design solution or security technique employed the shoplifter still found opportunity. In these instances the shoplifter and nonshoplifter base their decision on the risks involved. Situational factors provide a lens for understanding shoplifting within the physical environment. The theft triangle further elaborates this concept by illustrating the three components that must be in place for a crime to occur: perceived motive/need, perceived access/ability, and low perception of risk (Hayes, 1999). Shoplifters often weigh these three components before making the decision to steal an item. Changes to the environment including limiting access or adding risk factors can deter the shoplifter by removing one of the components of the theft triangle.
The study also found significant differences between expert and novice shoplifters. Three profiles of shoplifters emerged based on low, medium, and high environmental deterrence. The three profiles below illustrate the thought process of each type of shoplifter:

*High environmental deterrence:*
“The way that I look at the store, certainly, [impacts my shoplifting]. I wouldn’t want to do it, like, in the open shoe rack like that. . . I’d be uncomfortable there. Something like this, even, like the intimates area, just because there’s obviously no one there, there’s no counters or anything, [and a] thick series of walls, and fabric [which blocks the view]. . . Theft is not site specific. . . so I could bring any product to this area.”

*Medium environmental deterrence:*
“I’m standing right here, nobody can see me, there’s racks surrounding me at every point, and it would be so easy to snatch anything you wanted and stick it in your purse or down the front of your pants or whatever else.”

*Low environmental deterrence:*
“Cameras would deter me. As I walk into this store and see the black domes I will go to a different store to shoplift. . . not here.”

Each example demonstrates the affect the environment can have on the decision to shoplift. In addition, these types of shoplifters approach the task hand of shoplifting in different ways. In the most extreme cases the environment is tracked and studied through previous visits to understand the techniques in place as well as find ‘weak’ zones. In this quotation, we see an expert shoplifter recognize situational factors as an opportunity:

“The professional definition of luck, in my opinion is when preparation meets opportunity. . . if you just walk in and say I’m going to steal something, chances are you’re gonna get caught. But if you have prepared, you’re minimizing your risk.”

These shoplifters come to the site prepared for the task, use their knowledge of the environment, and wait for the appropriate opportunity to arise.
Conclusion

Creation of a new pattern language can be utilized by disciplines including interior design, architecture, and criminology to improve strategies to deter shoplifters. Future application-oriented research can be done by the development of prototype models focusing on store types, and deterrence strategies at the store, fixture, and product level. Future research efforts that extend to other store typologies will provide further opportunities for comparison and generalization.

References

American Psychological Association Manual


Effectiveness of Online Education versus Classroom Instruction Concerning the Principles of Design in an Introductory Interior Design Course

Julie Charlson, Ph.D.
San Francisco State University

Stephanie Clemons, Ph.D.
Colorado State University

ABSTRACT

Purpose
Online learning provides opportunities for educators to meet university and student education needs. Carnevale (2005) reported that one million students across the United States enrolled in online courses with ten percent at degree-granting institutions. Entire online interior design programs are being developed with movement toward CIDA accreditation (http://www.artinstitutes.edu/pittsburgh). Bender (2002) surveyed interior design faculty and found reluctance and/or disinterest in becoming involved with online practices. Should online education be used to teach interior design? The purpose of this study was to explore the potential of online methods to enhance student learning of design. Findings advance the body of knowledge concerning value, pedagogy, practices, and placement of online curriculum.

To determine if the asynchronous online instruction was effective, the following research questions guided the study:

1. Was there a difference between the two types of instructional methods, traditional or online, in regard to achievement scores for the unit?

2. Was there a difference between traditional and online instruction in regard to student satisfaction ratings?

3. What were the mean satisfaction ratings between the types of learning activities?
Methodology

The quantitative research paradigm was selected with a randomized experimental approach between groups. The class roster provided a sample of 44 students divided equally for the two teaching methods. Clouse (2001) noted that other performance studies varied in validity due to use of non-equivalent convenience samples and lack of similar instructional methods. Both groups were taught the principles of design as a course unit. A parallel pretest-posttest instrument was developed to measure performance. Data was analyzed using $t$-tests on gain scores and ANCOVA on post-test scores. The satisfaction survey contained evaluation questions, written comments, and learning activity ratings. The Mann-Whitney $U$ compared group mean satisfaction ratings.

Results

Statistics showed a greater range in test scores and satisfaction ratings within the online group as seen in Tables 1 and 2. Statistics did not show a significant difference in achievement, but showed a significant difference in satisfaction between groups, similar to a study by Clouse (2001) with business students. A variety of online tools, Figure 1 example, were used to facilitate visual material and cooperative activities. Available options permitted instructors to select learning activities that match their pedagogy. A virtual fieldtrip of the nearby remodeled Governor’s Mansion allowed students to revisit and view the principles of design more closely online. Selections and arrangements for online room designs could easily be altered comparing more options. Student ratings of instructional methods, as contributed to their learning, can be seen in Figure 2. There was greater interest in the text online and less satisfaction with written discussions and teamwork. This disagreed with Matuga (2001) where psychology students online
enjoyed team analysis, but agreed with Kramarae’s study (2001) where women learning online did not want teamwork. A hybrid teaching format might better provide sequenced orientations, technology assistance, and social context for team support. Data showed that interior design fundamentals could be learned online. Further research will help establish best practices to improve student satisfaction with online delivery methods.
References


Table 1

*Performance Descriptive Information by Group*

<table>
<thead>
<tr>
<th>Teaching Method</th>
<th>Mean gainscore</th>
<th>Range of points</th>
<th>Std. deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>10.89</td>
<td>20</td>
<td>6.66</td>
<td>44.34</td>
</tr>
<tr>
<td>Online</td>
<td>7.11</td>
<td>32</td>
<td>8.07</td>
<td>65.05</td>
</tr>
</tbody>
</table>

Note. $N = 18$ in each group
<table>
<thead>
<tr>
<th>Teaching Method</th>
<th>Mean Total</th>
<th>% Possible Points</th>
<th>Point Range</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>114</td>
<td>76%</td>
<td>67</td>
<td>3.8</td>
</tr>
<tr>
<td>Online</td>
<td>100</td>
<td>62%</td>
<td>72</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Note. N = 16 in each group
Maximum satisfaction total for traditional group was 150
Maximum satisfaction total for online group was 160
Residential Design Job

Figure 1. Student view example of online learning activity on the principles of design.

Harmony starts by unifying around a design "concept". For this residence, in France, the couple desired a dramatic dining room reflecting old-world European travels. This was achieved with plum-fauteuil walls & raised ceiling. Modern lines of cherry furniture adds some variety.

Interior design deals more with space and inside architectural features than decorating does. Columns separate areas in this open floorplan and bracketed beams carry through the old-world concept. There is unity in use of curved lines and arched shapes both in the structure & selections. Click on picture for harmony with exterior.

Whitewashed wood cabinets and fireplace across from kitchen unify with light walls to enlarge space. Color tones in painting on range hood and print needle fabric are the same, but appear on a light background. The color, curved door design, & hood lines painting up like raised ceiling sections all are unity. Copper is used for variety in accessories & range hood insert.

Joni Lauer, an interior designer, said the color scheme harmonizing the home began with one print fabric from which to pull other colors.

The pierce directly in front of the fireplace area also serves as a music room. The open plan allows guests to mingle through both, each with a unique variation of accented colors but unified with the color scheme and use of elegant textures. Click on the picture to view the transitional front door. The arched door repeats the window.

Linked views to top center and bottom right photos.
Satisfaction Ratings for Different Learning Activities in each Method

Totaled Ratings for Traditional Learning Activities

- Group colorboard: M=3.80, 10%
- Notebook applications: M=4.19, 10%
- Instructor demonstrations: M=3.75, 9%
- Class discussion: M=3.63, 9%
- Powerpoint visuals: M=4.06, 10%
- Note-taking: M=4.25, 11%
- Handouts: M=4.25, 11%
- Lecture: M=4.19, 10%

Means of Agreement Scores on Each Activity

Percentages for Relative Value of Different Activities

Totaled Ratings for Online Learning Activities

- Group paper on virtual fieldtrip: M=2.69, 9%
- Online room designs & panorama: M=3.50, 12%
- Team discussion in WebCT: M=2.56, 9%
- Photo gallery of campus in WebCT: M=3.63, 12%
- Scanned diagrams: M=3.25, 11%
- Created Web pages of design jobs: M=3.38, 11%
- Glossary terms in WebCT: M=3.63, 12%
- Links to internet sources: M=3.50, 12%
- At home text: M=3.69, 12%

Note. N = 16 surveys returned from both groups.

Satisfaction rating indicated level of agreement with how well each activity contributed to student learning from 1 low to 5 as high.

Figure 2. Comparative learning value for types of activities within each teaching method.
Effectiveness of Online Education versus Classroom Instruction Concerning the Principles of Design in an Introductory Interior Design Course

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San Francisco State University

Stephanie Clemons, Ph.D.
Colorado State University

Narrative

Introduction

With enrollment of a million students in distance education courses (Carnevale, 2005), and limited classroom space on university campuses, departments are exploring online learning to better meet program and student educational needs. Advancements in technology continually impact what and how educators are teaching with faculty encouraged to explore and incorporate more technology into their curriculum.

Using technology in an online format to teach interior design is questioned by interior design educators. Findings from Bender’s study (2002) indicated initial reluctance or disinterest of many interior design educators to become involved with online practices. Design education uses visual, project-oriented approaches toward the development of student problem solving skills that is a challenge in the electronic environment. Can online education produce satisfactory results and how should the learning environment be designed?

Little has been published concerning asynchronous online education for teaching interior design. The purpose of this study was to explore potential of online methods to enhance student learning of design. Findings advance the body of knowledge concerning value, pedagogy, practices, and placement of online curriculum.
To determine if the online instruction was effective, the following research questions guided the study:

4. Was there a difference between the two types of instructional methods, traditional or online, in regard to achievement scores for the unit?

5. Was there a difference between traditional and online instruction in regard to student satisfaction ratings?

6. What were the mean satisfaction ratings between the types of learning activities?

**Review of Literature**

Published studies from disciplines such as nursing, foreign language, and business used student evaluations and test scores to measure differences between distance and traditional teaching methods (Ryan, Carlton, & Ali, 1999; Lee, 1998; Tucker, 2000). ‘The No Significant Difference Phenomenon’ report by Russell was discussed by Weiss (2000) and Clouse (2001) noting that most performance studies varied in validity due to use of non-equivalent convenience samples. The related website, Russell & IDECC (2005), lacked studies from art and design.


**Methodology**

**Sample and Instruments**
The quantitative research paradigm was selected with a randomized experimental approach between groups. The class roster provided a sample of 44 students divided equally for the two teaching methods. Both were taught the same content on principles of design. A parallel, pretest-posttest instrument was developed to measure performance. Multiple choice questions were designed to assess student knowledge and application of the design principles (balance, proportion, rhythm, emphasis, and harmony).

The student satisfaction survey was a self-report instrument designed as end of unit posttest. The questionnaire used a five point Likert scale from “strongly disagree” to “strongly agree”. The satisfaction survey contained evaluation questions, written comments, and learning activity ratings.

Online Unit Format and Learning Activities

Tools within WebCT were explored to accommodate visual material and problem solving projects necessary to study interior design. Content and learning activities were sequenced to advance the level of learning according to Bloom’s taxonomy. Internet links and instructor designed web pages supplemented the text for information on each principle of design at the knowledge level. See Figure1 for uploaded Dreamweaver webpage. Use of the Photo Gallery developed understanding of how design principles contribute to familiar locations on campus connecting brain-based learning to online pedagogy. Team Discussion was used to analyze attached photographs for type of principle used and design effect. Lastly, synthesis of learning created individual online room designs and team paper on the remodel of the Colorado Governor’s mansion covering all principles in design solutions for the areas.
Data Analysis and Findings

Performance Comparison Between Online and Classroom Groups

SPSS software analyzed test scores for differences between teaching methods. Achievement was measured first by gain score; the difference between pretest and posttest scores. Classroom gain scores varied by a range of 20 points, while online scores varied by 32 points. Table1 summarizes performance data.

-----Insert table1 about here-----

With gain scores normally distributed in both methods, T-test was statistic to measure differences between two groups. The difference between group means, \( t(34) = 1.5, p = .135 \) was not statistically significant at \( \alpha = .05 \). Since \( t \) was not greater than the critical value of 2.0, or \( p \) less than .05, it could not be said that there was a difference in student achievement between the two teaching methods.

The analysis of covariance, ANCOVA test, further assessed performance scores after controlling for differences between pre-test scores. \( F(1,147) = 3.36, p = .076 \) indicated no significant difference between teaching methods in performance. Though \( F \) value was higher using ANCOVA, both tests supported the null hypothesis of no significant difference in mean scores for performance between classroom and online students.

Satisfaction Comparison Between Online and Classroom Groups

SPSS indicated satisfaction ratings were not normally distributed between methods, and Mann-Whitney U statistic chosen to test differences between two groups. Total satisfaction means from classroom group was higher at 114, while totaled satisfaction means for online students was 100. Classroom student rating totals varied
in range of 67 points, while online students varied by 72 points. Satisfaction survey data is shown in Table2. \( U=73, p=.038 \) indicated a statistically significant difference in satisfaction between the two teaching methods and null hypothesis was rejected. Online students were less satisfied with learning environment than classroom group, similar to findings by Clouse (2001) with business students.

Further analysis determined if student satisfaction varied between learning activities for their method. Some online activities paralleled the type of traditional activity, while others explored WebCT environment for unique learning experiences complementing interior design. Comparison of ratings for instructional methods in both teaching methods can be seen in Figure2. Rating activities for their contributions to learning, there was greater interest in the text online and less satisfaction with written discussions and teamwork.

Table 3 summarized satisfaction for online learning activities, listing from top to bottom the activity with highest satisfactory rating down to the one with lowest ratings. Totals combined 4 and 5 ratings for agree and rating of 1 or 2 for disagree. Findings disagreed with Matuga (2001) where psychology students online enjoyed team analysis, but agreed with Kramarae (2001) where women learning online did not want teamwork.

**Implications and Research Recommendations**

Figure3 shows the WebCT tools used and organizational format of the online unit.
Rated high were the Photo Gallery and Glossary. The Glossary easily entered term definitions with examples for access by category, alphabetically, or reviewed together. With photo gallery template, images were loaded by keyword, sized thumbnails linked to larger or alternate views, and descriptions added.

Positive written comments from the online group focused on computer-generated activities. Online room design experience, selections and furniture arrangement made at an Internet site, was given credit for the "hands-on feel" and called “helpful tools”, “where we could use our creativity” and “helped me create a space that met all the standards.” Students did six to eight trial versions before deciding final room design. The online environment supported Diehl-Shaffer and Webber (1993) findings that interior design students enjoy possibilities by facilitating the comparison of multiple options.

The second online activity with most positive comments was the panorama or virtual fieldtrip of the Colorado Governor's Mansion. The “experience of looking through the mansion allowed me to take the definitions & apply to overall space” and “Quicktime made you feel like you were really in the room”. The electronic environment provided the opportunity to visit design locations multiple times and zoom better views of room treatments.

Though no significant difference in test performance between groups, there was concern with the wide variation of scores within the online group, containing also the highest and lowest test scores. Palloff and Pratt (2003) indicated one fourth of undergraduates in a national survey were more satisfied with distance courses than classroom instruction, but that one third was less satisfied resulting in retention problems. Further research is recommended to determine if certain types of learners
are more successful and satisfied with online instruction. Research should continue to help establish which courses adapt best to online instruction and the most effective methods to improve student satisfaction with online delivery.

**Conclusions Improving Online Learning**

Data showed that interior design fundamentals could be learned online. WebCT also offered a variety of tools to accommodate design pedagogy. Course text, found more important to online learners, would reduce instructor preparation time if also the source of illustrations for analysis. A hybrid teaching format, as recommended by Girand (2004) for estimation, Ryan (2000) for construction, and Williams (2004) for design history, is a recommendation for introductory design courses. Biweekly or monthly lab sessions could provide sequenced orientations, technology assistance, and social context for team support. Satisfaction with online discussion might improve with more debatable topics and voice contact through chat sessions, as done by Bender (2005), increasing emotional involvement and instructor feedback. Written analysis, recommended by Feenburg (1999), was preferred as individual work to the instructor rather than interactive learning. If students accept writing quality as course objective and part of assessment, WebCT is well suited for interior design curriculum where writing skills are important. Expected responses to student written communication is time consuming and more frequent online than in the classroom indicating online instruction is not a solution for large classes; supported by Kramarae (2001) and Palloff and Pratt (2003).

Online instruction, in agreement with Matuga (2001) and Kramarae (2003) may be more appropriate and appreciated by students in upper level courses who have acquired independent study and technology skills. The researchers agreed with Thompson and Gibson (1999) that distance technologies, properly integrated and
managed, can enhance the learning experience. With online education more individuals and populations can be educated concerning the field of interior design.
REFERENCES
(APA Format)


Table 3.

*Summarized Satisfaction Ratings for Online Learning Activities*

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
<th>Disagree and Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>12</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Photo Gallery</td>
<td>10</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Glossary</td>
<td>10</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Online Activities</td>
<td>9</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Internet Sources</td>
<td>9</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Instructor Web pages</td>
<td>8</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Scanned Diagrams</td>
<td>8</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Group Writeup</td>
<td>4</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Team Discussion</td>
<td>4</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

Note. N = 16 online participants
There is something to do under each of the icons on the homepage for each of the Principles of Design we will study:

1. Start with the calendar to see the principle of the day. Be sure to click on the date to open it up for a full description. Do assigned text reading first.

2. Enter the Content Module and click the arrows next to the principle you wish to learn about. The main concepts for each principle are listed under each topic. Links will appear to connect you to outside sources of information. The text and illustrations in these sites will further explain the text and variety within each principle. Locate the reading area specific to the principle being studied and consider if required reading to supplement the text.

3. When text and online reading is done, go to the camera to view the campus photos for that principle. Information to review is written in the descriptions next to each picture. Click on the thumbnail picture to bring up a larger illustration with this information also appearing below it.

4. After reading and reviewing the campus photos, you are ready to go under Team Discussions. Again select the principle and open the message with attached photo to analyze and discuss. Open the picture file to your screen. Compose your answer to the message and send to your group members. Be sure it covered everything requested in the message. Read responses sent by other group members and reply back to one or two of them. Try to rotate your response to different members with other discussions. Before deciding who to respond back to, look to see who has already received a response and choose a different member. Hopefully each on your team will get a reply to their analysis.

5. The Online Activities icon contains two learning activities. One has two parts done individually or with one partner to create a living room design using some of the principles of design. The other is a team project involving viewing two panoramas, selecting one of them, and submitting a combined analysis of all six principles used in this area, plus your suggestions for the design.

Figure 3. Online unit format and WebCT tools.
Abstract

Purpose

Critical to the evolution of a profession is the identification of the theoretical underpinnings of the field. Piotrowski (2002) identified the use of skills based on theoretical knowledge as one of the major components of a profession. It has been said that theory, unique to interior design, does not exist (Guerin, 2003; Loustau, 1988). Is that true? What theories related to interior design is being used to guide research questions and the profession?

To fully appreciate the history and development of interior design as a profession and discipline, an understanding of the theoretical underpinnings of the field must be examined periodically in a systematic manner. “Theory plays an essential role in guiding research questions, designing methodology, and interpreting results.” (Steggell, et al., 2003, p. 23). Wells & Picou indicate that academic journals are “major repositories of the cognitive structure of a discipline” and are worth examining (1981, p. 80). Goldsmith (1983) stated that analysis of an academic journal assists in determining research progress.
This research study documents a content analysis of the *Journal of Interior Design Education and Research* (1975) and the *Journal of Interior Design (JID)* through 2007. (Note name change). This journal was selected as it is the only refereed publication dedicated to the design of interior environments. The purpose of this study was to identify the theoretical frameworks reported and make suggestions for future theoretical developments.

Methodology

The models developed by Steggell, et al. (2003 & 2006) were used for this systematic assessment of the use of theory in interior design research. Their models were guided by seminal work in sociology completed by Wells and Picou (1981).

Each article published in *JID* was considered scholarship and included in the analysis. For each article selected, the theoretical framework(s) identified by the authors were recorded. The word *theory* was used in an inclusive fashion and included such terms as paradigm, conceptual framework, typology, and model. Identification of the theory, definition of theory, and its application to interior design were gathered in Phase One. See Table 1. In Phase Two variables used to measure the use of theory in the research design were also recorded with statements such as “true” or “false.” For convenience these “Design” variables were labeled D1 through D7. See Table 2 and 3.

Findings/Conclusion/Relevance to Interior Design

Findings included that 1) the majority of first authors of articles where theory was cited were from research institutions, 2) the majority of theories were from the social sciences and 3) the majority of studies where theory was cited used qualitative methodology.
Theoretical approaches utilized by related disciplines offer a framework as a starting point for interior design to generate its own body of theory. “Theory must be made manifest; it is an important working tool for both the academic and the professional community.” (Loustau, 1988, pg. 7). Results of this research study offer educators, students, and practitioners an easy tool to identify theories that relate to the interior design and other near environments.
Exploring Theories Identified in the *Journal of Interior Design*

Stephanie A. Clemons, Ph.D.
Molly Eckman, Ph. D.
Nicole Conis
Colorado State University

Narrative
Introduction

Critical to the evolution of a profession is the identification of theories and theoretical underpinnings of the field. Theory provides a framework for analysis, facilitates the efficient development of the field, and is needed for applicability to practical real world problems (Wacker, 1998). Theory is necessary when providing evaluative criterion “for judging existing design work – in the past and in the present – as well as one’s own design ideas.” (Eidson, 1986, p. 24). In 2007, Piotrowski identified “the use of skills based on theoretical knowledge” (p. 7) as one of the six main components of a profession. “Theory, for theory’s sake, can easily degenerate into an uninteresting art form. Yet, practice without theory can quickly become a dull and dangerous occupation.” (Wacker, 1998, p. 361). Theories, therefore, service not only the educator, researcher and student, but also the practitioner.

Within the interior design discipline, a discussion concerning the existence and use of theory has ensued for years between the covers of the *Journal of Interior Design* (*JID*), within numerous classroom walls, and in trade publications within the field. The discussion has involved many contexts, from the development of the body of knowledge (Silverstein, 1993) to how it can be infused into the classroom environment (Martinson,
1998; Portillo, 1996). Yet, there has been no record of a systematic survey of the theories identified by educators and researchers in their studies. To fully appreciate the history and development of interior design as a profession and discipline, an understanding of the theoretical foundation of the field must be examined in a systematic manner.

Review of Literature

In the late 1970s, the discussion concerning interior design theory began in *JID*. Thomson (1978) indicated that a lack of developed theory in interior design concerning such topics as the transient family, flight from the city, impact of television on the integrated family and loss of personal identify in the impersonal environment was a concern. In 1985, Hewlett asserted that unless designers give greater priority to theory they will never achieve the “human depth of which interior design is capable” (p. 10). In 1988, Loustau stated that “in the field of interior design, no theory has been developed uniquely for interior design.” (p. 3). Five years later, Hasell (1993) advocated for a paradigm shift in which “educators, practitioners and industry individually and collectively accept the challenge to develop theories to explain the interactions between people and space at the micro-scale of interior design…focusing not only on designing better interior environments for people but also on generating new knowledge and improved theories of explanation.” (p. 1). Has the profession heeded this challenge? What are the reported theoretical underpinnings of the profession?

The purpose of this study was to identify the theories reported in *JID* from 1975 (first issue published) to 2007 and make suggestions for future theoretical
developments. This journal was selected as it is the only refereed publication dedicated to the design of interior environments. Journals within the given discipline serve as a credible source when assessing the presence of theory. Goldsmith (1983) stated that periodic analysis of an academic journal is important because a retrospective study assists in determining research progress; Wells & Picou indicate that academic journals are “major repositories of the cognitive structure of a discipline.” (1981, p. 80). While the target audience for scholarship is typically academicians and graduate students, the application of scholarly content extends beyond the academic audience (Guerin & Martin, 2003) and includes practitioners, editors of trade magazines, and manufacturer representatives.

Methodology

The models developed by Steggell, et al. (2003 & 2006) for the examination of existing theories in housing research were utilized for this study. Their models were guided by seminal work in sociology by Wells and Picou (1981) that used content analysis to study the use and application of theory in sociology research.

Each article published in the Journal of Interior Design Education and Research (JIDER) and JID was considered scholarship and therefore, included as part of this study. Parts of the Journal not analyzed included such sections as Focus Reports and Book Reviews in which theory is not expected to be the focus. For each article selected, the theoretical framework(s) identified by the authors were recorded and the application to the interior design field was noted. The word theory was used in a broad and inclusive fashion for this study and included such terms as paradigm, conceptual
framework, typology, and model. Identification of the theory, definition of theory and its application to interior design research data was gathered in Phase One of this study (Steggell, et al., 2003). This presentation will discuss Phase One of this study.

Findings, Analysis, and Conclusion

Over 300 articles were analyzed from the last 32 years of publication by JID. The first ten years of the journal revealed few referenced theories or theoretical frameworks compared to the most recent decade. If theories were referenced, they were sometimes used in a type of “sandwich approach” where a theory was cited at the beginning of an article and referenced at the end, but not necessarily used to guide the identified study.

Findings include that 1) the majority of the first authors of articles in which theory was cited were from research institutions, 2) the majority of the theories were adapted from social sciences (e.g. psychology, sociology, social psychology), and 3) the majority of studies in which theory was cited used qualitative methods. Others were developed specifically for the interior design phenomenon reported in the study with a number of new models explored and proposed in the specific study. Theories cited evidenced a wide variety of sources: from the Feminist Theory and Kolb’s Experiential Learning Theory to the Post-structuralist Theory. The theories were applied to a wide variety of topics including historical elements, and specific types of design installations (e.g. congregate living environments, hospital birthing rooms and dormitory design of personal spaces) to how best to educate interior design students. A summary sample of theories and their application to interior design is presented in Table 1. A few indicated theory-building, direct testing of a theory or the proposal of a theory as an outcome of the study (Hasell and Peatross, 1991). Given the broad definition of theory
for this study, it is no longer accurate to declare that interior design theory does not exist.

While it is unarguably critical for the interior design scholars to continue to build their own body of knowledge and theory, it may not be uncommon that “theory borrowing” rather than “theory development” is a hallmark of fields in which applied research is the norm (Damhorst, 1991), such as clothing and textile design or landscape design. A future area of study may be to identify specifically related applied fields and determine if theory building is reported in their journals. Another area of research may be to assess the potential ramifications of borrowing, rather than synthesizing and/or generating theories for our own discipline.

Theory building models are available for those interested in developing theoretical frameworks (Wacker, 1998) specific to interior design. In addition, authors have suggested appropriate topics for theory building (e.g. comfort of home) (Rybczynski, 1986), effects of specific environmental characteristics upon human physical and psychological health and well being and information contributing explanations of relationships between the character and value of aesthetic experiences and the quality of human life). What is holding us back? Granted there is limited graduate research being conducted to contribute significantly to the development of theory (White and Dickson, 1994) and the demands on an educator’s time is severe. However, perhaps a special issue of JID two years hence would encourage researchers to focus on theory building. Incorporating a section of manuscripts published in JID that is devoted to theory would encourage scholars to describe theories that they may currently be using to frame their studies but are neglecting to identify. Perhaps
challenge five of the top interior design researchers to concentrate on theory building. Strategies for building theory must be developed and implemented.

Utilization of theory is necessary for the advancement of knowledge in interior design. It is important to develop new theories, expand existing theories, and recognize new applications of theory. While theoretical approaches utilized by related disciplines serve by offering a framework for interior design to generate its own body of theory (Loustau, 1988), it is important for this decade to focus on building theory specific to interior design and then disseminate it to students, educators and practitioners.
References

(APA Style)


Table 1. Sample listing of theories identified in the *Journal of Interior Design*.

<table>
<thead>
<tr>
<th>Theory</th>
<th>Summary of Theory</th>
<th>Examples of application in Interior Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-structuralist theory</td>
<td>Post-structuralist theory understands society as both constructing and of constructed by people. Post-structuralist thinking encourages professionals to see professional practice, as all social life, as constructed, and to deconstruct in order to reflect on how to develop enabling practice (Goodley &amp; Lawthom, 2006).</td>
<td>This theory was used in research related to both historical elements of the profession and also looking at twentieth-century French design.</td>
</tr>
<tr>
<td>Sense of place</td>
<td>The phrase <em>sense of place</em> has been defined and utilized in different ways by different people. To some, it is a characteristic that some geographic places have and some do not, while to others it is a feeling or perception held by people (not by the place itself). It is often used in relation to those characteristics that make a place special or unique, as well as to those that foster a sense of authentic human attachment and belonging. (citation needed)</td>
<td>This concept was used in relation to personal interior spaces such as residence hall rooms.</td>
</tr>
<tr>
<td>Human Ecosystem Model</td>
<td>The effect of changes in marriage patterns, resource sharing patterns, or subsistence activities on the ability of the human population to survive in the environment (Weinstein, 1983).</td>
<td></td>
</tr>
<tr>
<td>Kolb’s experiential learning style theory</td>
<td>1. Experiential learning theory (ELT) describes learning as the holistic engagement of affective, perceptual, cognitive, and behavioral processes (Kolb, 1984). Learning results from the interplay of these processes, which are positioned along two primary dimensions of knowledge. According to ELT, learning proceeds as a cycle and results from the integration of four learning modes — concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). Learners must be able to fully and openly engage in</td>
<td>This theory was used in research related to the education of interior design students.</td>
</tr>
</tbody>
</table>
new experiences; reflect on, observe, and consider these experiences from various perspectives; create concepts that assimilate these experiences into sound theories; and appropriately apply these theories to their life situations (Sims & Sims, 1995).

| Lewin’s Field Theory | Field theory provides us with a map as we begin to describe how the interactions of the elements of culture and the social structure contribute to the creation and maintenance of unique social problems affecting individuals. They attempt to outline the interactive nature of these social problems. This theory attempts to deal with the influences of culture, the social culture, and their components, such as groups, technology, and institutions, on individual behavior.

(1) The interactions of individuals, groups, institutions, nations, and the world community influence our society and create unique sets of interactive social problems.

(2) The content and processes inherent in the elements of culture and the social structure at a given time contribute to the development and maintenance of specific social problems (Wheelan, Pepitone, & Abt, 1990). |

| Feminist theory | Feminist theory is the extension of feminism into theoretical, or philosophical, ground. It encompasses work done in a broad variety of disciplines, prominently including the approaches to women’s roles and lives and feminist politics in anthropology and sociology, economics, women’s and gender studies, and philosophy. This theory was used in research related to the history of the interior design profession. |

Other common theories were from the social sciences and design including: Kolb’s learning style theory, Stimulus-Organism response model, Mehrabian & Russells environmental psychology theory, color theory, Human Eco-System model, formed
affiliation theory, cognitive wayfinding theory, Moore’s integrative theory, Cantur’s theory of place identity.
Table 2. List of Design variables.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>One or multiple theories mentioned in the introduction or literature review</td>
</tr>
<tr>
<td>D2</td>
<td>One or multiple theories mentioned relative to research design</td>
</tr>
<tr>
<td>D3</td>
<td>Specific theory or theories named and a clear relationship between variables or methods identified in research design</td>
</tr>
<tr>
<td>D4</td>
<td>Specific theory or theories named and author explicitly showed how it was used to select variables or method in research design</td>
</tr>
<tr>
<td>D5</td>
<td>Specific theory or theories named and used to develop testable hypotheses</td>
</tr>
<tr>
<td>D6</td>
<td>New theory proposed</td>
</tr>
<tr>
<td>D7</td>
<td>New theory proposed and implemented in the research design</td>
</tr>
</tbody>
</table>
Table 3. List of Research Outcome variables.

<table>
<thead>
<tr>
<th>RO</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO1</td>
<td>One or multiple theories mentioned in the discussion</td>
</tr>
<tr>
<td>RO 2</td>
<td>Specific theory or theories used to interpret findings</td>
</tr>
<tr>
<td>RO 3</td>
<td>Results used to support or refute specific theory or theories</td>
</tr>
<tr>
<td>RO 4</td>
<td>Results used to suggest further testing of this or other theory</td>
</tr>
<tr>
<td>RO 5</td>
<td>Suggestion for specific use of the theory in subsequent research</td>
</tr>
<tr>
<td>RO 6</td>
<td>Modification or extension of theory suggested as a result of the study</td>
</tr>
<tr>
<td>RO 7</td>
<td>New theory proposed</td>
</tr>
</tbody>
</table>

Flat Stanley: A Tool for Documenting and Analyzing Interior Environments through Experiential Learning

Stephanie A. Clemons, Ph.D.
Colorado State University

Abstract

Purpose

Kolb’s experiential learning theory (1985) indicates that people go through a four-stage process, with the first stage known as “concrete experience.” In this stage, learners involve themselves in an experience and find personal meaning within it. Dewey’s learning-by-doing theory (Dewey, 1913) encourages similar experiential learning, which has proven successful with interior design students (Zhu, 1997).

The purpose of this presentation is to discuss the development of a freshmen level, lecture course exercise that encouraged the analysis of interior spaces through meaningful, concrete experiences. The unique aspect to this assignment is the implementation of “Flat Stanley,” a personal referent from childhood, as a recording device during the documentation and analysis of the spaces. See Figure 1. The book, Flat Stanley (Brown, 1964)) is a well known, international literacy and communication device. See www.flatstanley.com. By using a personal reference from childhood, students were invited to draw upon a meaningful experience during the learning process through linking their past with their present.
Process

Students were given the assignment to 1) personalize Flat Stanley, 2) travel with him to various interior spaces, 3) digitally capture the interior environments using Flat Stanley as a documentation device, 4) analyze the interiors through reflective statements, and 5) develop a 5” x 5” bound booklet illustrating each interior environment visited using Powerpoint. Twenty-two questions were posed that invited student analysis of the interiors concerning such topics as light, color, space, scale, rhythm, and balance. In addition, students were asked to assess interior spaces based on anthropometrics, “third place” theory, “need for nature” theories (e.g. mystery and complexity), “sense of place”, environmental psychology, and human comfort. See Table 1.

Findings

The exercise was assigned to 142 students in an introduction to interior design course. Students identified with Flat Stanley and shared stories about previous learning experiences with him. Based on comments, they were engaged in learning because they 1) had a meaningful reference point, 2) understood “why they were learning what they were learning” and 3) perceived the assignment as an interesting method to analyze design installations.

Interior spaces were digitally captured from the community and various states where students visited during the semester-long assignment. See Figures 2-5. Some students emailed Stanley “triplets” to individuals in another part of the world and analyzed the interiors from a cultural perspective. Content analysis of the student reflective
responses indicated they could more clearly understand how elements and principles of design shaped space as well as why certain theories impact human behavior.

Discussion/Significance

This exercise moved student learning from a lecture concept to concrete knowledge. Site visits, selected by the student, offered autonomy of learning and an opportunity to assess first-hand three dimensional aspects of interior spaces. Internet usage and textbook studies cannot replace the actual experience of being in the environment. This exercise offered semester-long opportunities for discussion, story-telling, and newly constructed questions. It personalized a lecture class through participation in “learning-by-doing” exercises, developed stronger student understanding of the fundamentals of interior design, and raised critical thinking skills.
References


Flat Stanley: A Tool for Documenting and Analyzing Interior Environments through Experiential Learning

Stephanie A. Clemons, Ph.D.

Colorado State University

Narrative

Introduction

Due to the continued popularity of design-related reality shows (Waxman and Clemons, 2007) many students declare interior design as their major. In a desire to assist students in clarifying the content and rigor of the major, one of the first required courses in the curriculum is typically an introduction to the profession of interior design. Common objectives of the course often relate to exposing students to the career (with its various specialties area of design) as well as basic design vocabulary, design process, elements and principles of design, and some basic theories used in the field. At times the content of this course is delivered in a studio format while at other times it is a lecture course.

When the introductory course is in a large lecture format (n = over 50), there is limited opportunity to work with students one-on-one to guide them through design application exercises. Yet, to lecture via the “talking head” method is deadly and therefore, ineffective when the goal is to enhance student learning.

Is there a way to offer experiential learning to design students in a large lecture format that would assist them in a more personal engagement with the topic (rather than
simply taught about the topic) to promote active learning? How can you make the elements and principles of design or theories used to shape interior spaces meaningful to the students, yet fun to experience? When the students have limited design skills, is there an exercise teachers could use to evaluate individual learning of the content delivered in class yet make it experiential in nature?

The purpose of this presentation is to discuss the development of an exercise administered in a freshmen level lecture course that encouraged the analysis of interior spaces through personal, meaningful, concrete experiences. The experiences involved assessment concerning student understanding of the elements and principles of design and a variety of theories related to shaping spaces. By analyzing spaces, learning may develop a rationale and vocabulary for future design solution outcomes. Examples of student books will be shared as part of this presentation.

Review of Literature

Experiential Learning Theories

Experiential learning, dating from the Egyptians and Greeks, has evolved into models of professional education based on the acquisition of a systematic knowledge base and aspects of experiencing the tasks at hand (Bines, 1992; Guerin & Mason, 1992). The term experiential learning was developed to define knowledge attained through observation, use, or practice. Experiential learning is especially important in a visually oriented profession such as interior design.

Kolb’s experiential learning theory (1985) indicates that people go through a four-stage process, with the first stage identified as a “concrete experience.” In this stage,
learners involve themselves in an experience and find personal meaning within it. Brooks and Brooks (1993) suggest that a deeper type of learning occurs when students are allowed to construct their own learning and to create meaning by drawing on their own experiences, as well as what they already know. Dewey’s learning-by-doing theory (Dewey, 1913) encourages similar experiential learning, which has proven successful with interior design students (Zhu, 2007; Weigand, 2006).

Process

To promote experiential learning, students were assigned a semester-long exercise to locate, identify, and document via photography interior spaces of their choice that illustrated specified elements and principles of design and theories related to interior spaces. The unique aspect to this assignment is the implementation of “Flat Stanley,” a personal referent from childhood, as a recording device to use during the documentation and analysis of the spaces. See Figure 1. The book, Flat Stanley (Brown, 1964)) is a well known, international literacy and communication device. See www.flatstanley.com. By using a personal referent from childhood, students were invited to draw upon meaningful experiences during the learning process through linking their past with their present. In addition, Flat Stanley offered a “constant” when visiting the sites that would assure a reference point for discussion (e.g. scale) and analysis.

Students were given the assignment to 1) personalize Flat Stanley, 2) travel with him to various interior spaces, 3) digitally capture the interior environments using Flat Stanley as a documentation device, 4) analyze the interiors through reflective
statements concerning visual attributes of the space, and 5) develop a 5” x 5” bound booklet illustrating each interior environment visited using Powerpoint.

Twenty-two questions were posed that invited student analysis of the interiors concerning such topics as light, color, space, scale, rhythm, and balance. In addition, students were asked to assess interior spaces based on anthropometrics, “third place” theory, “need for nature” theories (e.g. mystery and complexity), “sense of place”, environmental psychology, and human comfort. See Table 1. Upon student request, Flat Stanley could be sent to family and friends (the beauty of being flat) who photographed an additional three images for the booklet that captured their personal preference for certain visual attributes in a given interior environment.

Findings

The exercise was assigned to 142 students in a large lecture introduction to interior design course. Students identified with Flat Stanley and shared stories about previous learning experiences with him (typically in third grade). Based on comments, they were engaged in learning because they 1) had a meaningful reference point, 2) understood “why they were learning what they were learning” and 3) perceived the assignment as an interesting method to analyze interior environments.

Students’ personalization of Flat Stanley took place quickly with some students requesting to change his name to such things as Flat Luigi, Flat Mario and Flat Stella. Renderings of Flat Stanley were creative and unique. Rather than the rather strait-laced fellow in Brown’s book (1964), Flat Stanley obtained worker’s overalls, black convertibles, RAM-pride university tee-shirts, and at times, a Mohawk hair-do.
Interior spaces were digitally captured from the community and various states where students visited. (See Figures 2-5.) Some students emailed Stanley “triplets” to individuals in another part of the world and analyzed the interiors from a cultural perspective. Content analysis of the student reflective responses indicated they could more clearly understand how elements and principles of design shaped space as well as why certain theories impact human behavior and the visual attributes of an interior environment.

Discussion/Significance

This exercise moved student learning from a lecture concept to concrete knowledge. Site visits, via selected locations by the student, offered autonomy of learning and an opportunity to assess first-hand the three dimensional aspects of interior spaces. This exercise offered semester-long opportunities for discussion, story-telling, and newly constructed questions within the classroom environment. It personalized a lecture class through participation in “learning-by-doing” exercises, developed stronger student understanding of the fundamentals of interior design, and raised critical thinking skills. Internet usage, Powerpoint lectures with visual images, and textbook studies cannot replace the actual experience of being in an analyzed environment.

It is important to provide opportunities for students to carefully evaluate diverse spaces through different lenses. For example, when assessing an interior space, what may be successful in providing a properly scaled space for one user may be unsuccessful when evaluating the same space in relation to its color application.
Through identification and evaluation, students can more critically analyze why certain spaces successfully employ elements and principles of design or theories related to shaping space and why other designs are less successful. This experiential exercise serves as one example of how design application can be successfully incorporated into a large scale lecture class via the analysis of interior spaces through personal, meaningful, concrete experiences.
References

(APA Style)


Table 1. Sample questions for Flat Stanley assignment.

**Principle of Light:** How do different types of light affect the way in which Flat Stanley looks? Show him in fluorescent and incandescent settings as well as natural daylight.

**Third Place:** Invite Stanley to spend time at your favorite “third place” and tell us why this is your personal favorite. What is the importance of third places in life? How do you use your third place?

**Cultural Design:** What three different cultural experiences can you introduce Stanley to in your community and what is different about the design of those spaces?

**Ergonomics:** Tell us why today’s furniture is not ergonomically correct for someone like Flat Stanley. Show Flat Stanley in well designed ergonomic furniture for you and other furniture that is poorly designed.

**Anthropometrics:** Why does Stanley not fit into the human body measurement standards? Show an image of why this might be a problem for him when accomplishing everyday tasks.

**Need for Nature:** Show an image of Flat Stanley in nature and then an image of him in an interior space that uses Need for Nature theories such as mystery and complexity.

**Environmental Psychology:** Show Flat Stanley in an environment that has experienced one of the concepts discussed by the environmental psychologist who visited class. Who did human behavior shape that environment? Were there “leavings” from the humans that inhabited the space.

**Human Comfort:** Select a “comfortable” interior space for you. Why might this space be comfortable to you, but not to Flat Stanley? Describe aspects of human comfort in your space. Define “comfort” as it relates to you. How might it be different for your client?
Figure 1. *Flat Stanley* book cover by Jeff Brown
Student reflective observation: “Note Stanley on the hospital bed. He feels that fluorescent lights make spaces feel cool and uninviting. Incandescent lighting has good CRI; it makes Stanley look healthier. If the doctors want Stanley to look healthy, why do they use fluorescent light in the hospital room?”
Student reflective observation: Purple is not Flat Stanley’s favorite color. Perhaps it should be? He tends to be a pragmatic fellow (see him sitting uncomfortably on the bed) and purple would enhance his creativity and ability to dream.
Figure 4. Student image of Flat Stanley – analysis of personal space.

Student reflective observation: Stanley is in his CSU green tee-shirt on my bed in my favorite personal space: my bedroom! Note the positive messages sent to Flat Stanley every day he is with me. Personal spaces are important because they offer a sanctuary and a place to express “self.” There is a balance of warm and cool colors, yet an intensity of color that wakes me up in the morning. I love my personal space as it expresses many dimensions of my personality: color, cleanliness, and outrageous intensity.
Student reflective observation: It is extremely difficult to locate the proper scale for Stanley! Perhaps a toy store would be a better place to visit. Stanley is barely visible in the child’s blue chair. The chair is definitely not his scale, but seems to fit the rest of the room. Is this the giant’s waiting room?
Abstract

Purpose
The purpose of the study was to investigate the effectiveness of universal design kitchen features by people using wheelchairs. The study examined the features of the GE Real Life Design Kitchen (Peterson, 1995) and determined which universal design features were beneficial to users in wheelchairs.

Methodology

Nine participants, with various disabilities, who use a wheelchair on a daily basis were selected for the study. The sample consisted of 5 male and 4 female participants with ages ranging from 28-58 years old. Each participant had varying levels of grip, strength, and memory as a result of their disability.

Two instruments were developed for this study: the universal design evaluation form and the universal design decision tree. The study was video taped, reviewed and evaluated by the researcher utilizing the universal design evaluation decision tree matrix (Steinfeld & Danford, 1999) after all the participants had finished the study.

The universal design evaluation form’s purpose was twofold: collecting anthropometric data and evaluating specific universal design features of the GE Real
Life Design Kitchen (See Appendix A). Collecting specific anthropometric data from each participant allowed the researcher to recognize variances in the reach, size, and clearance needs of the participants. In addition, the universal design activity specifically tested certain universal design features of the GE Real Life Design Kitchen by having the participant perform and evaluate various tasks.

The participants performed 18 different tasks related to 18 different features of the kitchen. The participants evaluated the features and tasks based upon ease of use and visual appeal. At the end of each task, the participants were asked if they had any additional comments they would like to add. Appendix B shows a diagram of where each task occurred.

Summary

The results concurred with existing recommendations concerning clear floor and open knee spaces at the sink and cooktop areas, and also discovered that clear floor and open knee space is useful under a countertop microwave because it allows the wheelchair user to get their body closer to the task. The results of this study determined that appliances with easy to read and use controls are preferred and should be located within good visual range of a person in a wheelchair to be effective. In addition, it was determined that a pull-out cutting board and some type of roll-out tray feature in a base cabinet is useful to a person in a wheelchair.

Results from this study cannot be generalized to a national population of wheelchair users because of the limitations of the sample. Results, however, are significant in terms of providing consumers, cabinet and appliance manufacturers, policy makers, and designers with valuable insight and information concerning the inclusion of
universal design features in kitchens and environments that accommodate the needs of all people, including the person in a wheelchair. In addition, the results of this study imply that not all universal design features recommended in kitchen design are beneficial to people in wheelchairs. Further investigation of some of the universal design features tested is needed.

REFERENCES


APPENDIX A
Universal Design Evaluation Form (a portion from the form is shown)

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. * Side Approach Horizontal Reach Sitting</td>
<td>I. * Horizontal Forward Reach</td>
<td></td>
</tr>
<tr>
<td>B. * Vertical Reach Height Sitting</td>
<td>J. * Horizontal Forward Reach Stretching</td>
<td></td>
</tr>
<tr>
<td>C. Sitting Height</td>
<td>K. Wheelchair Width</td>
<td></td>
</tr>
<tr>
<td>D. Eye Height Sitting</td>
<td>L. Wheelchair Depth</td>
<td></td>
</tr>
<tr>
<td>E. Shoulder Height Sitting</td>
<td>M. Foot Rest Extension Depth</td>
<td></td>
</tr>
<tr>
<td>F. Top of Arm Height Sitting</td>
<td>N. Wheelchair Arm Height</td>
<td></td>
</tr>
<tr>
<td>G. Under Knee to Toe Length</td>
<td>O. Floor to top of Toe in Footrest</td>
<td></td>
</tr>
<tr>
<td>H. Thigh to Floor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Task 3 Adjust sink “A” utilizing the adjustability mechanism of the sink. Place the sink at the appropriate height for your greatest ease of use and get water out of the faucet in the glass provided and place it on the counter.

On a scale from 1 to 5 (1 being poor & 5 being excellent), rate the following:

<table>
<thead>
<tr>
<th>Ease of clearance and floor space under sink</th>
<th>poor</th>
<th>excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of adjusting the sink</td>
<td>1</td>
<td>2 3 4 5</td>
</tr>
<tr>
<td>Ease of turning on faucet</td>
<td>1</td>
<td>2 3 4 5</td>
</tr>
<tr>
<td>Visual Appeal of Feature</td>
<td>1</td>
<td>2 3 4 5</td>
</tr>
</tbody>
</table>

Would this feature make your kitchen preparation easier? ____________________________________________

Measure the sink height _______________________

Is there enough counter space at the appropriate height next to the sink? _________________________

Do you have any additional comments you would like to add? Would you change anything?  ________________________
APPENDIX B
Diagram for Task Orientation

Diagram for Task Orientation
GE "Real Life Design" Kitchen
APPENDIX C
Analysis of Results  (one analysis of the 18 tasks evaluated)

A score of five was the highest rating possible and a score of 1 was the lowest rating possible.

Ratings for Task Seventeen

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of using the controls</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Ease of clearance and floor space to open oven door</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of opening the oven door</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of removing the casserole dish from the oven</td>
<td>2</td>
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<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Ease of maneuvering to the table</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Ease of serving at the table</td>
<td>3</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual appeal of feature</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Testing Universal Design Features:
Effectiveness of Universal Design Kitchen Features by People Using Wheelchairs

Holly L. Cline, Ph. D. and Julia O. Beamish, Ph. D
Radford University and Virginia Tech

Narrative

Purpose

The purpose of the study was to investigate the effectiveness of universal design kitchen features by people using wheelchairs. The study examined the features of the GE Real Life Design Kitchen (Peterson, 1995) and determined which universal design features were beneficial to users in wheelchairs.

Theoretical Framework

The theoretical frameworks utilized for this study investigated models and theories that are all inter-related to Lewin’s person-environment interaction model. Lewin’s framework explored the idea that one’s behavior is the result of the interaction between the person and his or her perceived environment (Lewin, 1951). As a result of his work, many person-behavior-environment models have emerged (Steinfeld & Danford, 1999).

Three different person-behavior-environment models were employed in this research. Lawton and Nahemow’s model of Competence Press (1973) proposed that for people with lessened abilities, the impact of the environmental factors (environmental press) is greater. Because people in wheelchairs often must
compensate for their limitations, the environmental demands must be specifically synchronized with the abilities of the individual to obtain an optimal fit between the person and the environment. Steidl and Bratton (1968) studied the workplace within the home. Their model, the concept of Work, Worker, and Workplace determined conditions that accelerated the activities that required the most effort and strain on the worker, lessening the amount of time needed for those tasks and in turn, lessening the amount of strain on the individual. Faletti’s model of Human Factors or Person-Environment Transaction (1984) took into account the relationship of the person to the environment while attempting to accomplish daily activities. While each framework brings different components to the conceptual model of this study, all three of these frameworks are similar in that they recognize that the environment is a contributing factor to how a person performs a specific task, works more efficiently, and functions independently.

**Research on Kitchens Designed for People in Wheelchairs**

One of the first research experiments to address the space and design requirements for a kitchen designed for a person in a wheelchair was conducted by McCullough and Farnham in 1960. A series of tests and measurements were made of the following: the participants in their wheelchairs; space requirements for maneuvering the wheelchair; vertical and horizontal reach measurements; comfortable working heights for wheelchair users; and the necessary clearance of work areas while in a wheelchair. Despite the wide range of individual measurements of the participants, the research showed “that there are certain general dimensions and planning guides which can provide comfortable, safe work areas for many wheelchair homemakers” (McCullough & Farnham, 1960, p.36). These recommendations concluded that the work
counter height should be 30 to 31 inches above finished floor (AFF) and should include the sink and the cooktop at the work counter height. The document recommended a five foot clearance for ease of movement throughout, which is consistent with standard turn around clearances today.

In 1968, the Institute of Rehabilitation Medicine conducted a study on the meal preparation problems of the handicapped and elderly. Only a small portion of the study was devoted strictly to people in wheelchairs. However, some useful suggestions for accessories in the kitchen and on the wheelchair were made as a result of this study.

Model kitchens became the footprint for designing an accessible kitchen in the early 1970s. During this time, most of the research and design in accessibility was developed in Sweden and Europe. Sven-Olof Brattgard researched the activities of daily living among the severely disabled and developed a prototype kitchen known as the Fokus kitchen (Raschko, 1991). The purpose of the Fokus kitchen was to provide access and flexibility to all users. The kitchen was extremely adjustable since cabinets and counters were placed on an adjustable wall track and console system.

In the 1990s, GE Appliances sponsored a model kitchen, the Real Life Design Kitchen, which incorporated universal design principles and accessibility standards. The kitchen was presented at various trade show exhibits across the country allowing kitchen designers and builders to see and experience first hand a universally designed kitchen based on the NKBA guidelines for accessible kitchens.

It has been well documented that it is difficult to achieve universal usability, especially in kitchen design when the needs of a standing user are different from those of a seated one (Yearns, Patterson, & Bice, 2005; Story, Mueller, & Mace, 1998;
Vanderheiden & Vanderheiden, 1992). In 1993 the Rhode Island School of Design began a five-year project to develop *The Universal Kitchen*. Their goal was to address the issues of a variety of cooks who stand and sit while preparing meals, by designing kitchen cabinets as modular units that could be manually or electronically adjusted for the individual user. *The Universal Kitchen* was conceived as a “‘...kit of parts,’ with interchangeable modular components for refrigeration, cooking, water delivery, and storage” (Rhode Island School of Design, 2006, P3.). In 2003, Yearns, Patterson and Bice (2005) began a research project to develop a prototype for a universal designed kitchen to meet the needs of older women who prepare meals in their homes. The major issues that their kitchen prototype addressed were ways to lessen climbing and reaching, to reduce bending, and to compensate for lack of strength (Yearns, Patterson, & Bice, 2005). Their kitchen prototype was also based on a modular system and allowed for flexibility in height and cabinet type. Although both modular kitchen projects noted above show great progress towards universal kitchen design, neither prototype has been tested with people in wheelchairs.

**Methodology**

Nine participants, with various disabilities, who use a wheelchair on a daily basis, were selected for the study. The sample consisted of 5 male and 4 female participants with ages ranging from 28-58 years old. Each participant had varying levels of grip, strength, and memory as a result of their disability.

Two instruments were developed for this study: the universal design evaluation form and the universal design decision tree. The study was video taped, reviewed and
evaluated by the researcher utilizing the universal design evaluation decision tree matrix (Steinfeld & Danford, 1999) after all the participants had finished the study.

The universal design evaluation form's purpose was twofold: collecting anthropometric data and evaluating specific universal design features of the GE Real Life Design Kitchen (See Appendix A). Collecting specific anthropometric data from each participant allowed the researcher to recognize variances in the reach, size, and clearance needs of the participants. In addition, the universal design activity specifically tested certain universal design features of the GE Real Life Design Kitchen by having the participant perform and evaluate various tasks.

The participants performed 18 different tasks related to 18 different features of the kitchen. The participants evaluated the features and tasks based upon ease of use and visual appeal. At the end of each task, the participants were asked if they had any additional comments they would like to add. Appendix B shows a diagram of where each task occurred.

**Summary**

The results concurred with existing recommendations concerning clear floor and open knee spaces at the sink and cooktop areas, and also discovered that clear floor and open knee space is useful under a countertop microwave because it allows the wheelchair user to get their body closer to the task. The results of this study determined that appliances with easy to read and use controls are preferred and should be located within good visual range of a person in a wheelchair to be effective. In addition, it was determined that a pull-out cutting board and some type of roll-out tray feature in a base cabinet is useful to a person in a wheelchair.
Results from this study cannot be generalized to a national population of wheelchair users because of the limitations of the sample. Results, however, are significant in terms of providing consumers, cabinet and appliance manufacturers, policy makers, and designers with valuable insight and information concerning the inclusion of universal design features in kitchens and environments that accommodate the needs of all people, including the person in a wheelchair. In addition, the results of this study imply that not all universal design features recommended in kitchen design are beneficial to people in wheelchairs. Further investigation of some of the universal design features tested is needed.

REFERENCES


Vanderheiden, G.C., & Vanderheiden, K.R. (1992). Guidelines for the design of consumer products to increase their accessibility to people with disabilities or who are aging. Madison, WI: University of Wisconsin, Trace R & D Center.

APPENDIX A
Universal Design Evaluation Form (a portion from the form is shown)

Measurements *(A, B, I, & J measurements taken with 15 oz. Bag of rice in hand)*

A. * Side Approach Horizontal Reach Sitting *
B. * Vertical Reach Height Sitting *
C. * Sitting Height *
D. * Eye Height Sitting *
E. * Shoulder Height Sitting *
F. * Top of Arm Height Sitting *
G. * Under Knee to Toe Length *
H. * Thigh to Floor *
I. * Horizontal Forward Reach *
J. * Horizontal Forward Reach Stretching *
K. * Wheelchair Width *
L. * Wheelchair Depth *
M. * Foot Rest Extension Depth *
N. * Wheelchair Arm Height *
O. * Floor to top of Toe in Footrest *
Task 3  Adjust sink “A” utilizing the adjustability mechanism of the sink. Place the sink at the appropriate height for your greatest ease of use and get water out of the faucet in the glass provided and place it on the counter.

On a scale from 1 to 5 (1 being poor & 5 being excellent), rate the following:

<table>
<thead>
<tr>
<th></th>
<th>poor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of clearance and floor space under sink</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Ease of adjusting the sink</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Ease of turning on faucet</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Visual Appeal of Feature</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Would this feature make your kitchen preparation easier? ___________________________________________

Measure the sink height ________________________________

Is there enough counter space at the appropriate height next to the sink? _____________________________

Do you have any additional comments you would like to add? Would you change anything?__________________________
A score of five was the highest rating possible and a score of 1 was the lowest rating possible.

Ratings for Task Seventeen

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<thead>
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<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>Ease of using the controls</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td></td>
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<tr>
<td>Ease of clearance and floor space to open oven door</td>
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<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of opening the oven door</td>
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<td>6</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
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</tr>
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<td>Ease of maneuvering to the table</td>
<td>1</td>
<td>2</td>
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</tbody>
</table>
Humans have always turned to ornamentation to beautify their environments. In addition to beauty, ornamentation conveys meaning that is separate from the structure of the building, but equally important. Ornamentation is built on the foundation of both beauty and meaning, and expressed visually through rhythm, progression, tracery, and motifs (Pontius). Interior designers use the many elements of design to create beauty and meaning both in three-dimensional spaces and on two-dimensional surfaces. Of the design elements, light is particularly complex and is integral to the presentation of the other elements. The dynamic characteristics of light can be experienced through shadow. Shadows, like light, have measurable aspects, yet they remain inherently subjective, qualitative, and mysterious. Designers and critics all acknowledge that shadows exist, but use them without discussing how shadows respond to theories of design. This presentation explores the qualitative aspects of shadows in design, specifically shadows as they relate to ornamentation.

The presentation consists of two parts: development of concepts and physical application. A study of articles and architectural works discussing light set the foundation for a theoretical framework in which to discuss shadows. In order to discuss aesthetic value, a definition of beauty is established. Beauty is discussed through the
concepts of the unprecedented, sacred, life-giving, and deliberation (Scarry). These aspects of shadows transcend the usual divisions of culture, climate, materials, and ideas (figure 1). Shadows gain their meaning through philosophical arguments and examples from architecture (Millet, Wang). Shadows gain their meaning have philosophical value, through connection to origin, memory, the spiritual, and inspiration. While cultural origin influenced the composition of the shadows, the emphasis is on aesthetics and philosophy.

The second part of the presentation offers study models that explored methods of application. Shadows are able to communicate through the established language of ornamentation. A comparison of solid material ornamentation and examples of shadows show that shadows convey rhythm, progression, tracery, and motif (figure 9). In application, shadows are created by controlling light through reflection, diffusion, and interruption. The resulting compositions are further classified as hushed, energetic, or a combination of the two (figure 10).

In its simplest form, this research presents a toolbox for designers to explore shadows, which contains 1) a theoretical framework for shadows, 2) elements of ornamentation, 3) techniques for creating intentional shadows, and 4) categories for potential results. Shadows delight the eye and stimulate the mind; they represent a new set of options that have been made accessible to all designers.
Selected Resources


Discovering Beauty and Meaning:  
A Meditative Inquiry into Shadow as Ornamentation in Interior Design

Stacy DeKoekkoek  
John Turpin

Washington State University

Narrative

Humans have always turned to ornamentation to beautify their environments. In addition to beauty, ornamentation conveys meaning that is separate from the structure of the building, but still important. It is built on the foundation of non-physical aspects of beauty and meaning, and expressed visually through the physical aspects of rhythm, progression, tracery, and motifs (Pontius, Bloomer 62). Interior designers use the many elements of design to create beauty and meaning both in three-dimensional spaces and on two-dimensional surfaces. Of the design elements, light is integral to the presentation of the other elements and is particularly complex (Millet). The dynamic characteristics of light can also be experienced through shadow.

Shadows, like light, have measurable aspects, yet they remain inherently subjective, qualitative, and mysterious. Designers and critics all acknowledge that shadows exist, but use them without discussing how shadows respond to different theories of design. Until recently, In Praise of Shadows by Jun’ichirō Tanizaki was the only book that attempted to discuss the significance of shadows. Although Tanizaki was a freelance writer and neither an architect nor designer, any book that touches the topic of shadows in architecture makes reference to Tanizaki’s masterpiece. In his book, Tanizaki writes, “the beauty of a Japanese room depends on a variation of
shadows, heavy shadows against light shadows—it has nothing else” (18). He is explaining the absence of conventional decoration in Japanese rooms, which usually have blank walls of a uniform, neutral color. He is suggesting that the desire for, or presence of, shadows influences the way that rooms are decorated. This suggestion leads to the question of is it possible to use shadows as ornamentation? If so, what implications does this have for the field of interior design?

DISCUSSION

This exploration consists of two parts: the development of concepts and the methods of application. The issue of ornamentation deals directly with both beauty and meaning. The close association of meaning to culture and religion immediately immerses any discussion in philosophy. In establishing which philosophical tradition is to be used it is clear that the western tradition, which originated in Greece and emphasizes individual identity, and the Eastern tradition, which came out of China and emphasizes a holistic view through process (Wang “Authenticity”) do not need to be separated. A division is unnecessary because the use of shadows is present in the architecture of both and each find beauty and philosophical significance in shadows.

In order to discuss aesthetic value, a definition of beauty is established. Beauty is discussed through Elaine Scarry’s four characteristics of beauty. These are “unprecedented,” “sacred,” “life-giving,” and “incites deliberation” (23-24). Shadows can be described as unprecedented because the location and orientation of the building as well as the designer’s creativity ensure that no shadow will be exactly like another. The intangible characteristics of shadows represents the non-physical; allowing them to
become a link to an experience of the sacred. Through a close connection to nature shadows are both restful and invigorating. They are indicators of the natural passage of time and a greater connection to nature by being aware of time. In hot climates, shadows protect from the burning heat of the sun. In all climates, lower light levels have a calming affect. Shadows are subjective, qualitative and mysterious. This paper is only a small piece of the potential discussion of shadows; one could study shadows for a lifetime and still be making new discoveries. Figure 1 illustrates the multi-faceted criteria for evaluating the beauty of shadows. In short, these curious phenomena are beautiful.

<table>
<thead>
<tr>
<th>Characteristics of Shadows</th>
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</tr>
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<tbody>
<tr>
<td>WEST</td>
<td></td>
<td>EAST</td>
</tr>
<tr>
<td>Beauty: Identity</td>
<td></td>
<td>Beauty: Process</td>
</tr>
<tr>
<td>Unprecedented</td>
<td></td>
<td>Spontaneity</td>
</tr>
<tr>
<td>Sacred</td>
<td></td>
<td>Apperception</td>
</tr>
<tr>
<td>Life-giving, Regenerative</td>
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<td>Vitalism</td>
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<tr>
<td>Deliberation</td>
<td></td>
<td>Deliberation</td>
</tr>
<tr>
<td>Unprecedented</td>
<td></td>
<td>Spontaneity</td>
</tr>
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</tr>
<tr>
<td>Deliberation</td>
<td></td>
<td>Deliberation</td>
</tr>
</tbody>
</table>

Figure 1 Beauty and Shadows.

More than simply beautiful or aesthetically pleasing, shadows convey deeper meaning and complex emotions. Shadows have an inherently murky quality about them which is ideal for representing a connection to cultural roots and memory, to a religious
experience, or to a source of inner creativity and inspiration. Shadows create these qualities in the following examples:

A traditional Japanese home includes a dark alcove that represents the connection to one’s ancestors. In the Koshino House (figure 2) by Tadao Ando, a narrow skylight on only one side of the room allows the darkness to gather into the back corner creating an effect that is very similar to the traditional alcove. The shadows make the house feel established even though it is newly constructed (Ando 31).

Daniel Libeskind describes the Holocaust Tower (figure 3) at the Jewish Museum, Berlin as “a memory area in which nakedness and emptiness represent the many victims of Germany’s mass genocide” (“Libeskind-Building”). The shadows that fill the place remind the viewer that the victims are not present, but they are not forgotten.

Steven Holl’s Chapel of St. Ignatius is an example of how shadows produce privacy and reverence in religious spaces. Shadows are present throughout the space and particularly dominate the area known as the “Reconciliation Chapel” (figure 4). Here they provide symbolic privacy for confession and personal connection with God.
The Water Temple by Tadao Ando is a modern example of shadows. A Zen spiritual atmosphere is created through the representation of a void (Drew, Plummer 19). Along the approach to the main hall (figure 5), heavy shadows seem to dematerialize the walls; causing them to disappear as if they were part of the ‘nothing’ (Plummer 19).

Louis Kahn’s Kimbell Art Museum is an excellent example of his concept that inspiration comes from the “Treasury of Shadow” (Millet 160). In the gallery spaces, (figure 6) the light reflectors are effective for general illumination. Still, they allow for soft shadows to pool around the display bases; associating the objects that are the result of creativity with the source of creativity.

The intentional presence of shadow is a noticeable trait in both traditional and modern teahouses, as seen at the Jo-an Tearoom (figure 7). In Japan, the tea ceremony and tea houses are an expression of inner potential and artistic sensibility (Okakura 2, Suzuki 284). Teahouses deliberately celebrate inner harmony, propriety, and gentleness through carefully calculated construction and shadows. These are just a few examples of large projects where shadows influence how the space is experienced; they encourage thought and create feeling. There are many more examples where
these same principles can be applied to small compositions and naturally-occurring, unintentional shadows.

Having discussed shadows in terms of beauty and meaning, a relationship can be drawn between shadows and ornamentation (figure 8).

As a form of ornamentation, shadows convey beauty and meaning through rhythm, progression, tracery, or a single motif. A comparison of physical ornamentation and examples of shadows show clearly that shadows demonstrate the same characteristics. Take some time to contemplate the images in figure 9.
MODEL STUDY

The established theoretical framework allows shadows to be discussed as ornamentation, but how can designers consciously recreate the experience of these spaces? An analysis of the case studies and examples reveals the physical conditions that created the shadows in those applications. Some cases use more than one technique. The methods for creating shadows fall into three categories: reflection, diffusion, and interruption. The definitions of these terms are:

Reflection: Light bouncing off a primary surface onto a secondary or tertiary surface

Diffusion: direct light reduced by passing through a translucent material or a series of closely arranged objects creating a texture or small-scale pattern.
Interruption: when a physical object blocks light from a direct source causing an abrupt edge

Results from the analysis of case studies and examples show the two types of overall shadow conditions; shadow as negative space produced when an object blocks light and shadow as a muted quality of light. These two types of shadows generate very different feelings when created in a space. The hard edges of the negative space shadow create an energized feeling, while the muted shadows creates a hushed atmosphere. A series of shadow conditions were modeled and then sorted into two categories, energetic and hushed. Also, different techniques were combined to create both energetic and hushed shadows simultaneously (figure 10). This differentiation better equips designers to produce specific compositions.
CONCLUSION

Shadows are worth looking at as a subject that is separate from light. Most importantly, shadows contain a vast amount of untapped potential and can be an
intentional part of design. What is established here is a framework for analyzing any design project and a toolbox for creating future projects. Shadows represent a new set of options where art and design can further explore the complex weaving of beauty and meaning, while relating them to the world of physical realities. This project has no end; it establishes a place to start.
Reference List
(MLA)


----. “Chapter 7. What is an Authentic Experience”: working paper. 6 Nov. 2006.

Image Credits


Figure 3: “Holocaust Tower” <http://www.juedisches-museum-berlin.de/site/EN/04-Architecture/02-Libeskind-Building/06-Holocaust-Tower/holocaust-tower.php>

Figure 4: “Chapel of Reconciliation.” The Chapel of St. Ignatius <http://www.seattleu.edu/chapel/tour/slide/26.html>


Figure 6: “South Center Gallery.” Kimbell Art Museum <http://www.kimbellart.org/building/building_tour14.cfm>

Figure 9a: [http://faculty.evansville.edu/rl29/art105/img/islamic_cordobamosque.jpg](http://faculty.evansville.edu/rl29/art105/img/islamic_cordobamosque.jpg)

Figure 9b: McGrath, Kevin.


Figure 9c:

[http://www.paradoxplace.com/Perspectives/ItalianImages/images/Firenze/MediciFiles/PalazzoMediciRiccardiJun00.jpg](http://www.paradoxplace.com/Perspectives/ItalianImages/images/Firenze/MediciFiles/PalazzoMediciRiccardiJun00.jpg)

Figure 9d: [http://www.aurinkophoto.com/architecture/arch02.html](http://www.aurinkophoto.com/architecture/arch02.html)

Figure 9e: [http://www.artlex.com/ArtLex/r/images/rosewndw_notr.p.ext.lg.jpg](http://www.artlex.com/ArtLex/r/images/rosewndw_notr.p.ext.lg.jpg)

Figure 9f: “Balustrade Shadows” Images of the Other Worlds.


Figure 9g: [http://static.flickr.com/21/29109991_f45963fed9.jpg](http://static.flickr.com/21/29109991_f45963fed9.jpg)

Figure 9h: [http://www.wm.edu/news/slides/rudolph_architecture/slide06.html](http://www.wm.edu/news/slides/rudolph_architecture/slide06.html)
Privacy in the Open Plan Office: A Qualitative Inquiry

Suining Ding, ASID, IDEC
Indiana University Purdue University Fort Wayne

Abstract

Purpose

The purpose of this study is to explore managers’ and employees’ opinions regarding privacy in open plan office. There are three objectives for this research: 1) to identify the major environmental factors for employees to feel satisfied in their working environment; 2) to investigate the relationship between organizational ranking status and opinion regarding visual privacy and acoustical privacy; 3) to reveal employees’ preference regarding the flexibility of control over their own working place when privacy is needed. The significant contribution of this research is to provide valid data and make valuable suggestions to the body of knowledge of open plan office design.

Review of Literature

American Society of Interior Designers (ASID) conducted a series of qualitative and quantitative research studies to learn more about what executives, managers, employees and business experts considered most important in the work environment. Findings showed that only 28% of managers indicated that privacy ranks as the top design aspect for improving productivity (ASID, 2005a). Another survey done by ASID indicated that 46% of employees think amount of privacy make them feel satisfactory in
their working environment (ASID, 2005b). It is clear that different opinions may exist between managers and employees on prioritizing privacy. No research has been found about a relationship between organizational ranking status and opinion of visual and acoustical privacy. Similarly, no research was found about the desire of flexibility of control over physical working environment as a way to increase the level of privacy. Therefore, more studies are needed to confirm the results from previous studies and obtain new findings about privacy in open plan settings.

Methodology

The research method for this project is structured interview. The questions were designed based on the objective of this study, which is a qualitative inquiry about the privacy. The categorized data are analyzed with percentage of frequency distributions and Chi square analysis. Subjects were chosen from three different companies in the Midwest of United States. All of them are using open plan offices or sharing offices with others. Forty-two subjects were interviewed and separated in two groups as managers and employees.

Summary of Results

The study confirmed that lack of privacy still exists as an unsolved negative aspect in open plan office. Findings indicated that there is a strong desire for employees to change and control their physical working place when both visual and acoustical privacy are needed. The first hypothesis was supported by the research data that employees have strong desire to control and change the modular and panel system.
furniture in order to increase the degree of privacy. The second hypothesis was supported that managers and employees have the same opinion regarding acoustical privacy. Another finding of this study is that there is a different opinion regarding visual privacy between managers and employees. The research data rejects the third hypothesis. A high percentage of employees prefer to increase the partition height and the degree of enclosure. This can be explained by managers' wanting to have visual control of the entire office.

References


Narrative

Purpose

The purpose of this study is to explore managers’ and employees’ opinions regarding privacy in open plan office. There are three objectives for this research: 1) to identify the major environmental factors for employees to feel satisfied in their working environment; 2) to investigate the relationship between organizational ranking status and opinion regarding visual privacy and acoustical privacy; 3) to reveal employees’ preference regarding the flexibility of control over their own working place when privacy is needed. The significant contribution of this research is to provide valid data and make valuable suggestions to the body of knowledge of open plan office design.

Review of Literature

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their working environment (ASID, 2005b). It is clear that different opinions may exist between managers and employees on prioritizing privacy. No research has been found about a relationship between organizational ranking status and opinion of visual and acoustical privacy. Similarly, no research was found about the desire of flexibility of control over physical working environment as a way to increase the level of privacy. Therefore, more studies are needed to confirm the results from previous studies and obtain new findings about privacy in open plan settings.

Because system furniture plays a significant role affecting the perception of privacy in open plan office, it is obviously necessary to do the investigations about its design. Haworth and Harter have both developed an office panel that becomes clear or cloudy at the touch of a button. Haworth describes the active portion as “a light control film, a flexible plastic with a coating that scatters light, creating a frosted or translucent look. When low voltage electricity is applied to the film, the molecules in the coating instantly align, allowing light to pass through without obstruction, turning the window transparent (Kleeman, 1992). This system provides the office occupants the visual privacy for such occasions as an employee review, a strategy session, or any sensitive meeting. The translucent condition also signals that the space is in use. This product can provide an island of visual privacy in an open plan office and definitely provides office occupants the flexibility of control over their working place when greater level of privacy is needed.

The literature review shows significant fact that system furniture plays an important role in open plan office. Although previous research has shown that physical environments affect privacy, all the research findings recommended technical solutions
to increase the level of privacy. None of research findings suggested how to achieve
greater degree of privacy by office occupants themselves. None of previous studies
have explored flexible assembled modular and panel system furniture, which can
possibly increase the degree of privacy by office occupants themselves. This reinforces
the need for a systematic investigation of user preference of flexibility of control over
their physical working environment, such as modular and changeable system furniture.
Manager’s office settings are usually different from employee’s office settings. This also
requires a systematic investigation of the relationship between organizational ranking
status and opinion of visual and acoustical privacy in order to provide better design
solutions in an open plan office setting.

Methodology

The research method for this project is structured interview including both face-to-face and telephone interviews. Subjects were asked to answer five questions, which were formulated beforehand and asked in a set order. The questions were designed based on the objective of this study, which is a qualitative inquiry about the privacy. The categorized data are analyzed with percentage of frequency distributions and Chi square analysis.

Subjects were chosen from three different companies in the Midwest of United States. All of them are using open plan offices or sharing offices with others. Forty-two subjects were interviewed. The ages of the subjects ranged from 24 to 46. Twenty-four sample subjects are computer programmers and computer analysts. In this study, they were classified as general office employees. Twelve subjects are project managers; six
subjects are vice presidents and they are classified as managers. One of the objectives for this study is to investigate the relationship between organizational ranking status and opinion regarding visual and acoustical privacy. Therefore, subjects were classified and separated in two groups.

In order to define the relationship between organizational ranking status and opinion of visual privacy and acoustical privacy as well as user desires when privacy is needed, three hypotheses were used to guide this study (Table 1). This study is a preliminary investigation; five structured interview questions were prepared (Table 2). The subjects were divided into two categories based on their organizational ranking status, which served as dimensions of the basic statistical analysis and Chi-square analysis.

The classification of the respondents' answers into categories is called coding (Sommer, 1991). It is the means by which lengthy statements are reduced and sorted into specific response categories. Code categories are generally numerical (Sommer, 1991). In this study, the responses were recorded. The frequencies of each category were drawn, and percentages were calculated for each category as well. Furthermore, a Chi-square statistical analysis was carried out to examine whether there is a relationship between organizational ranking status and opinion of having visual and acoustical privacy in the open plan office. Two Chi-square analyses were completed as well. The first one focused on whether or not there is a different opinion on having acoustical privacy between managers and general office employees. The second analysis emphasized whether there is a different opinion on having visual privacy between managers and general office employees.
Findings

Table 2 presents the results from interview questions as well as percentage of frequency distributions of responses from both managers and employees.

Hypothesis one stated that employees have strong desire to control and change the modular and panel system furniture when privacy is needed. Percentage Frequency Distributions were used to examine it. 67% of managers and 88% of general office employees stated that they want to have the flexibility to have control over their physical working place when privacy is needed. 61% of managers and 83% of employees would like to have mobile furniture. Therefore, hypothesis one is supported by collected data and data analysis.

Hypothesis two stated that preference of acoustical privacy will be the same as managers and employees in open plan office. Chi square analysis was used to analyze the data. There is no relationship between the organizational ranking status and the opinion for acoustical privacy. (α = 0.05, Chi-square value = 6.2788 < 7.81). In other words, no matter what kinds of organizational ranking status office occupants have, the same opinion exists concerning acoustical privacy in the open plan office. (Chi-square Calculation Analysis 1 in Table 3).

Hypothesis three stated that preference of visual privacy will be the same as managers and employees in open plan office. Chi-square analysis was used to analyze the collected data. There is a different preference on having visual privacy between managers and general office workers. (α = 0.05, Chi-square value = 8.5409 > 7.81). A
high percentage of employees prefer to increase the partition height and the degree of enclosure. (Chi-square Calculation Analysis 2 in Table 3).

Summary

This study not only addressed some issues discussed in the literature review but also obtained some new findings. The study confirmed that lack of privacy still exists as an unsolved negative aspect in open plan office. Employees have a strong desire to solve this problem in order to have a satisfied working place. Findings indicated that there is a strong desire for employees to change and control their physical working place when both visual and acoustical privacy are needed. The first hypothesis was supported by the research data that employees have strong desire to control and change the modular and panel system furniture in order to increase the degree of privacy. The second hypothesis was supported that managers and employees have the same opinion regarding acoustical privacy. Another finding of this study is that there is a different opinion regarding visual privacy between managers and employees. The research data rejects the third hypothesis. This can be explained by managers' wanting to have visual control of the entire office. The recommended solutions come out of this study is to provide movable and adjustable modular system furniture in addition to all the technical solutions in open plan settings. Office occupants can have the flexibility to change the heights, materials and configurations when more privacy is needed. On the other hand, user participation in office design will increase the office environmental satisfaction. Involving office occupants in designing changeable modular system
furniture becomes more necessary to create more satisfied office environment and be more productive.

References


Appendix

Table 1
HYPOTHESES

1. Employees have strong desire to control and change the modular and panel system furniture when privacy is needed.

2. Preference of acoustical privacy will be the same as managers and employees in open plan office.

3. Preference of visual privacy will be the same as managers and employees in open plan office.

Table 2
FREQUENCY DISTRIBUTIONS OF CATEGORIES OF QUESTIONS

INTERVIEW QUESTIONS

1. What aspects make you feel satisfied with your current working space?
2. What aspects make you feel unsatisfied with your current working space?

3. Rank the following design factors: mobility, comfort, privacy, flexibility to control over physical working place, which makes you feel satisfied and affect your performance in your working space?

4. In an open plan office setting, when you need more acoustical privacy, what kind of system furniture do you prefer and what would you like to do?

5. In an open plan office setting, when you need more visual privacy, what kind of system furniture do you prefer and what would you like to do?
### Table 3

**CHI-SQUARE CALCULATION ANALYSIS**

<table>
<thead>
<tr>
<th>Null hypothesis = Preference of acoustical privacy will be the same as managers and general office employees in open plan office</th>
<th>Null hypothesis = Preference of visual privacy will be the same as managers and general office employees in open plan office</th>
</tr>
</thead>
</table>
| Degree of freedom = (2-1) (4-1) = 3  
Confidence Level = 0.05  
Chi-square Value from Critical Value Table = 7.81 | Degree of freedom = (2-1) (4-1) = 3  
Confidence Level = 0.05  
Chi-square Value from Critical Value Table = 7.81 |
| Since the computed Chi-square value 6.2788 is less than 7.81 from Chi-square Critical Values Table, we can not reject our null hypothesis set before, and that is, no matter what kind of organizational ranking status people have, they have the same opinions about having acoustical privacy in the open plan office. | The Critical Values Table shows that with three degree of freedom, a Chi-square of 7.81 or greater is required to reject the null hypothesis at the 0.05 level. Since the Chi-square value for this survey is larger than this (8.5409 > 7.81), we can conclude that there is a reliable organizational ranking status difference in the opinion of having visual privacy. The data shows that a higher percentage of general office employees prefer to increase the partition height and the degree of enclosure. |
| Computed Chi-square Value = 1.8674 + 1.6377 + 0.2565 + 0.4281 + 1.3878 + 0.4911 + 0.0817 + 0.1285 = 6.2788 | Computed Chi-square Value = 2.1735 + 1.0944 + 0.8096 + 2.4599 + 0.6376 + 0.3201 + 0.2375 + 0.7201 = 8.5409 |
Engaging the First-Year Design Student: What Can the Lecture Contribute?

Timothy D. Dolan, M.S.
Appalachian State University

Abstract

For many first-year design students, the introductory design lecture class can be a tedious right of passage. Often overshadowed by the studio course, the lecture is a conduit for many significant fundamentals, theories and principles of design, but provides little opportunity to engage students in a creative capacity. The studio counterpart has numerous success stories supporting out-of-the-box projects and ideas. A brief scan reveals such projects as MIT’s Egg Protection Vehicle utilized by many design schools. Florida State University (2007) recently made headlines with its Arches Project, completed by groups of interior design students, eliciting some comparison to Christo’s The Gates (Fairhurst, 2007). Yale Architecture Students have been participating in the First-Year Building Project (FYBP) for over 40 years, this year tackling an ADA Accessible Home for a disabled war veteran (Baker, 2007). Yet, a noticeable gap exists between lecture and studio. This teaching forum discusses six small group projects integrated into a lecture course designed to not only engage first-year design students, but also to provide them with an outlet to begin to utilize the concepts, principles and theories explored and discussed. Recognizing this is not a studio course, the small-scale projects increase in complexity and scope as the semester progresses. Through emphasis on craftsmanship, execution and composition,
the relationship between lecture and studio is bridged. The development of the projects focuses on a combination of student habits and interests, course objectives and desired outcomes, and a recognition that the majority of the students are true freshmen. “As Seen on TV," project #1, asks students to review popular television programming or movies, identify unique design object product placement, and discuss their impact on consumers. Project #2, “Sit on It,” introduces students to campus, design professors and student services through a scavenger hunt identifying icons of chair design, allowing for initial discussions of ergonomics, material selection and specification. The built environment as branding is investigated through “What’s in a Name?” as students explore the campus in project #3. Utilizing the Steelcase article *Space as Brand Experience* students are exposed to case studies as a foundation for this project (Myerson, 2004). “Can I Make a Difference?” encourages students to research non-profit design organizations and design as an impetus for social change. Bryan Bell’s *Good Deeds, Good Design: Community Service Through Architecture* is referenced as a resource for project #4. The design concept is introduced in “The Big Idea," project #5, as students attempt their first investigation project. “Bringing it All Together…” demands that students analyze a space, synthesize the environment, then utilize the concepts, principles and theories discussed in class for the last project. Upper-level case studies and precedent studies are reviewed in class, establishing a framework for the project. Student response to the lecture projects has been positive. Quoting one student, “…they (projects) allow us to have a chance to experience the ideas we are talking about in class” (Briskie, 2007). Freshman Libby Lee (2007) states “the projects provide a view to everyday life through the eyes of a designer.”
Engaging the First-Year Design Student: What Can the Lecture Contribute?

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Narrative

For many first-year design students, the introductory design lecture class can be a tedious right of passage. While overshadowed by the studio course, the lecture is a conduit for many significant fundamentals, theories and principles of design, but provides little opportunity to engage students in a creative capacity. Studio courses have numerous success stories supporting out-of-the-box projects and ideas. A brief scan reveals such projects as MIT’s Egg Protection Vehicle utilized by many design schools. Florida State University (2007) recently made headlines with its Arches Project, completed by groups of interior design students, eliciting some comparison to Christo’s The Gates (Fairhurst, 2007). Yale Architecture Students (2007) have been participating in the First-Year Building Project (FYBP) for over 40 years, this year producing an ADA Accessible Home for a disabled war veteran (Baker, 2007). However, when considering creative projects, a noticeable gap and disproportionate accolades generally exist between lecture and studio. The lecture should complement and set the framework for success in the studio.

This teaching forum presents six small-scale team projects integrated into a lecture course designed to not only engage first-year design students, but also to provide them with an outlet to begin to utilize the concepts, principles and theories explored and discussed. The small-scale projects increase in complexity and scope as
the semester progresses. Through emphasis on analysis, craftsmanship, execution and composition, the relationship between lecture and studio is bridged. Theory and criticism are also introduced, as students begin to develop analytic processes and comparisons structured around foundational concepts.

The development of the projects focuses on a combination of student habits and interests, course objectives and desired outcomes, and a recognition that the majority of the students are true freshmen. “As Seen on TV,” project #1, asks students to discuss the impact on consumers of unique design, object placement, and choice as seen in popular television programming or movies. The main goal of this project is to expose the students to the reality that design is all around them and that the interior designer can influence product choice and placement and popular culture.

Project #2, “Sit on It,” introduces students to campus, design professors and student services through a scavenger hunt identifying icons of chair design, allowing for initial discussions of ergonomics, material selection and specification. “Sit on It” fosters many discussion topics and concepts central to design. Form versus function, ergonomics, design and status, and initial introduction to sustainability are all appropriate as students investigate design for sitting. This project also provides upper-level faculty and allied faculty an opportunity to meet first-year design students and establish a connection.

The built environment as branding is investigated through “What’s in a Name?” as students explore the campus in project #3. Utilizing the Steelcase article Space as Brand Experience students are exposed to case studies as a foundation for this project (Myerson, 2004). Space as branding can be a challenge for many students. While most
understand branding in our culture as it relates to fashion and consumerism, the environment’s image as brand can create some confusion. This project opens the opportunity for students to explore the deeper meaning and impact of space as branding. In *Environmental Psychology for Design*, Dak Kopec (2006) writes “Image can serve not only to differentiate a store from others, including the competition, but also to attract and keep customers who may rely on the image to communicate information about the quality and value of products and services…” (279).

“Can I Make a Difference?,” Project #4, encourages students to research, reflect and respond to non-profit design organizations and design as an impetus for social change. Bryan Bell’s (2004) *Good Deeds, Good Design: Community Service Through Architecture* is referenced as a resource for project #4. Many people view architecture and design as only for the very wealthy. According to a 1995 article in the Philadelphia Inquirer, only 2% of new home-buyers worked directly with an architect to design the space in which they live (Bell, 2004). Additionally, studies have shown that through providing spaces designed and built to support the mentally ill, the housing pays for itself through the reduction of services (Culhane, 2002).

The design concept is introduced in Project #5, “The Big Idea.” Concept is often confused with theme or style for first-year students. This exercise forces students to examine a project at a more micro-level and to begin to assess what motivates the design.

Finally, “Bringing it All Together,” Project #6, demands that students analyze a space, synthesize the environment, and then utilize the concepts, principles and
theories discussed in class. Third and fourth-year student and precedent studies are reviewed in class, establishing a framework for the project.

Student response to the lecture projects has been positive. Quoting one student, “…they (projects) allow us to have a chance to experience the ideas we are talking about in class” (Briskie, 2007). Freshman Libby Lee (2007) stated “the projects provide a view to everyday life through the eyes of a designer.” In viewing the projects in their entirety over the semester, one cannot only see the progress made in design and execution, but also in thought, analysis and deeper understanding.


Defining Interior Design: Professional Vocabulary vs. Professionals’ Vocabulary

Theodore Drab
Oklahoma State University

Abstract

Purpose

Various organizations within the interior design profession, recognizing public
confusion about interior designers’ role in shaping the built environment, have published
documents to rectify the situation. The National Council for Interior Design Qualification
(NCIDQ) published the 1990 *Definition of Interior Design* to articulate what interior
designers do by providing a list of active verbs. That definition was revised in 2004, with
the verbs changed to nouns identifying the specific activities of interior designers. The
Council for Interior Design Accreditation (CIDA) and the Interior Design Experience
Program (IDEP) continue the work of defining the levels of achievement students in
accredited programs attain, and the work experiences required to prepare for
examination and full professional standing. The 2005 publication of *The Interior Design
Profession’s Body of Knowledge* provided new focus on defining exactly what “interior
design” signifies.

This paper examines the extent to which practicing professionals define themselves
by using the vocabulary of popular periodicals rather than that developed by the
professional organizations.
Framework

Previous investigations of the vocabulary used to define the discipline highlighted the role of periodicals in perpetuating an inaccurate public perception of interior design (Drab, 2002), the attitudes of interior design and architecture students about their respective analytical abilities (Powell, 2004), and the devaluing impact of feminine linguistic forms prevalent in interior design periodicals (Mathews & Hill, 2007). Verbs, adjectives, and nouns either used in magazines or selected by students as appropriate to define interior design were examined. The use of language by practicing professionals in defining their discipline has not been adequately addressed.

Methodology

Practitioners (437) were asked to define what they did as interior designers, and a list of the verbs they supplied was generated and compared both to verbs used in periodicals dealing with interior design and to those in documents published by the professional organizations. Content analysis of periodicals provided data on the verbs most frequently used in magazines, and the 1990 and 2004 definitions of interior design, the CIDA 2006 Professional Standards and The Interior Design Profession’s Body of Knowledge (2005) were examined to generate a list of verbs common to the professional organizations’ documents. Predictably, the two lists differ, with periodicals using “create” more frequently than other verbs, though it occurs infrequently in the organizations’ documents.

Results

Practitioners provided the verb “create” with far greater frequency than “analyze”, “specify”, “organize”, “manage”, “research”, or other words contained in the carefully
crafted official definitions. In contrast, “analyze”, used frequently in the organizations’ documents, was provided by only a small percentage of practitioners. “Create” is imprecise, vague, and not easily measured scientifically, yet, in periodicals, still communicates a suitably positive and artistic impression. The overly frequent reliance on the verb “create” over simplifies the true character of creativity, defined as “complex and multi-faceted” by Portillo (2002).

The increased use of “create” and the decreased use of “analyze” and “organize/manage” over the ten year course of the study suggests that interior design educators and professional organizations have important roles to play in enhancing practitioners’ effectiveness in defining their field.

**Verbs supplied by interior design practitioners in response to the question**

“**What do you do in your role as an interior designer?”**

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Create – 21%</td>
<td>Create – 46%</td>
<td>Create – 56%</td>
</tr>
<tr>
<td>Design – 14%</td>
<td>Design – 36%</td>
<td>Select – 16%</td>
</tr>
<tr>
<td>Solve problems – 12%</td>
<td>Select – 21%</td>
<td>Draw/draft – 12%</td>
</tr>
<tr>
<td>Space plan – 9</td>
<td>Solve problems – 15%</td>
<td>Research – 11%</td>
</tr>
<tr>
<td>Listen – 7%</td>
<td>Space plan – 14%</td>
<td>Design – 10%</td>
</tr>
<tr>
<td>Draw/draft – 6%</td>
<td>Draw/draft – 14%</td>
<td>Specify – 10%</td>
</tr>
<tr>
<td>Select – 5%</td>
<td>Specify – 13%</td>
<td>Solve problems – 9%</td>
</tr>
<tr>
<td><strong>Organize/manage – 15%</strong></td>
<td><strong>Organize/manage – 11%</strong></td>
<td>Space plan – 9%</td>
</tr>
<tr>
<td>Sell – 5%</td>
<td>Coordinate – 11%</td>
<td>Coordinate - 7</td>
</tr>
<tr>
<td>Research – 4%</td>
<td>Research – 9%</td>
<td>Help/assist – 7%</td>
</tr>
<tr>
<td>Educate/teach – 4%</td>
<td>Listen – 9%</td>
<td>Listen – 7%</td>
</tr>
<tr>
<td>Coordinate – 4%</td>
<td>Educate/teach – 9%</td>
<td><strong>Organize/manage – 6%</strong></td>
</tr>
<tr>
<td>Specify – 2%</td>
<td>Help/assist – 8%</td>
<td>Educate/teach – 5%</td>
</tr>
<tr>
<td><strong>Analyze – 2%</strong></td>
<td>Sell – 7%</td>
<td><strong>Assess/evaluate – 2%</strong></td>
</tr>
<tr>
<td>Assess/evaluate – 2%</td>
<td><strong>Analyze – 4%</strong></td>
<td><strong>Analyze – 1%</strong></td>
</tr>
</tbody>
</table>


Graduates of interior design programs enter a field inconsistently accepted as a profession. Despite the International Building Code’s designation of architects, engineers, and interior designers as “design professionals”, interior designers in many regions are viewed as less intelligent, less educated, and less qualified to assume leadership in shaping the built environment than their colleagues with architecture or engineering degrees. In an effort to rectify this situation, various organizations within the profession have taken steps to change this perception, but an effective campaign to modify public perception requires more than organizational initiatives. Practitioners must actively participate in the steady progress of interior design’s acceptance as a profession, and interior design educators have a pivotal role in equipping graduates with the tools they need to gain public trust and respect, opportunities for leadership, and compensation commensurate with their contributions to public health, safety, and welfare. Practitioners’ ability to clearly define their contributions, and those of their profession, to public health, safety, and welfare is essential to current recognition and future development. The study discussed below suggests that much work needs to be done to meet these objectives.
Context

During the past decade the Interior Design profession has undergone significant changes, many of them accompanied by equally significant shifts in the vocabulary used to define or explain the discipline. In 1998 the Foundation for Interior Design Education Research (FIDER) discontinued the Pre-Professional Assistant level standards, focusing accreditation efforts on programs leading to the bachelor’s degree. FIDER reviewed and modified accreditation standards and guidelines in 2000, and recently changed its name to the Council for Interior Design Accreditation (CIDA). Former measures of student achievement ("awareness", "understanding", and "competence") have been augmented by words defining expectations for content delivery in the curriculum: "should" and "must". These measures and those that follow below were initiated with a view to raising the bar and intensifying the rigor of interior design education, examination, and experience.

In 2004 the National Council for Interior Design Qualification (NCIDQ) revised its 1990 Definition of Interior Design. The former definition was characterized by strong verbs such as "analyze", "integrate", "formulate", "collaborate", "develop", and "prepare". The new definition stresses specific tasks by using the following nouns: "research", "analysis", "formulation", "confirmation", "selection", "specification", "provision", "preparation", and "observation". A new format for the NCIDQ examination adopted during the past decade was intended to better focus upon the health, safety and welfare aspects in interior designers’ responsibilities. The Interior Design Experience Program (IDEP) was developed to formalize the two-year interval between a student’s graduation and taking the NCIDQ examination so that it might become a rigorous continuation of
the training begun in the classroom. In addition, the Interior Design Council for Continuing Education (IDCEC) was formed to enhance the quality of educational programs offered to practitioners. Most recently, with the publication of the stimulating and provocative resource, *The Interior Design Profession’s Body of Knowledge* (2005), a new emphasis on defining exactly what the term “interior design” signifies both within and outside the profession was begun.

The new directions being generated are accompanied by a new vocabulary to distinguish themselves from earlier institutions. For the interior design profession, however, it is questionable if the new vocabulary is having any impact on the way interior designers describe their work and how they communicate their role to the public they serve. Has the new language adopted, or the new rigor applied at leadership levels, been effective at modifying the vocabulary employed by interior design practitioners?

**Methodology**

Vocabulary used by interior design practitioners to define their activities was compared to vocabulary found in periodicals and in official publications of interior design organizations. A survey was administered to interior design practitioners enrolled in IDCEC approved CEU sessions dealing with public perception of the interior design profession and the role of language in perpetuating or modifying that perception. Open ended in nature, the survey elicited short responses to the question “As an interior designer, what do you do?” Following the precedent set by the NCIDQ 1990 *Definition*, in which strong active verbs were emphasized, participants were asked to respond with simple verb/noun word pairs. The verbs used were counted and the frequency of their
use was divided by the total number of respondents (not responses) with the result expressed as a percentage score. All participants were affiliated with either ASID or IIDA, and all responses were collected prior to beginning the CEU.

A total of 427 responses were collected from participants at 10 different venues. For the purposes of the current study, responses were grouped as follows: four pre-millennial sessions (1997, 1998, and two in 1999) with 150 responses; four post-millennial sessions (2002 – 2005) with 180 responses; and two sessions in September 2006 with 97 responses. Pre-millennial venues included North Carolina, Tennessee, Oklahoma, and a national ASID conference. Post-millennial venues included national meetings of the IIDA Government Forum, the Association of University Interior Designers (AUID), Air Force interior designers, and an ASID chapter in Arizona. The most recent data was collected in Oregon and Washington from members of legislative coalitions.

Previous research (Drab, 2002) that focused on the verbs used in magazine articles dealing with interior design provided an opportunity for comparison with verbs provided by survey respondents. Both NCIDQ Definitions (1990 and 2004), CIDA Professional Standards 2006, and The Interior Design Profession’s Body of Knowledge were reviewed relative to verb usage, providing additional opportunities for comparison with the verbs provided by survey respondents.
Results

In all three groups the verb used most frequently to describe what interior designers do was “create” (used by 21% of the pre-millennial group, 46% of the post-millennial group, and 56% of the Pacific Northwest group). Interestingly, the word “create” does not appear in the NCIDQ 1990 Definition and appears only once in the 2004 version. The CIDA Professional Standards 2005 refers once in the preamble to “a creative professional” (II-2) and once in the Professional Values section to “creative thinking” (II-9). In periodical articles, however, the use of “create” is plentiful, as is the use of other so-called soft verbs that tend to diminish in the public’s view the knowledge-based aspect of the discipline (Drab, 2002). Rather than recognizing the complex and multifaceted characteristics of creativity explored by Portillo (2002) and other scholars, the verb “create” is casually applied as a synonym for “design” or “make”, and is often paired with nouns like “mood”, “look”, and “ambiance”. As an example, in the July/August 2006 issue of Southern Accents the verb “create” appears 21 times, while in the April 2006 issue of Healthcare Design, it appears only 4 times, suggesting its greater frequency in the more popular publications that focus on residential practice.

Among the verbs used least frequently by all three groups were “analyze”, “assess”, and “evaluate”. The verb “analyze” appears at the top of the list in the 2000 NCIDQ Definition, and the noun form “analysis” appears twice in the 2004 version. The CIDA standards expect the previously mentioned “creative professional” to “analyze problem” (II-2) and to demonstrate “analytical thinking” along with the “creative thinking” previously mentioned (II-9). In The Body of Knowledge the word “analysis” appears
three times in the section delineating the Knowledge Areas (BOK, 37, 38), while words such as “create”, “creativity”, and “creative” are absent. The influence of popular periodicals on interior designers’ vocabulary is apparent in another example: the September 2006 issue of *Architectural Digest* uses the word “create” 28 times while neither “analyze” nor “analysis” are employed. The findings of an earlier study by Powell (2004) in which interior design students rated “analytical” as the lowest in priority of a selection of adjectives describing interior designers, are, unfortunately, verified by the results of the current survey.

Conclusions

The results of the Powell study suggest that interior design educators have a role to play in developing in students a solid foundation of design vocabulary. Aligning the words used in the classroom and studio with the vocabulary utilized in the official publications of the national organizations will contribute to future practitioners’ ability to define the discipline and their role as design practitioners. The national organizations, as representatives of current and future interior design professionals, can exercise their influence toward expanding the application of the carefully chosen vocabulary employed in official documents to a wider sphere. Editorial policy and writing style affecting the dissemination of knowledge about the profession in periodicals might be modified to better educate readers about the true nature of interior design expertise, the real contribution interior design professionals make to the public’s health, safety, and welfare.
References
(APA Style)


Capstone Project: A Year Long Process

Matthew Dunn
T.L. Ritchie
Phillip Tebbutt

Louisiana State University

Abstract

The Interior Design program has had a senior capstone project in place for the last decade. Over the past two years the program has evaluated and revised the curriculum for this process. This presentation outlines the department’s current model and offers it for the evaluation and sharing of ideas with those who already have a capstone project in place and/or are thinking of starting one.

The capstone project is made up of three courses. In the fall of the senior year, students take the Capstone Seminar course where they will define, research, and program their design problem. During the spring semester, students complete the design work in the Capstone Design Studio and Capstone Focus Studio. In the past students were allowed to select a building of their choice to serve as the location. It became a problem when students selected buildings that were unsuitable, inappropriate, inaccessible and/or lacked drawings/plans. Their selections on building and design problem often had very little to do with the current social, cultural, economical and political issues of the surrounding area. In response to these issues, a location is selected by the faculty; six to seven suitable buildings are selected for the students to choose from. The most recent location was the local downtown district. The area is currently undergoing revitalization. Students were assigned the task of
researching the historical and current state of downtown. As a result of this research, they developed a project that would meet a specific need in the area.

Also during the Capstone Seminar, the students are assigned an alumni mentor that works in a field of design that coincides with the student’s project. Alums are contacted at the beginning of the fall semester and ask if they would participate and where they feel best qualified to mentor. The alumni have realized the value of mentoring future designers. To facilitate the sharing of information, students in the Capstone Seminar create and maintain a blog throughout the year long project. At the beginning they post research and ideas. The faculty uses this as a way to track a student’s progress and process. Later, student post programming information, diagrams, plans, images, and sketches that their mentors can access and comment directly on the blog. The blog allows the mentor to check in on the student’s progress when it’s convenient and cuts down on the number of emails sent to the mentor.

Above are just two examples of changes made to the capstone project. The response from employers in the interior design and architecture field has been overwhelming. Along with presentation boards, the students are required to produce a hard bound “book” that documents their project from defining the problem to their design solution. The department keeps one book for documentation/accreditation purposes. The student’s books serves as a complete portfolio of a skills and abilities.
Capstone Project: A Year Long Process

Matthew Dunn
T.L. Ritchie
Phillip Tebbutt

Louisiana State University

Narrative

The LSU Interior Design program has a senior capstone project that has been in place for the last decade. The program is in the process of evaluating and revising its curriculum. This presentation outlines the current capstone project model, recent revisions and offers for discussion the evaluation and sharing of ideas with those who already have a capstone in place or are thinking of instituting one.

The core of the LSU interior design program is the sequence of six design studios. These are problem-based learning laboratories to instruct the student in the professional program through inquiry, critical thinking and graphic resolution. Studios cover various practice and project typologies which include residential, office, hospitality, institutional, health care, adaptive reuse and retail. These typologies plus pertinent topics, such as sustainability, special users, aging in place and historic preservation, are allowed flexibility in the course sequence to accommodate opportunities such as competitions and outreach projects. A representative range of typologies and important topic areas are given to each student group during their accent to graduation. As the student progresses through the core design sequence there is a systematic investigation and application of the design process in increasing intensity and complexity culminating in the senior capstone project which is the most comprehensive inquest and resolution. A variety of teaching methods are utilized
including team teaching, learning communities, community-based and interdisciplinary projects.

The Senior Capstone Project consists of a sequence of three courses. The Capstone Seminar is the first course in the series. In the fall, students are required to fulfill a semester of research prior to the commencement of the spring Design and Focus Studios. Within the seminar the student explores issues, formulates strategies, and researches topics for their independent senior project. They document the selected building/site and propose the subject and scope of their proposed focus research and design project. This course provides students a final opportunity to independently develop the program for their capstone project utilizing the experience and skills from prior courses. Students are required to define the problem, examine precedents, provide client information, identify user groups, analyze the needs and concerns of the clients and users, analyze physical requirements (including special requirements), and develop the final program under the tutelage of their faculty advisor and professional mentor. Each project is refined and a committee of specialists is acquired. The final requirement is a presentation to a faculty committee to demonstrate preparedness to advance to the following semester’s independent project.

The second component is the core Design Studio of the Capstone project series. In this studio the student concentrates on the design process and the resolution of an independent project. The project is the demonstration of the students’ ability to synthesize and integrate the knowledge and skills learned in all their professional coursework. The senior studio includes the expectation that a fully developed comprehensive project will evolve.
The third part of the Capstone series, the Independent Study Focus Studio, is coordinated and taken concurrently with the Design Studio. The Focus Studio was specifically developed to allow the student to give attention to a specialist area of research. Examples of specialist areas might be lighting or special acoustic concerns, sustainable materials, the psychology of color or designing for special populations. This studio is a vehicle for the student to investigate prime source research regarding their focus topic along side the design and development of their project. They integrate the research with their design and document their findings in a much more thorough and vigorous way. The final format of the Focus and Design Studios is the design thesis book recording the process and design work supported by their research, material specifications and design resolution.

The Focus Studio allows the student to choose a special aspect of their capstone project to research. The series also promotes independent planning and individual responsibility. Projects are thoughtfully chosen and developed from a multitude of project types and issues and often embrace a social or cultural problem. The capstone project promotes and builds the attributes of the LSU program’s goals of developing a Professional Vision and Strong Knowledge Base.

Two recent revisions have been made to improve the Capstone series. First, there was a problem in the past when students selected buildings for their projects that were unsuitable, inappropriate, inaccessible and/or lacked drawings/plans. In response to this problem, students can still submit a proposed building of their choice or they can now make a choice from six to seven suitable buildings selected by the faculty. A recent faculty location was the local downtown district which is currently undergoing
Students as a team researched the historic and current state of downtown. As a result of this research, they developed a project that would meet a specific social, cultural and historic need in the area.

A second addition to the Capstone series revised the former requirement pertaining to the student’s committee of appropriate faculty, designers or professionals. Undergraduate students often found forming a committee difficult. The senior project faculty formalized a mentoring system. Forty to sixty professionals from across the country agreed to assist the senior students and were paired according to project types. Through communication via emails, blogs, telephone and personal meetings, mentors advised students as they prepared their programs and designs. The professionals’ willingness to individually mentor students resulted in many stimulating partnerships and enhanced projects. Their professional knowledge and detailed understanding of the project types complemented the broader design experience the students received in the typical classroom. The professionals had an informed insight into the preparedness of the student for the rigors of professional practice. Their council, in concert with the primary faculty advisors, enhanced the evaluation of the student’s ability to synthesize the knowledge and skills acquired in their educational program with their terminal project at hand. The mentors’ comments in an exit survey serve as an important external assessment tool for the department.

The undergraduate professional program at LSU critically binds the curriculum with the extent and depth of exploration in the design process and evidence-based learning. A strength of the breadth of coverage of the curriculum structure is the core design studio sequence culminating in the Capstone Project. After students progress through
the core sequence, they take the senior seminar and linked design and focus studios. The senior project allows the students to not only apply their acquired knowledge, but to analyze, synthesize and evaluate as they proceed with their independent designs. The success of this manner of teaching is heralded in the Boyer Report on Undergraduate Education.

When introducing concepts and skills, the LSU program utilizes Benjamin Bloom’s Taxonomy of Educational Objectives which postulates six levels of cognitive skills from simple to complex: knowledge, comprehension, application, analysis, synthesis and evaluation. The program’s curriculum structure introduces concepts and skills utilizing the multiple cognitive levels of Bloom’s taxonomy introducing them repeatedly in increasing levels at appropriate times in the curriculum sequence. Typically a concept or skill is introduced at least three times in the curriculum in increasingly complex levels of the taxonomy. For example, a specific concept related to the design process may first be introduced to the student at a knowledge and comprehension level in an introductory lecture class in the foundation year of the curriculum. They then analyze and apply the concept in a problem-based studio project in subsequent core design studios. In a third year field studies experience, the student deduces relationships, appraises influences and applies these evaluations of the example concept to a studio project outside their typical cultural context. Reaching the senior level, the student has been through the design process many times. A student may now choose to synthesize and incorporate the example concept in their independent project. In the capstone studio, their ‘process’ and progress is monitored through the completion of the project. It is important that the student addresses and internalizes the concepts they will need to
use in the future. The faculty has an opportunity to evaluate the individual student understanding of the process and concepts and give final advice during the capstone.

In summary, student performance in the three courses of the Senior Capstone Project exemplifies critical, analytical and strategic thinking and the final integration of Bloom’s Taxonomy. The Capstone project is the demonstration of the students’ ability to synthesize and assimilate the knowledge and skills learned in all their professional coursework. Students apply research and interests independently developed about a topic that is project-oriented and/or research-oriented in the design process. Students demonstrate a facility with the application of the interior design process, time management, programming, space planning, interior constructions and technical skills. They analyze and express knowledge of spatial concepts and design elements to achieve creative and aesthetic design solutions. They skillfully and creatively execute the presentation of design problems and resolutions with strategic professional skill. They successfully communicate a design graphically, written and orally in the execution and justification of an advanced Senior Capstone Project.

Reference List


CIDA Standards achieved for Senior Capstone Series:
Seminar: - 2a, 2e, 2f, 2h, 4d, 4e, 4f, 4g, 4o, 8c, 8d
Design Studio: - 1g, 1h, 2a, 2e, 2g, 4a, 4b, 4c, 4e, 4i, 4m, 4n, 4p, 4s, 4t, 4u, 6i, 6m, 6n, 6p, 7f, 8i
Focus Studio: - 2c, 2e, 2f, 4a, 4i, 4j, 4k, 4l, 4n, 4p, 4s, 4t, 4u, 6i, 6m, 6n, 6p, 7f, 8i
New Models for the Design Studio Environment

Matthew L Dunn

Louisiana State University

Abstract

“Human life is interactive life in which architecture has long set the stage. The city remains the best arrangement for realizing that human nature.”
- Malcolm McCullough, Digital Ground

The physical setting of the design studio remains relatively unchanged over the past several decades, despite witnessing changes in trends, style, technology, education pedagogy, theory and practice. While the studio serves as the setting for the genesis of a student’s designs and theories, it has had little influence in their development nor has it been transformed or altered as a result. As for aiding in development of ideas, the studio is similar to the fictitious design projects that exist in/on a context-less site offering no source of inspiration or concept generation. New ideas remain on paper whereas the studio should be a lab for testing design hypothesis. The design of the physical studio environment remains static.

Students need the opportunity to “turn up all the dials” on their creativity and vision to search for what is possible. This paper presents two models for a new design studio environment. The first is a responsive/interactive space that creates a unique technologically mediated form of self-learning; students become active participants and co-creators of content and context. A space that can be altered and reconfigured for an endless number of possibilities provides for ever changing design and process needs. An interactive environment encourages and enhances collaboration and socialization in the studio and has the opportunity to remotely connect local, regional, national and
international programs and disciplines. One can imagine situations where collaboration goes beyond an exchange of emails/graphics; design decisions on one end become physical manifestations and alterations in the linked interactive environment.

The second model removes the student entirely from the physical studio and uses the everyday built environment as the setting for educating interior design students. This model creates a situation where the studio professor becomes a “hub” to which the students remotely connect from spaces outside of a design studio. The everyday is the most familiar and unknown context that the design student occupies. Design studios tend to focus on the formal interactions of design and reject all outside influences, displacing the studio from the experiences of the everyday. There is a tendency to dismiss the everyday instead of finding ways to evaluate experiences in the everyday for formal and spatial design ideas.

“Seeing the world around you, rather than floating through it like a robot, alerts the eye, jolts the brain – and challenges society by shining the light of authentic discovery and awareness upon seemingly mundane aspects of social interaction, technology, and the built environment.”
-John Stilgoe, Outside Lies Magic

New models for the design studio environment can only enhance to teaching and learning that now exist in the studio. The two models above are presented as a means of starting a discussion that will generate further ideas and theories for the design studio.
New Models for the Design Studio Environment

Matthew L Dunn

Louisiana State University

Narrative

“Human life is interactive life in which architecture has long set the stage. The city remains the best arrangement for realizing that human nature.”
- Malcolm McCullough, Digital Ground

The physical setting of the design studio remains relatively unchanged over the past several decades, despite witnessing changes in trends, style, technology, education, pedagogy, theory and practice. While the studio serves as the setting for the genesis of a student’s designs and theories, it offers little inspiration in their development nor has it been transformed or altered as a result. New ideas remain on paper whereas the studio should be a lab for experiencing and testing design hypothesis.

This paper offers two alternatives to the current studio environment. While they differ greatly, both models seek to create an interactive experience. The first shifts the design studio into the everyday built environment. Technology is removed from the equation and the student learns to see and translate the everyday. The second model transforms the design studio into a technology mediated responsive environment, where design ideas are immediately realized and alter/reconfigure the studio environment.

Model One

One model for a new studio concept removes the student entirely from the physical studio and uses the “everyday” as the setting for educating design students.
The everyday is the most familiar and unknown context that the design student occupies. Design studios tend to focus on the formal interactions of design and reject all outside influences, displacing the studio from the experiences of the everyday. There is a tendency to dismiss the everyday instead of finding ways to evaluate experiences in the everyday for formal, spatial, contextual, social, and cultural design influences.

“Seeing the world around you, rather than floating through it like a robot, alerts the eye, jolts the brain – and challenges society by shining the light of authentic discovery and awareness upon seemingly mundane aspects of social interaction, technology, and the built environment.”
- John Stilgoe, *Outside Lies Magic*

**Defining the Everyday**

The spaces we study and analyze are symbolically important and exist disconnected from their everyday context. The everyday is filled with symbolic visuals and material elements although we experience them in an almost unconscious way. We have defined it as routine, static and un-reflexive, but the everyday is “capable of a surprising dynamism and moments of penetrating insight and boundless creativity.” It is in the everyday that we define and locate our selves.

“In ancient societies, one ate, one drank, one worked; there were houses, streets and rooms, pieces of furniture, useful objects, instruments and other things. Yet there was not “everydayness”. In the unity of ethics and aesthetics, of practice and knowledge, in a style, the contemporary levels of the everyday and ‘culture’ had neither reason, nor sense.” (Elden) Style [history] was the common shared experience that unified individuals and places. Information technologies and a range of media made it possible to tell and retell our histories with many divergent points of view. History began
to splinter into many “histories” which are now encompassed and organized by the concept of culture. The style of modern life has disappeared and it is because of this that life has become everyday.

**Translating the Everyday**

The everyday is the most familiar and unknown context that the design student occupies. Coffee shops, grocery stores and retail outlets make up their everyday and have the most influence on their self-embodiment. Visual/spatial rhetoric serves as one method for translating the everyday concept. Visual/spatial rhetoric is a theoretical framework describing how images and spaces communicate and serve as an expression of cultural meaning, as opposed to simply aesthetic. Michael E. Gardiner argues, “the ordinary can become extraordinary not by eclipsing the everyday, or imagining we can arbitrarily leap beyond it to some ‘higher’ level of cognition or action, but by fully appropriating and activating the possibilities that lie hidden, and typically repressed, within it.”

For the purpose of this paper, we will look at the rhetoric of one important node in a series of possibilities that characterize the contemporary moment, Starbucks. In Greg Dickinson’s article, *Joe’s Rhetoric: Finding Authenticity at Starbucks*, he investigates the spatial rhetoric of Starbucks’ interiors. “Starbucks’ rhetoric works to suture individual bodies and subjectivities into a seemingly natural world through the practices of production and consumption of coffee and through the use of "natural" colors, shapes and materials. This turn to nature is augmented by a claim to authenticity made by the coffee itself and is further reinforced by the rituals surrounding the buying and drinking of coffee”. (Dickinson)
The Starbucks’ green creates many connections. The use of green emphasizes nature and floral growth and is meant to create connections to lush forest of Central America. While the green is used to reveal this positive imagery, there is the hope that this imagery will eclipse the possibility of locating the consumer in the global relationships that make coffee possible, namely images of third world countries, with oppressed citizens engaged in backbreaking work.

There are a range of forms and materials in the design that reinforce the connection to the natural world. Lights, signs, counters, and carpets utilize curved forms, reminiscent of the forms of Art Nouveau. This connection to Art Nouveau is a powerful use of a nostalgic design style that creates a perceived simplicity of the past. References to nature and the move to place the space in a specific historical lineage, allow Starbucks to locate the subject in both space and time in which the subject and the body can find comfort. “The visual elements of Starbucks incorporate the body into a vision of nature, a nature the body incorporates through the drinking of coffee the shop offers. Starbucks' rhetoric of naturalness, then, is complex and multi-modal. The colors, forms and materials that create a vision of the natural combined with the smells and a sound of the production of the coffee introduce the body to the coffee itself and, in drinking the coffee; the body finally and literally incorporates the nature it has sensed in other ways.” (Dickinson)

Students in the everyday are equipped with only analog design tools. Computers, cell phones, mp3 players and such are left behind and understood to be distractions to experiencing the everyday. The studio is still inhabited, but it becomes
the place of production when occupied. Students can reunite with their digital tools to present their ideas and design solutions.

**Model Two**

*Environments are not only containers, although they involve some physical manifestation, but also processes that change the content of the environment.*

Marshall McLuhan

Emerging practices in responsive and interactive design are set to transform the built environment and spaces we inhabit. “Smart” design was once regarded as the preserve of museum exhibits and art installations; multi-mediated responsive design has now entered every domain of public and private life. As a spatial medium, responsive design offers the possibilities of revolutionizing and reinventing the workplace and home. Research and technology have reached the point where the inhabitant no longer has to initiate the interaction, the environment responds based on a specific biofeedback, creating a unique experience each time. Occupation of space will evolve over time as everyday static environments are transformed into responsive and interactive environments.

Model two is a responsive/interactive space that creates a unique technologically mediated form of self-learning; students become active participants and co-creators of content and context. A space that can be altered and reconfigured for an endless number of possibilities provides for ever changing design and process needs. An interactive environment encourages and enhances collaboration and socialization in the studio and has the opportunity to remotely connect local, regional, national and
international programs and disciplines. One can imagine situations were collaboration goes beyond an exchange of emails/graphics; design decisions on one end become physical manifestations and alterations in the linked interactive environment. Existing studios are retro fitted with a new “skin”. This skin responds to…

- movement / actions in a space.
- movement / actions outside of the space (directly or remotely).
- touch.
- sound levels / tone / loudness (an individual’s mood).
- changing data sets based on acquired biofeedback (ex. heartbeat).
- external data sets create by the student.

As with the design process of trial and error and building upon previous ideas, the responsive studio will have to develop over several iterations. The pieces that make up the whole are present in the world of art installation and prototype development. The challenge becomes to unify and appropriate these models to the studio environment.

**Conclusion**

The design of the physical studio environment remains static. New models for the design studio environment can only enhance the teaching and learning that now exist in the studio. The studio should serve as inspiration in the development of a student’s designs and theories, and provide a place for experiencing and testing design hypothesis. The two models above are presented as a means of starting a discussion that will generate further ideas and theories for the design studio.
References

(APA)


Collaboration in Lighting Design for Healthcare Environments

Anna Rae Dutro, ASID; W. Andrew Clark, Ph.D.; Nancy Nehring, Ph.D.; Andrew J. Czuchry, Ph.D.

East Tennessee State University

Abstract

A study of lighting as a positive distraction was made possible through collaboration with a university affiliated pediatric healthcare clinic, the university's Innovation Laboratory and a private manufacturing firm. This paper addresses the 1) collaboration, 2) research design and 3) the lighting used in the research.

The pediatric clinic management permitted the installation and research of a backlit nature art image in a patient examination room. Fourteen physicians and 80 parents/guardians of the patients in the pediatric clinic agreed to be a part of the data collection. The research and design of the nature art image was developed as a series of group projects assigned in graduate classes attended at the University's Innovation Laboratory. (The Innovation Laboratory is an economic development initiative of the university designed to support entrepreneurs and investors in establishing successful technology based businesses.) A local plastics manufacturing firm supported the development of the project with financial and personnel support.

Survey instruments were developed in collaboration with the university’s psychology and statistics departments. The survey instruments were used to collect sample data from patients and physicians in a randomized, balanced controlled study.
designed to determine if patients experienced less stress in the room with the backlit image as compared to other rooms.

As healthcare focuses on maintaining biological homostasis, the physical environment becomes sterile and lifeless. The intent of this investigation was to research the possibility of improving the healthcare built environment to reduce stress in patients by creating a positive distraction in a healthcare facility to assist in reducing stress and anxiety in the patient. The positive distraction, a backlit light image, was constructed from a nature art print (see appendix) that was adhered to the back of a lenticular lens whereby creating a 3-dimensional effect. Then the lenticular lens with print was mounted to a suspended ceiling light troffer and LED lights were placed in the light troffer behind the lenticular lens. The light troffer was installed in the ceiling of a patient examination room directly overhead the patient’s table. The LED lighting in the troffer was programmed to slowly change colors (red, blue, green, yellow) attracting the attention of the young patient lying on the examination bed. This research was conducted to determine if the distraction of the patient assisted in lowering the patient's stress whereby benefiting the attending physician, patient, patient’s parent/guardian and medical staff.

Little is known of the effect that the built healthcare environment has on the patient’s medical outcome so designer’s have little direction based on sound research to use in creating healing environments. Without research based data, the designer has no guidelines to direct the development of the design. The collaboration of the design and research of the nature art light image assists educators, designers and graduate
students to become involved with entities that provide research opportunities and support within other institutions and the private sector.
Collaboration in Lighting Design for Healthcare Environments
Anna Rae Dutro, ASID; W. Andrew Clark, Ph.D.; Nancy Nehring, Ph.D.; Andrew J. Czuchry, Ph.D.
East Tennessee State University

Narrative

At this time designers rely only on their experience or instinct to create healthcare environments, and many designers do not know the importance of designing healing environments. Little is known of the effect that the built healthcare environment has on the patient's medical outcome, so designers have little direction based on sound research to use in creating healing environments. Without research based data, the designer has no guidelines to direct the development of the design. Supplying designers with researched based knowledge on creating healing healthcare environments benefits the patients, medical staff, including physicians, as well as the owners and managers of healthcare facilities.

As healthcare focuses on maintaining biological homostasis, the physical environment becomes sterile and lifeless. The intent of this investigation was to research the possibility of improving the healthcare built environment by creating a positive distraction in a healthcare facility to assist in reducing stress and anxiety in the patient. Stress, a mobilizing force that helps a person deal with a threatening situation, is a beneficial physiological reaction. Yet, when a person stays in the stress mode, the body works overtime producing cortisol, a hormone that increases blood pressure and blood sugar levels and suppresses the immune system. When the immune system is
suppressed, wounds tend to heal more slowly and the recovery process is slowed. Studies proved prolonged stress increases higher heart rate and muscle tension and produces anxiety, depression, and a sense of helplessness. Research studies also suggest lowering stress can reduce patient anxiety, lower blood pressure, lessen pain, and in some situations shorten the stay in the healthcare facility (Ulrich, 2001; Ulrich, Zimring, Quan, Joseph, 2006; Wells-Thorpe, J., 2001).

Ulrich identified a positive distraction in the built environment as “an element that increases levels of positive feelings, effectively holds attention or interest, may block or reduce worrisome thoughts and produces desirable physiological changes such as reduced blood pressure” (Ulrich, 1997, p.45). Positive distractions are elements in the environment that eliminate stress or strengthen the patient and visitor abilities to cope with the stress. Research shows access to nature, daylight, art, and music can result in a patient using fewer drugs and spending less time in the hospital (Dilani, 2001). To enforce this theory, studies made on the absence of positive distractions or low levels of exposure to positive distractions show high levels of anxiety and stress in the patient. (Ulrich, 1997).

A study of lighting as a positive distraction was made possible through collaboration with a university affiliated pediatric healthcare clinic, (ETSU Physician’s Pediatric Clinic), East Tennessee State University’s (ETSU) Innovation Laboratory and a private manufacturing firm.

A backlit nature art image was developed as a series of group projects assigned in graduate classes offered at ETSU’s Innovation Laboratory. The first phase of the light image was developed in the class, Innovative Entrepreneurship. The goal of this class
was to develop a new business based on technology innovation. Two interior designers on a team assigned in the class developed the concept of producing a ceiling mounted backlit art image for the purpose of calming pediatric patients during the patient’s time in a pediatric examination room. The second development phase of the light image was implemented in the class, Strategic Experience. The goal of this class was to use the skills, knowledge, and experience gained in the graduate program to develop the product concept into a realistic environment using problem solving skills. A class assigned team, which included the two interior designers from the first phase, built and installed a prototype of the backlit nature art image in a pediatric examination room located in the ETSU Physician’s Pediatric Clinic. The third development phase was accomplished as an independent study, Light Image Therapy, conducted by one of the interior designers (a member of the team from the development phase two), as a requirement for the masters degree program. During this phase, a second prototype of the backlit nature art image was developed and installed in the ETSU Physician’s Pediatric Clinic.

The manager of the ETSU Physician’s Pediatric clinic was contacted by one of the interior designers at the beginning of the second development phase. The interior designer explained to the manager the concept of using the backlit nature art image to distract and possibly relax the pediatric patient during a medical examination. The manager was intrigued by the concept and collaborated with the graduate students to install (using a licensed electrician) the backlit image in one of the pediatric examination rooms. Since the ETSU Physician’s Pediatric Clinic is a teaching facility for medical
students, the manager was qualified to collaborate with the graduate students in this study.

Collaboration was made with Microporus, a local plastics manufacturing firm, during the second development phase. One of the professors advising the team suggested the team consider using a new technology in plastic, the lenticular lens. The lenticular lens would create a 3-D effect in the backlit nature art image. Microporus had developed a technology to create 3-D images using patented software and the lenticular lens. The professor assisted the team in contacting Microporus' management. Microporus agreed to provide the technological and financial support to build and install two backlit nature art image prototypes.

The positive distraction chosen for this study, a backlit light image, was constructed from a nature art print that was adhered to the back of a lenticular lens whereby creating a 3-dimensional effect. Then the lenticular lens with print was mounted to a suspended ceiling light troffer and LED lights were placed in the light troffer behind the lenticular lens. The light troffer was installed in the ceiling of a patient examination room directly overhead the patient’s table. The LED lighting in the troffer was programmed to slowly change colors (red, blue, green, yellow) attracting the attention of the young patient lying on the examination bed.

After the installation of the backlit nature art image, research was conducted to determine if the backlit image created a distraction of the patient and assisted in lowering the patient’s stress. To conduct the research, Physicians’ Survey Instrument (Appendix A) and Parent or Guardian’s Survey Instrument (Appendix B) were developed in collaboration with the university’s psychology and statistics departments.
The survey instruments were used to collect quantitative data from the patients and physicians in a randomized, balanced controlled study. The ETSU Pediatric Clinic allowed the use of four examination rooms to conduct the study. The backlit nature art image was installed in one examination room ceiling; the same nature art image without backlighting was installed in the ceiling of a second room. A black square of poster board with the same dimensions as the backlit nature art image was installed in the ceiling of the third room. The forth room was not altered. The results of the study would be used to accept or reject the null hypothesis; a nature art light image installed in the ceiling of a patient’s examination room will have no effect on the level of stress and anxiety in the patient undergoing medical care.

Data was collected using the survey instruments. Results from the Physician’s Survey Instrument (Appendixes C and D) indicated all treatments had the same median. With these considerations, the researcher could not reject the null hypothesis on the basis of the significance in the data from the Physician’s Survey Instrument.

The Parent or Guardian’s Survey Instrument asked the parent or guardian accompanying the patient to assess the examination room as boring to interesting and regression analysis of the data showed no significant treatment effect. Numerically ranking the data means, the rooms with the back-lit light image and the standard examination room were identified as the most interesting, while the room with the non-backlit light image ranked third and the black ceiling square was ranked least interesting (Appendix E).

Parents or guardians were asked to assess the examination room as warm and comforting or cold and unfriendly and regression analysis of the data showed no
significant treatment effect, but again there was a numerical difference in ranking the means identifying the room with the backlit image as the most warm and comforting (Appendix F).

Regression analysis of the parent or guardian’s perception of the patient’s anxiety during the time in the examination room showed treatment means were significantly different between the non-lit light image room (the lowest patient anxiety level) and the black ceiling square room (the highest patient anxiety level). Although the null hypothesis was not rejected because the backlit image room was not statistically different from the other test rooms, numerically, patients in the room with the black square showed the greatest amount of anxiety, patients in the non-backlit light image room and backlit light image room showed the lowest level of anxiety, while patients in the standard examination room ranked third in their level of anxiety (Appendix G). The trend in this data analysis suggested that a positive distraction of art in the room numerically lowered patient stress.
REFERENCES

(APA Manual of Style)


APPENDIXES

APPENDIX A

PHYSICIAN SURVEY INSTRUMENT

Survey of the Pediatric Examination Room
Questions for the Physician

Please check the box next to the answer for each question below.

1. Is this a routine or sick child visit?
   □ Sick          □ Routine

2. How long did this examination take?
   □ less than 10 minutes   □ 10-20 minutes
   □ 20-30 minutes          □ 30-45 minutes   □ 45-60 minutes

3. Relative to previous exams of this type, would you characterize your exam with this child today as…
   □ very easy   □ easy   □ average   □ difficult   □ very difficult
APPENDIX B

PARENT/GUARDIAN SURVEY INSTRUMENT

Survey of the Pediatric Examination Room
Questions for the Parent or Legal Guardian

Please answer for each question below.

1. What is the age of your child? ________

2. What is the sex of the child being examined?
   □ Male       □ Female

3. How did you find the exam room? (Please place an X closest your perception of the room.)

   Boring --------------------------------------------- Interesting

   Warm and ----------------------------- Cold and

   Comforting ----------------------------------- Unfriendly

4. How long did this examination take?

   □ less than 10 minutes   □ 10-20 minutes
   □ 20-30 minutes         □ 30-45 minutes   □ 45-60 minutes

5. If this is the first time your son or daughter has visited the doctor’s office for this reason, how would rate his or her anxiety level:

   Not At All Anxious ----------------------------------- Highly Anxious

6. If your son or daughter has visited the doctor’s office for the same reason today as on previous occasions, how would you compare his or her anxiety levels to those expressed on previous occasions (Please circle the most accurate answer or circle Not/Applicable).

   More Anxious       About the same       Less Anxious       Not/Applicable
APPENDIX C

Table 1

*Effect of Treatments on the Examination Length Recorded by the Physicians*

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number of Observations</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backlit light image</td>
<td>20</td>
<td>1.00</td>
</tr>
<tr>
<td>Standard examination room</td>
<td>20</td>
<td>1.00</td>
</tr>
<tr>
<td>Black ceiling square</td>
<td>20</td>
<td>1.00</td>
</tr>
<tr>
<td>Non-backlit image</td>
<td>20</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Note:* Kruskal-Wallis Test: Ranks

Score 0 median = less than 10 minutes

Score 1 median = 10-20 minutes

Score 2 median = 20-30 minutes

Score 2 median = 30-45 minutes

Score 4 median = 45-60 minutes
APPENDIX D

Table 2

Effect of Treatments on the Characterization of the Examinations (compliance of patients as assessed by the physicians).

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number of Observations</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backlit light image</td>
<td>20</td>
<td>1.0</td>
</tr>
<tr>
<td>Standard examination room</td>
<td>20</td>
<td>1.0</td>
</tr>
<tr>
<td>Black ceiling square</td>
<td>20</td>
<td>1.0</td>
</tr>
<tr>
<td>Non-backlit light image</td>
<td>20</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Note: Kruskal-Wallis Test: Ranks

Score 0 median = very easy
Score 1 median = easy
Score 2 median = average
Score 2 median = difficult
Score 4 median = very difficult
Table 3

Effect of Treatments on the Parent/Guardian Perception 1 of the Examination Rooms

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number of Observations</th>
<th>Mean$^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Examination Room</td>
<td>20</td>
<td>4.2375$^a$</td>
</tr>
<tr>
<td>Backlit light image</td>
<td>20</td>
<td>4.2125$^a$</td>
</tr>
<tr>
<td>Non-backlit light image</td>
<td>20</td>
<td>3.6875$^a$</td>
</tr>
<tr>
<td>Black Ceiling Square</td>
<td>20</td>
<td>3.6000$^a$</td>
</tr>
</tbody>
</table>

$^1$Means with same superscript are not different (p ≥ 0.3055)

Note: Tukey’s Studentized Range (HSD) Test for Perception 1 with Range of 0.5 for Warm and Comforting to 5.5 for Cold and Unfriendly.
Table 4

*Effect of Treatments on the Parent or Guardian Perception 2 of the Examination Rooms*

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number of Observations</th>
<th>Mean$^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-backlit light image</td>
<td>20</td>
<td>1.9625</td>
</tr>
<tr>
<td>Black Square</td>
<td>20</td>
<td>1.687</td>
</tr>
<tr>
<td>Standard Examination Room</td>
<td>20</td>
<td>1.5875</td>
</tr>
<tr>
<td>Backlit Image</td>
<td>20</td>
<td>1.3625</td>
</tr>
</tbody>
</table>

Note: Tukey’s Studentized Range (HSD) Test for Perception 2 with Range of 0.5 for Warm and Comforting to 5.5 for Cold and Unfriendly.
## APPENDIX G

Table 5

*Effect of Treatments on the Parent or Guardian’s Assessment of the Anxiety Level of the Patient During the Time in the Examination Rooms*

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number of Observations</th>
<th>Mean(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Square</td>
<td>20</td>
<td>2.4500(^a)</td>
</tr>
<tr>
<td>Standard Examination Room</td>
<td>20</td>
<td>2.4125(^{ab})</td>
</tr>
<tr>
<td>Backlit Light Image</td>
<td>20</td>
<td>1.8000(^{ab})</td>
</tr>
<tr>
<td>Non-backlit Light Image</td>
<td>20</td>
<td>1.3625(^b)</td>
</tr>
</tbody>
</table>

*Note:* Tukey’s Studentized Range (HSD) Test for Anxiety 2 with Range of 0.5 for Not At All Anxious to 5.0 for Highly Anxious.

\(^1\) Means with superscript \(^a\) and superscript \(^b\) are statistically different (\(p \leq 0.0234\))
La Maison de Verre: Negotiating a Modern Domesticity

M. Jean Edwards and W. Geoff Gjertson

University of Louisiana at Lafayette

Abstract

The purpose of this paper is to re-examine Pierre Chareau’s La Maison de Verre in the context of its contributions and challenges to the history of interior design and architecture. This particular house has been acknowledged for its technological advances by the architectural community, but has been more or less dismissed by those writing interior design history (for example see Massey, A. 1990, pp. 100-01). The authors of this abstract contend that this project provides an excellent case study of a successful negotiation between the rhetoric of “pure” modernism and the public/private needs of a combined office and residence. The house is not merely modern in “style”, but provides for a domestic modernity that challenges both the 19th century concept of domesticity and the Modernist’s rejection of it.

La Maison de Verre’s deviations from early modernist rhetoric seem to preclude its inclusion in the canons of Modern architecture and design. At the outset, sole architectural authorship is difficult to assign; the principal designer, Pierre Chareau, is most frequently identified as an interior or a furniture designer. He collaborated with Dutch architect Bernard Bijvoët and the metalworker Louis Dalbert on the house and its details, and evidence also suggests that the client, Annie Dalsace, made significant contributions to the overall concept and interior planning of the project (Taylor, B. B., 1992; Vellay, 2007). Additionally, few construction drawings or plans exist, implying that
the design was “negotiated” throughout its construction. The house itself cannot be apprehended as an object in space – it is, rather, an insertion into an existing structure. Finally, the technological advances within the house are clearly placed at the service of domesticity, a concept under severe attack by modernist theory (Reed, ed, 1996); the glass block on the facades is employed for its translucency, not its transparency, thus focusing the attention inward, not outward; the paths of circulation and the pattern of visual access from one space to the others, both controlled through high-tech means, suggest a flexible rather than fixed relationship between the inhabitants and visitors to the space.

An interior tour of La Maison de Verre reveals a genuinely livable dwelling - not simply a place for contemplation like the Farnsworth House or weekend holidays like the Villa Savoye. Unlike La Maison de Verre, which remained in family hands until its recent sale in 2005 to an American architectural historian who plans to live in the house with his family (Ouroussoff, N., 2007), these two acknowledged “masterworks” of modernism, after periods of abandonment, have become uninhabited modern museums.

La Maison de Verre’s client-driven, collaborative design process and the subtle use of novel materials create an experiential ordering of space (as opposed to a plan-ordered space). Its design thus negotiates modernism in an unprecedented way. This negotiated interior architecture reflects more appropriately the complexity of human habitation rather than the modernist dialectic of male vs female, exterior vs interior, architect vs designer. Thus, La Maison de Verre seems to offer a possible resolution to the modern interior design/architecture divide.
References


Introduction

At first glance the Maison de Verre seems consistent with the structural, material and theoretical formulations of the early Modern movement. Chareau identified himself with the avant-garde movements of his day: he, along with Le Corbusier and other avant-garde architects and designers, was a founding member of the Congrès Internationale d'Architecture Moderne (CIAM), an organization of architects and designers that sought to define and promulgate the principles of a rational and functionalist Modern architecture (CIAM, 1970).

Throughout the 1920’s and ‘30’s Chareau was a respected associate of these artists, designers and architects; his work was published in the contemporary press and regularly exhibited in public venues that included both the Paris Salon d’Automne as well as the Salon des Artistes-Décorateurs. He broke with the Société des Artistes-Décorateurs (identified with the French decorative arts tradition) to help found the Union des Artistes Modernes (UAM) that embraced the industrial materials and formalist ideas of the Modern movement. In addition, he served on the editorial board of the magazine L’Architecture d’Aujourd’hui that also was ideologically identified with Modern architecture.
Similarities have been drawn between the Maison de Verre and other Modern houses of the late 1920’s and early 1930’s executed by architects who employed similar glass and steel construction. Chareau’s biographer Brian Brace Taylor (1992) asserts common concerns between Adolf Loos and Chareau in terms of the use of glass as an emitter of light rather than a means to a view. Taylor (1992) also notes the influence of Chareau’s work on his contemporaries; he indicates that Chareau’s client, Annie Dalsace saw Le Corbusier visiting the construction site on several occasions. In addition to Le Corbusier, other architects of the day such as Paul Nelson, René Herbst and Oscar Nitschke recognized the significance of the Maison de Verre in the context of Modern architecture (Vellay, 2007). The question has been asked, therefore: “Why did Chareau the furniture designer and interior decorator, the architect and close companion of so many of the great painters, sculptors, composers and critics of the 1920s and ‘30s, slip into obscurity for nearly thirty years?” (Taylor, 1992, p. 6).

Review of Literature

Interior Design Literature

Interior design historians from the ‘80s through 2000 have remained dismissive of the house. Anne Massey (1990) states, “Designers like Chareau (1883-1950) incorporated modern materials and tubular-steel furniture into their designs to provide a modish effect, and cared little for the aims and ideals of Le Corbusier or the Bauhaus” (pp. 100-101).

Authors Tate and Smith (1986) limit their discussion of the Maison de Verre to a brief description of the interior insofar as it expresses the goals of Machine Age Moderne along with an acknowledgement of its technical innovations. In contrast they
devote over three pages and several illustrations to ‘The Purism of Le Corbusier’ (Tate & Smith, 1986) ascribing much greater significance to the work of Le Corbusier in their discussion of interior design history.

Suzanne Trocmé and John Pile devote single paragraphs and illustrations to the Maison de Verre, again merely describing its use of industrial components. Trocmé (1999) reiterates the assertion that Chareau “…did not share the social aims of the Bauhaus and Le Corbusier or care much for theorizing, but welcomed the industrial materials and general ideas of the Modern movement” (p. 99). Pile (2000) acknowledges that Chareau’s furniture designs for the house are suggestive of “… a move from Art Deco to the International Style” (p. 309), but provides no critical assessment of this for the development of interior design.

In *Interior Architecture* Kurtich and Eakin (1996) acknowledge Chareau as a master of interior space, but make no mention of the Maison de Verre. Two volumes on interior design by architect Stanley Abercrombie (1990; 2003) also fail to locate Chareau’s Maison de Verre in a historical context or provide a critical examination of its interior. These texts tend to isolate individual designer’s achievements from a coherent picture of a common profession.

**Architecture Literature**

Kenneth Frampton is cited as the architect and critic who rescued the Maison de Verre from obscurity (Ouroussoff, N., 2007; Taylor, B. B., 1992; Wiederspahn, P. (2002); Wigglesworth, S., 1998; Wilson, C., 2005). In the 1960’s he raised the issue “… is the Maison de Verre to be understood as a house in the conventional sense, or as a piece of furniture?” (Taylor, B.B., 1992, p. 28), a question that Taylor maintains has never
been answered (p. 37). This question highlights the fact that since its completion the house and especially its interior have remained essentially unclassifiable.

In recent literature, architectural historians have begun examining interiors in relation to evolving architectural concepts surrounding gender and domesticity. Alice Friedman (1998) maintains that major innovations in Modern architecture were made as a result of architects working with unconventional female clients. She connects modern architectural advances, particularly as articulated in the interior organization of the house, with the demands of unconventional life styles. Though she does not include the Maison de Verre or Pierre Chareau, her concept suggests the significance of his collaboration with the client, Annie Dalsace.

Various essays (Wiederspahn, 2001; Wigglesworth, 1998; Wilson, 2005) critically read the Maison de Verre interior in relation to gender. Wigglesworth (1998) emphasizes the fact that the interior program requires the inclusion of a gynecological office in an otherwise residential context. Her interpretation suggests a gendered reading based on the connection she makes between the building and gynecology (p. 264). Wilson (2005) uses the visual construction of two opposing views, “the medical gaze” and the “domestic glance,” to delineate the distinction between these two interior areas, and the gender roles implied by the distinction. Wiederspahn (2001) focuses on the movable elements of the interior as another way to examine gender roles implied by the organization and furnishings of the interior space. He identifies the transformable elements in the Maison de Verre as “architectural” and explains how they produce alternative programs within the space and construct the patterns of life lived within the space.
Taking a more phenomenological approach, Nicolai Ouroussoff (2007) claims, “the Maison de Verre is an architect’s ultimate poem” (p. AR1). After living in the house for a weekend, he asserts: “The experience drove home how liberating the house must have felt during those first years, when it still hummed with life…. The house was a perfect balance between the need for companionship and solitude, a utopia of the senses” (p. AR23).

Despite these various interpretations, the authors consistently identify the concerns and accomplishments of Pierre Chareau as expressed in the Maison de Verre as “architectural” even as their discussions focus on the interior and the difficulties inherent in classifying it as pure Modernism.

Domesticity and Modernism

Reed (1996) identifies the concept of domesticity as “… a specifically modern phenomenon, a product of the confluence of capitalist economics, breakthroughs in technology, and Enlightenment notions of individuality” (p. 7). The separation of work from the home gave rise to the “cult of domesticity” beginning in the mid-nineteenth century. By the end of the century women had gained almost exclusive control over the domestic interior, and decorating came to be seen as women’s purview - part of their domestic roles as wives and mothers. Tiersten (1996) notes that the domestic interior represented “… a separate sphere of feminine aesthetic self-expression and identity formation” (p.18).

Modern architectural theory rejected this bourgeois domesticity as antithetical to modern living. The theoretical positions taken by the authors of early Modernism’s manifestoes (CIAM, 1970; Le Corbusier, 1970) represent a direct assault not only on
the bourgeois interior, but also on the role of women in its design, in essence denying women the possibility of being “modern” within the context of their domestic environments.

Conclusion

On close examination, the Maison de Verre reveals significant deviations from early Modernist rhetoric that defy its classification as an “industrial prototype dwelling”. Nicolai Ouroussoff (2007) states:

The 1932 house designed by Pierre Chareau challenges our assumptions about the nature of Modernism. For architects it represents the road not taken: a lyrical machine whose theatricality is the antithesis of the dry functionalist aesthetic that reigned through much of the 20th century (p. AR1).

While the house may represent “the road not taken” for twentieth century architects, the Maison de Verre offers an instructive historical precedent that requires greater attention in the literature of interior design. It is the quality of this negotiated interior that reflects more appropriately the complexity of human habitation rather than the modernist dialectic of male vs female, exterior vs interior, architect vs designer. Thus, the Maison de Verre suggests a possible resolution to the Modernist interior design/architecture divide. In its dual embrace of and challenges to Modernism, especially as theorized in the early decades of the twentieth century, the design of this house suggests ways in which Modernism was and can be negotiated to provide a living environment compatible with human habitation.


Is House a Mirror of Self?
The Psychology of Home Preferences for Residential Studio

Sarajane Eisen, Ph.D.
Auburn University

Abstract

The concept of home depends on how individuals conceptualize the world around them (Cooper-Marcus, 1995). In environmental psychology, this is referred to as place identity. A sense of place develops when a level of comfort and feelings of safety are associated with a particular place, which for many people translates to a sense of belonging (Kopec, 2006). Whenever a psychologically supportive interior space is created, a sequence of expression-feedback-integration is fostered and simulated with that space (Jung, 1969). This is central to a larger process, when creating an environment to suit personal needs that allow them to feel at home. When their environment is created, they find themselves mirrored in it, seeing what had previously not been visible – a manifestation of that inner sense of self (Jung, 1986).

The interaction between people and their domestic environment has long been neglected in both interior design and psychology. Since, from early childhood, individuals change, growing in their psychological development which is punctuated with close, affective ties are created with their physical environment. The importance of understanding how individuals relate to their home environments is important to designing psychologically supportive interiors that meet the needs of the users. According to Kopec (2006), “the environment plays an intricate role in the overall psychological and physiological health of humans.“

The interior design student is typically challenged with acquiring an in-depth understanding of client needs, beyond the student’s personal preferences. The purpose of this course assignment was: 1) to generate self-reflection on what physical environment in childhood shaped the student’s present preferences of interior space, and 2) how they can translate this self-understanding into a tool for understanding the psychological needs of future clients. The project assignment involved a reflective analysis of a favorite remembered place in childhood which is documented through a sketch, collage, and written narrative detailing the place and the experiences associated with it. In addition, the student was requested to translate those reflections into present preferences of their ‘ideal’ home environment. These findings were both orally and visually presented to the class, followed by discussion. Certain issues emerged throughout students presentations: 1) need for autonomy from adults in childhood, 2) need for social interaction, and 3) freedom to create one’s own environment. These issues were then translated into designing their ‘ideal’ home interior, or a sense of place in order to create psychologically supportive environments that reflect who they are. A greater understanding of the true meaning of home emerged.
The concept of home depends on how individuals conceptualize the world around them (Cooper-Marcus, 1995). In environmental psychology, this is referred to as place identity. A sense of place develops when a level of comfort and feelings of safety are associated with a particular place, which for many people translates to a sense of belonging (Kopec, 2006). Whenever a psychologically supportive interior space is created, a sequence of expression-feedback-integration is fostered and simulated with that space (Jung, 1969). This is central to a larger process, when creating an environment to suit personal needs that allow them to feel at home. When their environment is created, they find themselves mirrored in it, seeing what had previously not been visible – a manifestation of that inner sense of self (Jung, 1986).

The interaction between people and their domestic environment has long been neglected in both interior design and psychology. Since, from early childhood, individuals change, growing in their psychological development which is punctuated with close, affective ties are created with their physical environment. The importance of understanding how individuals relate to their home environments is important to designing psychologically supportive interiors that meet the needs of the users. According to Kopec (2006), “the environment plays an intricate role in the overall psychological and physiological health of humans.”
What constitutes the physical concept of *home* varies culturally, but the psychological elements are generally consistent: emotional attachments to place, perceived safety or security. As a psychological construct, *home* can be defined by a person’s intention in living in a particular place, whether it be temporary or permanent. The importance of understanding this psychological construct from a design perspective are the expectations users will have for their dwelling. A person who intends for long-term residence in their home will have higher expectations of the structure’s ability to meet their needs. They will expect higher quality, functionality, and a greater sense of attachment to their environment. While people who regard their homes as temporary will not be focused as much on the quality and function, much less an expectation for place attachment.

Since homes are not merely places people reside, but places created by how people perceive and react within them, the impact of *home* cannot be undervalued. A home significantly impacts the way in which individuals develop, shaping their experiences, and their ultimate identity. A home is defined through self-expression and personalization, becoming a reflection of who an individual is, their connections with others, providing physical and psychological well-being, and shaping both their past and future. To most people, *home* becomes a symbol and respite for safety and stability. They provide means to self-identity by way of memories and emotions (Kopec, 2006). The home environment can be considered a means to generate and sustain psychological and physical nurturing. By meeting these needs, it understandably personifies why there is often intense emotional attachment to one’s home, forming place identity. Individuals long for a feeling of attachment, of being rooted in a particular
place, and of feeling as if they have ownership of something significant in their lives. In order to achieve those feelings, our psyche connects to certain places, thereby increasing our sense of self-esteem and happiness, creating a sense of belonging that can best be termed as ‘feeling at home.’ That is one reason why the first thing most individuals do when they move into a new home is make a significant change in their designed environment. As humans, we feel an instinctive need to personalize the places we live...a place identity.

Place identity is formed in part by the emotions and cognitions in places that have a role in the regulation of a person’s emotional balance and self-experience (Korpela, 1989). Place attachment is implicit in place identity; it increases in importance for places that fulfill peoples’ emotional needs and enables them to maintain and sustain their identity (Kaiser & Fuhrer, 1996). So, the centrality of the home is eminent in everyday activities and the possibilities that people have for shaping their residential environment in ways that can serve emotion regulation and reflect identity. Conversely, if the home does not fulfill the emotional needs of its inhabitants and so hinders the formation of positive attachment, then this shortcoming may motivate compensatory activities such as leisure time mobility (Fuhrer, Kaiser & Hartig, 1993).

Place identity cognitions have two essential purposes: to define who individuals are, and protect people from environments that threaten who they are and want to be (Proshansky, Fabian, & Kaminoff, 1983). The elements that affect people’s development of place identity are personal characteristics, the physical place, and a sense of belonging. Individuals form attachments to places that not only define them or express who they are, but provide a sense of belonging, freedom – a sense of well-
being (psychological security). This sense can generate a feeling of place attachment, which is an affiliation between a person and place, as sense of connection. This can be facilitated or eradicated by a person’s level of control over their environment. One study reveals that greater place attachment is associated with a greater sense of privacy, an important part of identity or sense of self (Harris, Brown & Werner, 1996).

Memories, especially those of childhood, are essential to attachment, evolving through meaningful experiences or artifacts that are reminiscent of positive reflected experiences. Some people have profound memories of a special childhood home and unconsciously reproduce aspects of it in their house in adulthood (Cooper-Marcus, 1995). While others may find a disconnect with their home environment, without understanding the reason why, as it appears to meet their needs for privacy, security, and comfort. According to Cooper-Marcus (1995), a home fulfills many needs: a place of self-expression, a vessel of memories, a refuge from the outside world, a cocoon where one can feel nurtured, and let down their guard. So home has the potential of becoming a meaningful place that both nurtures and supports the psychological and physical well-being of individuals.

The meaning of home evolves from place identity, in which both are states of mind rather than a physical place, but that place is significant in providing meaning to generate those feelings. What a specific place means to an individual is an important concept related to self, others, and their environments. Some researchers feel that people’s distinction of place, meaning of home, place identity/attachment, are becoming indefinable due to the barrage of technology (Kopec, 2006). Consequently, the need for
designers to create meaningful places for individuals to connect and find that sense of safety and attachment becomes more paramount.

The interior design student is typically challenged with acquiring an in-depth understanding of client needs – both physical and psychological - projecting beyond the student’s personal preferences. The purpose of this course assignment was: 1) to generate self-reflection on what physical environment in childhood shaped the student’s present preferences of interior environments, and 2) how they can translate this self-understanding into a tool for understanding the psychological needs of future clients. The project assignment involved a reflective analysis of a favorite remembered place in childhood which is documented through a sketch, collage, and written narrative detailing the place and the experiences associated with it. In addition, the student was requested to translate those reflections into present preferences of their ‘ideal’ home environment. These findings were both orally and visually presented to the class, followed by discussion. Certain issues emerged throughout students presentations: 1) need for autonomy from adults in childhood, 2) need for social interaction, and 3) freedom to create one’s own environment. These issues were then translated into designing their ‘ideal’ home interior, or a sense of place in order to create psychologically supportive environments that reflect who they are. A greater understanding of the true meaning of home emerged.
References


Moving to the Next Dimension;  
The Use of Film as a Vehicle for Concept Development.  

Pamela K. Evans, PhD  
Kent State University  

Abstract  

“Conceptual thinking is the ability to identify patterns or connections between situations that are not obviously related, and to identify key or underlying issues in complex situations. It includes using creative, conceptual or inductive reasoning.” (Hay) Conceptual thinking is also defined as the ability to perceive and imagine, predict and hypothesize, and to collude and reflect. Conceptual thinking is what leads to creativity in society. It is the basis or foundation that pushes society to move forward to the next “new idea”.

Steve Calde quotes in his 2007 article that “If you can’t explain the design, it must not be right yet.” Vital to any design development is the strength of conceptual exploration. One significant problem with concept as a development strategy in interior design education is that no one can agree what a concept is. It may be defined as inspiration for design. It may be defined as a schematic. The root of the definition lies in that conceptual thinking is problem solving and that it is a process by which one sees new connections. Connections between the abstract and the rational

Conceptual exploration has been for years linked and most often limited to a written format for both the design and non-design disciplines. Scientific disciplines, for example math, is said to conceptualize by conveying “conceptual thinking” through exemplification, such as illustrating the expounding of a mathematical proof. Design
disciplines such as interior design have traditionally linked the idea of conceptual thinking into a two-dimensional visualization of a concept through the use of images.

Conceptual thinking or design language can very often not be expressed in a two-dimensional format. The limitation of two-dimensional imaging is that interior space or the concepts that may drive the basis for design development can not be fully expressed in this flat visualization format because it has the inability to express the full gamut of the sensory. Film as a concept development tool has the ability to express motion and auditory as well as the visual. It allows the designer to express in a short period of time a feeling they wish to convey, an abstract thought, or a way to illustrate the new connections. It is the expression of language through images; images that have more dimension and more impact.

Utilizing video footage and still photographs in combination with sound, a three minute concept film allows the student to express the abstract concept without relying on the written language at first. Followed then by the expression of the abstract into design development and finally into written language the use of video allows the student to explore directions that may not be possible in former methodologies.
References


Schier, Flint. (1986) Deeper into pictures; an essay on pictorial representation. London: Cambridge University press,

The purpose of this paper is to establish a new approach for teaching concept development and its application to interior and architectural design. Previous concept education has been relegated to either the written word or through a more static two dimensional visual expression. The major restriction of utilizing either of these two methodologies is the inability of the student/designer to express the full intent or aspect of the concept.

“Conceptual thinking is the ability to identify patterns or connections between situations that are not obviously related, and to identify key or underlying issues in complex situations. It includes using creative, conceptual or inductive reasoning.” (Hay, 2005) Conceptual thinking is also defined as the ability to perceive and imagine, predict and hypothesize, and to collude and reflect. It is what leads to creativity in society and is the foundation that pushes society to move forward to the next “new idea”.

Steve Calde quotes in his 2007 article that “If you can’t explain the design, it must not be right yet.” Vital to any design development is the strength of conceptual exploration. One significant problem with concept as a development strategy in interior design education is that no one can agree what a concept is. It may be defined as
inspiration for design. It may be defined as a schematic. The root of the definition lies in that conceptual thinking is problem solving and a process by which one visualizes new connections; connections between the abstract and the rational.

Concept abstractions are typically associated with a corresponding representation in language or symbology and the representations of the concepts denote all of the objects or images in a category or class of entities, interaction, phenomena or relationships between them. Concepts are abstract in that they omit the differences of the things in their extension and treat them as if they were identical. The concept is also universal in that the concept can be applied to everything in its extension. Concepts are also the basic element of any proposition in the same way that the word is the basic semantic element of a sentence.

Conceptual exploration has been for years linked and often limited to a written format for both the design and non-design disciplines. Scientific disciplines, for example math, is said to conceptualize by conveying “conceptual thinking” through exemplification, such as illustrating the expounding of a mathematical proof. Design disciplines such as interior design have traditionally linked the idea of conceptual thinking into a two-dimensional visualization through the use of graphic images.

The use of concept is currently being used by educators in interior design programs as a basic tool for design development. It is, however, defined in various ways in textbooks and academic papers and, as a process, utilized differently in academic programs. To define and clarify the intent of this paper the term concept is herein defined as an abstract idea or mental symbol.
Visualization of thought is a direct link to creative cognition. In some approaches to creativity and design it is the final product that becomes the most important aspect. However, it is crucial in the education of the design student to develop the cognitive process in expanding an idea. (Finke) In the development and education of the design student’s creative cognition of the abstract thought, i.e. “the concept” must be distinguished from the final product. The creative cognition issue must consider the establishment of the linkages among originality, practicality, sensibility, productivity, flexibility, inclusiveness and insightfulness. By creating a way to connect these elements it will help develop more effective methods for teaching students how to generate creative ideas. (Finke, 1992)

Although vital to the dialogue between the teacher/student or the practitioner/client relationships the spoken or written language often cannot express the ideas or direction of the conceptual thought. Shier states “Pictures, one finds, are more apt than descriptions to stand for what they symbolize or denote.” (Shier, 1986)

In addition conceptual thinking or design language can very often not be expressed in a two-dimensional visual format. The limitation of two-dimensional imaging is that the concept that drives the basis for design development can not be fully expressed in this flat visualization format because it has the inability to express the full gamut of the sensory. However, film or video as a concept development tool has the ability to express motion and auditory as well as the visual. It allows the designer to express in a short period of time a feeling they wish to convey, an abstract thought, or a way to illustrate the new connections. It is the expression of language through images; images that have more dimension and more impact.
Utilizing video footage and still photographs in combination with sound, a three minute concept film allows the student to express the abstract concept without relying on the written language. Followed then by the expression of the abstract into design development and finally into written language the use of video forces the student to explore directions that may not be possible in former methodologies. A concept being expressed by this delivery method should not have a direct relationship to the structure being designed or the intended use but should be expressive only of the abstract idea.

Method

A rise in the amount of digital images available to the public as well as the many forms of digital imaging equipment readily accessible to students has made the use of this technique of concept expression the next logical step. The typical student has been engaged in creating web sites, interacting with others on social web networks like MySpace and viewing and contributing to video websites such as YouTube. The amount of imaging equipment available to the average student, ranging from cell phones to small compact video cameras, has dramatically increased. Downloading both still images and video is enhanced by the fact that “Millenials” communicate in the digital arena more than other generations. According to Morley Shafer in his November 11th, 2007 broadcast of 60 Minutes “millenials have the upper hand, because they are tech savvy, with every gadget imaginable almost becoming an extension of their bodies. They multitask, talk, walk, listen and type, and text. “

In order to engage these tech savvy students, incorporation of the use of film for concept development was integrated into a fall semester senior level studio as a part of a semester long team project. Criteria for the concept video included the following: the
concept should be abstract in nature; length of the video should be three to five minutes; it should not express anything concerning the intended use of the structure; the concept should have the ability be applied to any site, building or use; and the video should include audio that illuminates or adds to the concept.

The videos were submitted and screened for critique by their peers and instructors of the course. Visual and auditory adjustments to the videos including the addition of written narrative were suggested and edited before the mid-term critiques. Examples of the concept videos can be viewed by visiting the following website.

www.caed.kent.edu/~pevans/concepts

Outcomes and Conclusions

An example of the first attempt “The Egg” is representative of the course outcomes. Throughout the film the images and audio combine to create a physical and visual reaction for the viewer. The interlacing of egg images and car motion with the city conveys the designers’ conceptual vision. The viewer is exposed to images of fragility, intensity, resiliency, and determination and that can be extrapolated to the egg, the city and its inhabitants. The little bit of humor at the end of the film was the students attempt to lighten the day but does much to indicate that the engagement in this visualization technique is key to this generation of students.

By narrowing the focus of the concept the team began to draw their inspiration from answers to their questions. *What is an egg? What does it provide? What are its limitations, strengths, weaknesses? What can it do or not do?* The questions and answers pressed the team to look beyond the physical shape of the egg. The egg shape of course was not overlooked and can be seen in some of the sketches on the
outcomes website but design development of the projects proceeded including sketches, study models and additional exploration of the visual imagery of the concept.  

www.caed.kent.edu/~pevans/outcomes

One answer resulted in understanding that the egg, although hard, has the ability to “breathe” and serves as a filter for its inner contents. Based on this students developed a new HVAC system for the building using the walls as a “shell” for filtering air. The concept was extrapolated into all aspects including thematic development and is visible on the outcomes site.

Acquainted with the technique, video was used in the senior capstone project the following semester the resulting in more clearly articulated conceptual development and outcomes that were more creative. This is evident in the example of the concept labeled “Thread” on the concept web site.

Based on the successful outcomes from these projects the use of film has proven to be an extraordinary tool used to explore concept and concept development and the technique should be considered in design curricula. In the words of Ansel Adams “there is nothing worse than a sharp image of a fuzzy concept”


Schier, Flint. (1986) *Deeper into pictures; an essay on pictorial representation*. London: Cambridge University press,

Prelude to Modern Architecture: Chaos
Jean P. Freeman, FIDEC, ASID
Marymount University

Abstract

Purpose
This paper will address a way of understanding the complexities of design and architecture, especially as the advent of the “theatricalization” of the architectural experiences. The emergences of spaces that at once feel chaotic are in fact well organized, with repetition of form and rhythm of design.

Context
The theory of chaos is the theme around which the following works revolve. In observations of nature, initially there appears to be rampant disorder. What scientists, artists and others have discovered, through careful study, is that there are regularities that emerge from this chaos. This was an idea that was explored by the atmospheric scientist Edward Lorenz whose discovery of the “butterfly effect” speaks to weather’s inherent unpredictability at small spatial scales but, also, to the emergence of recognizable patterns at larger scales. This complexity of nature is now being integrated into the “built” human environment (Gleick, 1987).

This movement is a complete revolution in the forms that support how people live in the twenty-first century. The powerful forms are exceptionally expressive in their chaos. Influences from such architects as Antoni Gaudi, Le Corbusier, Rudolf Steiner are examples of historical influences on the new primal geometric forms. Gehry’s design for the Walt Disney Concert Hall and works by Zaha Hadid, another Pritzker Architecture Prize Laureate (2004), has demonstrated leadership in this innovative, creative, chaos movement.

Summary
Design ability today has an underpinning of high technology to help create and implement far-reaching forms. The controlled chaos discussed here has brought a breath of fresh air to interior and architectural design. Experiments with materials, new technologies, and new ways of living have expanded the forms that can be implemented. These new forms are wonderful, open-minded designs in the spirit of the times. These designs have true cultural significance deeply embedded in national and global identities. They positively enhance the image and potential of design in their originality and uniqueness. These more diverse and convoluted forms meld seamlessly with the chaos of nature, and take their place as a legitimate part of the patterns found in our universe.

References
Prelude to Modern Architecture: Chaos

Jean P. Freeman, FIDEC, ASID
Marymount University

Narrative

Purpose
This paper will address a way of understanding the complexities of design and architecture, especially as the advent of the theatricalization of the architectural experiences. The emergence of spaces that filter light, become barriers, and address alternatives to the traditional finishes of the forms, are evident in the works of these designers.

Context
The theory of chaos is the theme around which the following works revolve. In observations of nature, initially there appears to be rampant disorder. What scientists, artists and others have discovered, through careful study, is that there are regularities that emerge from this chaos. This was an idea that was explored by the atmospheric scientist Edward Lorenz whose discovery of the “butterfly effect” speaks to weather’s inherent unpredictability at small spatial scales but, also, to the emergence of recognizable patterns at larger scales. This new science incorporates the concept of fractals, in which complex but recurring themes and patterns at different spatial scales stand out. This complexity of nature is now being integrated into the “built” human environment (Gleick, 1987).

Edward Lorenz, MIT: 1960 illustration of the “butterfly effect”
Review

It is the plasticity of the architecture, which at the end of the twentieth century has gone through multiple styles and emerged into a new form of contemporary style. The very form of architecture, from the beginnings of Western civilization, first emerged from the Greeks, who established the theories of aesthetics. Ever since Pythagoras architecture has signified the significance of buildings. The theories of architecture devoted to naturalism are concealed in these forms. Architecture emerged as a form that has a relationship with the outside, with the world, entrusted in undulating forms. The sense of what is inside can no longer be evident. The forms are like biological mysteries.

By the time architecture finally crossed the threshold of the twentieth-first century, it was entirely covered with the produces of the evolution of thought and progress. The correspondence with natural features and the sense of balanced reflection has been bypassed. The identity with former styles is not as evident. The destiny of these forms and surfaces has been a quest of losing in harmony what is gained in expressiveness. It is an exploration of questions of design. What in architecture and design can produce an aerodynamic form if not a sufficient plastic experience, an investigative paradigm? In this surrealistic approach to architecture all forms are subject to tampering. Fantastic and repellent mutations are made with little correspondence to recognizable historic forms. Of crucial importance is the relationship between inside and outside.

This architecture is a story of our own time, still very much alive even if it now belongs in the last century. The rest has something to do with the leading role played by architecture itself, being brought up to date in the ever more extreme forms derived from technology.
Frank Gehry’s early computer modeling of the Guggenheim Museum resembling Lorenz’s “butterfly effect” (Chollet, 2001).

At the same time, on the other cutting edge of the contemporary, we have seen the triumph of the immaterial icon, valid to the point where it has taken the place of reality, poised between visual seduction and high technology. The advent of the computer has created more possibilities for architecture and design to have more of a sense of movement, expression and spatial extension, therefore, more complexity in meaning for building forms.

The scientific study of chaos has to do with examining recurring patterns found in nature; especially patterns that appear on different spatial scales synchronously. Chaos appears in randomness and complexity and observation of the whole, and not just what constitutes the parts. Although as first glimpse the universe may not appear to have regular patterns, they exist in infinite variety.

This movement is a complete revolution in the forms that support how people live in the twenty-first century. These design solutions are innovative and perceptive. The style has strong professional advocacy because of a consistent history of original designs and high quality spaces. The powerful forms are exceptionally expressive in their chaos. Influences from such architects as Antoni Gaudi’s Casa Mila’ in Barcelona are evident. Built in the period 1905-10, Gaudi’s plastic surfaces incorporated swirling curves used on
both the exterior and the interior. There is constant motion, like a wave propagating over complex shoals. Also, Le Corbusier’s Chapel of Notre-Dame-du-Haut in Ronchamp, France completed in 1954 makes dramatic use of forms. The soaring roof with complex curvatures is suspended on top of convex and concave walls pierced by irregular openings. There is fluidity in the composition. The undulating surfaces are echoed inside and throughout the surrounding natural setting. Ronchamp is a sculpture to be experienced in the round; as observers move about the structure, they sense the dynamics of the composition.

Other examples of historical influence would include Rudolf Steiner’s Goetheanum near Basle, Switzerland (1928). The forms that Steiner used have been described as bizarre. There is a flow of surfaces and dynamic elements that have the expressive force of theatrics. This is also true of Eero Saarinen’s Dulles Airport outside of Washington, D.C. originally finished in 1963. The dramatic tension of the roof is interwoven with the slanting forms of the supports. It is sculptural architecture that dramatically used the developing technologies of its time. His elegant, expressive forms were unhampered by ideological convictions and yielded highly subjective creations, which also displayed his technical virtuosity. These dynamic forms stretching like wings are also exemplified in Saarinen’s TWA Terminal. TWA Terminal by Eero Saarinen designed from 1956 to 1962 (Curtis, 2001).
The above architects would be part of what I have coined as the architecture of chaos. This tradition is being expanded and explored by both Frank Gehry and Zaha Hadid. Frank Gehry’s Guggenheim Museum in Bilbao, Spain built in 1997, as an art museum is an example. It appears as a curvaceous titanium metal-clad sculpture and is probably one of the most often mentioned new buildings of 1998-99 in architectural circles. The abstract, free-form components of this building express the repetition of pattern. Gehry has made a career out of bending horizontal and vertical surfaces to construct buildings that are sometimes defiant and sometimes poetic. His work has continually shattered conventional notions of what architecture might be, just as the field of chaos has reshaped scientific theory. He has created what have been acclaimed as powerful essays in primal geometric form.

Gehry’s design for the Walt Disney Concert Hall in Los Angeles has taken almost seventeen years to be realized. In the years since the project was awarded, there have been many revisions, including the replacement of the exterior material from stone to a more “fluid” stainless steel. Other modifications, to accommodate variables like acoustics, have evolved as well. The sense of movement engendered in form is produced in an auditorium that is shaped like a convex box, bowed in the middle and raised on either end. This appearance of movement in the surfaces of the auditorium reaches a crescendo in the exterior, where the hall is enveloped in the stainless-steel wrapper that flutters and swoops around its perimeter.

Zaha Hadid, another Pritzker Architecture Prize Laureate (2004), has demonstrated leadership in this innovative, creative, chaos movement. The Phaebo Science Center in Wolfsburg, Germany is an example of a building that appears as an object of mystery.
The center has a wonderful degree of complexity and strangeness, which rules by a very specific system of structural organization. Volumetrically, the building is structured in such a way that it maintains a large degree of transparency and porosity on the ground. However, the main volume of the exhibition space is raised, thus covering an outdoor public plaza. Inside the crater-like exhibition space there are diagonal views to the different levels and changing volumes of space. The forms appear organic, as if there is movement of the building and not just the people.

Summary

The success of design often is linked to the reputation, and, therefore, trust and acceptance, of the designer. The foundation of a reputation always has been the quality of the works conceived and executed. Design ability today has an underpinning of high technology to help create and implement far-reaching forms. The controlled chaos discussed here has brought a breath of fresh air to interior and architectural design. Experiments with materials, new technologies, and new ways of living have expanded the forms that can be implemented. These new forms are wonderful, open-minded designs in the spirit of the times. These designs have true cultural significance deeply embedded in national and global identities. They positively enhance the image and potential of design in their originality and uniqueness. These more diverse and convoluted forms meld seamlessly with the chaos of nature, and take their place as a legitimate part of the patterns found in our universe.
References


A Studio Based Approach to Teaching Theory of Home

Chad W. Gibbs, Ph.D.

Colorado State University

Abstract

PURPOSE

“Home” is often imagined to be concrete in nature, yet it is dependent upon abstract associations. One may know what home is, but not be able to define it (Benjamin, 1995). The design of residential interiors influences the way people experience home; (Rapoport, 1995) therefore, it is imperative that practicing interior designers learn how to facilitate the defining of a client’s home and its translation of abstract associations into tangible, fulfilling environments. Current design education provides entry level designers with few tools to understand and address the psychological aspects of design (Israel, 2003). The purpose of this presentation is to offer an approach to teaching the theory of “home” to interior design students in a studio setting.

METHOD

Research concerning the meaning of home, including a model of home, See Figure 1, was integrated into the course curriculum of a junior level interior design studio. Students defined their ideal home in a paragraph then created storyboards illustrating objects, details, or environments that

Once the storyboards were complete, the students were given the assignment to design a living / great room and directed to find ways to incorporate their one word descriptions of home into a three-dimensional cut and tear model. This exercise
allowed the students to take abstract factors of home and apply them to a variety of elements in a designed space. For example, one student labeled a Christmas tree *traditions,* meaning traditions helped create a sense of stability. In the three-dimensional model the student labeled the dining table as a designed element that would support the experience of traditions. Once the students completed the process of translating their abstract associations of home into concrete manifestations they were instructed to design a house that would nurture the meaning of home for a real client.

Each student interviewed their clients using questions derived from the model of home. Instead of asking what a client wanted in their bedroom the student designer asked questions that defined how the bedroom would support the development of home. This approach allows designers to assist their clients in the creation of a new, insightful reality for their clients (Ganoe, 1999).

**RELEVANCE TO INTERIOR DESIGN**

The approach created a framework for teaching interior design students to transform the abstract concept of home into tangible, designed elements of a house. The process appeared to help the interior design students remove their own conception of the ideal home and focus on designing a house that supported the nurturing of home for their client. Finally, the approach gave the students a tool to understand and address the psychological needs of their clients in the creation of home.

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A Studio Based Approach to Teaching Theory of Home

Chad W. Gibbs, Ph.D.
Colorado State University

Narrative

PURPOSE

Home is one of the most universal concepts experienced by humans. Even the word “home” elicits deep seated feelings and imagery in most people (Hart & Ben-Yoseph, 2005; Rybczynski, 1986). It can be argued that in some form nearly all humans, even the so-called homeless (Fox, 2002), have experienced home and desire what the word home represents (Hart & Ben-Yoseph, 2005). “Home” is often imagined to be concrete in nature, yet it is dependent upon abstract associations. As a result, it is possible that one may know what home is, but not be able to define it (Benjamin, 1995). This possibility becomes particularly relevant in the context of designing interior spaces that are expected to nurture the meaning of home.

The complexity of the meaning associated with home has been well documented in the literature (Rapoport, 1995) yet, a theory of home and a systematic approach to teaching home in the context of interior design has yet to be widely accepted. Israel (2003) points out that current design education provides entry level designers with few tools to understand and address the psychological aspects of design. The purpose of this presentation is to offer an approach to teaching the theory of “home” (Gibbs, 2007) to interior design students.
METHOD

Research concerning the meaning of home, including a model of home (Gibbs, 2007) (See Figure 1), was integrated into the course curriculum of a junior level interior design studios. The students were asked to define their own ideal home in a short paragraph (See Figure 2). The focus on the students' ideal home is important because “home is physically, psychologically, and socially constructed in both 'real' and “ideal” forms…” (Somerville, 1997, p. 226). Likewise, it is only by “engaging in the ideal world” that the designers of houses can create houses that “give mankind hope and direction” (Pallasmaa, 1995, p. 114).

Once the paragraphs were complete a copy of Gibbs's (2007) model of home was distributed (See Figure 1) to each student. The model of home organizes the concept of home into 20 factors under the categories of personal, temporal, social, and physical home. The model provided a method for the students to analyze their definition of home while their paragraphs served as an vehicle to talk about meaning. For example one student’s paragraph stated “A place where problems can quickly be forgotten.” In this example the student would be asked to compare the model of home with the sentence and match words in the model with their sentence. In this instance the sentence could be reduced to either the social aspect of home - supportive atmosphere or the physical aspect of home – safe haven.

Next, the students then were given the homework assignment to create storyboards that illustrated factors of their ideal home (See Figure 2). These storyboards included their definition of home as an introduction as well as images of concrete elements that represented factors of their ideal home. Under each image the
students placed a short description of the image and a word pair was constructed linking one word they would use to describe the factor of home to an equivalent word from the model of home (Figure 3.). By combining the student’s words with words from the model of home a common understanding and vocabulary was established.

The process of defining the home for oneself and linking images representing physical examples of home with words from the research literature appeared to help the students understand how they could facilitate the interpretation of future clients’ definition of home into a physical form. To explore this assumption the students were asked to take one of their words and apply it to a new situation. For example one student used the word traditions / stability with an image of a Christmas tree. When translated into a space without a Christmas tree the word pair was represented as celebrating holidays with family at the dinner table (See Figure 4.). This exercise demonstrated to the student that many physical aspects of home can support the same factor.

When the students finished the in-class exercise they were given the assignment to interview clients for a residential studio project implementing questions they developed focusing on the issue of home. Each of the interview questions was created using the model of home as a guide. For instance, instead of asking a question such as: What do you want in your kitchen? The question could be asked: What have you done to personalize your present kitchen? or How would you personalize your future kitchen? It is important to note that asking questions such as these is not a new concept. In fact, most research regarding meaning and home ask questions in a similar fashion. Instead, the point is that the students were given a method to understand
home and how to define home in a short period of time under the constraints of a studio setting. As a result, the students seemed to be much more sensitive to the client’s needs and were more likely to help their clients realize a higher level of satisfaction with their interior design solutions.

RELEVANCE TO INTERIOR DESIGN

The approach created a framework and demonstrated the use of the model of home for teaching interior design students to transform the abstract concept of home into tangible, designed elements of a house. The approach provided the students a systematic means to understand and address the psychological needs of their clients in the creation of home. Likewise, the process appeared to help the interior design students remove their own conception of the ideal home and focus on designing a house that supported the nurturing of home for their clients.
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**Figure 1. Gibbs Model of Home** (Gibbs, 2007)
Figure 2. Home story board

Figure 3. Home story board – Detail of description and word pair
Figure 4. Relating the factors of home to interior design
Understanding the Ideal Home:  
A Dialectic Research Approach

Chad W. Gibbs, Ph.D.  
Colorado State University

Abstract

BACKGROUND

Historically, the study of home related to interior design has been examined at length in the literature however; the overwhelming majority of data on the subject has been gathered, from a limited number of subjects, using qualitative means. This study demonstrates the value of a dialectic approach (Brown & Baldwin, 1995), implementing both qualitative and quantitative means to understand and design for the complex idea of home.

METHOD

A literature review identified reoccurring themes of home (Despres, 1992; Hayward, 1978; Kenyon, 1999). A model of home was developed from these themes and a questionnaire was created whereby the meaning of home could be studied using quantitative analysis of large samples. A total of 213 undergraduate students from 3 universities in the United State completed and returned the questionnaires. University students were targeted because the population of university students is an adult population in a voluntary state of transition between parental and future home states (Kenyon, 1999). The condition of voluntary transition placed these students in a unique situation where they were expected to be able to reflect on the homes of their parents while imagining the ideal home they hoped to create. The questionnaire focused on the
dependent variable “meaning” employing a series of 77 value statements. The value statements represented 5, randomly placed, repeated measures for each of the 4 categories of home divided by 17 negative detractors. The value statements invited the students to choose between 10 levels of agreement with the statement presented, ranging from strong disagreement to strong agreement.

ANALYSIS OF DATA

Analysis employing Pearson coefficients revealed that all four categories of home had a high level of correlation. This high correlation indicates that, statistically, the factors of home did not hang together under the four distinct constructs of home. This result points to the conclusion that, while the categories of home may appear distinct in qualitative work, the boundaries are blurred when analyzed using statistical measures. The data also revealed that all of the factors of home proved to be supported by high levels of agreement. Furthermore, regression modeling revealed that the independent variables gender, location, time invested in home and monetary investment in home were shown to have a significant effect on the value ratings of home.

RELEVANCE TO INTERIOR DESIGN

The results reported in this presentation support the view that it may be useful to employ a dialectic theory of home when exploring meaning of home. Several independent variables appeared to affect the ratings of home. These influential variables could be studied further to explore their origins. The study demonstrated the
use of a model of home and demonstrated the use of an instrument whereby the factors of home can be explored using a quantitative approach.

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Understanding the Ideal Home:  
A Dialectic Research Approach 

Chad W. Gibbs, Ph.D.  
Colorado State University

Narrative

BACKGROUND

Historically, the home has been examined from a variety of perspectives (Coolen, 2006; Cooper-Marcus, 1995; Despres, 1991; Hayward, 1978; Kenyon, 1999; Sixsmith, 1986). Recently there has been a surge in the number of investigations into meaning of home related to interior design. However, the overwhelming majority of data on the subject has been gathered using qualitative methods from a limited number of people.

Home appears to consists of function (lower-level needs) as well as meaning (higher level needs) (Maslow, 1970; Eshelman & Evans, 2002) and is made up of one or more people who share different interpretations of the environment (Altman & Low, 1992). This study demonstrates that a dialectic approach (Brown & Baldwin, 1995), implementing both qualitative and quantitative (Ærø, 2006) means can lead to a more holistic and generalized understanding of the complex idea of home. The dialectic approach recognizes that to build knowledge it is necessary to transcend disciplines and accept epistemologies that sometimes conflict (Gibbs, 2007).

METHOD

A literature review identified reoccurring themes of home that could be categorized into four distinct categories including personal, temporal, social, and physical aspects of home (Despres, 1992; Hayward, 1978; Kenyon, 1999). A model of
home (See Figure 1) was developed from the analysis of data collected of the four categories. Further, each of the four categories were developed into five factors that represented an aggregate of Kenyon’s (1999) factors and those suggested by other researchers (Altman, Brown, Staples & Werner, 1992; Cooper-Marcus, 1995; Despres, 1991; Hayward, 1978; Miller, 1986; Pallasma, 1995; Sommerville, 1997). Interestingly, all of the factors of home were represented in the work of Kenyon (1999), Hayward (1978), and Despres (1991) except for “A place of social interaction” (Hepworth, 1999), and “The potential to stimulate” (Berlyne, 1960; Gallagher, 1993; Kaplan & Kaplan, 1982; Pallasma, 1995).

The factors of home were then incorporated into a questionnaire whereby the meaning of home could be studied using quantitative analysis of large samples. The questionnaire focused on the dependent variable “meaning” employing a series of 77 value statements. The value statements represented 5, randomly placed, repeated measures for each of the 4 categories of home divided by 17 negative detractors. The value statements invited the participants to choose between 10 levels of agreement with the statement presented, ranging from strong disagreement to strong agreement.

A total of 213 undergraduate students from 3 universities in the United State completed and returned the questionnaires. University students were targeted because the population of university students is an adult population in a voluntary state of transition between parental and future home states (Kenyon, 1999). The condition of voluntary transition placed these students in a unique situation where they were expected to reflect on the homes of their parents, consider their current transitional home, while imagining the ideal home they hoped to create. This is of particular interest
because the “home is physically, psychologically, and socially constructed in both ‘real’ and “ideal” forms…” (Somerville, 1997, p.226). Likewise, the ideal home of the future is relevant because it is not necessarily constrained by limits placed by others such as landlords, parents, or even mortgage lenders.

There are many factors that may influence the way people rate meaning related to the home environment. As a result, this study included 12 independent variables and a dependant variable meaning (see Table 1).

**Independent Variables**

Since it appeared that people relate to the house archetype of their childhood (Israel, 2003), the childhood housing archetype was one independent variable. Age, gender, and geographic location of the subjects were also independent variables that could have influenced the results. Several independent variables related to time. The research documented in this paper indicates that time (represented by the temporal home) is essential to the creation of meaning (Kenyon, 1999). Therefore, several time factors were included as independent variables. The independent time variables included in this survey were 1) the amount of time (in months) since the students moved out of their parental homes 2) the amount of time the students lived in their current residence 3) the amount of time they spent at home, in hours, each day 4) the time they invested in their home 5) the frequency of leaving and 6) the monetary investment in home (see Table 1).
**Dependent Variable**

The dependent variable for this study was designed to capture the meaning respondents’ attribute to factors related to home. This measure of meaning was divided into four categories: personal home, social home, temporal home, and physical home. Each the four categories consisted of the five factors of home that were represented in a questionnaire using repeated measures. These repeated measures were analyzed using an Ordinary Least Square Regression Model (OLS) to determine if all of the measures for one factor were measuring the same concept. Finally, all of the repeated measures under each category of home then were analyzed to determine if all of the categories of home were rated equally as suggested by the literature. The OLS regression model also tested if there was an interaction effect between the dependent variable and the independent variables.

**ANALYSIS OF DATA**

Analysis employing Pearson coefficients revealed that all four categories of home had a high level of correlation. This high correlation indicates that, statistically, the factors of home did not hang together under the four distinct constructs of home. This result points to the conclusion that, while the categories of home may appear distinct in qualitative work, the boundaries are blurred when analyzed using statistical measures.

The data also revealed that all of the factors of home proved to be supported by high levels of agreement. Furthermore, regression modeling revealed that the independent variables gender, location, time invested in home and monetary investment in home were shown to have a significant effect on the value ratings of home, See Table 1.
CONCLUSIONS

This study successfully gathered qualitative work and organized it in a questionnaire that was analyzed using quantitative methods. The instrument proved an effective way of determining meaning ratings. However, the analysis of data revealed that the factors of home did not hang together under the four distinct categories of home. This finding strengthens the argument that the home can be examined using a dialectic theory of home (Brown & Baldwin, 1995). This means that the combination of the two approaches can enhance the understanding of the complex concept of home.

The strength of the study is that it focused on the types of questions to ask about home and not specific descriptions of home. The resulting questionnaire may be used to investigate the responses of a variety of populations.

In its present form, the questionnaire affords interior designers and interior design educators one more tool in the challenge to objectively understand and create environments that nurture the experience of home for people with diverse experiences, expectations, and requirements. Interior designers and interior design educators may cautiously use the model of home, developed in this study (see Figure 4), as well as the factor statements presented in the study questionnaire as an interview guide to teach the concept of home and to determine how the concept of home is created for individual people.

The data revealed that several independent variables influence the way people rated meaning in the home. This information can be instrumental to finding successful design solutions. For instance, the study showed that gender is an important variable in the way people value the factors of home. This information can help designers be
sensitive during their programming to the possible disparity between the way males and females value home. Also, location has an interaction effect on how people rate meaning. This is significant because many designers design for clients in diverse geographic locations or diverse geographic backgrounds. Designers must be responsive to the various requirements clients may have founded on their geographic location. Although temporal home was rated lower than the other categories it still rated extremely high suggesting that the aspects of a temporal home are still required to create a home for students. However, it is likely that the “homeless” state students are in makes the experience of time less important in their current housing than other demographic groups.

There is little doubt that the concept of home is an idea that is as complex as the people who build it. Since there are many ways to experience home and home can exist on many levels it becomes imperative that those who create home have a place to begin their inquiry. The role of interior design in the development of environments that nurture home is a noble cause that has the power to engage, enlighten, and enlarge the capacity of people to experience home in its ideal.
REFERENCES


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Israel, T. (2003). *Some place like home: Using design psychology to create ideal places*. Chichester, West Sussex: John Wiley & Sons Ltd.


Figure 1. Model of Home
## Table 1. Regression Coefficients for Personal, Physical, Social and Temporal Assessments of Home

<table>
<thead>
<tr>
<th></th>
<th>Personal</th>
<th>Physical</th>
<th>Social</th>
<th>Temporal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently Live In Temporary Housing</td>
<td>-0.688 (-2.607)</td>
<td>-1.752</td>
<td>-2.656</td>
<td>-2.627</td>
</tr>
<tr>
<td>Age</td>
<td>0.132</td>
<td>0.001</td>
<td>0.01</td>
<td>0.554</td>
</tr>
<tr>
<td>Gender</td>
<td>-6.076*</td>
<td>-6.323*</td>
<td>-6.63*</td>
<td>-3.409*</td>
</tr>
<tr>
<td>Time out of Parents Home (months)</td>
<td>0.007</td>
<td>0.037</td>
<td>0.009</td>
<td>-0.028</td>
</tr>
<tr>
<td>Time in Current Residence (months)</td>
<td>-0.041</td>
<td>-0.036</td>
<td>-0.034</td>
<td>-0.037</td>
</tr>
<tr>
<td>Frequency of Moving While in Parental Home</td>
<td>-0.058</td>
<td>-0.048</td>
<td>-0.045</td>
<td>-0.05</td>
</tr>
<tr>
<td>Hours at Home per Day</td>
<td>-0.212</td>
<td>-0.065</td>
<td>-0.153</td>
<td>-0.221</td>
</tr>
<tr>
<td>Frequency of Leaving Home Per Year</td>
<td>0.072*</td>
<td>0.056</td>
<td>0.038</td>
<td>0.052</td>
</tr>
<tr>
<td>LOCATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indiana, PA</td>
<td>6.118*</td>
<td>5.82*</td>
<td>5.523*</td>
<td>5.051*</td>
</tr>
<tr>
<td>Manhattan, KS</td>
<td>-1.779</td>
<td>-1.52</td>
<td>-1.465</td>
<td>-1.641</td>
</tr>
<tr>
<td>Columbuss, OH (reference)</td>
<td>-4.368*</td>
<td>4.068*</td>
<td>4.489*</td>
<td>3.575*</td>
</tr>
<tr>
<td>LOCATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monetary Investment in Home</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>-0.982</td>
<td>-2.343</td>
<td>-2.718</td>
<td>-0.69</td>
</tr>
<tr>
<td>Less than Average</td>
<td>-3.447</td>
<td>-2.755</td>
<td>-2.63</td>
<td>-3.041</td>
</tr>
<tr>
<td>Time Investment in Home</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>-6.237*</td>
<td>-5.164*</td>
<td>-2.906</td>
<td>-5.965*</td>
</tr>
<tr>
<td>Less than Average</td>
<td>-2.599</td>
<td>-2.205</td>
<td>-2.107</td>
<td>-2.368</td>
</tr>
<tr>
<td>Family Detached Home in Childhood</td>
<td>3.418</td>
<td>2.692</td>
<td>1.336</td>
<td>2.245</td>
</tr>
<tr>
<td>(Constant)</td>
<td>127.91</td>
<td>111.289*</td>
<td>114.758*</td>
<td>97.995*</td>
</tr>
</tbody>
</table>

*P<-.05 *( ) = Standard Error
The Social Dimension of Surveillance –
Implications for Interior Design Education and Practice

Tasoulla Hadjiyanni, PhD & Jain Kwon

University of Minnesota

Abstract

Purpose

Since 9/11, surveillance has permeated many aspects of American lives. The question is: “What are the implications of this elaborated notion of security for interior designers’ reason for being?” A literature review points to interior designers needing to expand their approach to the problem of security and afford the social dimension a larger role in security schemes, particularly those involving cameras. Examples from undergraduate and graduate student projects highlight these possibilities.

Framework

The notion of security has long been integral to interior design education, CIDA accreditation requirements, and the profession’s body of knowledge (Martin & Guerin, 2005). As currently defined and positioned though, security falls under standards dealing with Codes and Regulations and surveillance, which often involves cameras
and video monitors, is not separately highlighted. Requirements are also too vague to be applied to design projects as they do not zoom in on particulars such as camera systems. Typically the realm of engineers, surveillance systems are thereby often treated as add-ons, underestimated as pieces of equipment hanging on walls or hidden behind desks of security personnel.

Similarly, the socio-cultural domain of security schemes is downplayed as the digital/technological domain takes over. Little attention then is paid to involving those in need of protection, long advocated by Oscar Newman (1972), in the security plan. Moreover, surveillance systems are bound in paradox as they create both a feeling of safety and uncertainty in people. Concerns include: a) knowing they are being observed and monitored, people feel uncomfortable, often changing their behaviors (Helten & Fischer, 2004b); b) invasion of privacy (Lyon, 2002); c) operators often focus on people who look ‘different’ from others, such as foreigners (Helten & Fischer, 2004a); and d) cultural differences as conceptions of what is appropriate and inappropriate ‘watching’ differ (Lyon 2002).

Importance of the Topic

The above overview of how security and surveillance were/are conceived, perceived, and practiced in both the social sciences and the design fields reveals the
opportunities that arise through interdisciplinary collaborations and highlights three areas for reconsideration: a) expanding the terminology associated with interior design to include surveillance; b) distinctly defining all terms used in the field with respect to security; and c) positioning security in the early stages of the design process, thereby establishing the potential for creative and conceptual solutions.

Relevance to Interior Design

Examples from architecture, art, and theater set a trajectory for how interior design education can approach this problem. An undergraduate interior design thesis (Figure 1) and an architecture master thesis (Figure 2) use cameras and monitors to connect people, turning equipment from mere objects to symbolic manifestations. By re-conceiving cameras, these two projects created a forum for engagement, one through which interactions between people and cameras and between people present can begin to happen. Re-defining what security means and how it can be accomplished, interior designers can expand their reason for being and empower themselves to constructively participate in current debates. This is an NSF funded study (CNS#0324864).
References


Figure 1. Cameras and monitors enable visitors to scan museum galleries.
Figure 2. Large screens and PODs connect users of the post-office.
The Social Dimension of Surveillance –
Implications for Interior Design Education and Practice

Tasoulla Hadjiyanni, PhD & Jain Kwon
University of Minnesota

Narrative

Purpose

Since 9/11, security issues have been dominating the headlines and policy makers’
lists of promises. As a result, public surveillance has intensified to the point of
permeating many aspects of American lives: from schools and airports to personal data
and streets (Lyon, 2003). The question is: “What are the implications of this elaborated
notion of security for interior designers’ reason for being?”

Historically, security and surveillance fell within the architects’ domain as they
primarily relied on physical manifestations of the built environment, from fortification
walls around cities to open spaces in malls. Today however, both largely depend on
technological advances. Because of the use of electrical and mechanical systems,
security schemes, such as surveillance systems involving cameras, are typically the
realm of engineers.
Through a review of the literature and current approaches to the problem of surveillance, this NSF funded study (CNS#0324864) aims to re-define the role of interior designers in the realm of security and frame the dialogue around these issues in a way that takes into consideration current debates and design responses, particularly with respect to camera systems.

Exploring the potential tied to the further involvement of designers in devising ways to use cameras to respond to socio-cultural factors in the early stages of the design process, this study hopes to spur both more work in this arena and a dialogue around this issue among interested educators and practitioners. Examples from architecture, art, theater, and undergraduate and graduate design studio projects highlight how embracing surveillance and its camera/video manifestations along with the social dimension of security in interior design education can empower future designers to constructively participate in current debates.

Framework

The notion of security has long been integral to interior design education, CIDA accreditation requirements, and the profession’s body of knowledge (Martin & Guerin, 2005). As currently defined and positioned though, security falls under standards dealing with Codes and Regulations and surveillance, which often involves cameras.
and video monitors, is not separately highlighted. When it comes to building design, the
term security is mostly used to describe the whole approach to increasing safety in a
setting—be that for example, fire detection systems, access controls, and crime
detection (Finuean, 2005). Surveillance describes cases of camera and video
application, such as Close Circuit Tele-Vision systems (CCTV) (Walby, 2005).

Security Schemes in Interior Design Education

Three issues arise regarding how security is positioned and approached in
interior design education: 1) Surveillance and its manifestations, such as camera
systems, are overlooked as they are not highlighted among the understandings
expected of interior designers; 2) Security is separated from the design process. CIDA
accreditation places ‘security systems’ under the standard for building systems and
interior materials (Standard #6). The Interior Design Body of Knowledge (Martin &
Guerin, 2005) includes security systems under Interior Construction, Codes, and
Regulations, along with building systems, electrical plans and with fire and life-safety
principles; and 3) Often, related themes are separated, like detection being under
‘regulations’ (Standard #7) in CIDA accreditation standards, even though security and
detection are interrelated and together impact safety and well-being.

Requirements are also too vague to be applied to design projects as they do not
zoom in on particulars such as cameras. Not being thoroughly addressed in design curricula, cameras are rarely an integrated part of the design. Instead, left to engineers, surveillance systems are often treated as add-ons, underestimated as pieces of equipment hanging on walls or hidden behind desks of security personnel.

**The Socio-Cultural Domain of Security Schemes**

Similarly, the socio-cultural domain of security schemes is downplayed as the digital/technological domain takes over. Little attention then is paid to involving those in need of protection, long advocated by Oscar Newman (1972), in the security plan. Moreover, security is bound in paradox as, according to Ivy (2002), “where security systems assert themselves most forcefully fear, discomfort, and even danger often flourish; conversely, the absence of visible protection can promote the feeling of well-being” (p. 15).

Surveillance systems are thereby perceived as necessary for feeling safe but at the same time, they create a feeling of uncertainty in people. Knowing they are being observed and monitored, people feel uncomfortable, often reacting negatively and changing their behaviors (Helten & Fischer, 2004b). This duality—feeling safer and feeling uncertain—represents the hurdle that designers have to overcome as the public’s perceptions of security systems complicate decisions of how and when to use
them. This is partly why a lot of malls do not have signs indicating video surveillance is in operation (Bergsman, 2003).

Controversies surrounding surveillance systems also relate to privacy concerns as uses of surveillance systems, such as record-keeping and monitoring behaviors, constitute invasions of privacy (Lyon, 2002). Advocacy groups like the Surveillance Camera Players (http://www.notbored.org/the-scp.html) were born out of a reaction to the presence of camera systems in public areas, such as streets.

Largely behind the criticism surrounding security systems are concerns about how the technology operates, who monitors it, and how it is actually used. In their research of Berlin shopping malls, Helten & Fischer (2004a) pointed out that CCTV operators often focus on people who look ‘different’ from others, such as foreigners, young people, and ‘the homeless-like,’ based on elements like their body language. This finding is disturbing at a time when racial and ethnic discrimination are at the forefront of public debates surrounding the effectiveness of techniques such as profiling in increasing public safety.

Cultural differences add more complications as conceptions of what is appropriate or inappropriate ‘watching’ differ depending on culture, region, gender, ethnicity, nationality, class and income (Lyon, 2002). Applying surveillance systems in a
culturally diverse society such as the US, cultural differences in notions of privacy and photographing must be incorporated in the decision-making process.

Importance of the Topic

The above overview of how security and surveillance were/are conceived, perceived, and practiced in both the design fields and the social sciences reveals the opportunities that arise through interdisciplinary collaborations and highlights three areas for reconsideration: a) expanding the terminology associated with interior design to include surveillance; b) distinctly defining all terms used in the field with respect to security; and c) positioning security in the early stages of the design process, thereby establishing the potential for creative and conceptual solutions.

Relevance to Interior Design

Examples from architecture, art, and theater that responded to the public debate on surveillance can begin to set a trajectory on how interior design education can approach this problem. Diller+Scofidio’s Brasserie employs cameras and video monitors in an unconventional way, turning them into the bar’s decorative highlight, giving cameras and monitors space and time to function. For example, a video camera captures images of customers as they enter the venue and these are then displayed on monitors over the bar for everyone to view (Betsky, 2000). In this design, the
surveillance system becomes an integral part of the design scheme but privacy concerns are still present as tenants have no option as to whether their image will be broadcasted.

Wodiczko (1999), an artist, also takes advantage of cameras and videos, using them as a communication instrument for city strangers. Through two screens, the ‘stranger’ expresses herself/himself and attracts passer-bys to converse. In Wodiczko’s work, cameras are there to tell a story and to foster a dialogue that raises awareness about issues that commonly divide people. Another artist, Jill Magid, decorated police surveillance cameras with rhinestones to attract attention to them (Zacks, 2003).

Acting groups like the Wooster group, also use both cameras and videos in their theater settings. For example, in a play, audience members can be projected onto a screen and partake into the play. Taking advantage of technologically sophisticated and evocative uses of sound, film and video, the Wooster Group is redefining the role of technology in the realm of contemporary theatre, and in the process has influenced a generation of theatre artists nationally and internationally.

Pushing the boundaries for what surveillance means and how it can be accomplished are also two projects from University of Minnesota design students. Jane Storm, an undergraduate interior design student (Figure 1) working on the re-design of
the Goldstein Museum of Design and Nathan Burt, an architecture master’s student (Figure 2) whose thesis involved the design of a post-office, used cameras and monitors to connect people, turning equipment from mere objects to symbolic manifestations. By re-conceiving cameras, these two projects created a forum for engagement, one through which interactions between people and cameras and between people present can begin to happen.

Further possibilities exist that collaborations with engineers might make possible. Design schools can make a difference by for example providing opportunities for interdisciplinary collaborations between designers and engineers in joint classes. More work in this area on both the educational and the practice levels can open-up new avenues to begin a dialogue around what security means. Re-defining security and surveillance and how they can be accomplished, interior designers can expand their reason for being and empower themselves to constructively participate in current debates. Re-conceiving cameras can be a start.

References


Figure 1. Cameras and monitors enable visitors to scan museum galleries.
Figure 2. Large screens and PODs connect users of the post-office.
The “Other” Voice of Interior Design: Investigating Views and Concepts of Social Responsibility in the Profession

Kathryn D. Harrison
Colorado State University

Abstract

PURPOSE

Does interior design, as a profession, have a responsibility to society? An initial pilot study revealed a lack of writing about social or ethical responsibility of the interior design profession (contrasted with a substantial amount available in the field of architecture). The lack of in-depth, serious writing about ethics or professional responsibility within the field of interior design reveals a deficit in the profession; the absence of a current or established language of social consciousness and relevance. The absence of a discourse regarding our social value makes it difficult to discuss interior design publicly as an influential or significant profession.

The current qualitative study sought to investigate (and potentially explain) this absence. Firstly, did interior design professionals feel a sense of social responsibility? If so, how was it expressed or characterized by the designers? Through a series of in-depth interviews with practicing professionals, the researcher investigated the practice of pro bono interior design work, designers’ concepts of social responsibility (both personal and professional) and the relationship (if any) between pro bono work and social responsibility.
DISCUSSION

In the course of the study, pro bono interior design service is found to be the result of complex, overlapping motivations and conditions, some of which appear contradictory. The variety of participant attitudes towards the practice, including criticism and challenges, indicates that the phenomenon merits further study.

The study suggests that the terms “pro bono” and “socially responsible” do not necessarily encompass the same scope of meaning. Pro bono work is not necessarily work motivated by a sense of professional responsibility to society, nor does a designer’s sense of social responsibility necessarily manifest itself as pro bono service.

The participants identified personal and professional factors that contributed to their own concepts of social responsibility. Participants also identified conditions that negatively affected definition or expression of social responsibility within the interior design profession, such as confusion about the meaning of the term, cultural/capitalistic emphasis on financial matters, and the prevailing model of “client service” in which clients have the potential to limit or simply negate designers’ inclinations to social responsibility.

Responses to the interview questions reveal that interior designers overwhelmingly feel the profession has a social responsibility. So why is there a marked lack of discourse on the subject? The researcher suggests three factors contributing to the lack of writing: the “altruistic concept” of social responsibility, designers’ perception of public disregard for the profession, and the lack of a fully established “profession-defined value” of interior design.
CONCLUSION

In this exploratory study, the researcher proposes models of the concepts and processes describing pro bono work and socially responsible work, and suggests a conceptual model of the inclusive categories that define the value of interior design as a profession and as a practice. The study is intended to contribute and to initiate further exploration of a hidden depth of our profession that has, in the researcher’s opinion, the potential to be an exciting, vigorous dialogue of professional inquiry, discovery, and self-definition.
The “Other” Voice of Interior Design: Investigating Views and Concepts of Social Responsibility in the Profession

Kathryn D. Harrison
Colorado State University

Narrative

PURPOSE

In a pilot search of multiple databases, the author uncovered a lack of literature regarding interior design’s ethical or social responsibility to the public. A discourse of ethics exists in the field of architecture, so why doesn’t a similar body of writing exist within the profession of interior design? If designers do not feel that their profession has a social responsibility, then the lack of discourse is readily explained. But because there is evidence that some designers are doing socially responsible projects, it seems more likely that we are doing the work, but not talking about it with any real depth. The lack of in-depth, serious writing about ethics within the field of interior design reveals a deficit in the profession (Anderson, Honey & Dudek, 2007). Architecture’s ethical premise effectively promotes and substantiates its value in Western society. The purpose of this study is to explore how designers define and characterize the concept of social responsibility, to determine if interior designers believe their profession has a social responsibility, and to look for possible reasons why there is not currently a body of writing discussing the ethical and social responsibility of interior design.
CONTEXT

In the textbook *Ethics and the Practice of Architecture* the authors identify “assertions of architecture’s ethical nature” throughout history, dating as far back as first century B.C.E. (Wasserman, Sullivan & Palermo, 2000, p.38). In architecture, “ethics” are not external concerns imposed on the practice by professionals; rather, they are already present and dictated to the architects by the demands of the profession itself. In the introduction to an issue of *Philosophical Forum* devoted to ethics and architecture, the authors write: “An underlying assumption of this volume is that ethics is not something to be pasted onto architectural projects as an afterthought – the way in which, for example, ethics is often merely superimposed on professional practice, as in ‘business ethics’” (Levine, Miller & Taylor, 2004, p.4). The authors go on to locate the origin of modern architectural-ethical discourse in the writings of John Ruskin, Martin Heidegger, Nikolas Pevsner, Seigfried Giedion, and cite current writings of Roger Scruton and Karsten Harries.

Implications of the architecture of confinement (Allen, 2003), racism (McAfee, 1993), and gender (Rendell, Penner & Borden, 2000) all contribute to a multi-faceted view of ethics in architecture. Schmidt (1997) identifies four “loose” categories of “ethical” architectural teaching, and Wasserman, Sullivan & Palermo (2000), identify five different “lenses” that characterize architectural ethical concerns. While there is not unilateral agreement within the architectural community about architecture’s ethical responsibilities, there is an existing discourse of considerable scope regarding the profession’s ethical issues.
The examination of architecture’s ethical discourse is not intended to be prescriptive. Rather, it is an invitation, an opportunity to ask ourselves meaningful questions about the ethical responsibilities of our own profession. For example, Kaukas Havenhand’s (2004) assessment of the relationship between architecture and interior design is formulated along Simone de Beauvoir’s binary pairing of Subject/Other, and the corollary pair of male/female. Drawing on the work of Gilligan (1982), Haraway (1988) and hooks (2000), Kaukas Havenhand (2004) uses the association between “feminine” and “marginal” to ask a series of questions, including: “what would a unique language of interiors, that reflected its marginal and feminine characteristics look like, sound like and feel like?” (p. 41) and “does interior design have an identity outside of architecture?” (p.42)

These questions helped establish a basis for this study. Does interior design have an ethical or socially responsible identity separate from architecture? What words would interior designers use to define and discuss the concept? The fact that architecture has an established historical and modern discourse concerning its ethical implications, and interior design does not, is not sufficient evidence to suggest that we feel dispassionately about the ethical responsibility of our profession. It may be that ideas about the ethics of interior design, and more specifically, the social benefit of interior design, have not been sufficiently explored, as a result of interior design’s marginalization as a design discipline (Anderson, Honey & Dudek, 2007). It is that possibility that motivated this study.
METHOD

The initial problem of how to investigate socially responsible design work for the data collection phase of the study was solved by substituting the more commonly found term “pro bono” work. Socially responsible work was therefore practically delineated as pro bono or reduced-fee work performed primarily for a charitable purpose.

The study combines a short series of demographic survey questions with a semi-structured in-depth telephone interview of interior design professionals who have engaged in pro bono design activity. This non-probability sample of 18 interior design professionals, currently practicing or with a history of practice, was derived through a search of articles, announcements, and interior design organizations that promoted and described pro-bono activity. Candidates were contacted and invited to participate in the study, and were subsequently asked to identify and recommend other designers who had also engaged in pro-bono work. The interviews were transcribed, reviewed for relevant phrases and concepts, and the data was coded in a case ordered meta-matrix to enable cross-case exploration and description of data variables.

DISCUSSION

In the course of the study, pro bono interior design service is found to be the result of complex, overlapping motivations such as altruism, religion, personal satisfaction and business strategy. While the motivation may be primarily altruistic in nature, conditions that affect pro bono activity are primarily business related. Designers identified several challenges of pro bono work. The variety of participant attitudes, including criticism of the practice, indicates that the phenomenon merits further study.
Regarding social responsibility, the study strongly suggests that the terms “pro bono” and “socially responsible” do not encompass the same scope of meaning. Pro bono work is ultimately defined as work that is unpaid, not necessarily work motivated by a sense of professional responsibility to society, and participants clearly articulated the possibility or the need for being socially responsible in fee-based work.

When asked to define “social responsibility,” the participants used altruistic language which expressed desire to help others. The participants identified personal factors that contributed to their own concepts of social responsibility, as well as a general belief in the value of their professional service. Responses reveal that interior designers strongly feel the profession has a social responsibility. When asked why they felt the profession had a responsibility, the designers emphasized the positive impact interior design has on people’s quality of life.

Participants also identified conditions that negatively affected definition or expression of social responsibility within the interior design profession, such as confusion about the meaning of the term, our country’s cultural/capitalistic emphasis on money, and the prevailing model of “client service” in which clients have the power to limit or negate designers’ inclinations to social responsibility.

The study confirms that interior designers have a variety of opinions and experiences with issues of social responsibility in interior design practice. So why is there a marked lack of discourse on the subject? The researcher suggests three factors contributing to the lack of writing: the “altruistic concept” of social responsibility, designers’ perception of public disregard for the profession, and the lack of a fully established “profession-defined value” of interior design.
First, designers’ altruistic concept of social responsibility may contribute to the lack of writing about social responsibility by effectively placing the onus for social responsibility on individual designers (to simply “feel” this altruistic dispensation towards the public), rather than on the profession. In this way, social responsibility as a concept becomes too personal, or too relative, to be applied to the entire profession.

Second, participants almost unanimously felt that the general public, if asked, would not consider interior design as a profession with a social responsibility, and instead would view it as superficial, and only available to a privileged class. The designers’ feelings about public perception may or may not be accurate, but it seems reasonable to suggest that this perceived schism between designers and their public would discourage writing about interior design’s social responsibility.

Finally, several designers indicated that it was difficult to discuss professional social responsibility when they currently felt a lack of definitive, identifiable “value” that could be used to defend or promote interior design practice. The author proposes a conceptual model of the value of interior design with three components: designer, client, and profession, in order to illustrate and address how the lack of professionally-defined value contributes to an imbalanced, subjective and temporary idea of “social responsibility” which is forged only between the designer and client.

CONCLUSION

This study has provided a strong foundation for an initial understanding and exploration of social responsibility within the interior design profession. There is evidence that designers recognize a social responsibility within the profession, and the
diverse and sometimes contradictory opinions about how to define and express it have the potential to be an exciting, vigorous dialogue of professional inquiry, discovery, and professional self-definition.

REFERENCE LIST
(American Psychological Association)


Kaukas Havenhand, L. (2004, Fall). A view from the margin: Interior design


Abstract

Purpose

The purpose of this presentation is to describe and highlight important milestones in the early years, 1962-1975, of the development of the Interior Design Educators Council (IDEC).

Framework

The framework for the presentation is an investigative study and a historical qualitative analysis of primary and secondary resources related mainly to interior design and IDEC. Resources include IDEC historical documents and images (such as early meeting materials, the Constitution and By-laws, early correspondence, conference reports, Board minutes, newsletters, and photographs); oral histories from older IDEC members; interior design books and monographs; and historical documents, journals, and websites related to the growth of interior design education and the profession.

IDEC was conceived in 1962 at an American Institute of Interior Designers, Education Committee Seminar in Chicago because “the widely different curricula, points of view, etc., called for an organized council of educators through which they could
discuss their problems” (AID, Central Region, 1962; Stevens, 1962-1963; Brightman, 1972). The association was named and formalized at its first conference in Philadelphia in 1963 (IDEC, 1963-1964, p. 1). Its first Constitution identified the organization’s stated purpose as the “improvement of interior design education,” the enhancement of “communication between individuals, educational institutions, and organizations in interior design,” and the improvement of “the professional level of interior design” (IDEC, 1963-1964, Article II, p.1). As a result of the subsequent and important activities that followed, IDEC contributed significantly to the growth of the profession of interior design through its involvement in research, education, experience, and examination.

Importance of the Topic

IDEC is the recognized association for interior design educators in North America. It has no comprehensive published or unpublished history that details its early years, subsequent evolution, and substantive influence. Many IDEC members are unaware of its start and early growth. As IDEC continues to expand its membership to other countries and its communication with professional associations, its historical background becomes extremely important for communication and identity. Additionally, founding members of IDEC are aging, so this valuable knowledge resource must be tapped soon.

Relevance to Interior Design

IDEC has made numerous contributions to the development of interior design education and the interior design profession as evidenced by an ongoing record of important “firsts.” For example, in 1964, IDEC prepared the first chart of schools offering
interior design and identified their courses (IDEC, 1964). In 1966 it distributed the first newsletter to members to enhance professional communication (IDEC, 1965-1966). In 1968 it published *A Critical Study of Interior Design Education* and the *Directory of Institutions Offering Interior Design Education* (Friedmann, 1968). In 1970, it participated in the founding of the Foundation for Interior Design Education and Research (FIDER). In 1973, FIDER accredited six interior design programs in the United States, all of which boasted IDEC members. In 1974, IDEC was a founding member of the National Council for Interior Design Qualification (NCIDQ), which administers the qualifying examination for interior designers in North America. In 1975, it published the first (and only) journal for interior design research, *The Journal of Interior Design Education and Research* (IDEC, April 22, 1976, p. 9-10). Other important developments, projects, and publications followed in later years.

Selected References


Figures

1) Minutes of the first IDEC meeting in 1963.

2) Robert Stevens, the first President of IDEC in 1963.

3) Arnold Friedmann and Anna Brightman, Presidents of IDEC in 1965 and 1969 respectively.

4) The FIDER Trustees in 1970; (left to right) Ed Perrault (AID, Chair), Anna Brightman (IDEC), Roz Mallin (NSID), James Hewlett (NSID), and Richard Rankin (IDEC).

5) IDEC • Selected Historical Milestones 1962-1975. [See the longer Narrative or eventually the IDEC website for this document.]
MINUTES FOR MEETING OF INTERIOR DESIGN EDUCATORS COUNCIL

Tuesday, May 28, 1963 at The Philadelphia Museum College of Art

The meeting was called to order by Mr. Stevens at 10:15 with 27 members present. Mr. Friedmann read the proposed draft copy of the IDEC Constitution, as first item of business. Next, Miss Phyllis Krumm presented the slate of offices proposed by the nominating committee.

The following offices were proposed and unanimously elected:

Robert Stevens President
Victoria Ball Vice-President
Arnold Friedmann Secretary-Treasurer

A discussion of the content of the Constitution followed. Certain changes in wording were proposed and were incorporated into a slightly revised draft which was printed during the lunch recess, and distributed to the members. As a result of many points raised in discussion of the Constitution, both in the morning and subsequent afternoon sessions, a Constitution Committee was appointed. Mr. Richard Rankin and Miss Phyllis Krumm were asked to head the committee, and coordinate suggestions from all members for the final Constitution to be adopted at next year’s meeting. A resolution was made and passed to accept the present Constitution as a temporary one for the coming year.

Figure 1) Minutes of the first IDEC meeting in 1963.
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I DEC: Important Milestones from the Early Years

Buie Harwood, FIDEC, Hon. FASID, CID/VA
Professor Emeritus, Interior Design, Virginia Commonwealth University
ASID Educator of Distinction 2003

Narrative

Purpose

The purpose of this presentation is to describe and highlight important milestones in the early years, 1962-1975, of the development of the Interior Design Educators Council (IDEC).

Framework

The framework for the presentation is an investigative study and a historical qualitative analysis of primary and secondary resources related mainly to interior design and IDEC. Resources include IDEC historical documents and images (such as early meeting materials, the Constitution and By-laws, early correspondence, conference reports, Board minutes, newsletters, and photographs); oral histories from older IDEC members; interior design books and monographs; and historical documents, journals, and websites related to the growth of interior design education and the profession.

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I DEC is the recognized association for interior design educators in North America, but it has no comprehensive published or unpublished history that details its early years, subsequent evolution, and substantive influence. Many IDEC members are
unaware of its start and early growth. As IDEC continues to expand its membership to other countries and its communication with professional associations, its historical background becomes extremely important for communication and identity. Additionally, founding members of IDEC are aging, so this valuable knowledge resource must be tapped soon.

**Historical Milestones**

On November 10, 1962 in Chicago at the Central Region Meeting of the American Institute of Interior Designers (AID), Education Committee Seminar, the idea was conceived and an ad hoc committee was appointed to plan the development of an educators organization because “the widely different curricula, points of view, etc., called for an organized council of educators through which they could discuss their problems” (AID, Central Region, 1962; Stevens, 1962-1963; Brightman, 1972). This idea led in the following year to the formation of IDEC.

During May 1963, the association was named and formalized at its first conference in Philadelphia (IDEC, 1963, p. 1; Fig. 1). Robert Stevens (Fig. 2) is the first President. There are about 23-27 members present at the conference. Shortly thereafter, the “Constitution and By-Laws of the Interior Design Educators Council” is presented to the membership. The first Constitution identified the organization’s stated purpose as the “improvement of interior design education,” the enhancement of “communication between individuals, educational institutions, and organizations in interior design,” and the improvement of “the professional level of interior design” (IDEC, 1963-1964, Constitution, Article II, p.1).
In 1964, the “Chart of 15 Schools Offering Interior Design,” dated March 26, 1964 and prepared by Catherine Heller from the University of Michigan, is distributed to members (Heller, 1964; IDEC, 1964). At this time, IDEC has 61 members spread across the United States and two members from Canada.

In April 1965, Arnold Friedmann (IDEC, 1965-1966; Fig. 3) becomes the second President. During his tenure, IDEC circulates a proposal for a standard 4-year interior design curriculum. It recognizes the diversity in names of courses, number of credits assigned, and administrative housing of programs. At the time, few universities offer graduate degrees in design, and those that do offer them in the general areas of art and design (IDEC, June 25, 1965, p. 1-2).

In January 1966, Secretary-Treasurer Richard Rankin distributes the first IDEC Newsletter to the membership (IDEC, 1965-1966). The typed copy covers general information from the Placement Committee, Slide Collection Committee, and the President, with a “Welcome to New Members.” In May 1966, IDEC issues a white paper with the title “Professional Recognition of the Need for a Study of Interior Design Education.” It is felt that an objective study of design education is critical in order to improve overall standards in design education and the profession. At this time, there are 38 IDEC members representing universities and design schools (IDEC, 1966, p. 1-5).

In April 1967, the new elected President is Richard Rankin. During his tenure, IDEC members apply for incorporation of the Interior Design Educators Council, Inc. as a not-for-profit corporation. A Certificate of Incorporation is witnessed on May 18, 1967 in New York (IDEC, 1967).
In March 1968, the first Directory, *Institutions Offering Interior Design Education* is published by IDEC as the Curriculum Research Project, chaired by Arnold Friedmann. As stated on the opening page, “This directory represents the first phase of a major curriculum study on interior design education by the Interior Design Educators Council. Interior design as a meaningful profession has emerged in recent years only, and no single group or bureau has ever assembled basic statistical information on the teaching of interior design.” (Friedmann, Mar. 1968, p. 1). In the document, there are 286 schools listed throughout the United States and Canada. In August 1968, the final report of the committee’s work results in the publication of *A Critical Study of Interior Design Education*. As stated in the Forward, “this report is the final product of a comprehensive study of interior design education whose goal was to supply meaningful data on the quality and quantity of design education in the United States and to make recommendations based on these findings for the betterment of design education and the professional standing of the field” (Friedmann, Aug. 1968, Forward, p. i; Friedmann, 1962-1969). Membership at the time “consists of 130 individuals representing approximately 80 universities and design schools” (Friedmann, Aug. 1968, p.1). Also during 1968, the IDEC Board votes to explore the sponsorship with AID and NSID of a new student organization and to send a statement to college administrators “concerning adequate background for faculty in the interior design field noting that advanced degrees are not necessary in the field” (IDEC, April 1968; IDEC, 1963-1969).

In January 1969, the first printed and bound copy of the IDEC Newsletter is distributed to the membership. In April 1969, the newly elected President is Anna Brightman (IDEC, 1963-1969; Fig. 3). Following the 1968 publications the *Directory* and
A Critical Study, a joint committee comprised of representatives from AID, NSID, and IDEC forms to study the accreditation of schools with interior design programs. In August 1970, IDEC publishes the final report of the committee’s work, Guidelines for the Accrediting of Interior Design Educational Programs. “The research-study revealed that a large proportion of schools and programs offering coursework in interior design cannot by that coursework produce a professional interior designer” (IDEC, 1970, p. 1). This report subsequently leads to the formation of the Foundation for Interior Design Education Research (FIDER) by AID, NSID, and IDEC, which is formalized on March 19, 1971 (IDEC, 1972, p. 27). FIDER’s purpose is to promote excellence in interior design through research and the accreditation of interior design programs in North America. The first two FIDER trustees (Fig. 4) from IDEC are Anna Brightman and Richard Rankin.

In April 1971, Kate Ellen Rogers is the new President. IDEC’s focus during this time is on the development of interior design accreditation, communication with educators in related fields, a study of curriculum development, involvement in research, improvements in teaching effectiveness, and the development of graduate programs in interior design (IDEC, 1971, p.1).

In April 1973, Ben Gunter becomes President. During the spring, FIDER accredits the first six interior design programs that include the University of Cincinnati, the University of Texas at Austin, Virginia Commonwealth University, University of Georgia, University of Missouri, and Texas Tech University (Dunn, 2006; IDEC, 1974, p. 9).
In 1974, the National Council for Interior Design Qualification (NCIDQ) is incorporated, administers its first qualifying examination for interior designers in North America, and develops guidelines for model legislation/licensing in interior design (NCIDQ, 2005, p. 70; NCIDQ, 1994). As the exam process matures, IDEC members are involved as design problem authors, test bank authors, exam jurors, and jury-site coordinators. IDEC member representation on the NCIDQ Board begins in the late 1970s.

At the end of the next year, the first issue, Vol. 1, No. 1, of the *Journal of Interior Design Education and Research* comes out on December 29, 1975 (Rogers, 1975). The first editor is Kate Ellen Rogers who is assisted by a committee. She and her committee establish the first "Editorial Board of the Journal, the procedure for the acceptance of a paper, the subscription cost of the Journal, a method for the review of articles, and the standard table of contents," along with the replacement of members, and a constitution (IDEC, April 22, 1976, p. 9-10; IDEC, 1973-1975).

Relevance to Interior Design

IDEC has made numerous contributions to the development of interior design education and the interior design profession as evidenced by an ongoing record of important "firsts." They include the first chart of schools offering interior design, the first newsletter to members, *A Critical Study of Interior Design Education*, and the *Directory of Institutions Offering Interior Design Education*. In 1970, IDEC participated in the founding of FIDER. In 1973, FIDER accredited six interior design programs in the United States, all of which boasted IDEC members. In 1974, IDEC was a founding member of NCIDQ. In 1975, it published the first (and only) journal for interior design
research, *The Journal of Interior Design Education and Research*. These firsts became the foundation for IDEC and interior design education.

**Conclusion**

This particular period in IDEC’s history is remarkable for its broad scope, professional perspective, positive influence, high standards, congenial collaboration, and member dedication to specific tasks and worthy projects. As a result of these, and many important activities that followed, IDEC has contributed significantly to the growth of the profession of interior design through its involvement in research, education, experience, and examination. Without this involvement, the interior design profession wouldn’t be where it is today.

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Website:

http://www.ncidq.org

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Figures

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The following offices were proposed and unanimously elected:

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A discussion of the content of the Constitution followed. Certain changes in wording were proposed and were incorporated into a slightly revised draft which was printed during the lunch recess, and distributed to the members. As a result of many points raised in discussion of the Constitution, both in the morning and subsequent afternoon sessions, a Constitution Committee was appointed. Mr. Richard Rankin and Miss Phyllis Krumm were asked to head the committee, and coordinate suggestions from all members for the final Constitution to be adopted at next year's meeting. A resolution was made and passed to accept the present Constitution as a temporary one for the coming year.

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• 1962

On November 10, 1962 in Chicago at the Central Region Meeting of the American Institute of Interior Designers (AID), Education Committee Seminar, the idea was conceived and an ad hoc committee was appointed to plan the development of an educators organization because “the widely different curricula, points of view, etc., called for an organized council of educators through which they could discuss their problems” (AID, Central Region, 1962, Summary of 2nd Educators’ Conference; R. J. Stevens, April 29, 1963, communication to interior design educators; A. Brightman, 1972, summary documents related to IDEC’s history). This idea led in the following year to the formation of IDEC.

• 1963

First President: Robert Stevens, University of Cincinnati.

The first conference of IDEC takes place in Philadelphia, Pennsylvania at the Philadelphia Museum College of Art on May 28-29, 1963 (IDEC, 1963, Minutes, p.1). There are about 23-27 members present at the conference. The officers present the preliminary Constitution as the first order of business. Shortly thereafter, the “Constitution and By-Laws of the Interior Design Educators Council” is presented to the membership. The first Constitution identified the organization’s stated purpose as the “improvement of interior design education,” the enhancement of “communication between individuals, educational institutions, and organizations in interior design,” and the improvement of “the professional level of interior design” (IDEC, 1963-1964, Constitution, Article II, p.1). This document is subsequently revised under the committee chaired by Richard Rankin and Phyllis Krum. Eventually the By-Laws become a separate document with ongoing revisions.

• 1964

The “Chart of 15 Schools Offering Interior Design”, dated March 26, 1964 and prepared by Catherine Heller from the University of Michigan, is distributed to members (Heller, 1964; IDEC, 1964). During the IDEC annual conference, members agree to list
schools by the categories of those directly related to interior design with no degree, professional courses with a degree, and non-professional courses with an academic degree. Minutes of the meeting indicate that the curriculum discussion at this point "became extremely spirited and various members spoke briefly and sometimes passionately about their philosophy and approaches to interior design education" (IDEC, May 2, 1964, Minutes, p.3). At this time, IDEC has 61 members spread across the United States and two members from Canada.

• 1965

New President: Arnold Friedmann, Pratt Institute.

In June 1965, IDEC circulates a proposal for a standard 4-year interior design curriculum. It recognizes the diversity in names of courses, number of credits assigned, and administrative housing of programs. At the time, few universities offer graduate degrees in design, and those that do offer them in the general areas of art and design (IDEC, June 25, 1965, proposed standard curriculum, p. 1-2).

• 1966

In January 1966, Secretary-Treasurer Richard Rankin distributes the first IDEC Newsletter to the membership. The typed copy covers general information from the Placement Committee, Slide Collection Committee, and the President, with a "Welcome to New Members" (IDEC, 1965-1966, Minutes).

In May 1966, the IDEC Research and Advanced Degrees Committee, chaired by Lyman Johnson, reports on it’s questionnaire study on degrees in interior design. A wide variety of bachelor’s degrees were offered in 35 programs, along with 15 schools reporting some graduate study in interior design (IDEC, May 1966, Minutes, report on questionnaire, p. 7-8). Subsequently, IDEC issues a white paper with the title "Professional Recognition of the Need for a Study of Interior Design Education" which reflects discussions at the last two annual conferences. Four factors are cited for the study: 1) There is no statistical information on the teaching of interior design or on institutions offering courses; 2) the quality and content of interior design courses vary along with the administrative housing of the courses; 3) professional publications in the field do not present a critical study of the facts; and 4) England conducted a thorough study of all art schools three years previously resulting in strong recommendations and
government support. It is felt that an objective study of design education is critical in order to improve overall standards in design education and the field. At this time, there are 38 IDEC members representing universities and design schools (IDEC, 1966, p. 1-5).

- **1967**
  
  New President: Richard Rankin, Purdue University.


- **1968**

  In March 1968, the first *Directory, Institutions Offering Interior Design Education* is published by IDEC as the Curriculum Research Project, chaired by Arnold Friedmann. As stated on the opening page, “This directory represents the first phase of a major curriculum study on interior design education by the Interior Design Educators Council. Interior design as a meaningful profession has emerged in recent years only, and no single group or bureau has ever assembled basic statistical information on the teaching of interior design. The main purpose of IDEC’s curriculum study will be recommendations for curriculum reform based on a thorough analysis of data collected from schools, from a professional opinion survey, and from a comparative analysis of design education abroad and in allied fields” (Friedmann, Mar. 1968, *Directory*, p. 1). In the document, there are 286 schools listed throughout the United States and Canada. The listing is separated by schools offering academic majors, schools offering academic minors, professional schools and junior colleges – major programs, professional schools and junior colleges – some interior design courses, and schools with no interior design programs but with one or two elective courses.

  During the April 1968 conference in Denver, Colorado, the IDEC Board reviews a proposal from James Merrick Smith, President of the American Institute of Interior Designers (AID) and James Hewlett, President of the National Society of Interior Designers (NSID), to establish a single student organization under the auspices of AID, NSID, and IDEC. The IDEC Board votes to establish a committee to explore the sponsorship of the new student organization. Additionally, the Board votes to send a
statement to college administrators “concerning adequate background for faculty in the interior design field noting that advanced degrees are not necessary in the field” (IDEC, April 19-21, 1968, Minutes). The IDEC Board approves the formation of a student organization in April 1969 (IDEC, April 24-27, 1969, Minutes).

In August 1968, the Final Report of the IDEC Curriculum Research Project results in the publication of A Critical Study of Interior Design Education. The chair of the Curriculum Research Committee is Arnold Friedmann, assisted by an Advisory Committee of eight educators from North America. As stated in the Forward, “this report is the final product of a comprehensive study of interior design education whose goal was to supply meaningful data on the quality and quantity of design education in the United States and to make recommendations based on these findings for the betterment of design education and the professional standing of the field” (Friedman, 1968, A Critical Study, Forward, p. i). Work on this project begins in 1966 with financial support subsequently obtained from professional groups, business, and industry. Membership at the time “consists of 130 individuals representing approximately 80 universities and design schools” (Friedmann, 1968, A Critical Study, p.1)

• 1969

    New President: Anna Brightman, University of Texas at Austin.

    In January 1969, the first printed and bound copy of the IDEC Newsletter is distributed to the membership, with opening remarks by IDEC President Richard Rankin. Subsequent issues are also printed and bound.

• 1970

    Following the 1968 publications the Directory, Institutions Offering Interior Design Education and A Critical Study of Interior Design Education, a joint committee comprised of representatives from the American Institute of Interior Designers (AID), the National Society of Interior Designers (NSID), and IDEC forms to study the accreditation of schools with interior design programs. In August 1970, IDEC publishes the final report of the committee’s work, Guidelines for the Accrediting of Interior Design Educational Programs. “The research-study revealed that a large proportion of schools and programs offering coursework in interior design cannot by that coursework produce a professional interior designer” (IDEC, 1970, p.1).
• 1971

New President in April: Kate Ellen Rogers, University of Missouri.

IDEC’s focus during this time is on the development of interior design accreditation, communication with educators in related fields, a study of curriculum development, involvement in research, improvements in teaching effectiveness, and the development of graduate programs in interior design (IDEC, 1971, Annual Report, p.1). The 1970 IDEC accreditation report subsequently leads to the formation of the Foundation for Interior Design Education Research (FIDER) by AID, NSID, and IDEC, which is formalized on March 19, 1971 (IDEC, 1972, Annual Report, p. 27). FIDER’s purpose is to promote excellence in interior design through research and the accreditation of interior design programs in North America. The first two FIDER trustees from IDEC are Anna Brightman and Richard Rankin.

• 1972

In April, IDEC votes to join the International Federation of Interior Designers (IFI; later referred to as the International Federation of Interior Architects/Interior Designers). Additionally, it works with NSID and AID to develop a professional sabbatical program for interior design educators, one that will provide “meaningful opportunities to update their professional interior design backgrounds or to gain professional design experience” (IDEC, 1972, Post Conference Report, p.14).

• 1973

New President: Ben Gunter, Virginia Commonwealth University.

At the 1973 IDEC annual conference, the first major professional address is given and later published in the Conference Proceedings. Also this year, the Historical Development Committee, chaired by Mary Carter, has a permanent status and begins the task of compiling the early history of IDEC.

In spring 1973, FIDER accredits the first six interior design programs that include the University of Cincinnati, the University of Texas at Austin, Virginia Commonwealth University, University of Georgia, University of Missouri, and Texas Tech University (Dunn, 2006; IDEC, 1974, Conference Proceedings, p. 9).

• 1974
During the 1974 annual conference, association representatives from AID, NSID, and IDEC meet to discuss FIDER accreditation and appropriate standards for the profession. During the conference, IDEC inducts Warren Arnett, Past President of NSID, and the trustee representatives from AID and NSID as the first Honorary Members of IDEC (IDEC, Conference Proceedings, 1974, p. 15).

The National Council for Interior Design Qualification (NCIDQ) is incorporated, administers its first qualifying examination for interior designers in North America, and develops guidelines for model legislation/licensing in interior design (NCIDQ, 2005, NCIDQ/Denver 2005, p. 70; 1994 NCIDQ Celebrates 20th Anniversary, NCIDQ’s – Letter). As the exam process matures, IDEC members are involved as design problem authors, test bank authors, exam jurors, and jury-site coordinators. IDEC member representation on the NCIDQ Board begins in the late 1970s.

By 1975, 26 schools had been visited and 19 interior design programs had received FIDER provisional accreditation (IDEC, 1975. Conference Proceedings, p. 11).

The first issue, Vol. 1, No. 1, of the Journal of Interior Design Education and Research comes out on December 29, 1975. The first editor is Kate Ellen Rogers who is assisted by a committee composed of Arthur Hawn, Arnold Friedmann, and Ann Erickson. She and her committee establish the first “Editorial Board of the Journal, the procedure for the acceptance of a paper, the subscription cost of the Journal, a method for the review of articles, and the standard table of contents,” along with the replacement of members, and a constitution (IDEC Reports, April 22, 1976, p. 9-10; IDEC, 1973-1975, Minutes). Additionally, the committee submits a request for funding to the National Endowment for the Arts. The first issue of the Journal is paid for using IDEC funds.

Figure 5) IDEC • Selected Historical Milestones 1962-1975.
Can Light and Color in Home Environments Improve the Quality of Life of Individuals Suffering from Winter Depression?

Asha L. Hegde
Texas State University—San Marcos

Abstract

Purpose and Importance: The topic of winter depression or seasonal affective disorder (SAD) has generated much interest among researchers and the general public. During winter months, 4% to 5% of the population experience extreme changes in mood, sleep habits and weight variations, making their day to day living difficult. Light therapy has been used effectively to treat the SAD symptoms for these individuals. However, there is a larger population (14% -18%) that suffers from a milder version of SAD-like characteristics that affect their mood, cognitive functioning, and behavior, during the winter months but do not reach clinical levels of SAD symptoms. These individuals are identified as having a subsyndromal from of SAD (S-SAD). It is believed that these individuals can benefit from interior environmental changes such as light and color.

The present study was undertaken to examine the light and color modifications that might have been made by individuals suffering from SAD and S-SAD to their home environments to combat the winter blues. The preliminary documentation of cases provides valuable information regarding light and color that can serve as a rough template for interior designer, architect or builders to use throughout their design when dealing with clients suffering from winter depressions.
**Method:** The participants were recruited through city and university newspaper advertisement. First they were administered the Inventory of Seasonal Variation (ISV) to assess the degree of perceived change in mood and behavior over the course of the year. Based on the scoring guidelines provided by ISV, the researchers were able to identify individual’s severity of winter depression. Once the initial screening was done to assess the participants SAD or S-SAD status, a second survey was given to determine what changes they made to their home environment to combat winter blues and help improve their mood.

**Summary:** The results from the individual cases indicate that the light and color changes and alterations the participants have made to their homes have had a profound impact on their mood and behavior. Some of the common modifications done to the home environment were: Installing dimmable fixtures and switches in every room which gave them the flexibility to provide very bright light during daytime and low light levels at night; flooding the room with indirect light sources rather than brightly lit glaring light; and washing the walls with light creating a warm glow. With regard to color the participants tended to like saturated colors that reminded them of ‘sunset’, and colors that reminded them of the outdoors such as ‘forest green’ and ‘teal’. All participants indicated that if given the option to select their ideal home design they would select high ceilings with ‘lots and lots’ of windows. The information provided by these participants is preliminary in nature. Yet it provides valuable information to applied researchers as well as building professionals, architects and interior designers to make informed decisions about interior light and color when creating sensitive home environments for individuals suffering from winter depression.
Can Light and Color in Home Environments Improve the Quality of Life of Individuals Suffering from Winter Depression?

Asha L. Hegde

Texas State University—San Marcos

Narrative

The effect of light and color in interior spaces, and it's effect on the users of the space has long been the study of researchers. However, in the 80’s Rosenthal and colleagues (Rosenthal, et al., 1984) reported that light or the lack of it has a direct impact on an individual’s overall well being. Specifically, individuals who are sensitive to shortage of light during daytime suffer from clinical depression. They coined the mental illness as Seasonal Affective Disorder (SAD).

Over 25 years, much research has been conducted to find out the mechanism of action in light therapy. However, little attention is paid to study what can be done to help these individual’s suffering from SAD in the spaces where they live and work. If light is a critical factor in triggering SAD and interior designers and architects design and specify artificial/natural light in interior spaces, it only points to the importance of studying this important element that impacts the overall mental health of users of space. The current research is looking for fundamental evidence in interior light and color modifications that might have been made to their living environments by the individuals suffering from SAD or milder version of SAD.
A brief overview of research regarding SAD, the disorder, its symptoms and the mechanism of action in light therapy will be discussed so that the reader will have a better appreciation of the issue and its need of study.

Seasonal Affective Disorder (SAD), is a type of depression that is a clinical condition, which occurs yearly during the shorter days of fall and winter months and remits during the longer days of spring and summer months (Rosenthal and Blehar, 1989). Individuals suffering from SAD experience marked changes in mood, sleep habits and weight variation impeding their day-to-day activities (Rosenthal et al., 1984). Light has been used as a therapeutic agent to treat the symptoms of SAD successfully since the 80’s.

Terman (1988) and Spoont’s (Spoont et al., 1991) suggested that there are individuals who experience significant SAD-like symptoms that affect their mood and behavior, but do not reach the clinical levels of SAD symptoms. These individuals have been identified as having a subsyndromal form of SAD (S-SAD) and represent a large population.

Studies researching the relationship between the prevalence of seasonal disorders and gender; and seasonal disorder and age have been addressed. In general women experience greater seasonal changes than men. Younger women, reported greater seasonal changes than older women (Hegde, et al., 1996; Kasper et al., 1989a, 1989b; Rosen et al., 1989; Spoont et al., 1991). Research regarding latitude and its relationship with seasonal changes has also been investigated. A Majority of the research has involved higher latitudes such as Maryland (39° N latitude) indicating a
prevalence rate of 4.3% for individuals suffering from SAD; and 13.5% for individuals suffering from S-SAD (Kasper et al., 1989a, 1989b). However, Hegde’s (1996) Austin, TX—Latitude 30° N, study indicated that 3.7% of Austinites suffered from SAD while 17.4% suffer from S-SAD. This study highlighted that regardless of latitude, individuals are affected by inadequate access to daylight during the shorter days of fall and winter months.

For individuals diagnosed with SAD, light treatment has been prescribed and has generally been effective in combating the depression. Standard light treatment includes a light box that contains light sources that produce broad bandwidths of white light at an intensity of 10,000lux. The typical treatment protocol consists of exposure to light for 30 to 60 minutes each morning (Terman et al. 2001). However, research using the blue narrow band light emitted diodes at 450-480nm (Rea, et al., 2005) at much lower intensities have shown success in treating winter SAD (Glickman, B., et al., 2006).

Use of light therapy for treatment of clinical winter depression (SAD) is well documented. Since SAD and S-SAD are much more common than most tend to expect, lighting considerations inside the home need to be successful and meet the needs of the person experiencing these symptoms. Interior designers and architects need to consider such lighting implications when designing for all clients.

**Purpose and relevance to interior design**

This study queried individuals who suffer from SAD and S-SAD regarding the modifications they did to their home environment to combat the winter depression. Such information can serve as a rough template for interior designer, architect or builders to use throughout their design when dealing with clients suffering from winter.
Specific questions that were queried:

1. What commercial light therapy products do individuals suffering from SAD or S-SAD use to combat winter depression?
2. What light and color modifications do individuals suffering from SAD or S-SAD make in their home environments to combat the winter depression?
3. What personal lifestyle modifications have the SAD and S-SAD individuals made to combat the winter blues?

**Methods**

The subjects were recruited through a city and university newspaper advertisement asking them to contact us if they suffer from winter depression. Sixteen individuals responded to the call. The subjects were administered the Inventory of Seasonal Variation (ISV; Spoont et al., 1991) to screen and assess the degree of perceived change in mood and behavior over the course of the year. Of the 16 subjects, 6 qualified to participate in the study. The sample consisted of 4 females and 2 males with a mean age of 30.6. These six individuals were administered a second survey to determine what changes they made to their home environment to combat winter depression and help improve their mood (research questions listed above).

**Results**

Regarding the question what treatments do they actively seek to combat winter depression? Subjects named commercially available products such as Dawn Simulating Clocks, Light Boxes, and Light Visor. One subject mentioned that she used a homemade dawn simulating clock, which she uses to wake up to a subtle dim glow
every morning. All subjects agreed that they have made both interior light and color modifications to their home.

The results from the six individual cases indicate that the light and color changes and alterations the participants have made to their homes have had a profound impact on their mood and behavior. Some of the common modifications done to the home environment regarding lighting were: Installing dimmable fixtures and switches in every room which gave them the flexibility to provide very bright light during daytime and low light levels at night; flooding the room with indirect light sources rather than brightly lit glaring light; and washing the walls with light creating a warm glow. Results also indicate that subjects tended to keep high light levels during daytime but preferred low light levels in the evening and night hours.

With regard to color the participants tended to like saturated colors that reminded them of ‘sunset’, and colors that reminded them of the outdoors such as ‘forest green’ and ‘teal’. All participants indicated that if given the option to select their ideal home design they would select high ceilings with ‘lots and lots’ of windows.

With regard to personal lifestyle modifications, subjects indicated that they do believe that exercise makes a difference in their overall mood thus try to include exercise (such as going to the gym or going for a walk) in their day to day routine. Keeping a schedule and following it seems to work help them overcome their negative mood. One subjected indicated eating healthy organic foods was critical to her positive mental health.
Discussion

Based on the results of the 6 subjects of this study as well as information from available SAD literature, light seems to have a positive impact on the overall mood and well being of these individuals suffering from winter depression. Lighting preferences and bright light therapy seem to have the most uncontroversial influence on those with seasonal depression. Therefore, interior designers and architects need to seriously consider such lighting implications in their designs for all their clients suffering from both SAD and S-SAD. Since the prevalence of S-SAD is much more common than most tend to expect, most clients may not even realize the effects that seasonal cycles and lighting have on their moods and behaviors. A word of caution, SAD is a mental disorder that needs a physician’s diagnosis and treatment with light. However, an interior designer that is knowledgeable about the impact of light on health can provide sound interior lighting design solutions to the client that suffers from issues such as SAD and S-SAD. Designers need to take responsibility for contributing to well being of their SAD and S-SAD clients.

The information provided by the six subjects is preliminary in nature. Yet it provides valuable information to applied researchers as well as building professionals, architects and interior designers to make informed decisions about interior light and color when creating sensitive home environments for individuals suffering from winter depression.
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Abstract

Purpose

In an earlier content analysis of design-related magazines and select HGTV shows, researchers explored how the language of professional designers differs from the language of the general public. The results of that study indicated that there were, in fact, gender biased language variations between the two groups when looking at a very finite set of adjectives. Those findings led the researchers to question why, as one advances in the interior design profession through education and experience, there seems to be a linguistic shift away from feminine terminology replacing it instead with more masculine terminology. The purpose of the present study was to expand on the findings of the original content analysis and explore gendered linguistic variations among college students at various points in their academic careers.

Methodology

In spring 2007, a three-part survey was administered to freshman and senior Interior Design majors at two universities in the southwest US (n = 83). The same survey was also administered to a group of non-majors varying in their year in school. The first part of the survey included general questions about demographics and perceptions of the interior design profession. The second part of the survey included
ten images of interior spaces and called for students to categorize the images as either “more masculine” or “more feminine”. Subsequently, students were asked to select from a twelve-item word bank the best descriptors of the space while also being given an opportunity to write-in self-selected descriptors. The word bank choices purposefully dichotomized terms that were masculine and feminine, as well as, positive and negative. The third part of the survey involved a semantic orientation exercise which required students to rank twenty terms using a 5-point Lichert scale in terms of both their “goodness/badness” and “masculinity/femininity.” In addition to simple means, a series of cross tabulations were used to determine whether or not statistically significant relationships existed between the images, words selected to describe each image, and the students major and year in the program.

Summary

The results from the survey yielded several interesting avenues of discussion for design educators. The study revealed surprising consensus among participants regarding whether spaces were “more masculine” or “more feminine” and the words selected to describe such spaces clearly reflect gendered linguistic practices. The semantic orientation portion of the survey revealed some compelling and contradictory information regarding perceptions of “masculine” and “feminine” terms and their relative “goodness” or “badness” raising questions about some of the researchers initial suppositions. Specifically, the findings suggest a degree of interole conflict among interior designers while also calling into question the relationship between survey responses and behaviors actually observed in practice. The presentation will share
findings from the survey and engage IDEC members in a discussion about the presence and role of gendered language in interior design education and by extension, practice.
Introduction

In a previous study of design-related magazines and HGTV shows, researchers explored how the language of designers differs from the language of the general public (Hill & Matthews, 2007). The results indicated that there were gender biased language variations between the two groups when looking at a finite set of adjectives. Those findings led the researchers to question why, as one advances in the interior design profession through education and experience, there seems to be a linguistic shift away from feminine terminology replacing it instead with more masculine terminology. The purpose of the present study was to further explore gendered linguistics and related associations among college students at various points in their academic careers. The research also explored whether masculine linguistic forms were preferred over feminine ones by students and student perceptions of the profession in general.

Framework and Literature Review

The original impetus for this study was the seminal work by Robin Lakoff (2004) that suggested women use language differently than men and that feminine linguistic practices are perceived less favorably. Research clearly suggests that interior design is
seen as a feminine profession (Havenhand, 2004) suggesting that interior designers would prefer feminine linguistic forms. However, Hill and Matthews (2007) content analysis of interior design publications found that publications targeting or produced by professional interior designers employed more masculine linguistic forms while mainstream publications targeting the general public employed more feminine linguistic forms. This finding suggests that at some point, as interior designers transition from novices to professionals, they begin to distance themselves from the feminine aspects of the profession and align themselves more with the masculine.

The concept of gendered space is well documented in architectural theory (Bryden & Floyd, 1999; Coleman, Danze & Henderson, 1996; Colomina, 1996) and in order to address one of the primary research questions in the present study, students were asked to categorize color images of ten spaces as either “more masculine” or “more feminine.” Students were also asked to evaluate the masculinity and femininity of select words as well as the word’s semantic orientation, or perceived “goodness” or “badness.” Research by Hatzivassiloglou & McKeown (1997), which explored the semantic orientation of 1,336 adjectives, guided the development of the semantic orientation component of the present study. The results of the study revealed some surprising findings that challenged earlier studies and the researchers’ original assumptions about gendered linguistics.

Methodology

In spring 2007, a three-part pen-and-paper survey was administered to freshman and senior Interior Design majors at two universities in the southwest US, as well as a
group of non-majors. Seventy-seven participants were female and 6 participants were male (n = 83). This survey addressed three primary research questions.

1. How do student perceptions of the interior design profession change during their academic experience?

2. Is there agreement on the identification of, and language used to describe masculine versus feminine spaces?

3. Are some commonly used words to describe interiors seen as masculine and others feminine and do these words carry positive or negative connotations?

The first part of the survey included questions about demographics and perceptions of the interior design profession. The second part of the survey included ten color images of interior spaces and asked students to categorize the spaces as either “more masculine” or “more feminine.” Additionally, students selected from a twelve-item word bank the best descriptors for each space or wrote-in self-selected descriptors. The word bank choices purposefully dichotomized terms presumed to be masculine and feminine (e.g. handsome and pretty), as well as positive and negative (e.g. beautiful and ugly).

The third part of the survey required students to rank the “masculinity” or “femininity” of twenty commonly used spatial descriptors on a 5-point Lichert scale. Students also used a 5-point Lichert scale to rank the semantic orientation of each word. In addition to descriptive correlations, a two-tailed t-test was used to determine whether statistically significant relationships existed between the words selected to describe each image, and the students major and year in the program.
Discussion

Research question one addressed student perceptions of the interior design profession at various points in their academic career. Previous researcher’s assertions regarding the feminine nature of the profession (Havenhand, 2004) were only partially supported by the present study. Senior interior design majors were equally divided on the gender ascribed to the profession with half identifying the profession as feminine and the other half gender-neutral. Fifty-five percent of freshmen and non-majors reported perceiving the profession as gender-neutral with 45% perceiving it as feminine. No respondents identified interior design as a masculine profession. The survey also queried whether student’s believed that the actual work of an interior designer matched the general publics’ perception of the profession. Senior design majors unanimously reported that the public perception of the profession did not match the actual work of designers. Non-design majors responded that the public’s perception of the profession is accurate (76%) while freshman interior design majors were divided on their responses (50% perceived it as feminine and 50% perceived it as gender neutral). These findings confirm what those in the profession know is a significant disconnect between the real versus imagined work of interior designers.

The second research question explored whether students agreed on the gender of interior spaces and looked for patterns of language use in describing those spaces. The spaces students were asked to identify included both residential and commercial settings representing traditional and contemporary styles. For seven of the ten images evaluated, over 90% of the respondents agreed on the gender classification of the space. Only two projects elicited a significant spread between responses from non-
majors to majors. In the first case, 57% of the interior design majors classified the space as “more feminine” while 72% of non-majors classified it accordingly. In the second case, 67% of the interior design majors classified the space as “more feminine” compared to 87% of non-majors. These findings suggest as students become more sensitized to design issues they feel less strongly about characteristics that gender a space. Not surprisingly, the words most commonly selected to describe the spaces identified as masculine were *practical, bold, and handsome* while the words selected to describe feminine spaces were *beautiful, lovely, and pretty*. There was also agreement on whether the spaces were traditional or modern and these words were used to describe spaces classified as both feminine and masculine.

Because previous research revealed that language used in the general press and television shows varied from the language used in professional and academic press (Hill & Matthews, 2007), a series of correlations were run to see if this shift in language usage occurred at some point between the freshman and senior year of the interior design education process. Surprisingly, there was no statistically significant shift in students’ usage of and attitudes towards masculine versus feminine language. While this finding may be valid at face value, it might also suggest that interior designers are experiencing a degree of interrole conflict. Such conflict exists when an individual faces two or more, often competing, expectations in a single role. Perhaps interior design students are struggling to find a balance between embracing the feminine aspects of the profession within a society that favors the masculine. Additionally, the findings raise concern about the congruency of survey responses compared to observed behavior.
The third research question addressed whether or not words commonly used to describe interior spaces were seen as more “masculine” or “feminine” and “good” or “bad” depending on the student’s year in school and major. No significant differences were found regarding the masculine and feminine rankings of words from one student subset group to another. In terms of the semantic orientation of each word, the only significant difference found related to the word *ornate*. Senior interior design majors ranked “ornate” significantly less positively than non-senior interior design majors (t= 2.933, p < .005). Although the results were not statistically significant, “feminine” words were generally rated more positively than “masculine” words. This finding challenges previous research conclusions (Hill & Matthews, 2007; Lakoff, 2004), that feminine linguistic forms were not seen as favorably as masculine ones.

Summary

The results of this study revealed consensus among participants regarding the gender of spaces and the words selected to describe these spaces reflected gendered linguistic practices. The semantic orientation portion of the survey revealed compelling and contradictory information regarding perceptions of “masculine” and “feminine” terms and their relative “goodness” or “badness” raising questions about initial suppositions that interior design students seek to distance themselves from the feminine aspects of the profession.

In spite of the survey results however, as educators and practitioners, the researchers have witnessed a shift in the way students use language to describe space. Across the curriculum, students avoid words that this survey identified as feminine and
positive. Perhaps this is due to a degree of interole conflict among designers or a reflection of inconsistencies between survey responses and actual observed behaviors. Another reason for these findings may be that the distancing of interior designers from feminine aspects of the profession happens later than initially assumed (e.g. after several years in the profession) rather than during the span of the undergraduate education.
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BUILDING THE DESIGN SKILL SET:
FUNDAMENTALS OF INTERIOR SPACE PLANNING

Denise R. Homme Ph.D., ASID, FCSD, IDEC, IIDA
Design Institute of San Diego

Abstract

This presentation introduces a pedagogical strategy devised to enhance the instruction of foundation level space planning skills. The intention of the strategy is to build the first level design skill set by engaging students in introductory studio exercises and activities that logically, systematically and holistically facilitate an understanding of the fundamental concepts of planning interior environments. To illustrate the proposed pedagogical method, examples of project materials and student work from design studio will be examined and discussed.

The professional standards used to evaluate interior design education demonstrate the paradigm that “the responsibilities of the interior designer encompass all spaces within environments built for human habitation. Toward that end, educational philosophies and goals should be applied in the development of a creative professional who can synthesize information and analyze problems from many different perspectives” (Council for Interior Design Accreditation, 2006). Additionally, Martin & Guerin (2005) state that “throughout the design process, interior designers must be able to ask clients the right questions, listen to their responses, and create visual images and written documents that reflect their design solutions as they apply to the client’s needs” (p. 93).

In design practice, the creative, thoughtful synthesis of graphic image and text defining the proposed interior is expressed in the space plan. Without this essential document a design project lacks organization, purpose, and direction. To facilitate the development of a design skill
set that promises proficiency in space planning, interior design educators must offer students a means of building an understanding of the fundamental concepts informing the organization of the interior environment.

It has been the experience of the author that introductory interior design studio work often assumes that students come equipped with the understanding needed to synthesize basic organizing strategies into the planning of full scale interior spaces. Through the examination and discussion of studio work increasing logically and sequentially in both difficulty and scope, this presentation will challenge this assumption and offer an alternative teaching approach devised to help students understand the basic concepts used in organizing the interior environment. Students follow a sequential series of projects and exercises designed to develop their awareness, control and use of space as a dynamic interior design element.

Space planning is a professional skill that is fundamental to the practice of interior design. Given its importance, it is essential that educators provide students with learning opportunities that parallel the needs of the profession. By offering examples of studio work that focus specifically on the reflexive relationship of anthropometrics, human needs and the experience of architecture, this presentation hopes to foster dialogue among interior design educators by offering a holistic approach to teaching the basic concepts involved in space planning.
INTRODUCTION

It is essential that design education provide students with learning opportunities that parallel the needs of the interior design profession. As Martin and Guerin (2005) have noted, “throughout the design process, interior designers must be able to ask clients the right questions, listen to their responses, and create visual images and written documents that reflect their design solutions as they apply to the client’s needs” (p. 93). If one considers the types of visual images and written documents interior designers create, the space plan is one of the most important. Without one, a design project lacks organization, purpose, and direction. A design skill set that demonstrates proficiency in space planning, therefore, is vital to a student’s future success in professional practice.

With over twenty years of teaching experience and a deep personal interest in finding successful ways to help students learn about interior design, I have traveled many of the same pedagogical paths as of my colleagues. I have explored the literature and, subsequently, have developed numerous studio projects and exercises that I have tested in the classroom. I have observed hundreds of interior design students - with scale rulers and fierce determination – make their first attempts at space planning. I have dialogued with students about their space planning solutions and have assessed countless project outcomes. My efforts have proven to be effective - with one exception. What I have consistently seen in the outcomes of many entry-level space planning attempts leads me to believe a disconnect occurs at the point where students need to
translate what they have learned about the design elements and principles into the design of full
scale, three dimensional environments. Asking myself why this phenomenon consistently tends
to reappear in entry level space planning solutions, I have reconsidered my approach, continued
to devise new strategies for teaching and remained focused on the question:

When space planning is first introduced, why is it difficult for some interior design students
to translate and apply what they have learned about the design elements and principles in
foundation level courses to the design of three dimensional, full scale interior environments?

My attempts to come to some resolution of this inquiry are what I offer for consideration in
today’s presentation.

BACKGROUND

With the exception of a handful of interior design students that appear to grasp space
planning concepts effortlessly, my observations of entry level student space planning outcomes
suggest the answer to this question lies in finding a place to begin; a place that allows students to
begin the process of assimilating and translating theory into practice. Looking back to foundation
level studies in the design elements and principles, I elected to begin with the fundamental of the
design elements; space. Space is the necessary element in space planning. Space—as the
essential design element—should logically be the place to begin. It made sense that limited
understanding of interior space might explain why students appear to approach their first space
planning challenges as they might a two-dimensional figure - ground study encountered in first
year design elements studio. It would also explain why some student space planning solutions
involve aesthetically pleasing patterns of recognizable furniture shapes - carefully composed and drafted but without any logical thought toward how these shapes represent three dimensional objects that work together in the interior environment. What these students seem to be missing is a sense of space as it applies to the practice of interior design. Do interior design students need to understand the experience of volumetric interior space before they can understand the concept of space planning?

THE TEACHING METHOD

The teaching strategy I am currently using to teach introductory level space planning is embedded in a series of four studio projects that been developed and tested informally in my classroom over the past two years. The four projects follow a logical sequence, building upon the knowledge gained in the previous project and increasing in level of content and in degree of difficulty. The individuals involved in the development and testing of this strategy are students enrolled in a course titled Interior Design I; the first in a series of interior design specific studio courses offered in a four year private interior design college. Prior to taking my class, these students have completed Introduction to Interior Design, Drawing and Composition, Elements I and History of Interiors and are able to demonstrate introductory level design knowledge and skills, including an understanding of the elements and principles.

Considering its position in and overall importance to the four project sequence, I would like to examine the first studio project. This project helps students understand the experience of dimensional interior space by asking them to explore the relationship of open and closed and, in doing so, to consider how a visitor might experience their building from various exterior and interior points of view. To facilitate learning and to demonstrate their design solution, the students must build two scale models. The first model is a simple rectangular box constructed of four solid
sides and a bottom. This model acts a reference for discussing enclosure and functions not as architecture, but as a visual control device to be considered as the student de-constructs complete enclosure and explores the relationship of interior and exterior space in the second (submittal) model (See Figure 1). To maintain focus on the element of space, students are restricted to the use of white and translucent or transparent materials. In the absence of color, students consider materials with interesting and unique surface textures and varying degrees of transparency and/or opacity. As the human element is an essential aspect of spatial experience this, and all the projects that follow in the project sequence, require a scale figure. To maximize learning, students are urged to utilize a scale figure when developing their design solutions (See Figure 2).

Prior to building the study models, students are provided with written materials that explain the specifics of the project (See handout). An essential requirement of this project is that students are to assume the building has no other purpose than to offer a visitor a unique and memorable experience of exterior and interior space. Another significant aspect of the project requires students not think of the building they are creating as having rooms with specific functions. Following a review of the project handout, there is an in-class discussion on levels of enclosure, and the importance of windows and doors to the use and experience of architecture.

THE FINDINGS

In my opinion, this project positively impacts a student’s ability to translate and apply what they have learned about space in foundation level courses to the design of three dimensional, full scale interior environments. When working through this project in studio, students comment on the sensation of dimensional space. Many are able to see that, from the exterior, buildings are
perceived as a large three dimensional objects possessing a significant amount of mass or positive volume. Once inside, positive volume becomes negative volume; expressed in an interior void defined by the surfaces of the floors, walls and ceilings. In addition, exploring the placement and character of the windows and doors appears to make the relationship between inside and outside, mass and void more understandable (See Figures 3 – 8).

VALUE TO THE PROFESSION

The professional standards used to evaluate interior design education demonstrate the paradigm that “the responsibilities of the interior designer encompass all spaces within environments built for human habitation. Toward that end, educational philosophies and goals should be applied in the development of a creative professional who can synthesize information and analyze problems from many different perspectives” (Council for Interior Design Accreditation, 2006). Based upon the impressive results I have observed in the quality and depth of the solutions been submitted by my students in response to this entry level project, this teaching strategy offers students an excellent opportunity to develop proficiency in organizing interior space; a necessary skill that will allow them to creatively analyze and synthesize interior space planning situations in professional practice.

Introductory interior design studio work should not assume that students come equipped with the understanding needed to translate and synthesize visual organizing strategies into the planning of full scale interior spaces. The teaching strategy I suggest challenges this assumption and, in my opinion, offers an effective way to prepare students to meet the rigors of the interior design profession. I believe it is the exceptional entry level student who possesses the ability to translate and apply what they have learned about the design elements and principles in foundation level courses to the design of three dimensional, full scale interior environments. As
an integral component in the design skill set, proficiency in space planning promises future practitioners greater awareness, control and use of space as a dynamic interior design element.

It is my sincere hope the teaching strategy I’ve presented today will foster further dialogue on teaching interior design; and especially in regard to the vital role an understanding of spatial volume plays in the development of entry level space planning skills.
REFERENCE LIST

(Cited and Suggested)

(APA Style)


A Flexible Laboratory Model for Lighting Design Education

Neal C. Hubbell
Brian Pelcak
Kansas State University

Abstract

The need to instruct interior design students in the fundamentals of lighting is widely recognized. As professionals they will routinely design lighting for the spaces they create. In response, many interior design programs are offering specialized courses in lighting where basic design and technical information are taught. Currently, much of the coursework is presented in a way that is highly technical, leaving students buried in terminology, standards, and data tables. Ironically, these students’ exposure to the physical elements of lighting is limited and the design character of these elements is oft omitted; inevitably, students “learn” without “seeing.” To redress this problem many programs have invested in the construction of a lighting lab with the intent of showcasing a variety of luminaires and lamp types. Unfortunately, their flexibility is often limited: the luminaires are commonly fixed in the ceiling plane and electrically hardwired making them costly to reconfigure. Students then sit passively as the instructor controls the luminaires from a remote console; lighting design is reduced to pieces of equipment installed in a ceiling. These shortcomings contribute to the misperception that lighting is something done to a space after it has been designed, rather than attempting to more fully integrate the lighting into the architectural elements of the space.
Alternatively, the authors believe that the teaching of lighting should concern itself more with the notion that lighting is part of a comprehensive design solution where lighting is integrated with the architecture of the place.

The authors have developed a curriculum, methods of instruction, and an innovative laboratory environment that work together to improve the student’s understanding and application of lighting. The lab was designed with several unique features:

1. A modular ceiling structure and flexible electrical system that:
   a). permits the support of lightweight student constructed ceiling planes,
   b). permits luminaires to be easily relocated, arranged, and controlled by the students,
   c). facilitates the mock-up of temporary architectural elements (i.e.: partitions, columns, overhead beams) that can be lit with concealed luminaires.

2. A modular panel wall capable of displaying various finishes, materials, and tones for studies of grazing angles and luminance.

3. Designated areas for the presentation of various lamp types and color temperature.

4. Multi-surface flooring for studies of mood and contrast.

These minor changes in the design of the lighting lab model have had a considerable impact on the curriculum and the methods of instruction. The students can readily design and construct an architectural vignette (i.e.: retail, hospitality, exhibit) that includes the fabrication of temporary walls/ceilings, display systems, etc. The students are challenged to first integrate lighting into the architectural elements and then supplement it using a large variety of luminaires. They can then evaluate the relative success of the mock-up and start to develop both an intuitive and quantitative sense about lighting.
A Flexible Laboratory for Lighting Design Education

Neal C. Hubbell
Brian Pelcak

Kansas State University

Narrative

Introduction

Recognizing the growing importance of lighting many interior design programs have invested both resources and time in the construction of a lighting lab. The intention is to enhance student’s insight by exposing them to the “real thing” – a variety of fully operable lamps and luminaires. The hope is that by offering direct access to the luminaire’s physical appearance, as well as, their photometric characteristics the students will develop a deeper and more profound understanding of lighting. The luminaires are commonly installed in a suspended acoustical tile ceiling to reduce overall cost and enhance access to the wiring above. The luminaires are then operated through the use of a sophisticated control system from a central location. While these efforts are admirable, there are several significant shortcomings to this approach. First, the flexibility of the lab is limited. The hope is that by installing them in a suspended ceiling flexibility will be increased by making access to the wiring above easier and facilitate the replacement of tiles when luminaires are relocated. But this approach is not as flexible as one would hope. It is true that ceiling tiles can be easily replaced, but since the luminaires are electrically hardwired they are for all practical purposes permanent. The selection of lighting controls can also limit flexibility. Centralized, instructor operated control systems are often used. But these types of systems reduce students to passive participants that simply sit back and watch the instructor switch
various luminaires on and off. Instead, the students should be able to fully engage the
control system by actively turning them on/off, dimming them, etc. from a variety of
locations. The last significant limitation to flexibility is the fixed ceiling height of the lab.
The distribution of light from a luminaire will appear to change significantly when its
distance from the workplane changes dramatically. Ideally, the ceiling should have a
number of distinct heights.

The second major shortcoming of the conventional lab design is the nature of the
unchangeable space into which the luminaires are installed. The length, width, and
height of the space are constant. This is unfortunate because the space in which the
luminaires are installed can have a significant impact on the quantity and quality of the
light emitted and reflected. The problem is further exacerbated because the colors and
reflective qualities of the surface materials can not change. It is crucial for students to
see the direct effect that size, shape, color, and value have on the perception of space
and levels of illumination.

A third shortcoming worth noting is the inability to introduce additional spatial
elements to alter the shape and form of the ceiling plane. Most real world ceilings are
not simply unarticulated flat planes, but rather dynamically formed surfaces that have a
variety of heights, materials, and profiles. Students should have the opportunity to
engage the space with a variety of ceiling forms and heights.

**A New Model for Lighting Lab Design**

**Description**

The address these shortcomings the authors conceived of and built a lighting lab
with several innovative features with the specific intent of enhancing flexibility. The lab
includes the following attributes:
1. Two different ceiling heights (9 and 12 feet),
2. Permanently installed luminaires mounted in moveable ceiling panels that can be easily relocated by students,
3. Moveable ceiling panels that can be easily fabricated and installed as new luminaires are acquired or changed out,
4. All luminaires have been changed from a hardwire install to a plug-in electrical connection,
5. An inexpensive X-10 radio control system is used to allow for the individual control of luminaires,
6. A load supporting overhead ceiling structure that can support both suspended clouds and aid in stabilizing temporary partitions,
7. A number of combination display and storage cabinets,
8. A flexible and interchangeable wall system that facilitates the use of a plethora of wall panels, display boxes, and shelving.
9. A number of cabinets that house a range of lamp types and sizes for each major category of light source (incandescent, fluorescent, HID, etc.),
10. A variety of interchangeable floor surfaces with varying degrees of gray values.
11. Structurally-reinforced perimeter partitions that allow for the installation of wall-mounted elements,
12. A variety of wall-hung, lightweight wall finishes that demonstrate grazing phenomenon, and finally,
13. The students have an environment where students can create mock-ups of their design ideas and then illuminate them.

Curricular Impact
The physical design of the lab has also facilitated a number of important curricular developments. The first and foremost is the ability of the students to directly engage the luminaires by physically relocating them. With moveable ceiling panels the students can easily change the arrangement and spacing of the luminaires. They can make predictions concerning a lighting layout and then test it. Most importantly they can start to build an intuitive sense about lighting.

The second important curricular impact concerns the ability to alter the form of the ceiling plane. With the structural nature of the ceiling the students can build any type of suspended ceiling cloud and suspend them from the overhead structure. Into
these suspended structures lighting can then be installed to fully investigate the integration of form and lighting.

The third important development concerns the modification of the physical nature of the lab. Lightweight partitions can be easily fabricated and hung from the ceiling structure to alter the size and proportions of the lab. The modular wall system also facilitates changes in wall design, color and finish as the student’s desire.
Abstract

Interior design educators are employing service-learning projects in studio and other courses, as evidenced by recent conference presentations and publications. (Pable, 2006; Sterling, 2007). Service-learning integrates academic study and community service to meet three broad objectives: enhance student learning of course content; address a need within a community; and promote civic responsibility among participants. (Ehrlich, 2000). The aspect of civic responsibility distinguishes service-learning projects from other modes of experiential education in interior design, such as internships or co-ops. What does civic responsibility mean and how can interior design educators encourage it? Establishing a theoretical basis is essential to defining civic responsibility and developing appropriate pedagogy for interior design service-learning.

John Dewey ([1916] 1944) contended that democracy required critical thinking and action by citizens. Civic-engagement, one of the principal theories of service-learning, is based on the concept of civic action. The civic-engagement approach asserts that educational institutions are agents of social transformation. As viewed from this perspective, service-learning is an opportunity to apply academic theory and research to help solve community needs and address the underlying social issues. In the process, students are encouraged to become life-long advocates. (Watson, 2004).
Using a case study analysis, this presentation will examine how civic-engagement concepts informed a service-learning project in which students assisted with planning for the rehabilitation of interior environments in post-Katrina Mississippi. Over a six-week period beginning in March 2006, eight, third-year students researched, documented, and prepared designs for the interior rehabilitation of a privately-owned historic house in Bay St. Louis, Mississippi that had been partially destroyed by Hurricane Katrina. The project was part of a larger initiative led by the World Monuments Fund and National Trust for Historic Preservation that advocated the importance of preserving the built heritage during post-disaster rebuilding.

As part of the investigation phase of the project, students were asked to research and present position papers on the complex issues impacting recovery efforts and negatively effecting communities, including lack of funding, public debate over rebuilding, and loss of social institutions. These presentations were accompanied by class discussion. Students continued their inquiry through field observations and interviews during a visit to Mississippi to conduct local research, meet with the owner, and document the house’s interiors. Following the completion of the project, a narrative method was used for individual and group interviews in which students were asked to reflect on the experience.

Among the comments, students reported: an awareness of the role grassroots efforts play in disaster recovery, helping supplement government support; understanding of
how their critical-thinking and graphic skills could be used in similar situations; and
appreciation for the role of the designer in restoring sense of place. All students stated
an increased likelihood of taking future action to address a community need. A second
series of interviews with students are currently underway to assess outcomes post-
graduation.

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A Civic-Engagement Model for Service-Learning Projects: Rehabilitating Interiors and Restoring Sense of Place in Post-Katrina Mississippi

Morris Hylton III
University of Florida

Narrative

Introduction

Interior design educators are integrating service-learning projects into studio and other required courses, as evidenced by recent conference presentations and publications. (Pable, 2006; Sterling, 2007) Service-learning integrates academic study and service to meet three broad objectives: enhance student learning of course content; address a need within a community; and promote civic responsibility among participants. (Ehrlic, 2000). The aspect of civic responsibility distinguishes service-learning from other modes of experiential education in interior design, such as internships and co-ops. The interest in service-learning within the interior design discipline corresponds to a larger movement in American higher education, as evidenced by the amount of scholarship, institutional initiatives, and advocacy organizations created over the last decade. (Campus Compact, 2003)

The increased interest in service-learning pedagogy is due in part to a perceived loss of community awareness and participation in contemporary American society. (Speck and Hoppe, 2004) A.W. Astin (1993) charges that the values of “materialism, individualism, and competitiveness” dominated American higher education during the last half of the twentieth century, contributing to the fragmentation of society and subsequent loss of community. (p.4) Educators integrate service-learning into curriculum as a way of introducing students to issues impacting society and culture and challenging them to use their knowledge and skills to develop solutions. The objective is to instill civic-responsibility and produce a generation with the motivation and capacity of rebuilding sense of community. Establishing a theoretical basis is a critical first step in designing a service-learning project that will help meet this objective.

A case study analysis is used to examine how civic-engagement concepts informed a service-learning project in which students assisted with documenting and planning the rehabilitation of historic interiors in Mississippi damaged by Hurricane Katrina.

Civic-Engagement Model

The progressive education ideals of John Dewey are often cited in providing a theoretical basis for service-learning. An early proponent of participatory democracy, Dewey ([1916], 1947) asserts that critical thinking and action by citizens is essential for identifying social problems and developing solutions. The appropriate pedagogy for
teaching civic responsibility, according to Dewey, is experiential. He promotes placing students in real-life contexts that require them to respond to complex situations and use their knowledge and problem solving skills. A primary goal is to provide students with an experience that could serve as a reference for responding to comparable situations. (Dewey, 1963)

Proponents of the civic-engagement model for service-learning assert that educational institutions are agents of social transformation and therefore community service—traditionally a post-graduate goal of education—should be an integral part of the curriculum. (Ehrlic and Beaumont, and Stephens, 2003; Mann and Patrick, 2000; Zlotkowski, 2000) As viewed from this perspective, service-learning is an opportunity to apply theories and methodologies or engage in collaborative and action research to help solve community needs while raising student awareness of larger problems. In the process, students are encouraged to become life-long advocates. (Watson, 2004)

However, as some critics charge, the civic-engagement model can present potential problems. C.F. Able (2004), in synthesizing scholarly critiques on civic-oriented service-learning, asserts that requiring students to engage in a project with an already defined, subjective social or political position may undermine the neutrality of academia and hinder constructive debate. Others question the potential negative effects of involving students for limited periods of time in the development of a solution for a complex issue that will impact a community of which they are not a member. (Lloyd-Thomas, 1983) The structure of the educational experience is critical in responding to these criticisms and avoiding these potential negative aspects of the civic-engagement approach.

One methodology for delivering service-learning is offered by David A. Kolb. Influenced by the theories of Dewey, Kolb (1984), a proponent of learner-focused, experiential teaching, contends that learning is made up of five basic activities: experience, observation, reflection, formation of concepts, and application in new contexts. Reflection, as defined by Jacoby (1996), fosters a “…a deeper understanding of the historical, sociological, cultural, economic, and political contexts of the needs or issues being addressed” (p. 7). Reflection is essential for what developmental psychologist William Perry (1970) terms accommodation—the conscious assimilation of new information into an individual’s current thought process. Perry offers three stages of cognitive development with his theory of accommodation in which an individual’s thinking evolves from a right or wrong approach to understanding information (dualism) to an acceptance that knowledge is based upon context and personal experience and values among other factors and is therefore relative (relativism). With the final stage, the cognitive processes formed by experience and employed by an individual shape identify (commitment).

The theories of Dewey, Kolb, and Perry informed the development of a service-learning project that offered interior design students the opportunity to assist with the planning and recovery of historic interiors on the Gulf Coast of Mississippi following Hurricane Katrina.
Case Study

More than 60,000 buildings in Mississippi were destroyed during Hurricane Katrina. Over 1,200 of them were listed on the National Register of Historic Places. After the storm, an estimated 2,500 historic properties, the majority of them private residences, remained vulnerable to demolition because many owners lacked the knowledge or resources to stabilize their homes. (World Monuments Fund, 2007)

Over a six-week period beginning in March 2006, eight, third-year interior design students from the School of Visual Arts in New York City researched, documented, and prepared designs for the interior rehabilitation of a privately-owned historic house in Bay St. Louis, Mississippi that had been partially destroyed by Hurricane Katrina.

The service-learning studio assignment was a component of a larger initiative led by the World Monuments Fund and National Trust for Historic Preservation. In addition to advocating for the preservation of historic resources during post-disaster rebuilding, the initiative offered a number of demonstration projects that offered solutions for stabilizing and rehabilitating historic houses as an alternative to demolition.

The civic-oriented goal of the project was to challenge students to explore ways in which interior design can contribute to restoring community in a post-disaster context.

During the initial research and data collection phase of the project, students analyzed and made presentations on issues related to post-disaster recovery, particularly those affecting the built environment such as lack of public funding, public debate over if and how to rebuild, and long-term psychological effects of physical loss. These presentations were accompanied by instructor-moderated class discussions in which various viewpoints on the issues and possible actions were expressed and debated by the students.

Students continued their inquiry through field observations and interviews during a visit to New Orleans and Mississippi to conduct local research, meet with the owner, and document the house’s interiors. The trip itinerary was carefully planned to allow for unanticipated opportunities, such as chance discussions with local residents and volunteers.

Encouraged by the students, the 76-year-old owner of the house made her first trip to New York City to attend the final review and respond to the designs. Following the final review, a narrative method was used to conduct individual and group interviews in which students were asked to reflect on their experience. Among the comments, students reported: an understanding of how their critical-thinking and graphic skills could be used in similar situations; awareness of the direct relationship between the rebuilding of the physical and psychological communities; and appreciation of the role designers and the design process play in recovering sense of place. All students stated an increased likelihood of taking future action to address a community need.
A second series of interviews with students are currently underway to assess civic-oriented outcomes that may have occurred post-graduation. Of particular interest is potential involvement in community or other service projects and programs, additional reflections on the experience, and possible impacts on professional work and interests.

**Conclusion**

The outcomes of the post-disaster recovery project in Mississippi demonstrate that civic-engagement is an appropriate theoretical framework for the development of interior design service-learning projects. Through a carefully structured learning experience that allows for unanticipated aspects of field observation and proper reflection, civic-oriented service-learning can provide interior design with distinct opportunities for applying their skills while promoting critical thought and action to address pressing social and cultural issues.

The project also demonstrated to cultural heritage specialists and others involved in post-disaster recovery the value of including an interior design professional as part of recovery teams. Interior design expertise, distinct from other allied disciplines, lies in human ecology and how the environment supports the physiologically and, more important in this instance, psychologically well-being of inhabitants. These skills are particularly relevant in the context of planning and implementing rebuilding efforts. Reclaiming the sense of community that existed on the Mississippi Gulf Coast prior to Hurricane Katrina could not occur without the restoration of the intimate spaces—kitchens, dining rooms, living rooms, and porches—in which residents lived their lives, connected with their families, and interacted with their neighbors.

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(APA Style)


Alcoholic Aggression: Reducing Aggression in Nightclubs through Interior Design

Jessica James
Iowa State University

Abstract

Aggression in nightclubs has been found to be associated with poorly maintained, unclean, unattractive nightclub environments including poor ventilation, smoky air, inconvenient bar access and inadequate seating, high noise level, and crowding (Graham, 1980). Macintyre and Homel (1992) concluded that the key feature of high aggression night clubs was intersecting traffic flows created by inappropriate design, especially poor location of toilets and bars, and the use of the same door as both entrance and exit. Thus, the design of a nightclub can greatly impact the amount of aggression and the nature of social interactions.

This study examines ways to make drinking establishments safer and less aggressive for its patrons through design. In addition, it shows ways that design can promote and improve positive interaction among different groups of people, whether for friend-making or dating purposes. Social interaction, aggression, and drinking have been found to relate to each other. As concluded by Sommer (1969), people in groups drink larger quantities than people alone. Attributed to this is the social pressure on a person in a group to keep up with the fastest member. Group drinkers, on the average, spend twice as long in the pub as isolated drinkers, and people in groups drink more than people
alone, not because they drink faster, but because they remain longer. Aggression has also been found to increase with such activities as dancing and pool playing (Graham, 1980). Likewise, Radcliffe and Nutter (1979) concluded that people who engaged in social activities such as games tended to drink more slowly; however, they also tended to stay in the nightclub longer, ultimately consuming more alcohol than non-players. Thus, the activities found in a nightclub can impact the amount of drinking and aggression.

Improving the communication between patrons is also examined. The likelihood of strangers interacting at a bar depends on the distance between them. As a general rule, a span of three bar stools is the maximum distance over which patrons would attempt to initiate an encounter (Sommer, 1969). The design of a nightclub should encourage social interaction among various groups. A patron can still arrange to be alone, bunching himself up at the end of a bar and staring down at his drink, or sitting at a remote table. But [if the bar is designed correctly] these postures must be maintained rigorously (Sommer, 1969).

This paper examines previous studies and conducts its own investigations, targeting nightclub owners, nightclub patrons, and interior designers. Questionnaires will be passed out and case studies of different nightclubs will be conducted. As a researcher and someone who has worked in a nightclub environment, multiple incidents have been noted that could be reduced or even avoided if the design of the nightclub was better. This topic benefits humankind by subconsciously changing the drinking patterns of each patron, and as a result, has the patrons become aware of their own tolerance. It is
important and allows the drinking establishment to evolve into a friendlier, more active environment.


Alcoholic Aggression: Reducing Aggression in Nightclubs through Interior Design

Jessica Lynn James
Iowa State University

Narrative
Aggression in nightclubs has been found to be associated with poorly maintained, unclean, unattractive nightclub environments including poor ventilation, smoky air, inconvenient bar access and inadequate seating, high noise level, and crowding (Graham, 1980). Macintyre and Homel (1992) concluded that the key feature of high aggression night clubs was intersecting traffic flows created by inappropriate design, especially poor location of toilets and bars, and the use of the same door as both entrance and exit. Thus, the design of a nightclub can greatly impact the amount of aggression and the nature of social interactions.

This study will examine ways to make nightclubs safer and less aggressive environments for their patrons through design. In addition, it will show ways that design can promote and improve positive interaction among different groups of people. Social interaction, aggression, and drinking have been found to relate to each other. As concluded by Sommer (1969), people in groups drink larger quantities than people alone. Attributed to this is the social pressure on a person in a group to keep up with the fastest member. Group drinkers, on the average, spend twice as long in the pub as isolated drinkers, and people in groups drink more than people alone, not because they drink faster, but because they remain longer. Aggression has also been found to
increase with such activities as dancing and pool playing (Graham, 1980). Likewise, Radcliffe and Nutter (1979) concluded that people who engaged in social activities such as games tended to drink more slowly; however, they also tended to stay in the nightclub longer, ultimately consuming more alcohol than non-players. Thus, the activities found in a nightclub can impact the amount of drinking and aggression. This study will discover the specific factors of design which can increase aggression in nightclubs, such as traffic circulation, air quality, and noise.

There are many outside factors which can increase aggression in a nightclub, such as how much a person drinks, an individual’s tolerance, ethnicity, gender, staff attitudes, and so on. This study, however, will focus only on the design aspects as a means of reducing, not necessarily eliminating, aggression.

It is important to know the difference between “density” and “crowding” for this study. Density refers to the total amount of people in an establishment in relation to the overall square footage. Crowding is usually understood as a negative subjective experience of too much density in one specific area which can closely be linked with patron movement and bumping (Macintyre and Homel, 1992). It is also important to note the difference between low-level aggressive acts, and high-level aggressive acts. Low-level aggressive acts are more accidental and can include bumps, knocks, or spilled drinks. High-level aggressive acts are more intentional including pushing, shoving, hitting, or fighting (Macintyre and Homel, 1992).

For this study, human physiology is examined to understand how humans function in a given environment. In addition, human psychology is observed by means of case
studies. It is important to know why people act in aggressive manners. Many factors can contribute to aggression besides environment, such as a person’s genetics, level of intoxication, personality or gender (Macintyre and Homel, 1992). Thus, psychology of a human’s reaction towards their given environment must be reviewed. In this experiment, traffic circulation is examined to see what behaviors are displayed when humans move in at-will patterns as opposed to forced patterns. Several variables will be collected in an effort to measure the effect of design on behavior, including aggression, density, flow and design characteristics. The design of a nightclub has the ability to direct people in a certain direction, both explicitly and implicitly.

The case studies will be conducted by examining six different nightclubs, each for 36 two-hour increments during a six month period. This will be a random sampling of times, which will be inspected for outliers, or rather incidences of aggression that are not likely to reflect the true population. Traffic patterns and density will be observed, as well as areas of aggression. The documentation used by Macintyre and Homel (1992) to observe traffic patterns will be used to note the traffic patterns in this research project's observations (see Appendix). The areas of aggression will then be ranked on a four point scale (none, low, medium, high). Dynamic density (flow) will be measured throughout the bar by noting the number of people per minute that walk in each direction in a certain space or pathway. In addition, patrons of the nightclubs will be interviewed regarding their experiences with aggression in those particular establishments and the level of safety perceived by each individual.

As a researcher, I do not have extensive knowledge on this subject. Thus, previous studies by noted authors such as Macintyre, Homel, Graham, and Sommer have been
examined. Most of my studies have been conducted through observation. I received my Bachelors of Fine Arts in Interior Design. I have also worked as a bartender for over three and a half years in multiple establishments including a sports bar, a nightclub, and an Irish pub. Throughout that time I have seen many incidents of aggression, ranging from a small quarrel over a spilt drink to a forty-two person fight, which could have been avoided or lessened, had the design of the nightclub been better.

Drinking establishments will always be prevalent, whether the economy is high or low, people are happy or sad. As stated by Sommer (1969), “Generally it is cheaper for a person to drink at home than in the local tavern. The raison d’être of the tavern goes beyond the opportunity for people to drink alcoholic beverages. This fact must be understood before one can understand the social and physical form of the tavern. A man goes to a bar to drink, to see and meet other people. It is a place to avoid boredom and existential loneliness. A bar allows for the transformation of loneliness into alienation with the availability of oblivion through alcohol.” In addition, the nightclub is the prime space to observe aggression as a result of design. Bars are where people congregate in the least organized manner. Workplaces are highly structured and can be well or poorly designed, but poor design won’t lead to aggression since jobs depend on workers not lashing out at those around them. In a bar, behavior is free to come out, and free for this study to observe and use to one’s advantage in design. This topic benefits humankind by subconsciously changing the drinking patterns of each patron, and as a result, has the patrons become aware of their own tolerance. It is important and allows the drinking establishment to evolve into a friendlier, more active environment.
Most studies conducted on aggression and design have examined bars or taverns such as Graham and Homel’s (1997), or examined nightclubs in a different culture such as Macintyre and Homel’s (1992). Those studies have provided guidance and insight into this research project. All studies examined supported one hypothesis: Aggression in [drinking establishments] is a result of inappropriate design, including poor ventilation, smoky air, inconvenient bar access and inadequate seating, high noise level, intersecting traffic flows, and crowding. Their findings support my hypothesis, yet I believe each nightclub needs different design measures to alleviate aggression. To this end, I propose a final product of a guidebook for architects and interior designers of nightclubs which lists possible solutions to reducing aggression through design. It will list the pros and cons of each solution so that the individual designer can select which option works best for the nightclub which they are designing.


Figure 4: Nightclub Floor Plans: NC-1, NC-15, NC-16

Diagram of three nightclubs used in Macintyre and Homel's study (1992)
Bringing Hope to a Devastated Community in New Orleans: An Interdisciplinary Community Service Project

Vibhavari Jani
And
Kevin Singh
Louisiana Tech University

Abstract

Purpose

The purpose of this paper is to disseminate the outcomes and experiences of a community oriented, interdisciplinary, collaborative, service learning project the authors undertook to assist Gert Town, an impoverished neighborhood of New Orleans. This paper will focus on a positive result created by two professors’ desire to involve students in disaster recovery and development efforts to teach the value of community service and promote civic engagement. This project involved 10 Interior Design and 6 Architecture students in developing site specific housing prototypes to fit in with the neighborhood context. Implementation of this project was the result of receiving a $15,000 grant that promotes service learning experience.

Conceptual Framework

Long after Katrina devastated New Orleans and its surrounding areas, many neighborhoods of the city still require assistance in rebuilding their community. Many buildings that withstood the storm's winds were damaged by the direct force of the
flooding and by the deleterious effect of long immersion\(^1\). Water damage created mold, mildew and other environmental problems for these buildings. Among other historical buildings, Creole Cottages, Shotgun and Camel Back houses were damaged which grant New Orleans a unique architectural identity. Some of these beloved houses are located in impoverished neighborhoods and require massive cleanup and renovation efforts. Others face the fate of demolition. Finding the owners to get the permission to start cleanup, renovation or demolition is a difficult task for a city where 80% of the population evacuated and majority has not returned back as yet. There are many pockets in these impoverished neighborhoods where residents are living in damaged homes. How to help these residents? In this paper the authors will share literature reviewed, provide conceptual framework and discuss Gert Town project in detail including history of Gert Town, its culture and residents and their needs.

**Method and Design Process**

For this project, Kolb’s experiential learning theory\(^2\) was used as a guide for providing active learning\(^3\), reflective observations\(^4\), abstract conceptualization\(^5\) and active experimentation\(^6\). These activities provided experimentation opportunities for students\(^7\).

The authors will explain design process adapted for this project. Best practices and innovative ideas will be explained. New approaches adapted by the instructors will be discussed so that other educators can adapt these approach/processes in developing future service learning and community design projects.
Outcomes and Conclusions

In conclusion, the authors will discuss how educators and participants can achieve successful outcomes, despite the many obstacles and hurdles one can face while working on service learning and civic engagement projects in challenging environments. The authors hopes that sharing this experience will inspire others to involve young citizens in service learning and civic engagements projects.
Attachment 1: Project Objectives

Develop an inter-disciplinary, collaborative, community service learning design project to develop 2 new site specific housing prototypes that can be adapted to support hurricane recovery efforts for sustained growth of the Gert Town community and adapt a Friendship House for the community leader of the neighborhood. The instructors’ specific objectives were:

- Encourage student & faculty participation in recovery efforts.
- Develop collaboration with community partners, professionals & service organizations.
- Create awareness regarding health, safety & welfare of the hurricane affected community and environment.

By providing a relevant and meaningful academic learning and civic service opportunity to our students we hope to develop the following skills:

- Team building and leadership
- Identification of local community needs
- Develop design skills including:
  - Evaluate potential solutions for housing improvement
  - Prototype development
  - Sustainable & Green Design strategies to create healthy built environments
- Verbal communication and visual presentation

Impact on community:
We believe that this project will assist the disaster affected community in developing:

- The heart of the community by adapting the Friendship House model that serves as a support mechanism for the community to meet with each other and with partners to rebuild the social network and create “mutually enhancing relationships.”
- Safe and healthy house design prototypes that a community member can adapt to build a house for his/her family.
- A network of professionals to provide technical assistance for the Gert Town community in recovery and rehabilitation efforts.
- Meaningful living and working environments to create a common culture for the community that will bring back hope and confidence in the community.

Our students will propose the development of:

- Safe and healthy housing floor plans (two and three bed rooms) that he residents & funding agencies can adapt to build homes in the hurricane affected communities.
- A Friendship House design that will provide a house for the community leader and also serve as a support mechanism for the community to meet with each other and with partners to rebuild the social network & create mutually enhancing relationships & nurture a common culture of caring.

This project will support hurricane recovery efforts in the Gert Town neighborhood of New Orleans in the following ways:
Leaders within the community will be identified to assess the neighborhood, establish needs and determine the state of the community.

The housing prototypes will be designed with direct community input and will reflect the character of the neighborhood.

The *Friendship House* model, a successful program developed by the SBCR in the Shreveport/Bossier area, will be used to reconnect the social network and needs of the community.

The Gert Town neighborhood residents will be invited to participate in a community-based design process. Instructors, students and SBCR staff will work with residents to identify the neighborhood’s problems and potential solutions.

Students will meet with the local residents to understand the past and present conditions of the neighborhood to identify design needs of the community.

**RESPONSIBILITIES:**

- The assembled group will collectively identify and recommend actions for the neighborhood to be incorporated into prototype housing designs.

- Students will prepare needs assessment to generate a program for housing prototypes.

- SBCR staff will explain the philosophy, history and methodology of their social technology process that is creating sustainable communities. The Friendship House model will be explained and how it has improved neighborhoods in other communities.
• Students, community members and SBCR staff will work together to develop a *Friendship House* model for the Gert Town community.

**End Results:**

• At the end of this project, students will prepare 2 different prototypes for housing (2 & 3 bedroom houses). These prototypes will be available for the Gert Town community members at no charge so that they can adapt these floor plans to build a new home for their family.

• Our community partner SBCR has agreed to let us employ their *Friendship House* model for the Gert Town neighborhood revitalization. Our students will enhance the SBCR model for the Gert Town community leader so that it will become a connection for the neighborhood development.

• The housing prototypes can also be adapted by any funding and Government agency for revitalizing hurricane affected communities.
Attachment 2: Instructional Tools and Methods

For this project, Kolb’s experiential learning theory\textsuperscript{10} was used as a guide for providing active learning\textsuperscript{11}, reflective observations\textsuperscript{12}, abstract conceptualization\textsuperscript{13} and active experimentation\textsuperscript{14}. These activities provided experimentation opportunities for students\textsuperscript{15}. The experiential learning theory includes associative real life situations and the use of critical reflection as a learning tool\textsuperscript{16}. The active learning\textsuperscript{17} (what Kolb termed as concrete evidence) involves direct exposure and interaction to a real-life situation. The reflective observations\textsuperscript{18} include reflection on the “real-life” experience. Thus, learning begins with an experience, continues with reflection, and leads to action. It provides learning viewed as a practical component of life. During abstract conceptualization\textsuperscript{19}, students draw conclusions about the real-life experiences. In the last phase, active experimentation, those conclusions are tested\textsuperscript{20}.

The instructors Incorporated following teaching tools for the exhibition design project\textsuperscript{21} in the design studio:

- Site visits and analysis
- Interviews
- Literature Reviews
- Reflective Thinking
- Concept Drawings and Sketches
Students were encouraged to:

- Visit New Orleans to understand the effect of Katrina. The grant afforded three site visits. The grant paid for students housing and transportation.
- Interview community members so that they gained better understanding of their culture, way of life, and their needs.
- Review variety of literature to understand New Orleans architecture, culture, and climate so that they can be exposed to various aspects of the Gert Town community and can design according to the context of the site and the needs of the residents.
- Celebrate music, food and other cultural festivals to expose students to Southern culture, local customs, traditions, art, architecture and music that is such an inherent part of Gert Town community.
- Keep a journal of their findings, observations, thought and design ideas.

The instructors utilized following tools:

- **Combination of lecture/discussion**: The instructors abandoned the old slide based lecture format and adapted presentations and discussion format to stimulate students’ interests. Active participation of students was encouraged during the studio time. Instructors provoked discussions by posing controversial questions, asked students’ opinions, encouraged students’ comments, and fostered an open, friendly
environment where students can provide their feedback of their likes, dislikes, discuss their views, compare and analyze information.

- **Creative expression:** The instructors abandoned the research paper format and adapted creative expression as a tool for learning. Students were encouraged to research similar projects, Green design concept, strategies and New Orleans architecture, think and digest collected information, than create and present their findings. Students discussed, debated and expressed their opinions in a creative manner!

- **Reflective Thinking:** For this design studio, students were required to keep a journal that allowed them to reflect on their active learning experiences. The journal was used as a tool to document observations and provided a medium in which students could think critically about their real-life encounters. Sketching was encouraged. The students were asked to express their feelings, likes, dislikes, and document their ideas to facilitate reflective thinking. Most students diligently followed instructions and kept a journal of their thought process, feelings and observations and used it as their source book for ideas, materials and information about Green design and strategies for designing for devastation.

- **Literature Reviews:** Specific research assignments were given (see attachment 3) to provide information to students, increasing their involvement and interest in the community and the design project. The use of library, Internet, and personal
resources were encouraged for research. This lead to interesting discussion at times!
Attachment 3: Design Process

The instructors developed various assignments to encourage students to familiarize with Gert Town, its culture, climate, and architecture to facilitate site specific housing design. Students were asked to research and analyzed similar projects, Green Design concept, strategies and materials before taking them to see Gert Town. Students were asked to form teams and shared their research findings with their classmate. This facilitated learning from their peers. Once they researched, collected and analyzed the information, a site visit was arranged to expose students to Gert Town. Students walked around the neighborhood, documented devastated areas, sketched various house types to understand the vernacular architecture of the area, identified lots for new construction. After the site visit, students came back and prepared site analysis, discussed and debated which lots to use and presented this information to Gert Town Rejuvenation Committee Members who came to the University. This communication facilitated client communication and students asked many questions to understand needs of the community which assisted them in preparing program for each housing prototype.

Once program was prepared, students started preparing parties and sketches to generate ideas for preliminary design of the housing prototypes. Students worked in teams. Two team prepared prototypes for two and three bedroom prototypes and the third team prepared Friendship House prototypes. The preliminary design was then presented for feedback first at the university where other instructors reviewed the preliminary prototypes and made suggestions to improve it. Students adapted these
changes and prepared first draft of the prototypes and re-visited Gert Town to present their design and get feedback from the community members. After receiving feedback from the community members, students went back to Gert Town to clean up the sites and to understand site specific issues related to design.

After coming back, students revised their designs to accommodate changes suggested by the residents of Gert Town and began making models, 3D walk through, renderings and specifications for the final design. They presented this final design first at the University again to get feedback from the instructors and consultants and adapted changes suggested by them and finalized their designs. We traveled back to Gert Town at the end of the quarter to present final prototype designs to the community members. Below you will find a master schedule of the events/project design process and few assignments given to students to facilitate design process.
End Notes and References:

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Bringing Hope to a Devastated Community in New Orleans: An Interdisciplinary Community Service Project

Vibhavari Jani
And
Kevin Singh
Louisiana Tech University

Narrative

Introduction

New Orleans is well known for its architecture, culture and the delightful food and entertainment it provides. The buildings in the French Quarter and the houses of the Garden District are a sight to behold. But there are many impoverished neighborhoods in the city that possess as much cultural and decorative history that very few people know about. While affluent neighborhoods sustained relatively minor damage and have been restored to pre-Katrina status, New Orleans’ impoverished neighborhoods were not as fortunate. They suffered catastrophic damage from Katrina and sustained substantial water damage that require massive cleanup, renovation or demolition efforts. There are many pockets in these neighborhoods where residents are still living in damaged homes. The instructors wanted to assist these residents in their recovery and rebuilding efforts and provide an interdisciplinary learning experience for the interior design and architecture students in the school. They received a University of Louisiana System’s Learn and Serves grant to address hurricane recovery needs. Ten interior design and six architecture students participated in this project called the New Orleans
Studio. Working together, the instructors and students developed site specific housing prototypes to assist in disaster recovery and development efforts. The main objectives were to encourage student participation in recovery efforts to promote civic engagement and community service that incorporate universal human values of “Tolerance, Respect, Love, Compassion and Prosperity” for all.

Following Hurricane Katrina, the February 2006 Mid-City District area housing unit damage report estimated that 83% of all housing units in the district were damaged primarily from flooding. The flooding was caused from a breach in a nearby levee, with the entire district submerged with three to nine feet of water for a period of days. The damage from mold and mildew resulted in the homeowner having to remove all finishes down to the bare studs and renovate, or start over and begin with a new structure. Gert Town, an impoverished neighborhood within this district, had not received any design assistance. It was this basic need for housing that the New Orleans Studio wanted to address.

Literature Review

Since there were no known precedents in interior design for community based design projects, the authors reviewed and were inspired by the work of Samuel Mockbee’s “Rural Studio” and Architecture for Humanity, established by Cameron Sinclair and Kate Stohr. A book published by Architecture for Humanity, Design Like You Give a Damn, and another, Rural Studio: Samuel Mockbee and an Architecture of Decency by Dean and Hursley, also served as inspiration. To understand the characteristics of the

**Project Location, Neighborhood Context and Needs**

Gert Town is located three miles west of the Central Business District just south of I-10 along the Earhart Boulevard arterial. It is a semi-urban community with single-family residences of two and three bedrooms and multifamily units up to three stories. In its prime, the town housed the headquarters of several businesses and industries; however, population had been declining prior to Katrina. Among the 1,876 housing units, 18% were vacant. According to the 2000 census, 94.5% residents were African American and 43.6% were single mother households. The neighborhood, like much of New Orleans, is divided primarily into 30 foot wide lots. The depth of the lots varies from 60, 90, to 120 feet. Small front yards lead to a porch and then entry to the house.
Gert Town is composed mainly of shotgun style houses. The shotgun house is a narrow rectangular dwelling, consisting of three to five rooms in a row without hallways, and doors at each end of the house. Several variations of shotgun houses adorn the neighborhood. "Double-barrel" shotgun houses share a central wall which allows two houses to be fitted on a small lot. "Camelback" shotgun houses include a second floor at the rear of the house. The street culture and close connection with neighbors is prevalent throughout Gert Town. The favorable climate enables residents to use the porch throughout the year for gatherings with neighbors or as an additional "outdoor room" of the house.

Regenerating this social fabric of the neighborhood was one of the priorities of the project. The instructors partnered with Shreveport-Bossier Community Renewal (SBCR) organization that assist communities in the Shreveport and Bossier City to invigorate neighborhoods. SBCR developed a *Friendship House*\textsuperscript{25} prototype, which serves as a community center and provides a mechanism for the community to establish friendships and support.

After analysis of Gert Town’s needs, the instructors and students determined that designing safe, healthy and economically viable housing prototypes (two and three bedrooms) should be the priority that the residents and funding agencies can adapt. The rebuilding of the neighborhood would be facilitated through the establishment of adapted SBCR *Friendship House* designs.
Methodology

For this project, Kolb’s experiential learning theory\textsuperscript{26} was used as a guide for providing active learning\textsuperscript{27}, reflective observations\textsuperscript{28}, abstract conceptualization\textsuperscript{29} and active experimentation\textsuperscript{30}. These activities provided experimentation opportunities for students\textsuperscript{31}. The experiential learning theory includes associative real life situations and the use of critical reflection as a learning tool\textsuperscript{32}. The active learning\textsuperscript{33} (what Kolb termed as concrete evidence) involves direct exposure and interaction to a real-life situation. The reflective observations\textsuperscript{34} include reflection on the “real-life” experience. Thus, learning begins with an experience, continues with reflection and leads to action. It provides learning viewed as a practical component of life. During abstract conceptualization\textsuperscript{35}, students draw conclusions about the real-life experiences. In the last phase, active experimentation, those conclusions are tested\textsuperscript{36}. Over the course of one 10-week quarter, the instructors guided the students using these methods to develop the site specific housing prototypes and Friendship Houses.

Design Process

The authors developed various assignments that promoted research of the community’s culture, sustainable and green design issues and solutions and precedent studies. Students went on site to document and analyze the devastated areas and needs of the community to generate site specific programs. Concept drawings and sketches for the housing prototype designs followed. Based on their research of the neighborhood’s context and understanding of the conventional housing types, students developed the designs of the housing prototypes and presented their first versions to the neighborhood
residents to get feedback and ensure that their housing needs were met. Sustainable design principles, appropriate construction systems, and green material selections were considered to reduce the impact on the environment and to make the prototypes affordable. To facilitate affordability, at the request of residents, a rental unit was added in three prototypes as an option to generate income to offset the mortgage and currently higher building costs in the New Orleans’ area. Teamwork and sharing students’ research findings were promoted, as well as presenting their ideas within their group and to clients. Through this process students learned how to design affordable, sustainable and contextually appropriate housing prototypes that blend well with the existing neighborhood.

Outcomes and Conclusions

The students designed two options for the Friendship House (Fig. 4) and two (Fig. 3) and three-bedroom (Fig. 2) prototypes. The prototypes reflect the traditional housing within the neighborhood and have been adapted to enhance the residents’ modern lifestyles. The designs are sustainable and incorporate green materials and systems while maintaining a modest square footage to maintain affordability.

A critical consideration was the connection with the street. In each design the students incorporated a porch that was either public, private or a combination of both (achieved through a series of levels and setbacks). The multiple levels were contingent on the finish floor level. The new building codes mandate that houses are built to an established height based upon the existing elevation. Because the neighborhood varies
in elevation, the prototypes were designed to meet the new guidelines while still maintaining the connection with the street. Reinforced pier systems were selected for the foundation to allow water to freely pass under the structure without damaging the main house if flooding ever occurred again.

After overcoming the challenge of working with a community located five hours from the university, the instructors and students found the benefits and lessons learned outside the classroom inspiring as they helped reshape Gert Town. The students involved commented that they feel empowered to impact change in their communities and have more confidence as they proceed toward practicing interior design and architecture professionally. The instructors hope that sharing this experience will inspire others to involve young citizens in service-learning and civic engagements projects.

Fig. 1 Student Work: Two Bedroom Prototype - Study Models
Fig. 2. Student Work: Three Bedroom Prototype - Exterior and Interior Renderings
Fig. 3. Student Work: Friendship House – Exterior and Interior Renderings
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Authors adapted the term “Universal Human Values” from Wendell Bell who gives lists of near-universal human values which have stood the test of time in “Values, Objectivity, and the Good Society, Volume 2 of Foundations of Futures Studies.” However, the authors developed the following “Universal Human Values” in the context of interior design education:

1. Tolerance: for all cultures, religions, races and people and difference of ideologies and values (Relates to Global Issues)
2. Respect: for knowledge, new experiences, ideas and thoughts (Relates to Education and New Innovations)
3. Love: for all living, breathing organisms (Relates to Environmental Awareness)
4. Compassion: for anyone in need (Relates to Civic Engagement)
5. Prosperity: for all (Relates to Social Justice)

The authors were also inspired by Sissela Bok, who in her book *Common Values* suggested “developing limited set of values so down-to-earth and so commonplace as to be most easily recognized across societal and other boundaries. To the extent that they are acknowledged as common and respected as such.”

23 Architecture for Humanity was established by the architect Cameron Sinclair and freelance journalist and documentary producer Kate Stohr in 1999.

24 2000 US Census

25 Friendship Houses are homes built in low-income areas and lived in by Shreveport-Bossier Community Renewal (SBCR) staff that help turn impoverished neighborhoods into havens of hope.

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References


Interior Designers’ Sustainable Energy Awareness and Application

Mihyun Kang, Ph.D., Ji Hye Kang and Brooke Barnes

Oklahoma State University

Abstract

The U.S. Green Building Council’s Leadership in Energy and Environmental Design program includes five sustainable design components: site, water, energy, materials and resources, and indoor environmental air quality. While all of these components are vital, the U.S. Environmental Protection Agency has identified energy as the single most important green building issue (Kibert, 2005). Interior designers can contribute to the reduction of energy consumption by the choices they make in their design projects.

This study determined the characteristics of interior designers who are aware of sustainable energy practices and of designers who are applying the practices. International Interior Designers Association provided the mailing addresses of randomly selected members, and a national mail survey of these practitioners was conducted. Descriptive and inferential statistics were employed to analyze the data gathered.

To examine differences between awareness and application of sustainable energy practices, a three-way repeated measure was conducted. The results showed that interior designers consider sustainable energy important, but application did not match awareness. This pattern occurred both for general sustainable design and energy and for specific sustainable energy characteristics.
To check whether interior designers could be classified by the level of awareness and application, a two-step cluster analysis was conducted. Six variables (importance of sustainable design to firms, importance of sustainable design to interior designers, frequency of sustainable design application, importance of sustainable energy to firms, importance of sustainable energy to interior designers, and frequency of sustainable energy application) were selected as criteria to cluster the respondents. A four-cluster solution satisfied the criteria for discriminating the entire interior designer group: high sustainable design, moderate sustainable design, high self-awareness of sustainable design, and low sustainable design. Analysis of Variance (ANOVA) tests confirmed these four groups are differentiated by all six categories.

To investigate the differences of individuals in these design groups on specific sustainable energy applications, ANOVA tests were conducted. The application of sustainable energy for every specific characteristic was different by sustainable design group. The high sustainable design group tended to apply specific energy characteristics the most frequently. The high self-awareness of sustainable design and low sustainable design groups less frequently applied specific energy characteristics in all cases.

The professional characteristics of interior designers were compared by sustainable design groups to examine which characteristics influenced the differences in sustainable energy awareness and application. Chi-square tests showed that two characteristics significantly affect the group differences. Interior designers who earned degrees from programs accredited by the Council of Interior Design Accreditation more
frequently applied sustainable energy characteristics. Average project size was the other influencing factor.

More courses for theoretical and practical advice on sustainable energy application are desired for interior design students. Because sustainable design is a relatively new addition to the interior design curriculum, application of the techniques can be difficult for designers who did not receive formal training. Therefore, continuing education for practicing designers is needed. Demonstrating incremental improvement in many small buildings by sustainable energy application will have a greater impact than will a few super efficient exhibition buildings.

References

Interior Designers’ Sustainable Energy Awareness and Application
Mihyun Kang, Ph.D., Ji Hye Kang and Brooke Barnes
Oklahoma State University

Narrative

Purpose

The purpose of this study was to determine the characteristics of interior designers who are aware of sustainable energy practices and of designers who are applying the practices. Although interior designers have been at the forefront for suitable materials and indoor environmental quality, integrating sustainable energy has not been emphasized (Williams, 2007). Identifying the status of sustainable energy practices in the field of interior design allows for the development of educational strategies for such practices.

Review of Literature

The U.S. Green Building Council’s Leadership in Energy and Environmental Design program includes five sustainable design components: site, water, energy, materials and resources, and indoor environmental air quality. While all of these components are vital, the U.S. Environmental Protection Agency has identified energy as the single most important green building issue (Kibert, 2005). Interior designers can contribute to energy efficiency in their design projects. These contributions can include the following:

- Evaluate and use renewable energy systems.
- Specify energy efficient and environmentally safe equipment and appliances.
- Provide energy efficient thermal, ventilation, and lighting conditions and controls.

The use of renewable energy to fuel electrical systems is a primary component of sustainable energy. On-site energy generation such as photovoltaics, wind energy, and biomass use is becoming more common, as it reduces not only energy consumption, but also dependency upon third party energy production.

Professionals who hire interior designers often have little information on the benefits of energy-efficient equipment and appliances (Birner and Martinot, 2005). Manufacturers have made efforts to increase the energy efficiency of their appliances, aided by the U.S. Department of Energy minimum efficiency standards, the federal ENERGY STAR program, and efforts of the Consortium for Energy Efficiency (Foster, Stelmack, & Hindman, 2006). Designers’ specification of energy efficient and environmentally safe equipment and appliances can play a large role for sustainable design.

Heating, cooling, and lighting systems are involved in moving energy into or out of a building. Although the controls of these systems have been used traditionally to provide flexibility, a new and major application for the controls is energy management (Gordon, 2003). Personal control over ambient conditions, especially temperature and ventilation, is associated with enhanced performance on a variety of tasks (Steemers, 1993). Lighting is important for sustainable design as it accounts for 25 to 40% of a commercial building’s energy consumption (Bonda & Sosnowchick, 2006). As daylight is a natural resource available to almost everyone, designers should explore making optimal use of options involving this light source (Whitehead, 2004). Design can provide daylight solutions specific to the expected range of sky conditions (Lechner, 2001).
Daylight has been shown to enhance the physical and psychological wellbeing of building occupants. Designers need to devise a lighting system that combines natural and powered light in an energy efficient manner.

**Method**

International Interior Designers Association provided the mailing addresses of 1,200 randomly selected members, and a national mail survey of these practitioners was conducted. A questionnaire consisting of a series of 20 questions on interior designers’ characteristics and sustainable energy practices was developed. The first draft of the questionnaire was pre-tested to reduce ambiguity.

To identify the characteristics of interior designers who are aware of sustainable energy practices and of designers who are applying the practices, the following hypotheses were developed.

- **Hypothesis 1:** There are no differences among application, awareness at a firm level, and awareness at an individual level.
- **Hypothesis 2:** There are no clusters by the different levels of application and awareness.
- **Hypothesis 3:** There are no differences of sustainable energy application among clustered groups.
- **Hypothesis 4:** There are no differences in professional characteristics among clustered groups.

Descriptive and inferential statistics were employed to analyze the data gathered. First, the data was descriptively analyzed to observe the characteristics of respondents. Second, a three-way repeated measure was conducted to examine Hypothesis 1. Third, a two-step cluster analysis was conducted to check Hypothesis 2. Fourth, Analysis of Variance (ANOVA) was employed to investigate Hypothesis 3. Lastly, chi-square tests were conducted to identify Hypothesis 4.
Results

A total of 266 designers submitted usable responses, which gave an overall response rate of 22.17%. Respondents’ characteristics were measured by education, experience, examination, and regulation related to interior design. Almost 70% of the respondents had degrees from Council of Interior Design Accreditation (CIDA) accredited interior design programs. A continuing education on sustainable design had been taken by 79.7% of the respondents. Of the respondents, 44.0% specialized in corporate or office design, 15.4% in health care, and 11.3% in residential design. The highest percentage of respondents (34.2%) had practiced more than 20 years. Of the respondents, 31.6% reported the size of a typical interior design project was 6,001 to 20,000 sq. ft. Of the respondents, 61.7% had passed the National Council for Interior Design Qualification examination and 40.6% were state licensed or certified as interior designers.

To examine differences between interior designer awareness of and application of sustainable energy practices (Hypothesis 1), a three-way repeated measure was used. General sustainable design and energy and specific sustainable energy characteristics were significantly different in importance to designer’s firm, importance to the designer, and frequency of application. Every statement showed the highest mean score in the category of importance to designer and the lowest mean score in the category of frequency of application.

To examine whether interior designers can be classified by level of importance to the designer’s firm, importance to the designer, and frequency of application
(Hypothesis 2), the two-step cluster analysis was conducted. Six variables (frequency of sustainable design application, importance of sustainable design to firm, importance of sustainable design to interior designer, frequency of sustainable energy application, importance of sustainable energy to firm, and importance of sustainable energy to interior designer) were selected as criteria to cluster the respondents. A four-cluster solution was satisfied for discriminating the entire interior designer groups (high sustainable design group, moderate sustainable design group, high self-awareness of sustainable design group and low sustainable design group). An ANOVA test confirmed that these four groups are differentiated by all six categories.

To investigate the differences of individuals in these design groups on specific sustainable energy applications, ANOVA tests were conducted. The application of sustainable energy for every specific characteristic was different by sustainable design group. The high sustainable design group tended to apply specific energy characteristics the most frequently. The high self-awareness of sustainable design and low sustainable design groups less frequently applied specific energy characteristics in all cases.

Interior designer professional characteristics were compared by sustainable design group to examine which characteristics influenced the differences in sustainable energy awareness and application (Hypothesis 4). Chi-square tests showed interior designers who earned degrees from the CIDA accredited programs more frequently applied sustainable energy characteristics. Average project size was the other influencing factor.
Discussion

Although interior designers consider sustainable energy as important, its application to projects did not reach the same level as designers’ awareness of its importance. The efforts required to gain the interdisciplinary knowledge of sustainable energy and to apply it to projects might be too time-consuming for the pressures of project scheduling. Interior designers might think the built environment incorporating sustainable energy requires higher initial costs. Also, it might be difficult to encourage clients to adopt sustainable energy solutions if they did not request such an approach or were not familiar with it.

Among specific characteristics related to sustainable energy, characteristics such as interaction of sunlight and views, optimization of daylighting, and lighting in an energy efficient manner were frequently applied, while renewable energy systems was less frequently applied. However, sustainable energy characteristics related to natural daylight might be applied based on the impact of occupants’ health and welfare rather than on consideration of sustainable energy.

Interior designers who earned degrees from CIDA accredited interior design programs more frequently applied sustainable energy characteristics in their projects. More courses for theoretical and practical advice on sustainable energy application are desired for the education of interior design students. Sustainable energy application can be difficult for designers who did not receive formal training on the topic during their academic preparation, and many designers did not receive this training because
sustainable design is a relatively new addition to the interior design curriculum. Therefore, continuing education on sustainable design is needed for practitioners.

The average project size in which a designer had been involved was the other characteristic influencing sustainable energy application. Based on this finding, demonstration of incremental improvements in many small buildings by sustainable energy application will have a greater impact than will application of these practices to a few super-efficient demonstration buildings.

Conclusions

By applying sustainable energy solutions to interior design projects, designers can contribute to creating environmentally responsible spaces. Designers who earned degrees from CIDA accredited interior design programs and were working on larger interior design projects more frequently demonstrated sustainable energy practices. Additional educational opportunities for interior design students and practitioners to pursue energy efficient interior design solutions are needed. Practical guidelines, especially for small interior design spaces, might promote additional application of sustainable energy practices by interior designers.
References
(APA Style)


Exploring Strategies for Optimizing the Design of Therapeutic Environments for People with Dementia: Opportunities for Changing the Culture of Care

Migette L. Kaup, MArch

Kansas State University

Abstract

Introduction:

Over the past decade there has been a growing movement of support for rethinking the ways that we deliver long-term care. When a facility speaks of adopting “change culture”, the evidence of this shift can be seen in the physical artifacts that demonstrate the rituals and activities of how people live and work within the setting (Centers for Medicare and Medicaid Services and Edu-Catering, 2006). Research identifying the therapeutic goals and environmental features of special care settings for memory loss has been advancing along these fronts rapidly for the past twenty years. Thus, the challenges identified through culture change share many of the same dimensions as residential settings for residents with dementia.

The Artifacts of Culture Change Tool (as developed by Bowman and Schoeneman, 2006) identifies thirty-one discrete items that support culture change. These environmental measures demonstrate validity in their intended outcomes as evidenced in other instruments including, the Professional Environmental Assessment Protocol (PEAP) (Lawton et al, 2000; Norris-Baker et al, 1999), as well as the multiple dimensions in terms of Day, Carreon, and Stump’s (2000) typology. Measurements of discrete environmental features identified through literature review can be thoroughly referenced as well (e.g. Cohen and Day, 1993; et. al.)
Methodology:

These thirty-one artifact items were used as the basis for photo documentation and structured interviews with staff and administrators in six case studies of dementia care settings. Sites were selected based on their recognition as culture change facility and having interest in participating in additional research that focused on extending the goals of culture change more specifically to individuals with dementia. Photos of each artifact item that could be documented were collected, organized in table format. All items that could not be documented through photography but which had a policy outcome were noted through the structured interviews and recorded by footnote in the table. Each artifact as a discrete environmental feature was cross referenced to the therapeutic outcomes (as supported through established research) to provide a context for the culture change environment at that particular facility. An item analysis was averaged for all case studies to develop a global perspective on the implementation of specific artifacts as it related to the cohort of facilities.

Results:

The outcomes of this investigation have resulted in examples of environmental as well as policy strategies that have been employed to support a more residential model of care that is identified with the culture change initiatives. This paper highlights the environmental features at the three levels of spatial context; fixed or structural features, semi-fixed or less permanent architectural elements such as floor coverings, and non-fixed features or “props”. This paper will discuss the artifacts documented through the six memory care facilities and provide exemplars that will (1) explore the existing congruence between dimensions of their physical, social, and organizational
environments and approaches to staffing and staff-empowerment and (2) examine the impacts of different types of culture change projects on these dimensions. The author will also present the strategies for disseminating these examples so they can be used by long-term care facilities and their hired design professionals to generate recommendations from minor additions of props to major renovation.

Selected References


Defining Culture Change

In order to improve the quality of life and transform a living space from institutional to residential in nature, efforts are being made to rethink long-term care. Groups such as the Pioneer Network are leading the way in the national movement to redesign nursing homes as living environments that place residents first and provide supporting care (Brawley, 2007, p. 9; Lustbader, 2000). The movement has coined terms such as culture change which “represents serious reform of institutional culture to one that gives voice like never before to the people living and working in such a culture” (Centers for Medicare, 2006, p. 4). Culture change aims to educate staff, empower the residents, and create a quality of life that is satisfying, meaningful, and humane (Calkins, 2002). The social, emotional, and physical impacts of culture change are assessed through indicators which measure the quality of health care and the desired outcome (Mace, 1991, p. 85). Many dimensions of culture change are evidenced through features of the built environment. Karen Schoeneman and Carmen Bowman, nursing home specialists, refer to this evidence as Artifacts of Culture Change (Centers for Medicare, 2006). These identifiable artifacts indicate how to achieve an environment that is therapeutic and supports the quality of life for the residents. Five categories of
variables are identified; care practice, environmental, family and community, leadership, and workplace. Within the environmental category there are thirty-one discrete items that support culture change objectives (see Table 1).

*Defining Dementia and Special Care Settings:*

Many skilled care facilities provide special services for those residents who are afflicted with dementia; a non-normative progressive deterioration of cognitive function (Briggs, 2004, p. 5). Many of these care services are located in a geographically separate unit that specializes in the needs of its residents, with the intent to encourage and support the optimum quality of life (Brawley, 1997, p. 42; Day, Carreon, & Stump, 2000, p. 406). By designing dementia specific care, residents get targeted programming and a modified physical environment that addresses their special needs (Volicer, 2000, p. 100-101). Transformations in dementia care settings, resulting from changing demographics, are leading the way to increased research on the designed environment and its impacts on people with dementia (Brawley, 2006). Due to the modern views on aging and living expectations, designers are looking to culture change as a model for special care unit (SCU) planning.

*Validation of Artifacts through Existing Research – A Review of the Literature*

Throughout the existing research, there is consistent documentation of eleven quality indicators (QIs) that contribute to the therapeutic needs of persons with dementia (e.g. Calkins, 1988; Zeisel, et al, 2003). Table 2 illustrates how multiple authors define the QIs as necessary components for achieving therapeutic environments. Although the
term varies by source, the definition of the intended goal is consistent throughout the research. Based on the accepted definitions, the Artifacts of Culture Change can be cross referenced to identify which of the QIs they support (see Table 3). Although there is evidence that the Artifacts of Culture Change and the QIs are both used to evaluate the effectiveness of therapeutic outcomes in a dementia care units, it is useful to understand their relationship to one another. More importantly, care providers striving to make meaningful improvements should have a clear understanding of how to implement specific strategies for change.

**Methodology**

*Documenting Artifacts of Culture Change within SCU Settings*

This project targeted six specialized dementia care units (or SCUs) to document and evaluate the implementation of artifacts in the built environment and how they support the QIs identified throughout the existing published research. The case studies provided the opportunity for detailed photo-documentation and analysis of artifacts and potential effect on “resident-centered” culture of care in the SCU setting. Structured interviews with staff and administrators were used to augment these measures and provide a context for interpreting each case study. All photos were recorded and described in table format for each site. These descriptions were then paired with the Artifact of Culture Change they represented. An item analysis was completed for each of the thirty-one environmental artifacts to determine which artifacts could be confirmed for each of the sites (see Table 4).
Results

For the purposes of this paper, only high frequency QIs that were supported by artifacts in 75% or more of the sites will be discussed (see Tables 3 & 4). From this analysis three QIs were identified as most prevalent; autonomy, social interaction, and functional competence. The following section will provide examples of artifacts at sites. The relationship between the artifacts and the QIs is discussed to show how the physical environment has an impact on the quality of life of people with dementia. Exemplars come from three levels of physical setting; fixed or structural features, semi-fixed or less permanent architectural elements such as floor coverings, and non-fixed features or “props.”

Artifacts that Support Resident Autonomy:

Autonomy represents the ability to maintain maximum control over one’s environment (Coons, 1991). The personal areas in the bedroom and bathroom are key spaces to achieve this outcome. All sites provided some at least some private room options on their unit. When residents have their own room (Artifact 16), they maintain a more controlled stimulatory environment and have more opportunities for personalization, as well as, autonomy, privacy and safety and security. Figure 1 shows a private room at Cedar House that offers opportunities for personalization and has direct access to a window. When residents share rooms and have control over their distinct areas without having to pass through the other residents’ space (Artifact 17) autonomy and privacy can be also achieved (Centers for Medicare, 2006). This is
evident in Figure 2, which illustrates how each resident in the room has their own individual space at Meadowlark Hills in Manhattan, KS. Due to the personal and private nature of toileting activities, the dignity of residents should be maintained to the greatest extent possible. Multiple sources state that maintaining dignity promotes independence, autonomy, safety, and security (Cohen & Day, 1993, p. 18-19; Cohen & Weisman, 1991, p. 112, 115-116; Day, Carreon, & Stump, 2000, p. 410).

**Artifacts that Support Social Interaction:**

The special care setting for all sites was a self-contained unit and 83% of the sites provided a kitchen setting that was open to residents and their families. Marsden, Briller, Calkins, and Proffitt (2001) explain how the therapeutic kitchen should be small to help residents relate to their past roles, behaviors, and routines. The space should also provide for gatherings and socialization. When kitchenette or kitchen area with at least a refrigerator and stove is available to families, residents, and staff where cooking and baking are welcomed (Artifact 47) social interaction and functional competence are supported. An example from Catholic Care Center in Wichita, KS is shown in Figure 3.

The dining room should be an intimate space that mimics a residential setting. It is common to provide personal touches to maintain ties with the familiar and enhance individuality (Cohen & Weisman, 1991, p. 102). The goal is to provide small eating areas that allow for stimulation control, which reduces agitation and confusion, and increases social interaction (Weisman, Cohen, Ray, & Day, 1991, p. 98). Additionally, the ideal location for the dining and kitchen area is within each dementia care unit because this reduces resident agitation and makes the situation more manageable for
the staff (Day, Carreon, & Stump, 2000, p. 411). Figure 4 shows small, home-like kitchen, living, and dining area at Cedar House that is located in the unit.

Artifact that Support Functional Competence

To compensate for their declining abilities, people with dementia need modifications within their environment (Winchip, 1990, p. 39). These modifications should not encourage dependence on the built environment; they should support the use of residents’ existing functional abilities and compensate for changes that occur due to both dementia and the normal aging process (Briggs, 2004, p. 5). A variety of seat heights in public areas (Artifact 29) supports functional competence in social areas (Centers for Medicare, 2006). Figure 5 is an example of a variety of seat heights at the Catholic Care Center.

In addition to supporting autonomy, it is necessary for the restroom and the bathing experience to support functional competence. This can be done through wheelchair accessible or adjustable mirrors that allow visibility for all users. Functional competence is also supported equipment and hardware incorporated into the environment. Figure 6 shows an accessible sink at Cedar House Figure 7 shows a faucet with easy-to-use handles at Wesley Towers in Hutchinson, KS. The implementation of adaptive handles, enhanced for easy use, for doors used by residents, (Artifact 23) also supports a resident's functional competence (Centers for Medicare, 2006). Figure 8 is an example an easy-use handle at the Catholic Care Center.
Conclusion: Future Implications and Findings

Many problems that people with dementia face are directly related to the built environment; therefore, designers have the opportunity to make a substantial impact (Cohen & Weisman, 1991). Because the artifacts of culture change address specific elements of the built environment and the quality indicators measure the impact of the artifacts, it is necessary to consider both when designing or evaluating special care units for people with dementia. For providers seeking resources to assist them in evaluating or modifying their special care settings, dissemination of these case studies and the exemplars of artifacts is being made available through online resources from the Center on Aging at Kansas State University and the PEAK project (Providing Excellent Alternatives for Kansas Nursing Homes). By comparing the examples of artifacts of culture change to quality indicators, existing and future skilled care settings can be evaluated accurately and decisions regarding supportive environmental features appropriately implemented.
Individual Items of Environmental Artifacts of Culture Change

15 Household is self-contained with full kitchen, living room, and dining room.
16 Residents have private rooms
17 Residents in shared rooms have distinct territories with control over their side of the room without the need to trespass through the other resident's space
18 No traditional "institutional" nurses' desk
19 Residents have direct access to a window in their room
20 Resident bathroom mirrors are wheelchair accessible and/or adjustable in order to be visible to a seated or standing residents
21 Sinks in resident bathrooms are wheelchair accessible below sink for wheelchair
22 Sinks used by residents have adaptive/ easy-to-use lever or paddle handles.
23 Adaptive handles, enhanced for easy use, for doors used by residents
24 Closets have moveable rods that can be set to different heights
25 Residents can decorate their rooms
26 Home makes extra lighting available
27 HVAC is controlled by resident in their own room
28 Residents can have their own ref in their room
29 Seating in public areas have a variety of seat heights
30 Gliders (lockable) are available inside and out.
31 Home has store/gift shop/ cart available where residents and visitors can make personal purchases
32 Residents can use a computer with assistive technology
33 Workout room available to residents
34 Bathing rooms have functional and properly installed heat lamps, radiant heat panels, or equivalent
35 Home warms towels for resident bathing
36 Protected outdoor garden/patio accessible for independent use by residents
37 Home has outdoor, raised gardens available for resident use.
38 Home has an outdoor walking/ wheeling path which is not a city sidewalk for path.
39 Pager/radio/ telephone call system is used where resident calls register on staff's pagers/ radios/ telephones and staff can use it to communicate with fellow staff.
40 Overhead paging system has been turned off or is only used in case of emergency
41 Personal clothing is laundered on resident household/ neighborhood/ unit instead of in a general all-home laundry, and residents/ families have access to washer and dryer for own use.

Family and Community Artifacts

44 Private guest room available for visitors at not or minimal costs for overnight stays
45 Home has café/ restaurant/ tavern/ canteen available to residents, families, and visitors at which residents and families can purchase food and drink daily
46 Home has a special dining room available for family use/ gatherings which excludes regular dining
47 Kitchenette or kitchen area with a least a refrigerator and stove is available to families, residents, and staff where cooking and baking are welcomed.

Table 1. Environmental Artifacts of Culture Change as Identified by Bowman and Schoeneman (2006).
<table>
<thead>
<tr>
<th>Quality Indicators</th>
<th>Analysis of Existing Research / Source</th>
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<tbody>
<tr>
<td>Autonomy</td>
<td>Autonomy: The environment should allow for residents to establish a sense of self-control as well as control over the immediate environment. P. 14.</td>
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<tr>
<td></td>
<td>Opportunities for Personal Control: &quot;The extent to which the physical environment and the rules governing the use of the environment provide residents with opportunities, consistent with level or acuity, for exercise of personal preference, choice, and independent initiative to determine what they will do and when it is done.” P. 32.</td>
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<tr>
<td>Privacy</td>
<td>Privacy: The degree to which the environment facilitates opportunities for a person to control amounts of privacy. P. 23.</td>
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<td>Privacy: &quot;The extent to which input from and output to the larger environment are regulated.” P. 32.</td>
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<tr>
<td>Dignity</td>
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<tr>
<td>Social Interaction</td>
<td>Socialization: The degree to which the environment inhibits or facilitates opportunities for a person to control amounts of social contact between people. P. 23.</td>
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<tr>
<td></td>
<td>Facilitation of Social Contact: &quot;The extent to which the physical environment and rules governing its use support social contact and interaction among residents.” P. 30.</td>
</tr>
<tr>
<td>Meaningful Activity</td>
<td>Competence in Daily Activities: &quot;The extent to which the environment facilitates or inhibits the residents' ability to carry out daily activities.&quot; P. 28.</td>
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<tr>
<td>Individuality</td>
<td>Personalization: &quot;The degree to which the environment encourages or discourages residents' control over the placement and arrangement of personal effects.” P. 25.</td>
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<td></td>
<td>Continuity of the Self: The extent to which the environment preserves continuity between present and past environments and the self of past and present.” P. 32.</td>
</tr>
<tr>
<td>Enjoyment vs. Aversive Stimulation</td>
<td>Stimulation: The degree to which the environment provides pleasant or undue visual or acoustical stimulation. P. 8.</td>
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<td>Stimulation and Coherence: The &quot;levels of stimulation of any of the senses at levels strong or frequent enough to provide interest and novelty without exceeding tolerable levels.” P. 32.</td>
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<tr>
<td>Safety and Security</td>
<td>Safety and Security: &quot;The degree to which the environment is designed to avoid the occurrence of accidents while not inhibiting ease of locomotion through, and use of, the area.” P. 26.</td>
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<td></td>
<td>Maximizing Safety and Security: &quot;The extent to which the environment both minimizes threats to residents' safety and maximizes the sense of security of residents, staff, and family members.” P. 31-32.</td>
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<tr>
<td>Spiritual Well-being</td>
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<tr>
<td>Clarity of Structure</td>
<td>Wayfinding/Orientation: &quot;The process by which the environment helps a person derive cues and information to aid in navigation from a point through space to a desired location.” P. 22</td>
</tr>
<tr>
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<td>Maximizing Awareness and Orientation: &quot;The extent to which users can effectively orient themselves to physical, social, and temporal dimensions of the environment.” P. 31.</td>
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<tr>
<td>Functional Competence</td>
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<td>Support Functional Abilities: &quot;The extent to which the environment and the rules regarding the use of the environment support the practice or continued use of everyday skills.” P. 32.</td>
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</table>

Table 2. Establishing the validity of the Quality Indicators through an Analysis of Existing Research on the Therapeutic Relationship between the Environment and Dementia.
<table>
<thead>
<tr>
<th>Quality Indicators</th>
<th>Source</th>
<th>Analysis of Existing Research / Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy</td>
<td>Autonomy: &quot;Enabling residents to maintain maximal control over their own lives.&quot; P. 15</td>
<td>Maximize Autonomy and Control: The environment should allow residents to &quot;have the ability to make decisions and to take responsibility for their own lives.&quot; P. 32.</td>
</tr>
<tr>
<td>Privacy</td>
<td>Protect the Need for Privacy: &quot;Environments with people with dementia should allow residents choices between solitude and participation in activities by providing a range of public to private spaces.&quot; P. 34.</td>
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<tr>
<td>Dignity</td>
<td>Dignity: The environment and staff support each residents right to live with dignity and respect, regardless of the degree of impairment. P. 20.</td>
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<tr>
<td>Social Interaction</td>
<td>Provide Opportunities for Socialization: &quot;Environments should encourage socialization among residents by creating opportunities for communication through physical design, program, and policy.&quot; P. 34.</td>
<td></td>
</tr>
<tr>
<td>Meaningful Activity</td>
<td>Activities that provide continuity with the past: &quot;the availability of opportunities for residents to continue in normal social roles and familiar activities&quot;... &quot;that parallel those of everyday life.&quot; P. 19.</td>
<td>Meaningful Activity: The availability of normal, positive, and useful social roles for people with dementia through involvement in activities. P. 30.</td>
</tr>
<tr>
<td>Individuality</td>
<td>Individuality: The environment should provide opportunities for the resident to express their sense of identity and special past interests to maintain a sense of personal being. P. 17-18.</td>
<td>Establish Links with the Healthy and Familiar: The environment should provide &quot;opportunities for residents to integrate experiences and relationships with their past lives.&quot; P. 33.</td>
</tr>
<tr>
<td>Enjoyment vs. Aversive Stimulation</td>
<td>Stimulation: &quot;Opportunities offered from which residents may choose, the extent of needed sensory stimulation, and the quality of social interactions.&quot; P. 17</td>
<td>Provide Opportunities for Stimulation: &quot;Sensory and social stimulation should be carefully regulated to avoid either deprivation or overload&quot;... &quot;it is essential to provide regulated stimulation and appropriate challenge.&quot; P. 31.</td>
</tr>
<tr>
<td>Safety and Security</td>
<td></td>
<td>Ensure Safety and Security: The environment should ensure that users sustain no harm physically or psychologically. P. 29.</td>
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<tr>
<td>Spiritual Well-being</td>
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<tr>
<td>Clarity of Structure</td>
<td>Maximize Awareness and Orientation: &quot;Program, policy, and design should all work to maximize the awareness and orientation of people with dementia to their physical and social environment, assisting them in knowing where they are in terms of time, place, and social situation so that they naturally engage in appropriate behaviors.&quot; P. 31.</td>
<td></td>
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<tr>
<td>Functional Competence</td>
<td>Functional Ability: The environment should support the maintenance of those abilities not impaired by dementia. P. 30.</td>
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Table 2. cont.
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<thead>
<tr>
<th>Quality Indicators</th>
<th>Analysis of Existing Research / Source</th>
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</thead>
<tbody>
<tr>
<td>Autonomy</td>
<td>Autonomy support: “The ways in which the facility encourages and supports residents to use their remaining faculties to carry out basic tasks and activities independently, and with dignity, including enabling staff to avoid being overprotective.” P. 700.</td>
</tr>
<tr>
<td>Privacy</td>
<td>Options for Privacy: The extent to which the environment allows residents to meet their needs for privacy. P. 113.</td>
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<tr>
<td>Dignity</td>
<td></td>
</tr>
<tr>
<td>Social Interaction</td>
<td>Options for Interaction: The extent to which the environment allows residents to meet their needs for social stimulation. P. 113.</td>
</tr>
<tr>
<td>Meaningful Activity</td>
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<tr>
<td>Individuality</td>
<td>Homelike Setting: The availability of access to interesting or familiar objects which residents can look at and interact with and a familiar setting which residents can relate to their past. P. 111.</td>
</tr>
<tr>
<td>Enjoyment vs. Aversive Stimulation</td>
<td>Optimal Stimulation: The environment should provide adequate social and spatial stimulation that allows residents to choose the desired level of privacy or social interaction. P. 112.</td>
</tr>
<tr>
<td>Safety and Security</td>
<td>Resident Safety: The environment’s ability to permit staff supervision of residents and a secure environment that reduces harm to residents. P. 111.</td>
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<tr>
<td>Spiritual Well-being</td>
<td></td>
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<tr>
<td>Clarity of Structure</td>
<td>Cues: The environment’s ability to provide sensory cues that enable residents to identify the function of a space and to permit resident interaction or activities. P. 112.</td>
</tr>
<tr>
<td>Functional Competence</td>
<td>Prosthetic: “Physical supports in the environment for residents to do things for themselves.” P. 700.</td>
</tr>
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Table 2. cont.


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<thead>
<tr>
<th>Quality Indicators</th>
<th>Analysis of Existing Research / Source</th>
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</thead>
<tbody>
<tr>
<td>Autonomy</td>
<td>Autonomy: &quot;Facility policies, practices, and staff permit and encourage residents to take initiative, make choices to direct their lives.&quot; P. S59.</td>
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<td></td>
<td>Autonomy and Control: &quot;Design and program elements may assist in providing opportunities for exercising control.&quot; P. 34-35.</td>
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<tr>
<td>Privacy</td>
<td>Privacy: &quot;Facility policies and practices and staff behavior show sensitivity to residents' modesty, desires to determine how and to whom their information and feelings are disclosed, desires to be alone, or to be unobserved with others.&quot; P. S59.</td>
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<td></td>
<td>Privacy: The environment should allow residents to choose their level of privacy. P. 35.</td>
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<tr>
<td>Dignity</td>
<td>Dignity: &quot;Facility policies and practices and staff behavior maintain and promote residents' sense of dignity and do not belittle, devalue, or humiliate residents.&quot; P. S59.</td>
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<tr>
<td>Social Interaction</td>
<td>Relationships (Interactions): &quot;The facility policies and practices promote and do not deter residents' ability to have meaningful person-to-person interchanges with other residents, staff and family and friends outside the facility.&quot; P. S59.</td>
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<td></td>
<td>Promoting Socialization: The environment should promote social interaction to allow residents to maintain good social skills despite their declining abilities. P. 35-36.</td>
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<tr>
<td>Meaningful Activity</td>
<td>Meaningful Activity: &quot;The facility policies and practices and the behavior of staff encourage residents to engage in tasks and activities that interest or stimulate them.&quot; P. S59.</td>
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<tr>
<td>Individuality</td>
<td>Individuality: &quot;Facility staff are aware of residents' preferences and interests, and facility policies and practices and staff behavior promote each resident's individuality. Staff behavior and residents' immediate environments shows markers of the residents' backgrounds and present interests.&quot; P. S59.</td>
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<tr>
<td>Enjoyment vs. Aversive Stimulation</td>
<td>Enjoyment: &quot;Facility policies, practices, and staff behavior promote resident enjoyment.&quot;... &quot;Residents engage in discretionary behavior, either active activity or passive observation, that they find interesting, stimulating, and worthwhile.&quot; P. S59.</td>
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<td>Controlling Stimulation: The environment should limit extraneous stimuli. P. 37.</td>
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<tr>
<td>Safety and Security</td>
<td>Security/safety: &quot;The facility does all possible to produce the perception of safety and security, to enable residents to move about freely, to keep their possessions intact, to present expectations clearly and to apply them fairly and flexibly.&quot; P. S59.</td>
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<td></td>
<td>Assuring Physical Safety and Enhancing Psychological Security: Environment should enable patient functioning without harm and provide cues so that residents feel comfortable and familiar. P. 33-34.</td>
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<tr>
<td>Spiritual Well-being</td>
<td>Spiritual well-being: &quot;Policies, practices and staff behavior show respect for each resident's religious beliefs and practices and moral values and facilitate their needs for religious observation, prayer, and meditation.&quot; P. S59.</td>
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<tr>
<td>Clarity of Structure</td>
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<tr>
<td>Functional Competence</td>
<td>Functional competence: &quot;Policies, practices, and staff behavior encourage and do not discourage residents from being independent around self-care, care of their environment, or mobility.&quot; P. S59.</td>
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Table 2. cont.
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<tr>
<th>Environmental Artifacts of Culture Change</th>
<th>Autonomy</th>
<th>Privacy</th>
<th>Dignity</th>
<th>Social Interaction</th>
<th>Meaningful Activity vs. Aversive Stimulation</th>
<th>Safety and Security</th>
<th>Spiritual Well-being</th>
<th>Clarity of Structure</th>
<th>Functional Competence</th>
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<tr>
<td>18 Household is self-contained with full kitchen, living room, and dining room</td>
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<td>16 Residents have private rooms</td>
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<td>17 Residents in shared rooms have distinct territories with control over their side of the room without the need to trespass through the other resident's space</td>
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<td>X</td>
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<td>18 No traditional &quot;institutional&quot; nurses' desk</td>
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<td>19 Residents have direct access to a window in their room</td>
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<td>20 Residences bathroom mirrors are wheelchair accessible and/or adjustable in order to be visible to a seated or standing resident</td>
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<td>21 Wheelchair accessible sinks for wheelchair use by residents who do not have their own</td>
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<td>22 Adaptive/easy-to-use lever or paddle handles</td>
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<td>23 Adaptive handles, enhanced for easy use, for doors used by residents</td>
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<td>24 Clouds have movable rods that can be set to different heights</td>
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<td>25 Residents can decorate their rooms</td>
<td>X</td>
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<td>26 Home makes extra lighting available</td>
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<tr>
<td>27 HVAC is controlled by resident in their own room</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 Residents can have their own refrigerator in their room</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>29 Seating in public areas have a variety of seat heights</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 Gliders (lockable) are available inside and out</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 Home has store/gift shop available where residents and visitors can make personal purchases</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32 Residents can use a computer with assistive technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33 Workout room available to residents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34 Bathing rooms have functional and properly installed heat lamps, radiant heat panels, or equivalent</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>35 Home warms towels for resident bathing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 Protocled outdoor garden/patio accessible for independent use by residents</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37 Home has outdoor, raised garden available for resident use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38 Home has an outdoor walking/wheeling path which is not a city sidewalk or path</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>39 Pager/intercom system is used when resident calls register on staff's pager/intercom and staff can use it to communicate with fellow staff</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>40 Overhead paging system has been turned off or is only used in case of emergency</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41 Personal clothing is laundered on resident household/neighborhood/unit instead of in a general all-home laundry, and residents/families have access to washer and dryer for own use</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44 Private guest room available for visitors at no or minimal cost for overnight stays</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 Home has staff/restaurant/servants'cart available to residents, families, and visitors at which residents &amp; families can purchase food &amp; drink daily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46 Home has a special dining room available for family use/gatherings which excludes regular dining</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47 Kitchenette or kitchen area with at least a refrigerator and stove is available to families, residents, and staff where cooking and baking are welcomed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Table 3. Relationship between Quality Indicators and Artifacts of Culture Change.
<table>
<thead>
<tr>
<th>Item Analysis</th>
<th>The Cedar House</th>
<th>Catholic Care-Skilled</th>
<th>Catholic Care-Res</th>
<th>Wesley Towers</th>
<th>Midwirk Hills</th>
<th>Schwitz Villa</th>
<th>Environmental Artifacts of Culture Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of Special Care Dementia Unit</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>Household is self-contained with full kitchen, living room, and dining room.</td>
</tr>
<tr>
<td>100%</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>Residents have private rooms</td>
</tr>
<tr>
<td>75%</td>
<td>NA</td>
<td>yes</td>
<td>NA</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>Residents in shared rooms have distinct territories with control over their side of the room without the need to trespass through the other resident's space</td>
</tr>
<tr>
<td>67%</td>
<td>yes</td>
<td>yes</td>
<td>partial</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>No traditional &quot;institutional&quot; nurses' desk</td>
</tr>
<tr>
<td>83%</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>some</td>
<td>yes</td>
<td>yes</td>
<td>Resident bathroom mirrors are wheelchair accessible and/or adjustable in order to be visible to a seated or standing residents</td>
</tr>
<tr>
<td>83%</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>Adaptive handles, enhanced for easy use, for doors used by residents</td>
</tr>
<tr>
<td>?</td>
<td>no</td>
<td>no</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>yes</td>
<td>Closets have moveable rods that can be set to different heights</td>
</tr>
<tr>
<td>100%</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>Sinks in resident bathrooms are wheelchair accessible below sink for wheelchair</td>
</tr>
<tr>
<td>100%</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>Sinks used by residents have adaptive/ easy-to-use lever or paddle handles.</td>
</tr>
<tr>
<td>67%</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>Home makes extra lighting available. (note 1)</td>
</tr>
<tr>
<td>83%</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>HVAC is controlled by resident in own room</td>
</tr>
<tr>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>Residents can have their own ref in their room</td>
</tr>
<tr>
<td>83%</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>some</td>
<td>Seating in public areas have a variety of seat heights</td>
</tr>
<tr>
<td>50%</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>Gliders (lockable) are available inside and out.</td>
</tr>
<tr>
<td>33%</td>
<td>yes(a)</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes(a)</td>
<td>Home has store/gift shop/ cart available where residents and visitors can make personal purchases</td>
</tr>
<tr>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>Residents can use a computer with assistive technology</td>
</tr>
<tr>
<td>33%</td>
<td>yes(2)</td>
<td>no</td>
<td>yes(2)</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>Workout room available to residents. (note 2)</td>
</tr>
<tr>
<td>50%</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>?</td>
<td>Bathing rooms have functional and properly installed heat lamps, radiant heat panels, or equivalent</td>
</tr>
<tr>
<td>33%</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>Home warms towels for resident bathing</td>
</tr>
<tr>
<td>100/33%</td>
<td>yes/no</td>
<td>yes/no</td>
<td>yes/no</td>
<td>yes/no</td>
<td>yes/no</td>
<td>yes/yes</td>
<td>Protected outdoor garden/patio accessible for independent use by residents (note 3)</td>
</tr>
<tr>
<td>17%</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>Home has outdoor, raised gardens available for resident use.</td>
</tr>
<tr>
<td>67%</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>Home has an outdoor walking/ wheeling path which is not a city sidewalk for path.</td>
</tr>
<tr>
<td>33%</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>Pager/radio/ telephone call system is used where resident calls register on staff's pagers/radios/ telephones and staff can use it to communicate with fellow staff.</td>
</tr>
<tr>
<td>83%</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>Overhead paging system has been turned off or is only used in case of emergency</td>
</tr>
<tr>
<td>33%</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>some</td>
<td>no</td>
<td>no</td>
<td>Personal clothing is laundered on resident household instead of in a general all-home laundry, and residents/ families have access to washer and dryer for own use.</td>
</tr>
</tbody>
</table>

Table 4. Item Analysis of Artifacts for Each Site.
<table>
<thead>
<tr>
<th>Location of Special Care Dementia Unit</th>
<th>Family &amp; Community Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item Analysis</strong></td>
<td></td>
</tr>
<tr>
<td>The Cedar House</td>
<td></td>
</tr>
<tr>
<td>Catholic Care-Skilled</td>
<td></td>
</tr>
<tr>
<td>Catholic Care-Res</td>
<td></td>
</tr>
<tr>
<td>Wesley Towers</td>
<td></td>
</tr>
<tr>
<td>Mdwirk Hills</td>
<td></td>
</tr>
<tr>
<td>Schwitr Villa</td>
<td></td>
</tr>
<tr>
<td><strong>Family &amp; Community Artifacts</strong></td>
<td></td>
</tr>
<tr>
<td>Private guest room available for visitors at not or minimal costs for overnight stays</td>
<td>44</td>
</tr>
<tr>
<td>Home has café/ restaurant/ tavern/ canteen available to residents, families, and visitors at which residents and families can purchase food and drink daily (note 4)</td>
<td>45</td>
</tr>
<tr>
<td>Home has a special dining room available for family use/ gatherings which excludes regular dining</td>
<td>46</td>
</tr>
<tr>
<td>Kitchenette or kitchen area with a least a refrigerator and stove is available to families, residents, and staff where cooking and baking are welcomed.</td>
<td>47</td>
</tr>
<tr>
<td>83% yes yes yes yes yes no</td>
<td></td>
</tr>
<tr>
<td>17% no no no no no yes</td>
<td></td>
</tr>
<tr>
<td>100% yes yes yes yes yes yes</td>
<td></td>
</tr>
<tr>
<td>83% yes no yes yes yes yes</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

- a. Gift shop is at the main building

- 1. Most indicated families could bring additional lighting if desired.

- 2. No dedicated room with only exercise equipment. Some had equipment on the household or a multipurpose room for exercise time.

- 3. Almost all outside areas required staff to enter a code to unlock the door, even if the courtyard was secured and could easily be viewed from the interior spaces.

- 4. Not always daily. Most all units have snacks available for residents to access easily.

Table 4. cont.
Figure 1. Cedar House in McPherson, KS has individual resident rooms that supports resident autonomy. Photograph taken by Migette Kaup.

Figure 2. Artifact 17 is demonstrated in shared rooms at Meadowlark Hills in Manhattan, KS. Photograph taken by Migette Kaup.
Figure 3. The Catholic Care Center in Wichita, KS has a kitchen and dining area that supports social interaction. Photograph taken by Migette Kaup.

Figure 4. The Cedars in McPherson, KS has a kitchen, living room, and dining room that supports social interaction. Photograph taken by Migette Kaup.
Figure 5. The Catholic Care Center in Wichita, KS has varying seat heights that support resident functional competence. Photograph taken by Migette Kaup.

Figure 6. The Cedars in McPherson, KS have sinks that are wheelchair accessibility that support resident functional competence. Photograph taken by Migette Kaup.
Figure 7. Faucet in resident restroom at Wesley Towers in Hutchinson, KS that supports functional competence. Photograph taken by Migette Kaup.

Figure 8. The Catholic Care Center in Wichita, KS uses lever style handles that support functional competence. Photograph taken by Migette Kaup.
References

(APA)


Volicer, L. Goals of dementia special care units. In D. Holmes, J. A. Teresi, & M. Ory (Eds.), Special Care Units (pp. 93-103). NY: Springer Publishing Company.


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i The most prevalent form of dementia is Alzheimer's disease (AD), a chronic brain disease that progresses gradually from slight memory loss to confusion, behavior, impaired judgment, and personality changes (Brawley, 2006, p. 18; Calkins, 1988, p. 4).

ii These QIs have been validated through research tools such as the Professional Environmental Assessment Protocol (PEAP) (Lawton et al., 2000; Norris-Baker et al., 1999).
Designing a Law Library:  
Assessing the Building and the Team Problem Solving Process  
Jennifer C. Lamar, MID and Mary Joyce Hasell, DArch  
University of Florida  

Abstract  

The purpose of this study was to assess the users’ satisfaction with a recently constructed law library on a university campus 18 months after its occupation in 2005 (see Appendix A for photographs and plans). Pre-design research for the project began in 1999 with the law college’s faculty, staff and students in discussions and workshops facilitated by the university’s interior design department’s faculty and students. The project was planned and completed using an action research partnership. Action research (AR) is a team approach to problem solving. The research part aims to gather pertinent information about the design problem from the users; and the action part ensures the users’ democratic participation in the design solution. In addition to assessing the public university library building, this exploratory study investigated the efficacy of using AR as a team problem solving approach for the planning and designing.

The study used a multi-method process and triangulation with both qualitative and quantitative measures. We addressed and answered the following three questions:

1) How effectively did the pre-design program (building criteria) capture the needs, dreams, and values of the stakeholders?

The pre-design program was compared with the university’s pragmatic RFP program (circa. 2000), the final architectural program (2001) and the completed building (2005). A high degree of similarity of criteria across these three
programs and the final building indicated that the stakeholders’ involvement contributed to solving the design problem (see Appendix B).

2) **How satisfied are the current library staff and students with the real-world library?**

Surveys were administered to 100 students and 14 staff members. The sixty item closed and open-ended questions were based upon an AR Subjective Assessment Framework that included functional, technical, psychological and ambient dimensions (see Appendix C). A rating scale of 1 (very satisfied) to 7 (very dissatisfied) indicated a respondent’s satisfaction level with the completed building.

3) **How satisfied with the AR approach are the key participants who were involved in the planning process?**

The library director, former dean, project architect and staff members participated in unstructured interviews. The interviews were transcribed and verified for accuracy by the participants. In their own words, they shared thoughts, opinions, and stories about the value of the collaborative process.

Collectively the findings revealed that the AR approach to the planning and designing of the law library was successful. 1) The stakeholders were effectively involved in solving the problem. Eighty-five percent of the building criteria listed in the preliminary program was implemented into the final building. 2) Both the law library staff members and current students reported being satisfied with the building. The average overall staff score was 2.40 on a 7-point scale where one is very satisfied. The average overall student score was 2.70 on a 7-point scale. 3) Participants’ interviews revealed an appreciation for the AR process and the quality of the building.
This study’s findings are significant for architects and interior designers who plan mid- to large-scale facility projects. Insights about how to best satisfy the clients and stakeholders alike are shared.
Designing a Law Library: Assessing the Building and the Team Problem Solving Process

Jennifer C. Lamar, MID and Mary Joyce Hasell, DArch
University of Florida

Narrative

The purpose of this study was to assess the users’ satisfaction with the recently constructed Lawton Chiles Legal Information Center (LIC) on the University of Florida campus 18 months after its occupation in 2005 (see Appendix A for photographs and plans). Pre-design research for the project began in 1999 with the Levin College of Law’s (LCoL) faculty, staff and students in discussions and workshops facilitated by the College of Design, Construction, and Planning’s (CDCP) interior design faculty and students. The project was planned and completed using an action research partnership. Action research (AR) is a team approach to problem solving. The research part aims to gather pertinent information about the design problem from the users; and the action part ensures the users’ democratic participation in the design solution.

Using an AR planning process, a preliminary programming document was created by the CDCP facilitators. Then, the University of Florida’s Facilities Planning and Construction (FP&C) office used the original AR program to create a Request for Proposals (RFP) document that was posted on their website for architectural firms to bid on the project. After interviewing six short-listed applicants, design and construction teams were selected to design and build the library. The selected architectural firm was instructed to review the RFP program and verify the building criteria and users’ needs. By conducting a post-occupancy evaluation, this exploratory study investigated both the efficacy of using AR as a team problem solving approach for the planning and designing
of the facility and how this comprehensive approach contributed to a successful building project from the end-users point of view.

Over the past decade thousands of new school buildings and renovations (K – 12) have been constructed in the U.S.; however, only a small percentage of these will ever be evaluated to discover if these new facilities satisfy the students, faculty, and staff. (Lackney, 2001:1). The same is true for university campus buildings. Post-occupancy evaluations (POE) of higher education buildings are valuable resources to guide designers away from repeating similar mistakes. Published case studies can help designers to build upon successful building elements to make new designs even better. POEs also inform facility managers about future renovation needs.

Numerous methods can be used to conduct a POE. The purpose of the LIC case study POE is to focus on users’ satisfaction with the project and thus to evaluate the success of an AR programming and planning process. Lackney, an expert in designing school environments, states, “we were warned early on in the development of the POE that in order to evaluate solutions effectively, the design and planning process must be included” (Lackney, 2001:4). Therefore, this study returned to the beginning and evaluated the planning process to discover whether or not and how the early planning efforts translated into a satisfying building.

The study used a multi-method process and triangulation with both qualitative and quantitative measures to ascertain the validity of the results. The study was divided into three parts to examine three different aspects of the LIC and its planning process. Examination of these three research processes disclosed the success or failure of the AR method in this setting. We addressed and answered the following three questions:
1) How effectively did the pre-design program (building criteria) capture the needs, dreams, and values of the stakeholders?

The AR program was compared with the university’s pragmatic RFP program (circa. 2000), the final architectural program (2001) and the completed building spatial analysis (2005). The objective was to determine whether user satisfaction with the LIC could be attributed to the AR planning process. The study did find a high degree of similarity of criteria across these three programs and the final building. Together the findings indicated that the stakeholders’ involvement contributed to solving the design problem satisfactorily (see Appendix B).

2) How satisfied are the current library staff and students with the real-world library?

Surveys were administered to 100 students and 14 staff members. The sixty item closed and open-ended questions were based upon an AR Subjective Assessment Framework that included functional, technical, psychological and ambient dimensions (see Appendix C). A rating scale of 1 (very satisfied) to 7 (very dissatisfied) indicated a respondent’s satisfaction level with the completed building. If the current end-users were satisfied, then the project was successful and AR planning efforts were valuable planning and designing tools.

3) How satisfied with the AR approach are the key participants who were involved in the planning process?

The library director, former dean, project architect and staff members participated in unstructured interviews. The interviews were transcribed and verified for accuracy by the participants. In their own words, they shared thoughts, opinions, and stories about the value of the collaborative process. The in-depth interviews
provided a holistic view about the planning and designing process from multiple perspectives.

Collectively the findings revealed that the AR approach to the planning and designing of the law library was successful. 1) The stakeholders were effectively involved in solving the problem. Eighty-five percent of the building criteria listed in the preliminary program was implemented into the final building. 2) Both the law library staff members and current students reported being satisfied with the building. The average overall staff score was 2.40 on a 7-point scale where one is very satisfied. The average overall student score was 2.70 on a 7-point scale. 3) Participants’ interviews revealed an appreciation for the AR process and the quality of the building.

AR proved to be a valuable process for helping the College of Law to gain a collective vision for the LIC from students, staff, administration and designers. The AR preliminary program also assisted the LCoL in raising funds for the project by showing potential donors all of the spadework that had already been done and how committed the college was to building a high quality facility. Not only do these findings support the success of the AR planning partnership, but it promises to be a viable model for future stakeholders who want to participate in planning other complex facilities.

As mentioned earlier, the POE was expected to facilitate both the building evaluation and the process. Knowledge about whether a facility is successful or not in serving the needs of the users and the organization and why is valuable. Knowing how this was achieved is also valuable. For example, who was involved? How was the information gathered and organized? How was it utilized and synthesized? In this study, the detailed collaborative process was found to be successful and satisfactory to
the key participants in the process. This may be due to the wide range of user participation throughout the planning phase and the design phase. The stakeholders took responsibility for their facility rather than relying on the architects to be the “experts.” Ed Tsoi, the chief architect from Tsoi/Kobus & Associates, stated the following during a presentation that he made at a recent law library conference.

You shape the way the architect sees the problem. How the design team communicates with you, and how you communicate with them is critical in terms of determining the outcome. You should not expect that the designers are conversant with all of the subtleties of what you are dealing with. You have to be able to communicate it and communicate it clearly. (Tsoi, 2006)

Communication is critical. The AR process started the collaborative process, and the preliminary AR program clearly communicated the needs of the users and the law school to the design team.

In addition, it was imperative that the right project design team was chosen. Howie Ferguson, the Senior Project Manager of the LIC, stated that this decision is very important because they need be able to work collaboratively not only with the users and stakeholders of the facility, but also the facility’s project manager, contractor, code and permitting officials. The selection of the architect should not be based solely on their impressive resume of similar facility types. All of the work during the AR preliminary programming process could have been lost if a design team did not understand the culture of the LCoL and their desire for the project to be collaborative. It could have also been lost if the design team completely ignored the CDCP program. However, it was utilized. In addition, Ferguson stated that the CDCP program was “largely a benefit in intangible ways” (Ferguson, personal communication, February 7, 2007). It was a catalyst for getting the LCoL to think and dream; it helped demonstrate to A/E applicants how seriously the LCoL considered satisfying the stakeholders needs.
Future research about action research (Boog, 2002) and how it relates to the
design and planning process is needed. Some practitioners currently use this method
and have published case studies (Greenwood, Whyte, & Harkavy, 1993; Horgen &
Sheridan, 1996; Sanoff, 2002). Nonetheless, formal research about the effectiveness of
AR approaches in the planning process is scarce. These authors recommend that
comparative research among similar facilities designed using different planning and
design processes are needed to begin to improve both design processes and buildings.
APPENDIX A

First floor plan of final law library design

Second floor plan of final law library design
Law library reading room
APPENDIX B

Summary of the verification checklists that ascertained how many of the users' needs, dreams, and values that were expressed in the pre-design AR program were included in the sequential steps in the planning and design of the library: the Request for Proposals documents, the architectural program, and the final building design.

<table>
<thead>
<tr>
<th>DEPARTMENT/AREA</th>
<th>RFP DOCUMENT</th>
<th>ARCH PROGRAM</th>
<th>FINAL BUILDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBLIC SERVICES:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>CIRCULATION DESK &amp; ENTRY AREA</td>
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<td>100%</td>
</tr>
<tr>
<td>MIRCOFILM COLLECTION</td>
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<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>STUDENT STUDY AREAS</td>
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<tr>
<td>COLLECTION SERVICES:</td>
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<tr>
<td>TOTAL:</td>
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<td>40.00%</td>
<td>85%</td>
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</tbody>
</table>
APPENDIX C

Action Research Subjective Assessment Framework
REFERENCE LIST
(American Psychological Association Style)


A Critical Analysis of the Academic Review Process

Thelma Lazo-Flores, Ph.D.

Ball State University

Abstract

With the ever changing design landscape, many academic institutions initiate an Academic Program Review process every three to five years to further enhance the quality of their learning environments and maintain the relevance and competitiveness of their disciplines. The process of this comprehensive evaluation is distinct in every institution with the variations being dependent on the plethora of purposes it intends to satisfy. Academic groups involved in the methodological study of institutional effectiveness and quality assurance matters note that the Academic Program Review process falls within several scales of significance. First, it is being used as a self-critical scheme for institutional-wide strategic planning; second, it is designed as a qualitative assessment tool intended for institutional accreditation leading to academic partnerships, franchise agreements and validation of awards, and third, it is a systematic approach of periodic evaluation intended to further improve particular disciplines within an academic school.

In this research paper, the author seeks to discuss in-depth the relevance of the Academic Program Review process within the current context of educational practices and professional trends in interior design curricula. Further, this paper also intends to frame the discussion within the parameters of critical theory and analyze several relevant aspects namely; the contextual significance of the process, the illustrative
extent of data needed, the engagement of the departmental faculty, the participation of other independent bodies, the inclusive mechanisms within the administration, and the comparative review of existing models to foreground distinct or similar approaches.

This research was taken from the critical study of program review models, analysis and synthesis of dialogues and interactions with faculty, undergraduate and graduate students and industry representatives, and the qualitative review of academic reports from six institutions. The author also renders in the background an experiential narrative of the various program review processes she has actively participated over a period of eight years. The summative result of the study will provide a valuable amount of insights which could lead to a structural template or paradigm of an Academic Progress Review process useful and adaptable for the interior design discipline.
A Critical Analysis of the Academic Review Process

Thelma Lazo-Flores, Ph.D.

Ball State University

Narrative

Purpose

Changing paradigms in higher education continue to transform new knowledge domains and likewise result into diverse and challenging issues to the academic environment. One impact of change can be construed in the evolving quality of academic program reviews of design disciplines as institutions redefine their constant equilibrium with society.

This thematic study on the program review spins off from the author’s global participation in several evaluation activities of the interior design degree and other related design disciplines over a period of eight years and spanning four continents. It has been noted that academic institutions pursued different schemes and are engaged in this tedious task and challenging process with distinct agendas ranging from simple curricular changes to major academic merger or acquisitions. As institutions are distinctively structured from one another, the study highlighted a plethora of motivations and goals on why the review process is both considered as a meaningful and highly critical academic activity. Some design programs work on strong mission statements and anchor all their competitive strategies for learning schemes, faculty resources, and physical resources to it. Primary academic motivations of the review can be linked to
seven distinct purposes. One, it is a mandated process in which an institution concludes a summative and critical report responding to the required governmental standardization procedures. Two, a department or program undertakes the process as it seeks professional accreditation. Three, a school of multiple design disciplines goes through the process with a degree validation agenda, where one school seeks for their diploma programs be evaluated and declared as the equivalent of the diploma of a larger and more established foreign institution. This practice is highly common in the Far East having partners in US, Europe and Australia. With successful results, both institutions are linked as academic partners with the validated school earning the prestigious opportunity to deliver topped-up degree programs and grant a similar award to their home-grown graduates. Four, institutions continually go through the process as a self-critical scheme to competitively shape up their programs with the assistance of appointed advisory members or contracted external examiners. Five, other academic environments state their review process as part of a complimentary mechanism for the annual assessment cycle. Six, other departments or schools are internally reviewed by a president-appointed task force assigned in assessing the continuous viability of a program suffering from a declining student body, in evaluating the possibility of merging related disciplines and, in reviewing and maximizing use of resources, more likely in the context of faculty and facility. Lastly, the review process is also taken as a significant tool to pursue an institutional-wide strategic planning in the context of initiating larger ambitions such as international franchise agreements or an upgrade in institutional category or status.
With so many distinct academic goals, the entire process foregrounds a wide array of evaluative processes and challenging schemes, even revealing many facets of institutional governance that is captured in both praise and pitfall. From multiple angles and different models, this paper seeks to illustrate the key components in facilitating the review process, define the prevalent variants and invariants therein, and construe the participation quality of the faculty, administrators, industry representatives, students, alumni and staff.

Process

The current conjunctures in critical approaches inspired the contextual analysis of this thematic study. Experiential data collected by the author was analyzed and synthesized in the context of critical theory. Popkewitz and Fendle (1999) defined “critical theory as an approach addressing the relations among schooling, education, culture, society, economy and governance” (p.xiii).

Experiential data served as the primary data utilized in this study, and are indicated in documented dialogues, interviews and interactions with external examiners, advisory members, administrators, faculty, alumni and students; and program review reports, annual reports, departmental academic monitoring reports, accreditation reports, advisory reports and assessment reports. The author took this derivative study from her lengthy career in different institutions located in four continents. As such, it was necessary to maintain the anonymity of the institutions as such body of knowledge form part of privileged information accessed in previous academic years.
First, key components of a typical program review were evaluated in terms of the structure of data, documented evidence and extent of usage. The study elucidated the prevalent values and issues in the process. Common issues are manifested in the ideation of the mission and vision of the program and how such is linked to the university mission statement, curriculum and methods that articulate student learning outcomes, evidence of an assessment procedure and use of results for improvement, size and stability of the program, market or employment demand, industry trends and expectations, programs for collaborative practice or joint immersive learning schemes, current facility resources, faculty profiles and faculty development programs, and alumni accomplishments and post-learning years' involvement. All components were subsequently compared with program reviews associated with a professional accreditation, university accreditation, and degree or postgraduate award validation.

Second, essential information were retrieved and synthesized from documented dialogues and interaction with over fifteen hundred personalities representing external examiners, professional industry representatives, advisory members, administrators, design educators, alumni and students. Data included a wide spectrum of reports, minutes of meetings, surveys, feedback summary sheets, and the author’s digitized personal notes outlining essential discussion points. Such body of information was compared across institutions and synthesized in the context of participation quality, validity of facts, variance of issues and level of acceptability.

Third, institutional timelines for review, sequence of the evaluation, and use of graded materials, catalogues and exhibitions as articulation of student success were also noted and cross-evaluated to further demonstrate the quality of the process.
Summary

In the in-depth evaluation of the key components of the typical program review and in comparison with the current schemes used in accreditation and validation process in other continents, a number of interesting variants were found. The basic structure of the academic report template showed that a typical US review model indicates ten key components, while the UK, Australian and East Asian template exceeded the US template by five items.

Five important aspects are notably included in the UK model and some selected Far East review processes, which to date are not fully explored in the US format. One is the use of a benchmarking document or a comparative report of other institutions with interior design program, and is considered useful for the strategic positioning of an institution. Second, a program specification document that explicitly explains the intended outcomes in terms of student knowledge, understanding, skills and other attributes. Third, an extensive program specification outlining the detailed teaching approaches and learning strategies in a program. Fourth, the evident use of a program regulation document showing the admission process, progress review, examination, and completion in a program. Lastly the program’s policy and procedural document embodying the handling of student forum, feedback, appeals and complaints within a structured design discipline. If one rationally looks into the items not being fully explored in US models, it can be discerned that minimal documentation is prepared in the areas of mapping the desired program outcomes, the schemes enabling students’
level of achievement, the quality of transparency and accessibility across faculty, reviewing members and administrators. They also illustrate in many facets the prevailing vision, governance and internal tensions therein.

Many common items appear in both UK and US templates but are at times misleading since they are grouped under various headings. The most obvious difference can be seen along the content on assessment strategy and rationale. The UK review process is far more advanced in detailing their assessment criteria and the relationships of the learning outcomes to the progression requirements. Each course has a well-defined assessment rubric that is accessible to all faculty members. Documents also state that there are even departmental meetings where all faculty members review, assess and mark capstone projects. It can also be noted that there is a higher articulation of formative, summative and diagnostic assessment procedures in the UK model which are seldom discussed in US program reviews. However, with the recent addition of departments focused on assessment in recent years, more US models are now beginning to address this documentation process. Several Far Eastern program reviews have adapted the UK model as early as the late 90s.

The spectrum of institutional and independent participants in the review process also manifests the diverse qualities of involvement. The scale of involvement is reflected in variations of time-bound participation, passionate commitment and even the academic adherence in using the essential assessment documents. However, in whatever model, the collective desire for the success of the program review is highly evident by looking at the diverse inputs of all players into process.
Faculty commitment is protracted across individuals, but surprisingly does not vary much across institutions. The tedious task of engaging them in the preparation and collection of documents is far from fun. One aspect that was observed to be common in all models is the apprehension when it comes to standardization of faculty profiles were degrees, research, grants and professional development are requested.

One uncommon participant in a US review model is the presence of an external examiner who participates in the thesis or final project evaluation, who interviews each graduating student on their overall learning process, who votes with the team of faculty for the grade or degree. The external examiner also submits a semester report on the assessment procedure, quality of works reviewed, quality of faculty involvement, and makes recommendation on the future development of the program to the dean and the higher administrative body. Apparently, the external examiner is very common in UK interior design disciplines and has also been a significant addition in the Far East in recent years.

It has been noted that a good mixture of professionals and academic experts sit in all review boards. Memberships vary in terms of length of time, but more successful models have their members commit for a two to three year term to see a continued thread of active inquiry, evaluation, feedback and resolution.

Another prevalent practice in the UK model is the participation of administrators and staff in the program review process. The review process mandates for a key representative in admission, registrar’s office, international office, library, technology office, etc. to demonstrate their respective roles towards the success of a program.
Other department chairs and deans in other disciplines also participate and share their vision in developing or promoting interdisciplinary activities.

Students are noted to be engaged in the process with different agendas. Oftentimes, students see their encounter with the advisory or accreditation board as a whining opportunity. Few students view the review as a constructive process on the quality of the program, provided feedback on learning mechanisms, and see this as a platform for their future assimilation into the professional world. Some institutions pre-select the students who will attend the review to filter the achievers from the slackers. However, some review committees will spread out and move around campus and rooms to interact with students. They see that students share more information when they are not in formal dialogues. Alumni on the other hand welcome this review process with a positive view where the younger alumni see the process as shaping the program competitively and will provide added value to their degrees over time.

When it comes to institutional timelines for review, most reviews need one academic year preparation in order to significantly articulate the full spread of strengths and weaknesses. This given timeline also allow groups to be able to respond to the issues and concerns of the previous year. Further, in order for a review to be more successful, one must show a good spectrum of graded materials in digitized versions, relevant student portfolios and competition projects, and prepare an exhibition of works that articulate all of the desired learning outcomes or at least present the capstone courses in every year level.
Conclusion

The academic review process across the globe surely manifests varied formats and templates dovetailed for any type of institutional agenda. At this stage of the study, the UK format is indicative of a more cohesive review process, defines a more inclusive participation from a wider spectrum of experts, and also reveals a more diverse data and very definitive contextual materials to access. However, we should not at all undermine the other models as they also construe parallel academic merits. This initial study serves as a springboard for further related researches with the goal of providing a directional approach and academic review matrix, which could potentially lead to an academically meaningful and inclusive facilitation of program evaluation for the interior design discipline in the United States.

Reference List
(APA Citation Style)

The relationship between indoor environmental quality design criteria and worker satisfaction and performance in LEED-certified buildings

Young S. Lee, Ph.D and Denise Guerin. Ph.D

Abstract

PURPOSE

The Leadership in Energy and Environmental Design (LEED), a green building rating system developed by the U.S. Green Building Council (USGBC) in 1998, has been a significant contributor to the current successful market transformation towards sustainable building design in built environment design practice in the U.S. The popularity of the LEED standards continues to grow and the LEED standards are now mandated in public as well as certain private building projects by many local governments. Intending to provide a framework for designing and evaluating sustainable built environments, the standards aim to provide better indoor environment quality (IEQ) for more comfortable, healthy, and productive indoor habitats for the occupants (USGBC, 2006). However, little research has been done to identify the IEQ design criteria that significantly contribute to occupants’ satisfaction and performance in workplaces of LEED-certified buildings. Finding IEQ design criteria that enhance or hinder worker satisfaction and performance is crucial to businesses’ economic success and better investment decisions. The purpose of this study was to examine the relationship between IEQ design criteria and occupants’ satisfaction with and performance in overall workspaces. Seven IEQ design criteria were examined in relation to overall workspaces quality by measuring occupant self-assessed satisfaction and performance in each design criteria.

METHOD

Data from the Occupant IEQ Survey database at the Center for the Built Environment at the University of California, Berkeley were used. Occupants from 15 LEED-certified buildings were sampled. Self-assessed worker satisfaction and performance were measured in seven IEQ design criteria including qualities of office layout, office furnishings, thermal comfort, indoor air, lighting, acoustics, and cleanliness and maintenance in the original survey. Worker satisfaction and performance with the seven criteria were correlated with worker satisfaction and performance with overall workspace quality. A Likert-type scale was used with seven choices from “very satisfied” to “very dissatisfied” for worker satisfaction, and a semantic differential scale from “enhances” to “interferes” for worker performance. Correlation analyses determined which IEQ design criteria were significantly related to overall workspaces quality measured via worker satisfaction and performance.
SUMMARY OF RESULTS

Preliminary findings indicate that worker satisfaction with overall workspace quality was significantly correlated to worker satisfaction with office furnishings quality. Worker performance in overall workspace quality showed a significant correlation with worker performance in office furnishings quality and indoor air quality. Office furnishings quality was positively associated with both worker satisfaction and performance. Office furnishings quality in the survey referred to the comfort of furnishings, ergonomic furniture, and aesthetic finishes. It is important to note that office furnishings quality is not a LEED IEQ design criterion whereas indoor air quality is a main focus in the LEED IEQ category. More emphasis on the importance of office furnishings quality should be given to create habitable workplaces for occupants as well as to contribute to clients’ business bottom line when designers comply with the LEED standards for workplace design.

REFERENCES

The relationship between indoor environmental quality design criteria and worker satisfaction and performance in LEED-certified buildings

Young S. Lee, Ph.D and Denise A. Guerin, Ph.D

Narrative

PURPOSE

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However, little research has been done to identify the IEQ design criteria that significantly contribute to occupants’ satisfaction and performance in workplaces of LEED-certified buildings. Finding IEQ design criteria that enhance or hinder worker satisfaction and performance is crucial to businesses’ economic success and better investment decisions. The purpose of this study was to examine the relationship between IEQ design criteria and occupants’ satisfaction with and performance in LEED-
certified workplaces. The study identified IEQ criteria that are significantly associated with worker satisfaction with and performance in overall workspaces. Seven IEQ design criteria were examined in relation to overall workspaces quality by measuring occupant self-assessed satisfaction and performance in each design criteria.

**CONTEXT**

LEED is a consensus-based national green building set of standards developed by a coalition of leaders in the U.S. building industry. The primary goal was to provide environmentally responsible, profitable, and healthy places (USGBC, 2005a). LEED standards have been leading the current sustainable building design movement nationally and internationally by rapidly affecting the design and building industry and shaping the sustainable building delivery systems (Kibert, 2005). Implementation of these standards has led researchers to investigate the environmental, economic, and social benefits of sustainable design. However, the ultimate success of a sustainable building design is dependent on its IEQ, which is often overlooked by researchers (Whole Building Design Guide, 2006).

IEQ directly influences building occupants by affecting the quality of their lives as they spend the most time indoors. The indoor environment is directly related to occupant comfort, health, and productivity. Furthermore, the workplace is where all these issues are crucial as employee satisfaction and performance contribute to organizational goals and outcomes. There is a consensus that better indoor environments contribute to increased worker satisfaction and performance (Leaman &
Bordass, 2005). But, there is no study focusing on which, if any, IEQ criteria are related to worker satisfaction and performance in sustainable buildings, especially in LEED-certified buildings. Identifying which IEQ criteria are related to worker satisfaction with and performance in overall workspaces in LEED-certified buildings is important because designers can then create better work environments that contributes to worker well-being and the economic success of businesses.

**LITERATURE REVIEW**

A need to promote sustainable building research that provides comprehensive solutions has been identified. The USGBC Research Committee responded to this need by identifying four national research agenda items. One of these items is ‘Buildings’ Interaction with Occupants’ that focuses on the impact of IEQ on occupants’ comfort, health, and performance (USGBC Research Committee, 2007). The USGBC’s emphasis demonstrates their awareness of the significant relationship between IEQ and occupants.

IEQ criteria support the quality of indoor environments for occupants in sustainable buildings. Adverse effects of indoor environments have caused health problems such as sick building syndrome (SBS), building related illness (BRI), and multiple chemical sensitivity (MCS), which directly threaten productivity and physical comfort from undesirable health conditions and the issues of general occupant well-being. IEQ includes various issues of the indoor environment such as layout, ergonomics, aesthetics, acoustics, artificial lighting, daylighting, indoor air quality (IAQ),
and thermal comfort (Whole Building Design Guide, 2006). But IEQ in many sustainable
design standards and guidelines, including LEED standards, refers to only mechanical
controls of the indoor environment such as IAQ, lighting, and thermal comfort. Of the
issues of IEQ, IAQ is the most frequently researched, as well as most funded issue
(Baum, 2007). Other issues include daylighting and thermal comfort. Most IEQ related
studies focus on the effects on occupant’s health (Kumar & Fisk, 2002). Fewer studies
explore relationships between IEQ and occupants’ performance.

This unbalanced view of IEQ issues raised a concern among the built
environment design professionals in achieving comprehensive solutions that totally
support a sustainable environment. Additionally, the prescriptive nature of LEED
standards concerned the built environment design community as there is no evidence
that the measures of LEED standards contribute to occupant’s satisfaction and
performance. Due to these concerns, many built environment professionals support the
need to use post-occupancy evaluation (POE) to evaluate occupants’ perception of
success of indoor environments of sustainable buildings (Heerwagen & Zagreus, 2005;
Marlin, 2003; Mendler, Odell, & Lazarus, 2005; Mendler, Woolford, & Bannon, 2006). It
is of increasing importance to identify the success or failure of workplaces in LEED-
certified buildings related to worker satisfaction and performance because commercial
offices show one of the highest commitments to implementing LEED standards
(USGBC, 2005b).

POE is a systematic evaluation of the effectiveness of design components in the
built environment based on occupants’ responses to their environment (Preiser, 2001).
It is frequently used as an evaluation tool for the built environment design professions to
assess the effectiveness of their designs in practice. One POE instrument used to evaluate sustainable buildings is the Occupant IEQ Survey developed by the Center for the Built Environment (CBE) at the University of California (UC), Berkeley. The CBE’s focus is to compare worker satisfaction and performance between sustainable buildings, which were a mix of LEED-certified buildings and self-nominated green buildings, and non-sustainable buildings. Findings of their studies reveal that occupants’ ratings of overall building, indoor air quality, and thermal comfort were significantly higher in sustainable buildings than non-sustainable buildings, but no difference was found in office layout, lighting, and acoustics between these buildings types (CBE, 2005). This is a great initial step in utilizing POEs to assess the IEQ levels in sustainable buildings, but little research has focused on the relationship between IEQ of LEED-certified buildings and their occupants. Moreover, there is no study focusing on the significant IEQ criteria associated with worker satisfaction and performance in LEED-certified buildings despite growing interest in the issue.

METHOD

This study examined worker satisfaction and performance between seven IEQ criteria and overall workspaces in LEED-certified buildings to identify which IEQ criteria, if any, were significantly related to worker satisfaction with and performance in overall workspaces. The study used a POE to correlate worker satisfaction and performance with IEQ criteria. Data from the Occupant IEQ Survey database at the CBE at UC, Berkeley were used. Occupants from 15 LEED-certified buildings were sampled. Self-
assessed worker satisfaction and performance were measured in seven IEQ design criteria including quality of office layout, office furnishings, thermal comfort, indoor air, lighting, acoustics, and cleanliness and maintenance in the original survey. Worker satisfaction and performance with the seven criteria were correlated with worker satisfaction and performance with overall workspace quality. A Likert-type scale was used with seven choices from “very satisfied (+3)” to “very dissatisfied (-3)” for worker satisfaction, and a semantic differential scale from “enhances (+3)” to “interferes (-3)” for worker performance. Correlation analyses determined which IEQ design criteria were significantly related to overall workspace quality measured via worker satisfaction and performance.

SUMMARY OF RESULTS

Preliminary findings indicate that worker satisfaction with overall workspace quality was significantly correlated to worker satisfaction with office furnishings quality. Worker performance in overall workspace quality showed a significant correlation with worker performance in office furnishings quality and indoor air quality. Office furnishings quality referred to the comfort of furnishings, ergonomic furniture, and aesthetic finishes. It is important to note that office furnishings quality is not a LEED IEQ design criterion. The findings of the study suggests that office furnishings quality should be considered as an important component of the IEQ criteria in LEED-certified office buildings, given its importance to occupant satisfaction and performance, which contribute to economic sustainability.
REFERENCES
(APA Style)


Cross-Cultural Analysis of Residential Design and Housing Behaviors: 
The Case of Korean Households in the United States

Eunsil Lee & Nam-Kyu Park, Ph.D
Michigan State University & University of Florida

Abstract

During the last two decades, the United States has experienced a significant increase in the total number of temporary visitors (sojourners) from 16.1 million entries in 1989 to 30.8 million in 2004 (US Department of Homeland Security, 2006). While the cross-cultural sojourner population is one of the fastest growing cultural groups, there is a lack of information about their housing perceptions and behaviors in the new residential environment of the host countries. Thus, the purpose of this study is (1) to examine how Korean sojourners in the U.S. perceive differences between residences in Korea and the U.S., (2) to describe how Korean sojourners change their housing behaviors to adapt to their new residences in the U.S. Oberg’s (1960) four phases of cultural adjustment and Morris and Winter’s (1978) model of housing adjustment provided theoretical background for this study.

A case study was conducted to collect more in-depth information. Twenty-seven participants were recruited through a stratified purposive sampling strategy. Interviews and observations were conducted in participants’ homes using a semi-structured interview protocol. Participants’ planned total time of sojourning ranged from one year to seven years, and their length of residence in the U.S. ranged from six months to six years.

Several themes emerged from interviews and observation. These themes of
perceived cultural differences are shown in Table 1. The distinctive characteristics of
Korean (Table 2) and the U.S. homes (Table 3) were presented using a framework of
the built environment’s meaning (Rapoport, 1988) and annotated floor plans of a typical
apartment in Korea (Figure 1) and one in the Lansing area of Michigan (Figure 2).

The results showed Korean sojourners perceived surrounding natural
environment and built-in storage as satisfactory residential attributes, while carpeted
floors, poor interior lighting condition, and noise as unsatisfactory residential features.
The results also indicated that Korean sojourner households typically deal with housing
changes in one of four ways including: 1) changing their behaviors to fit existing housing
attributes, 2) modifying existing housing attributes to fit their life style, 3) enduring
inconvenience, and 4) moving. These four behavioral types are influenced by length of
residence in the U.S. and planned time of sojourning in the U.S. These findings add to
designers’ understanding of how different cultures perceive and respond to the new
residential environment of their host country.

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Cross-Cultural Analysis of Residential Design and Housing Behaviors: The Case of Korean Households in the United States

Eunsil Lee & Nam-Kyu Park, Ph.D
Michigan State University & University of Florida

Narrative

During the last two decades, the United States has experienced significant growth in the number of temporary visitors who travel, study, or work abroad. The number of these temporary visitors to the United States is expected to continually add to (US Department of Commerce, 2007) as increased from 16.1 million in 1989 to 30.8 million in 2004 (US Department of Homeland Security, 2006).

A temporary visitor to another country for a short period of time is referred to as ‘sojourner’ (Kennedy, 1994). One of the most important tasks for cross-cultural sojourners is adjusting their thinking and behavior to fit the new environment. Since a house is not just a physical structure but a cultural phenomenon that is designed around the lifestyle of different groups of people (Rapoport, 1969), cross-cultural sojourners will especially have to adjust their behaviors to fit their new daily living house in the host countries.

While the cross-cultural sojourner population is one of the fastest growing cultural groups, there is a lack of information about their housing perceptions and behaviors in the host countries. Thus, the purpose of this study is (1) to examine how Korean sojourners perceive cultural differences in residential designs between Korea and the U.S. and (2) to describe how Korean sojourners change their housing behaviors to adapt to their new residences in the U.S.
Theoretical background

Considering cultural adjustment as a sequence of four different stages (Oberg, 1960), sojourners' perceived differences about residential design in the host country were explored. Oberg (1960) suggested that the four stages of cultural adjustment consisted of (1) “the honeymoon stage” - sojourners are excited about being in a new place, (2) “the crisis stage” - sojourners face cultural differences leading to culture shock, (3) “the recovery stage” - sojourners gradually discover how to better function in their new environment, and (4) “the adjustment stage” - sojourners are comfortable and function successfully in the new culture.

Housing behaviors of sojourners were explored based on Morris and Winter’s model (1978) of housing adjustment; families evaluate their housing conditions in terms of their norms. When families’ current housing conditions do not meet these norms, a deficit is generated. Whenever this normative deficit is perceived, a reduction in housing satisfaction results and a family responds to reduce the deficit. That is, dissatisfied families (1) move to other housing units, (2) modify their housing, (3) change their family make up, or (4) change their norms.

Literature review

Studies about the relationship between culture and physical environment found that individuals from different cultural backgrounds vary in their spatial behaviors (Canter and Canter, 1971; Hall, 1966; Lawrence, 1982) and culturally responsive housing is more likely to meet psychological and physical needs than physically sound housing (Brascugli, 1982), because culture shapes both physical environment and lifestyles (Rapoport, 1977, 1980).
In the studies about the housing adjustment of Korean immigrants (Lee, 1982; Lee, 1998; Song, 1990), socio-cultural attributes were indicated as important factors in creating satisfactory housing environments. Lee (1998) and Song (1990) also found length of residence in the host county was one of the influential factors for cultural adjustment. The longer a household resided in the host country, the less the household was dissatisfied with cultural differences in residential environment. Korean immigrants in the U.S. relieved housing deficiencies through mobility rather than through physical or behavioral changes (Lee, 1982; Lee, 1998), while student residents often slightly modified their rented apartment to better fit their cultural needs (Qadir, 1993).

Methodology

A qualitative case study was utilized to collect more in-depth and detailed information by focusing on a small number of people (Patton, 1990). Twenty-seven participants were recruited through a stratified purposive sampling strategy considering length of residence and planned total time of sojourning. All participants were Korean housewives, between 32 and 55 years old, and lived in rental apartments in the Lansing, Michigan, area. Interviews and observations were conducted in participants’ homes. A semi-structured interview protocol was used to ensure consistent coverage of important questions and each interview lasted approximately 60-90 minutes. Participants’ planned total time of sojourning ranged from one year to seven years, and their length of residence in the U.S. ranged from six months to six years.

Findings and Discussions

Perceived differences in residential design

The results of Interviews and observation showed Korean sojourners perceived
cultural differences in residential designs between Korea and the U.S. They include
typical housing type, housing orientation, shape of house, space layout, furniture,
lighting, interior material, types of heating, entrance, and bathroom (see Table 1).
Distinctive characteristics of a typical apartment in Korea (see Table 2) and the US (see
Table 3) were analyzed using a framework of the built environment’s meaning
(Rapoport, 1988) with annotated floor plans of a typical apartment in Korea (see Figure
1) and one in the Lansing area (see Figure 2).

Participants admitted their first impressions of the current apartment were more
negative (67%) than positive (33%). Interior lighting conditions and carpeted floors were
the most negative impressions, while exterior building appearances and views outside
were the most positive impressions. Other residential attributes mentioned as
satisfactory features in their current residences were built-in storage (i.e., number and
size of closets), a kitchen open to the living room, subsidiary service facilities (i.e.,
workout facilities, swimming pool), quietness, and layout of interior space. As
unsatisfactory residential attributes, carpeted floors, poor interior lighting condition, and
noise were most frequently mentioned. Cultural attributes including no water drain on
the bathroom floor, no shoe amenities in the entrance, type of heating system were also
mentioned as unsatisfactory residential features.

Adjustment in housing behaviors to the new residential environment

The results revealed newcomers with short-term sojourner plans presented the
greatest numbers of favorable features as well as the greatest number of complaints
about their housing. On the other hand, sojourners whose length of residence was over
four years cited the least number of complaints about their housing. This result suggests
that housing perceptions of sojourners can be explained to some degree by Oberg’s (1960) four phases of cultural adjustment. Newcomers seem to represent a mixture of “the honeymoon stage” and “the crisis stage”, sojourners who had stayed in the U.S, one to two years seemed to be in “the recovery stage,” and sojourners who had stayed in the U.S. over four years seemed to be in “the adjustment stage.”

Morris and Winter (1978) suggested four types of housing adjustments: (1) move other housing units, (2) modify their housing, (3) change their family make up, and (4) change their norms. The result of this study identified four patterns of housing adjustment behaviors of sojourners: 1) changing their behaviors to fit existing housing attributes, 2) modifying existing housing attributes to fit their life style, 3) enduring inconvenience, and 4) moving. Overall, sojourners with short-term sojourning plan tended to be more engaged in changing their behaviors to fit existing housing attributes or modifying housing attributes to fit their life style. Enduring inconvenience took place only for newcomers with short-term sojourning plan, while sojourner with long-term sojourning plan tended to move out when they were dissatisfied with their housing.

Depending on the length of residence in the U.S., respondents showed some differences and similarities in their housing perceptions and behaviors. Newcomers whose length of residence in the U.S. was six months or less, were dissatisfied with carpeted floors (82%), dim interior lighting (91%), noises (91%); while carpeted floors (38%) and outdated structures (38%) were considered as unsatisfactory by those whose length of residence in the U.S. was over four years.

The results indicated that it takes Korean sojourners a long time to be comfortable with a carpeted floor. The results also showed newcomers were more
dissatisfied with the lack of cultural amenities in their current housing while long-term sojourners were more concerned with physical attributes such as outdated structures or furnishings. Sojourners’ attitudes about cultural attributes tended to change from cultural translocation to cultural transformation with sojourners’ length of residence in the U.S.

Conclusion

This study investigated how Korean sojourners perceive cultural differences in their housing environment in the U.S. and how they respond and adjust to their new housing environment. The findings of the study suggest that it is important to provide more variability in housing design to satisfy various cultural needs for different cultural groups within our society. By using as an example the Korean culture group, a greater understanding of individual cultural differences was discovered.

This study is expected to help improve the housing environment for various cultural groups in their host country by helping housing professionals to effectively work on ill-defined housing problems related to different culture groups. Future study should be conducted on a larger sample from other geographic regions in the United States as well as other countries for a variety of ethnic and cultural groups.
References
(APA Style)


Abstract

Employer expectations regarding new hires in the interior design field and their Computer Aided Design (CAD) skills have changed in recent years. Employers are now requiring graduates to have already attained solid computer skills during their undergraduate work. The purpose of this study was to determine employers’ expectations for interior design graduates regarding their two-dimensional and three-dimensional Computer Aided Design (CAD) competencies as well as their expectations of general computer technology skills. As there is an assumption that an increased emphasis has been placed on the importance of and dependency on the use of technology in the workplace over the past several years, this study also sought to determine how the design knowledge of interior designers who are users of CAD and other types of technology has increased over time as a result of the amplified use of CAD in the workplace.

Telephone interviews were conducted for this study with 30 interior design professionals. Fifteen participants were interior design directors whose firms were chosen at random from Interior Design Magazine’s Top 100 Giants (Davidsen, 2004). The remaining 15 participants were interior designers from the same firms who had been recommended by the directors and who had been employed with the firm for between two and six years. The 30-minute telephone interviews were coded and resulting data were analyzed using the Grounded Theory method (Strauss & Corbin,
1998) to determine the patterns of expectations of employers and the changes occurring in the field of interior design as a result of increased technology use.

Findings revealed that employers are expecting new hires to have more than basic skills of CAD programs for two-dimensional design, as well as an awareness of advanced programs that employ three-dimensional design. They also reported that with the increased use of technology comes an increase in the expectations of the types of work interior designers perform on a daily basis. The employers also expressed that while recent graduates come to the job market with a variety of technological skills, these skills sometimes tend to conceal the designers' basic knowledge of design skills.

The interior design community benefits from this study. The study results may enhance educators' understanding of employers' expectations when they hire interior design graduates which may in turn positively impact learning outcomes of graduates. This research also has potential for helping the profession understand the ramifications that the increase in technology has had and will continue to have on the profession. A national survey of interior design professionals can be conducted based on this exploratory study. Such a survey will allow generalization to a broader population of the interior design professions. A barrier faced by those interested in the impact of CAD use in the design community has existed as a result of significant lack of appropriate data with which to examine the many aspects related to CAD use in design related fields.

References


Technology in Interior Design Firms: The Changing Face of Design
Melinda Lyon, Shiretta Ownbey, Ph.D., Mihyun Kang, Ph.D. and Lisa V. Frey Ph.D.
Oklahoma State University

Narrative

Purpose

The purpose of this study was to determine employers’ expectations for interior design graduates regarding their two-dimensional and three-dimensional Computer Aided Design (CAD) competencies as well as their expectations of general computer technology skills. As there is an assumption that an increased emphasis has been placed on the importance of and dependency on the use of technology in the workplace over the past several years, this study also sought to determine how the design knowledge of interior designers who are users of CAD and other types of technology has increased over time as a result of the amplified use of CAD in the workplace.

Review of Literature

Technology in the field of interior design is becoming an increasingly important tool in the day-to-day tasks performed by interior designers (Custer, 1999). The past several years have seen rapid changes in the types of technology available and the influence technology has had on the interior design profession. Computers have changed the way designers work and interact, and in turn, have affected every aspect of the design profession. The computer has become a powerful tool and has changed designers’ concept of the way they function (Caplan, 2005). Designers not only rely on the internet, word processing, and facsimiles on a daily basis, but they also rely on
technology as a means of design implementation, resource generation, and data gathering. The numerous forms of technology have become an integral part of our everyday life (Custer, 1999). Consequently, employers are requiring graduates to have attained solid technology skills during their undergraduate work. They are expecting the new hires to have a working knowledge of many different types of computer technologies, and particularly to have a certain level of expertise in computer drafting technologies. According to Laiserin and Linn (2000), technology is influencing the core understanding of design. For instance, designers are using technology as a tool in problem solving (Taute, 2005). Technology can make it easier for designers to determine end solutions which should ensure these designers have a deeper understanding of the basic concepts of design.

As the world becomes smaller, workplace expectations change. Globalization in the workplace is integrated more fluidly with technology. “The force of globalization is driving different priorities, greater information consumption, and the need to adapt to the latest tools” (Dale, 2007, p. 1). Standards for performance are changing as a result of globalization (Goleman, Boyatzis, & McKee, 2002). In order for companies to stay competitive, they must employ techniques that mark them at the forefront of their industry. This is true for the design profession as well, changing the level of technological expectations held by employers of recent graduates.

Method

The target population of this study was interior design employers in the United States. In order to more comprehensively identify employers who hired recent interior design college graduates, an accessible population was employers listed in Interior
Design Magazine’s Top 100 Giants companies (Davidson, 2004). Directors of Interior Design firms supervise interior designers and determine what technological expectations are necessary for successful employment in the workplace. Randomly selected directors of Interior Design of the Top 100 Giants companies were contacted and fifteen directors were willing to participate in the study. Snow-ball sampling was then employed in which these fifteen directors recommended one interior designer from their firm to be interviewed. Interior designers who had been employed by their firm from two to six years were interviewed to determine if interior designers and their employers have the same or different expectations regarding technological skills of the employees.

For economical purposes, data were collected by conducting 30-minute telephone interviews with each of the thirty participants. Open-ended structured interviews were conducted to allow respondents to voice their opinions and to ensure consistency. The interviews were coded and resulting data were analyzed using the Grounded Theory method (Strauss & Corbin, 1998) to determine the patterns of expectations of employers and the changes occurring in the field of interior design as designers increased use of technology.

**Results and Discussion**

This study revealed that employers are expecting new hires to have more than basic skills of CAD programs for two-dimensional design, as well as an awareness of advanced programs that employ three-dimensional design. They also reported that with the increased use of technology comes an increase in the expectations of the types of work interior designers perform on a daily basis. Most of the Directors revealed that these expectations were being met on an average to above average level.
Of primary importance, however, was the concern the employers expressed regarding the basic knowledge of design that recent graduates are bringing to the workplace. While recent graduates come to the job market with a variety of technological skills, these skills sometimes tend to conceal the designer's knowledge of basic design skills. It was reiterated numerous times, that many of the new hires do not have the ability to conceptualize or sketch ideas without the use of the computer. The directors further revealed that this was disconcerting in the fact that they were not seeing the interior designers' abilities to express concepts or to show an understanding of the design process. Some directors noted that recent graduates had a tendency to rely too heavily on the computer as a means to an end rather than as a tool. The lack of hand drafting skills was reported to be a result of this phenomenon. Many of the directors were in agreement that the problem solving skills of the recent graduates were hindered as a result of too much reliance on CAD related programs.

Interior design employees, on the other hand, indicated that, in order to stay competitive in the job market, it is imperative to graduate with above-average knowledge of technology skills, particularly those related to CAD and three-dimensional programs. Many of the interior designers noted that the accelerated use of technology actually helped not only with their understanding of the basic concepts of design but also with presentation techniques. None expressed an awareness of the weakness of their hand drafting skills articulated by the Directors or that such a deficit might impact design competence. This could be the result of their not being conscious of the importance of this skill or the level of competence previous graduates achieved. The
interior designers did report, however, the perception that their problem solving skills were significantly enhanced by the use of CAD related programs.

Respondents conveyed understanding of the importance of technology in the design community and indicated that the power of technology is momentous. They reported that it is often through Information Technology (IT) departments that new technology is introduced to designers and their employers, helping companies to stay abreast of the new programs and changes in current technology being used. Study participants indicated that many companies make training programs available to interested participants. Others reported learning new programs or updates through help from a colleague or by hands-on experiences when time permits.

All participants confirmed that the computer is vital as a tool for resource generation and for information sharing. New products were made available to them at the click of a mouse. Finding suppliers for these new products was also simplified by the use of the internet. Sharing information between satellite offices as well as with clients was greatly enhanced as well. Sending information that at one time could take days to transmit is now possible in a matter of seconds. Conducting meetings via the internet has decreased time away from the office.

**Conclusions**

The interior design community as a whole benefits from the findings of this study. Educators may particularly benefit as they are apprised of the expectation employers have for graduates entering the interior design profession. Knowledge of employers’ expectations allows educators to craft instruction and curriculum so that student learning outcomes are improved.
This research also has potential for helping the profession understand the ramifications that increased technology has had and will continue to have on the profession. The rapidly changing technology, while expensive, can serve to be a springboard in a firm's ability to launch itself into the increasingly competitive global market.

Employing the findings and methodology from this study, an instrument may be developed to conduct a national survey that allows generalization to a broader population of the interior design profession. The lack of appropriate data with which to examine the impact of CAD use on the work load and type of work being performed is a barrier to all stakeholders in the interior design field.

References
(APA style)


Incorporating Free Web-based Technologies in the Design Studio

Katja V. Marquart, MFA
University of Wisconsin – Stevens Point

Abstract

Modern classrooms are filled with technology-savvy “Millennial Children” that have been plugged-in throughout their lives (Howe and Strauss, 2000). The results of this excessive stimulation, combined with a demand for real and significant experiences, proves challenging when engaging students in a traditional design studio. Teaching Millennials requires changes to the structure and implementation of design projects. Contemporary students are more engaged through significant learning experiences integrating foundational knowledge with technology and socially responsible applications (Fink, 2003). A design project utilizing a real client from an innovative brainstorming company created an opportunity to embrace this approach in a third-year design studio.

This project challenged students to explore intersections between design, creativity, innovation, and technology in the modern office. The client’s brainstorming practice, founded upon utilizing college students as primary “idea generators”, engaged and sustained class interest throughout the semester. While the overall project maintained requirements aligned with traditional advanced studios, the implementation of some tasks offered unique opportunities for students to utilize two free online technologies.
Based upon a need to connect with the client from a remote location, the students used Skype, a free online conferencing and networking technology, as part of the project framework. Both the initial client interview and the final project presentations were implemented through Skype. Using this technology offered a cutting-edge studio experience that students responded to with enthusiasm.

The client also provided another opportunity to incorporate online technology as part of the design process. Through an internet-based brainstorming utility, one of the free services offered by the client, students were divided into groups of four and registered as brainstorming “teams”. The instructor remained a fifth member of each student team as a way to monitor the brainstorming process. Each student group was assigned a brainstorming problem based upon project issues. Results of the brainstorm were shared with the entire class when the activity was completed. One advantage of this process was that ideas could be sorted to see which ones the group thought were best overall. Additionally, each participant was given credit to ideas submitted, allowing fellow group members to monitor the quantity of ideas submitted by each. This process created an opportunity for students to work on conceptual development with other classmates on their own time from any location providing internet connection.

The excitement of students and their engagement in the overall design project as a result of using these technologies was rewarding to witness as an instructor seeking ways to integrate new practices into the traditional studio environment. Students are using internet-based technologies with increasing frequency as a method of communication. Web-based communities like “Myspace” and “Facebook” have already proven their popularity among this generation. As instructors, it is important that we take
advantage of new technologies in our teaching. This practice keeps our techniques fresh and enables us to remain more connected to students and to fuel their creative thinking (CIDA, 2006). Using new forms of technology in the design studio as a means to implement traditional lessons also keeps students engaged and provides opportunities for more significant learning experiences.

References


Incorporating Free Web-based Technologies in the Design Studio

Katja V. Marquart, MFA

University of Wisconsin – Stevens Point

Narrative

Modern classrooms are filled with technology-savvy “Millennial Children” that have been plugged-in throughout their lives (Howe and Strauss 2000). The results of this excessive stimulation, combined with a demand for real and significant experiences, proves challenging when engaging students in a traditional design studio. Teaching Millennials requires changes to the structure and implementation of design projects. Contemporary students are more engaged through significant learning experiences integrating foundational knowledge with technology and socially responsible applications (Fink 2003). A design project utilizing a real client from an innovative brainstorming company created an opportunity to embrace this approach in a third-year design studio.

This project challenged students to explore intersections between design, creativity, innovation, and technology in the modern office. The client’s brainstorming company, “BrainReactions”, was founded upon the practice of utilizing college students as primary “idea generators”. The philosophy of this practice developed based upon the belief that college students were an untapped resource for the corporate world, and could offer fresh ideas and a high degree of creative insight. As part of this demographic, the students in the design studio were immediately connected to the client in more ways than with other “typical” design project scenarios. In addition, the
unique opportunity to create an office space dedicated to serving members of their peer group, engaged and sustained class interest throughout the semester. While the overall project maintained requirements aligned with traditional advanced studios, the implementation of some tasks offered opportunities for students to utilize two free online technologies.

Based upon a need to connect with the client from a remote location, the students used Skype, a free online conferencing and networking technology, as part of the project framework. Both the initial client interview and the final project presentations were designed to be implemented through Skype. In the end, only the client interview was conducted using Skype, and the client was able to attend the final project presentations, where students interacted with the client in-person. Having these two different types of interaction proved more beneficial for the students overall. By using Skype, both time and transportation costs were saved, while still offering the students client contact. The physical presence of the client at the final presentations reinforced the clients’ engagement in the project, and provided the students with the opportunity to interact with a professional client first-hand. The combined experience of client interaction through both the online technology and the in-person meeting, offered a cutting-edge studio experience that students responded to with enthusiasm.

When asked to provide feedback regarding the interview process on Skype, students offered the following (selected) comments:

- “I think it was a great experience. Getting to see the face and talk with a real client makes a world of difference rather than just reading a profile off a paper. It was very high-tech and fun.”
• “I thought the interview went very well. It was nice to actually talk to someone about what they wanted instead of reading about it on paper. It helps to give it a more personal touch.”

• “It was exciting. Something new. I am glad we were able to make it work. I love to experience doing things in different ways. I was already in an in-person interview so this was an interesting alternative.”

The client also provided another opportunity to incorporate online technology as part of the design process. Through an internet-based brainstorming utility, one of the free services offered by the client, students were divided into groups of four and registered as brainstorming “teams”. The instructor remained a fifth member of each student team as a way to monitor the brainstorming process. Each student group was assigned a brainstorming problem based upon project issues. The brainstorm session was available online for a total of seven days, during which each student was able to log-on and contribute their ideas. Results of the brainstorm were shared with the entire class when the activity was completed. One advantage of this process was that ideas could be sorted to see which ones the group thought were best overall. Additionally, each participant was given credit to ideas submitted, allowing fellow group members, as well as the instructor, to monitor the quantity and quality of their ideas. This process created an opportunity for students to work on conceptual development with other classmates on their own time from any location providing an internet connection.

The excitement of students and their engagement in the overall design project as a result of using these technologies was rewarding to witness as an instructor seeking ways to integrate new practices into the traditional studio environment. Students are
using internet-based technologies with increasing frequency as a method of communication. Web-based communities like “Myspace” and “Facebook” have already proven their popularity among this generation. As instructors, it is important that we take advantage of new technologies in our teaching. This practice keeps our techniques fresh and enables us to remain more connected to students and to fuel their creative thinking (CIDA, ch. 2, sec. 2). Using new forms of technology in the design studio as a means to implement traditional lessons also keeps students engaged and provides opportunities for more significant learning experiences.


Consumer Complaints: A Substitute for Interior Design Regulation?

Caren S. Martin, Ph.D.

University of Minnesota

Abstract

Purpose
The purpose of this study was to determine if consumer complaint behavior is a reliable substitute for interior design regulation. The Institute for Justice’s (IJ) recent publication, *Designing Cartels: How Industry Insiders Cut Out Competition* (Carpenter, 2006) written about the actions of the interior design profession stated that interior design should not be regulated. They cite the minimal instances of complaints against interior designers, as reported to the Better Business Bureau (BBB) as the rationale for their position. However, an investigation of both the BBB data that were examined by the IJ and an analysis of consumer complaint behavior literature indicate that consumer complaints may not be an appropriate method by which to determine if the public’s health, safety, and welfare are protected and, by extension, indicate that interior design should not be regulated.

Method
The reliability and validity of the data collection and analysis method used by the IJ as the basis for their analysis were examined. The IJ evaluated BBB data for a three-year period; they noted that it was not a random or comprehensive examination (Carpenter, 2006). Their method of analysis was also reviewed and found to be inappropriate for the prescribed data. The IJ subsequently determined that the number of complaints regarding interior designers was very low, especially in jurisdictions that had title/practice regulation (Carpenter, 2006), concluding that regulation was unnecessary. Due to the categorization processes of the BBB, and therefore limited data available outside the BBB, it is unclear to what extent professional interior designers are evaluated as compared to interior decorators and other industry participants. A literature review of consumer complaint behavior was conducted to establish the appropriateness of these findings.

Importance of the Topic
Interior designers have the obligation to protect the health, safety, and welfare of the public and are qualified to do so through the stages of their career (Guerin & Martin, 2001). Regulation enables the public to clearly identify individuals qualified to call themselves interior designers and/or to practice interior design. The IJ posits that consumer behavior is a valid substitute for legal regulation. However, consumer complaint behavior overwhelmingly indicates that consumers do not complain (Stephens & Gwinner, 1998; Susskind, 2000). Only when related to post-purchase price disputes were they more likely to complain (Estelami, 2003). Subsequently, the nature of consumer behavior and consumer complaints makes the IJ’s method unreliable in
terms of public protection. Moreover, it questions reactionary efforts to correct an
interior environment problem in place of proactive problem solving embedded in the
professional interior designer’s design process.

Relevance to Interior Design
The IJ’s findings are currently being presented to the public and lawmakers. Though unfounded, findings have proven compelling and regarded as fact by these
audiences. It is imperative to expose the erroneous basis of the IJ’s report and re-focus
the discussion on regulation. Regulation is a means by which to identify a qualified
interior designer. If the IJ’s report is believed, it is possible that regulation will not be
enacted, leaving the public to fend for themselves to identify a professional interior
designer.

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The purpose of this study was to determine if consumer complaint behavior is a reliable substitute for interior design regulation. The Institute for Justice’s (IJ) recent publication, Designing Cartels: How Industry Insiders Cut Out Competition (Carpenter, 2006) was written about the actions of the interior design profession and stated that interior design should not be regulated. The IJ cites the minimal instances of consumer complaints against interior designers, as reported to the Better Business Bureau (BBB) as the rationale for their position. However, an investigation of both the BBB data that were examined by the IJ and an analysis of consumer complaint behavior literature indicates that consumer complaints may not be an appropriate method by which to determine if the public’s health, safety, and welfare are protected and, by extension, indicate that interior design should not be regulated.

Method and Findings

This study examined the reliability and validity of the data collection and analysis method used by the IJ as the basis for their findings. The IJ evaluated BBB data for a three-year period; they noted that it was not a random or comprehensive examination (Carpenter, 2006). Due to the categorization processes of the BBB, it is unclear to what extent professional interior designers were evaluated as compared to interior decorators and other industry participants. An examination of the BBB Web site found that “interior
“design” and “interior decoration” were combined into a single category, “Interior Decorators & Designers.” A maximum list of 200 firms could be brought up from the search, further divided in the BBB database by type, with the quantity of companies within each noted:

- Interior Decorators & Designers (130)
- Plants – Interior Design and Maintenance (6)
- Furniture – Retail (5)
- Draperies & Curtains – Retail/Custom (5)
- Multi-Level Selling Co. (4)
- Furniture Designers & Custom Builders (3) (BBB, 2007)

When the “Interior Decorators & Designers” window was selected, it exposed an additional 32 types of businesses, ranging from “Cabinets” to “Auto Seat Covers, Tops & Upholstery” and “Fire Alarm Systems,” among others. A keyword search produced no more than 200 entries, many outside the interior designer’s scope of practice.

Direct communication with the Council of the BBB’s Information Technology Department, established that the BBB does not allow the entire list of companies related to a keyword to be displayed to keep the site from what is termed “data mining,” to protect their members from unsolicited contact. The BBB does have 9,210 companies who have identified their business category as “Interior Decorators & Designers” (M. Scandale, BBB IT staff, personal communication, September 14, 2007). Many of the businesses’ lack of relationship to interior design practice and the high percentage of listings without any performance data (complaints) listed raises questions about the applicability of the IJ’s findings.

The IJ’s method of analysis was also reviewed and found to be inappropriate for the prescribed data. The IJ discusses the findings of an analysis of variance (ANOVA)
conducted with complaint data that is skewed (towards zero), violating the assumption of an ANOVA that the data represents a normal distribution (Babbie, 2006).

From their analysis, the IJ subsequently determined that the number of complaints regarding interior designers was very low, especially in jurisdictions that had title/practice regulation (Carpenter, 2006), concluding that regulation was unnecessary. However, no matter the complaint frequency reported, it was important to determine if complaint behavior could obviate regulation’s role in mitigating harm. Therefore, a literature review of consumer complaint behavior was conducted to investigate the appropriateness of the IJ’s findings, especially as a definitive measure of public protection.

Importance of the Topic

Regulation enables the public to identify individuals qualified to call themselves interior designers and/or to practice interior design. The litmus test for professional regulation is protection of the public—its life, health, safety, and welfare. Interior designers have the obligation to protect the public and are qualified to do so through the stages of their career (Guerin & Martin, 2001).

Brint (1994) found that the number of “professionals” in the U.S. has grown 12 times from the pre-World War II era. In any state, many practices, trades, or occupations are regulated as their work is seen as impacting the public’s life, health, safety, and welfare. For instance, in New York, athletic trainers, creative arts therapists, midwives, and massage therapists are regulated (Office of the Professions, New York State Education Department, 2007). In all cases, the proof of burden was put on those requesting this level of protection and accountability, typically the profession itself. A
handful of states offer under 100 occupational licenses, and many offer over 350 occupational licenses (America’s Career InfoNet, 2007). In a broad study of occupations, Kleiner (2006) makes a case for limiting professional regulation, but also acknowledges the need or responsibility of protecting consumers from their own bad choices, especially in cases of health, safety, and welfare.

Professional regulation is limited in the interest of consumer freedoms. Checks and balances, such as the legislators’ knowledge of the issue, sunrise provisions, sunset legislation, and the established purpose of the state agency (aka, board or council) exist to ensure measured adoption of regulations. To regulatory agencies, both licensed professionals and consumers are viewed as “special interest groups” and their concerns are considered lesser than those of the agency members’ charge to protect the public’s interests (Council on Licensure, Enforcement and Regulation, 2000).

The IJ posits that consumer behavior is a valid substitute for legal regulation. However, consumer complaint behavior overwhelmingly indicates that consumers do not complain (Stephens & Gwinner, 1998). For consumers, efficacy, specifically asking themselves if it is worth it and will their efforts be successful to bring about positive change, was found to be a substantial deterrent to complaining (Susskind, 2000). In a study of 1,637 consumers’ satisfaction/dissatisfaction with healthcare services, it was determined that many refrained from making a complaint as they were not sure if it would have been a waste of time, characterized by a “general feeling of impotence” (Mulcahy & Tritter, 1998, p. 840). Among the findings, researchers discovered that “complaining is an atypical reaction to dissatisfaction and is rarely considered as an option by aggrieved patients” (1998, p. 828). In fact, noncomplainers are ambivalent
about the time and effort required to complain, service provider responsiveness, personality factors, organization-initiated recovery, and other miscellaneous factors (Voorhees, Brady, & Horowitz, 2006). Estelami’s (2003) study, based on an expectations-based framework, found that only when related to post-purchase price disputes were consumers more likely to complain. However, price disputes commonly engender issues of professional conduct, not life safety, and are typically not the purview of regulatory boards for that reason. Subsequently, the IJ’s reliance on consumer complaints is unreliable in terms of public protection.

It is questionable that complaints, reactionary by their nature, can adequately address interior environment challenges, preventing harm. Primarily in the form of life and safety threats, human rights issues (e.g., accessibility), and wellness and quality of life concerns, interior environment challenges are proactively, appropriately addressed during the design process by an interior designer. Safeguards exist, but they do not adequately address public protection for a myriad of reasons. The International Building Code (IBC) and the Americans with Disabilities Act (ADA) offer the public protection, but only to the extent that the building owner complies over the life of the building, as very few interior environments remain as they were initially designed and constructed. Furthermore, though they constitute the majority of fires, single family homes are exempt from requiring the consultation of registered design professionals, including interior designers (Karter, Jr., 2007). Evidence gathered from the National Fire Protection Association’s publication, *NFPA Journal*, substantiates the importance of interior materials and the fuel load contributed by them. Statistics regarding fire
occurrence indicate that of the 1.64 million fires in the U.S. in 2006, 524,000 were structure fires, causing 3,245 civilian deaths (Karter, Jr., 2007).

Beyond fire, there are additional interior environment concerns. The aging population faces accessibility challenges both residentially and in the public spaces they frequent (Tinetti, 2003; Piotrowski & Rogers, 2007). The design of the healthcare environment has been linked to recovery rates, including reduction in the need for medication (Diette, Lechtzin, Haponik, Devrotes, & Rubin, 2003). Inhabitants of buildings can face safety and health risks via indoor air quality contaminants (Lee, Haghighat, & Ghaly, 2005; Melkin, Potus, Pekkanen, Hyvarinen, Hivonen, & Nevalainen, 2005).

Based on the significance and complexity of these interior environment issues, relying on complaints registered with the BBB deny the central issue: how to best protect the life, health, safety, and welfare of the public, which could be argued is more important than basic consumer concerns, such as contract issues, courteous service, timely delivery, or meeting aesthetic expectations. For despite statements made to the contrary by the IJ (Carpenter, 2006), evidence indicates that beyond price, there is little motivation for consumers to complain. And in the context of life, health, safety, and welfare protection, is ‘after the fact’ appropriate?

Relevance to Interior Design

The IJ’s findings are currently being presented to the public and lawmakers. Though unfounded, findings have proven compelling and regarded as fact by these audiences. For instance, journalist George Will’s syndicated commentary, “Wallpapering with Red Tape,” falsely characterized the interior design profession as proffered in the IJ
report, citing many of its points (2007). It is imperative to expose the erroneous basis of the IJ’s report and re-focus the discussion on regulation. Regulation is a means by which to identify a qualified interior designer. If the IJ’s report is believed, it is possible that regulation will not be enacted, leaving the public to fend for themselves to identify a professional interior designer.

References
(APA)


The Ladies: Female Interior Decorators as Professionals in the Early 20th Century

Bridget A. May, Ph.D.

Marymount University

Narrative

Purpose and Significance

This presentation examines the professionalism of female interior decorators in the early 20th century by using selected decorators, such as Marion Tate and Diane Hall, Nancy McClelland, and Eleanor McMillen Brown, as case studies. The first generation of interior decorators, the so-called Ladies, is regarded as untrained and, by extension, unprofessional. While most were not formally trained especially by today’s standards, nevertheless they regarded themselves as professionals following professional standards who offered valuable services to their clients. Additionally, they competed in a male-dominated field through maintaining professional attitudes, excelling in a traditionally female arena, and by adopting various coping strategies.

Professionalism and Professional Standards

The first generation of female interior decorators has been criticized for its lack of training (Kirkham, 2000). Formal educational opportunities in decorating, especially for women, were few in their day. Most common were art and design schools, architecture schools (not readily open to women), and correspondences courses. However, there was general agreement among decorators and others about areas of knowledge needed and much recognition that training was necessary. In 1895, Candace Wheeler proposed a body of knowledge for decorators, including drawing, color, and history (Wheeler, 1895a, 1895b). She acknowledged that obtaining it was difficult and
recommended learning on the job. In 1907, decorator Mary Linton Bookwalter gave largely practical recommendations for education—arithmetic, color, knowledge of materials—and advocated learning by field study and on the job (pp. 341-343). Others, such as McClelland (1929, pp. 246-247), made similar recommendations. While it is true that most female decorators were not formally trained, many had prepared in ways accessible to them. They most often began their careers by engaging in field study like McClelland (“In Memory,” 1959) or working for other decorators like Rose Cumming (Tweed, 1964, p. 44) and McMillen Brown (Brown, 1982, p. 22).

The terms profession and professional were used by and applied to interior decorators in the early 20th century. Although no formal definition seems to have existed until AID’s in 1931 (History of ASID, 2005, p. 11), the following can be inferred. A professional interior decorator engaged in paid work outside the home. Possessing taste, knowledge, and experience, the decorator provided aesthetic services and interior assemblages that were tasteful, appropriate, and beautiful. Above all, the decorator’s work represented the client’s personality and lifestyle. (Eberlein and McClelland, 1922; McClelland, 1929; Kirkham and Sparke, 2000; Sparke, 2005; Massey, 2001; Tweed, 1964, pp. 44, 80)

Female decorators promoted their knowledge, experience, and taste as important professional credentials (McClelland, 1929; Tweed, 1964, p. 59; Brown, 1982, pp. 41-42). As Marion Hall expressed it, “for a home to become as charming as the owner envisioned . . . the knowledge and experience of the decorator . . . are often required to help put things in order (Tweed, 1964, p. 59). Furthermore, many apparently believed that, “every piece of work well done endows her [the decorator] with greater
ability. . ." (McClelland, 1929, p. 252). They also regarded taste as especially important for a decorator since it would overcome the bad design of previous generations and produce modern rooms of good taste that expressed the desires of the client (Wheeler, 1895a; McClelland, 1929; Tweed, 1964, p. 55). Some, like Cumming or McMillen Brown, maintained that some qualities important for the decorator, such as flair or “artistic alchemy,” could not be learned (Tweed, 1964, p. 44; Brown, 1982, p. 22). Their taste, knowledge, and experience set professional decorators apart from artisans, artists, upholsterers, and trades people (McNeil, 1994; Massey, 2001)

Engaging in paid work outside the home was a key component in the identification of the professional female decorator who was pursuing a profession. Decorating had long been considered an innate womanly ability (Robertson, 1997). But in the early 20th century when women engaged in decorating outside the home and were paid for doing so, they moved from amateur to professional status (Sparke, 2005). In 1922, a New York Times article noted that society matron, Mrs. William A. Hamilton, had “joined the professional ranks” of decorators at a local firm (“Mrs. Wm. A. Hamilton,” p. 10). Lesson XXIII, Interior Decoration as a Profession, of the Arts and Decoration Practical Home Study Course supports this notion of professionalism in its assertion that “the information that follows is intended for those who will make interior decorating a profession” (Eberlein and McClelland, 1922,p. 359).

Service to the client was among the most important design goals for early female interior decorators. They also considered this aspect of their work especially satisfying. Hall emphasized that she tried to create spaces that would “reflect [the owner’s] taste and look as though he or she had created the rooms” and the “highest praise [for] a
decorator” occurred when there was little or no evidence of her work (Tweed, 1964, 59). McClelland (1929) observed, “it is part of a decorator’s job to study and understand a client and her family and to put them into suitable surroundings, which will be a beautiful and tasteful translation of their needs” (p. 246). Service to a client remains a definitive component of professionalism (Abbott, 1988; Bledstein, 1978; Piotrowski, 2008).

Coping with Competition and Discrimination

Although decorators’ work was within traditional ideas of femininity, like other female professionals, they faced discrimination and impediments. So they adopted various strategies to cope, such as subordination, separatism, and super performance (Glazer & Slater, 1987). Glazer and Slater (1987) describe female-dominated fields, like nursing, as subordinate professions because they affirmed the 19th-century idea of separate spheres or areas of work (p. 215). Decorating, which had been considered womanly since the mid 19th century, was one such sphere. This separation enabled female decorators to enter a male dominated arena, engage in paid work outside the home, and, even, stand out in a role traditionally considered feminine. They also could challenge the male dominated area by using their womanly abilities, finer senses, and tasteful domesticity.

Separatism, another coping skill, used the idea of gendered spheres to benefit women by creating special female public arenas. Here, female decorators excelled. Their work, much of which was residential, maintained “cultural links between domesticity and femininity.” So they could retain a feminine posture while working within the context of the “‘masculine’ public sphere of work defined as professional rather than amateur.” (Sparke, 2005, p. 48).
Many of early female decorators owned their own businesses, a common means of separation in which there were fewer barriers to independence and success. Business did not require a formal education, but a “combination of ingenuity, capital, tenacity, and luck” for success (Harris, 1978, p. 119). As business owners, female decorators did not have to submit, or even answer, to males. They were the decision makers. They controlled their professional lives and received appropriate pay. Many first-generation female decorators, like McMillen, Hall and Tate, and McClelland, owned successful firms and seem to have been exceptional entrepreneurs and marketers.

Like other professional women, early female decorators appear to have believed that “extraordinary performance was crucial to gain acceptance into professional arenas and to legitimize their commitment to a career.” Like other professional women, they adopted “hard work, outstanding ability, and . . . willingness to sacrifice traditional relationships [like marriage]” to succeed (Glazer and Slater, 1987, p. 210-212). Many had very busy professional lives. Besides decorating, they wrote, gave lectures, participated in exhibitions, and belonged to professional organizations. While these activities obviously were economically driven, they probably recognized that as females in the male-dominated world, they had to prove themselves and demonstrate stronger commitments to their careers that men did. Some, like McMillen Brown, used their taste and expertise to carve niches for themselves in the marketplace. And some, like Tate and McClelland, did not marry but through mentoring had progeny who followed in their footsteps.

Using one’s expertise to compete and distinguish one’s self is evidence of super or meritorious performance, another coping strategy used by female professionals and
decorators (Glazer and Slater, 1987, pp. 211-213). While helping set the professional decorator apart from the amateur, meritorious performance could assist in overcoming obstacles, gaining acceptance, and demonstrating strong commitments to their careers. Some decorators found areas in which to excel, suggesting that they recognized the importance of expertise and the professional and economic benefits of presenting themselves as experts. McClelland, for example, built a reputation for her knowledge of antiques and wallpapers (May, in press).

Conclusion

The first generation of female decorators saw themselves as professionals who served their clients by creating beautiful and tasteful spaces for them. Many entered the field not with formal training but through field study and/or work experience. They maintained that service, taste, knowledge, and experience were professional standards. As professionals they continued the traditional female role of decorating while engaging in paid work outside of the home, and they coped with discrimination and competition by creating and excelling in a traditionally feminine arena. Many opened their own firms to exert control over their working lives. They used their expertise to distinguish themselves from others and to compete successfully in their male-dominated field and world.

1 Tate and Smith describe the first generation of American female decorators as “the ladies” noting this was probably a reference to their social standing, their work for the affluent or members of high society, and taste-making activities as reflected in their period-style interiors (Tate and Smith, 1986, p. 314.)
Eleanor McMillen Brown had formal decorating training. She graduated from a three year design course at the New York School of Fine and Applied Arts in 1924 and claimed that she was not "one of the 'ladies'" (Brown, 1982, p.15).
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These images are included to indicate some of the Lady Decorators who will be discussed in the presentation.

Figure 1. Louis XVI Living Room of Mr. and Mrs. Carl J. Schmidlapp, New York City, Tate and Hall. In K Tweed (Ed.). (1964). *The finest rooms by America’s great Decorators*. New York: Bramhall House, 69.
Changing the way we think about buildings: A life-cycle costing approach to sustainable design decisions

Rachelle J. McClure
Professor Eric A. Wiedegreen
Florida State University

Abstract

This study deals with a university’s responsibility to adopt sustainable practices in both education and campus construction. Emphasis is placed on both the social and fiduciary responsibilities that affect students, faculty and universities alike. The objective is to address universities and companies that have taken leadership positions in identifying the positive benefits, such as increased performance from students and staff, reduced environmental impact and reduced costs associated with energy and maintenance fees. Field research was conducted via on-site interviews to seek out leaders in the architecture and design industry that are carving new paths in financing, documenting and building green buildings.

Harvard University has been a leader in the sustainable campus movement by creating a revolving loan fund to support sustainable projects. This revolving loan fund has created a positive return on investments for both the company managing the loan fund and the schools that have taken advantage of this unique program. The Cambridge Energy Alliance is an organization that receives a great amount of support from the local energy company, NSTAR, to help prepare for future energy demand. NSTAR
realizes that energy conservation is their most cost effective path because their projected future energy demand far exceeds their supply.

Bergmeyer, an architectural firm in Boston, has taken on a retail client who is dedicated to sustainability and keeping costs low. They proved to their client that they could be green and beautiful at the same budget as their previous stores.

Florida State University is preparing for change to stay competitive and cost effective. While the university has been constructing energy efficient buildings (predominately because it is cost effective), it is now leaning toward full LEED certification for all future construction.

In many instances during debates on sustainable building, the misconception that green buildings inherently cost more plays a large role in the decision making process. According to a survey by Turner Construction Company (2005), higher construction costs and a lack of awareness of the benefits of sustainable building presented a very significant obstacle for participants. Only five percent of executives involved with university facilities said that life-cycle costs were given more emphasis than initial costs. This research aims to show that at both a micro and macro level, sustainable buildings are cost effective. Each of the interviews focused on specific projects where life-cycle cost was one of the largest driving factors in decision-making.

The research led the way to a project that analyzed the costs and benefits of a conventionally built university classroom building versus a sustainable one. The general use classroom building incorporates attributes that increase productivity and learning such as increased ventilation control, temperature control, lighting control as well as an increase in daylighting and use of non-toxic materials and surfaces. The
project then analyzes the costs from a net present value standpoint, in contrast to initial costs, to show that sustainable building not only increases student and staff success but also generates financial benefit for the institution.

References:

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Narrative

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costs, to show that sustainable building not only increases student and staff success but also generates financial benefit for the institution.

**What role should a university play in sustainability?**

At universities, students are often taught about global responsibility while the institution itself makes little to no financial investment in the ideals (Orr, 1991). This creates a gap between reality and theory, which leaves students helpless and unable to solve real world problems. By continuing to teach “economics, for example, without reference to the laws of thermodynamics or those of ecology is to teach a fundamentally important ecological lesson: that physics and ecology have nothing to do with the economy” which is certainly not reality (Orr, 1991, p. 5). If universities continue to create accountants that do not know how to price the 40 to 100 species that become extinct with every rainforest or the waste from a nuclear power plant that will permanently exist, they will become part of the problem by continuing to allow educated professionals to remain unaware and thus not responsible for a solution.

An interesting success story regarding one campus’ attempt to weave sustainable thought into their entire curricula is the Ponderosa Project at Northern Arizona University in Flagstaff (Bartlett et al, 2004). The campus is home to a fairly large number of students, 20,000, relative to the number of the city’s 58,000 residents. In 1995, more than 100 faculty members at the university started the project with hopes to integrate sustainability into areas as “far ranging as music, geology, nursing, English, philosophy, political science, education, and art history” (Bartlett et al, 2004, p. 91). The project underwent a tumultuous period over the next five years including the changing of
supportive university presidents and loss of funding for their workshops. In 2001, the
annual workshop to support the project was canceled due to lack of funds. The
dedicated staff continued to search for new funding, and today, the university teaches
over 120 general requirement classes that incorporate sustainability.

The Ponderosa Project has been very successful and has served as a model for
other sustainability initiatives on campuses throughout the United States (Bartlett et al,
2004). The driving force behind their project consisted of some important fundamental
ideas. Firstly, faculty profits most from being exposed to a wide spectrum of
approaches, ideas, and resources for incorporating sustainability into their class.
Second, how the material is taught is as important as what is taught. Third, individual
faculty knows best how to incorporate the new subject matter. This is an extremely
important idea as sometimes people are resistant to change, and allowing the
professors to incorporate the new material on their own terms might make them more
receptive and excited about the change. The fourth and final idea was to provide a
forum for faculty to step outside of their discipline and talk to other professors.
According to Bartlett et al, if universities are encouraging their students to have a
deeper understanding of other disciplines, the professors should share the same
knowledge.

**The leaders in sustainable acts**

An important realization for a university is that no other industrial industry has as
much purchasing power as the architecture, construction, building and interior design
industry (Van der Ryn et al, 1996). “Education is the largest sector of nonresidential
buildings for new construction and renovation projects” (Turner, 2005). It is also
important to note, “40 percent of the energy consumption in the United States can be traced back to building construction, materials, and maintenance” (Van der Ryn et al, 1996, p. 13). For that reason, it is important that a sustainable design curriculum be incorporated into the very foundations of programs associated with these industries (Van der Ryn et al, 1996). There are a few schools that have dedicated programs to environmental design. The Slippery Rock University of Pennsylvania offers a Masters in Sustainable Systems with a focus on the design and management of systems and how they relate to support resiliency and diversity within the natural ecosystems (Bartlett et al, 2004). It is important to note that although it was difficult to find a higher education institution that was dedicated to incorporating sustainability into its design curriculum, it was not hard to find a world-class academic institution that focused on sustainability issues from a business perspective. Some of the most well-known and well-respected MBA programs that offer programs in sustainability are Cornell, Stanford University, Yale University, George Washington University and London Business School (Di Meglio, 2005).

Although it is difficult to find a university that has taken the steps necessary to make sustainable design a required part of the curriculum (Strauss, 1995), there are a number of schools that have taken the initiative to migrate towards sustainable building as well as campus-wide sustainability programs such as promoting more pedestrian friendly environments for biking and walking and engaging in socially responsible investing (Bartlett et al, 2004). Amongst those with a sustainability initiative is the University of Florida in Gainesville. They have created a sustainability task force that deals with many aspects of campus administration from waste management, energy
and resource use to investments. The university feels that there are many benefits to positioning themselves as a global leader in sustainability such as “cutting edge educational and research programs with consequent increases in external funding, and improved quality of campus and community life” (Final report, 2002). Correspondingly, institutions like UC-Berkeley, Georgia Tech, Brown, Dartmouth, and the University of Michigan have increased their dedication to sustainable leadership in order to market to and recruit students.

The construction and maintenance of a sustainable building can be incorporated into student projects that will help students solve real-world problems and will turn their classroom time into a hands-on learning experience (Kats, 2006). This will allow students to utilize some of the esoteric concepts, which will allow them to have a deeper understanding of their education (Kats, 2006). For many contractors and building site managers, the practice of sustainable building is not common practice (Turner, 2005). The more experience everyone in the construction field obtains the more smoothly, efficiently and therefore economically the building process will be (Kats, 2006).

References


Innovation in Interior Design Curriculum: Interdisciplinary Service-Learning as the Reason for Being

Susan Martin Meggs, MS, MFA
Annette G. Greer, PhD, MSN, RN
Michael Bassman, PhD

East Carolina University

Abstract

The pedagogy of interior design is inherently cross-disciplinary, incorporating overlapping skills into the curriculum which are extracted from disciplines such as art, history, architecture, and business. An interdisciplinary, service-learning approach in a foundations level course in interior design introduces students not only to the basic skill sets required for interior design, but to a design process that embraces a collaborative pedagogy serving the client in the community. This paper will discuss how a foundations course assists students in examining design concepts from a cultural perspective in the design of healthcare and educational facilities. The specific objectives are to: (1) provide a case study of one university’s experience engaging with various regional entities to provide service and learning opportunities to interior design students at freshman levels (2) discuss the curricular changes that resulted in outcomes through service learning projects (3) advocate for the integration of service learning into existing curricula to nurture both the cultural sensitivity and health focus of interior design and (4) inspire community initiatives to enhance the quality of rural health care through healthy and innovative design solutions. The described course integrates honors students from diverse disciplines using innovative service-learning pedagogy.
Exposure to an interdisciplinary context at a foundations level opens students to perspectives about distinct cultures and disciplines. The course engages students in a regional community noted for health disparities. The limited resources in this regional community provide a unique opportunity for students to conduct service-learning in environments greatly in need of functional and aesthetic design solutions appropriate to cultural context. The population served in this rural eastern region is increasingly diverse with growing proportions from the Latino and African-American cultures, which have their own vision of design that is integral to their emotional and physical well-being. Innovative design solutions reduce the social and environmental stressors that are the result of cultures experiencing economic and health disparity.

In order to address the overwhelming needs of the community, a creative and collaborative interdisciplinary pedagogical approach to curriculum design was sought. The curriculum sought to provide innovative solutions to effectively serve the client by designing healthcare and educational facilities. Interior design students were able to partner with honor students and the community in a service-learning project providing a non-threatening context for collaborative learning.

Overlapping objectives were measured based on an integrated cross-disciplinary rubric involving interior design, OISHE and Scholars Program standards. The development of a series of rubrics for formative and summative evaluation is important for numerous reasons: determine the effectiveness of the design, align the curriculum to national standards, assess teaching and learning praxis, measure the efficacy of the service-learning model in improving student outcomes and gauge the impacts on the community.
Student outcomes include increased awareness of the social and environmental context of design relative to community need and application of adaptive design solutions for common health and safety problems within the school environment. The Interdisciplinary collaborative service-learning partnership provided conceptualized learning for development of responsible yet creative design solutions.
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Narrative

Project-based learning is the foundation of a fundamentals laboratory course that represents the substantive application of concepts presented in a parallel lecture course that encompasses a framework for the theoretical, procedural and practical basis for the practice of interior design. The laboratory course introduces students to a longitudinal pedagogical structure that addresses the goals and objectives of the department as well as the national standards for the profession. “A developmental approach is applied to teaching the content of interior design. Rather than treating interior design competencies in a comprehensive and focused coverage of topics in a single course, faculty members build and expand upon topics from one course to the next.” (East Carolina University Mission, 2001)

A primary emphasis in the curricular goals of the interior design program at this university is the creation of safe, healthy and barrier-free environments that address the social and cultural issues of the community. “Embedded in an exploration of design for human needs is a shared faculty commitment to socially conscious design; to seek design solutions that improve social and environmental conditions, both close to home and across the globe. Creative imagination and interdisciplinary collaboration are critically needed for bringing about innovative solutions to stresses placed upon humanity and nature” (School of Human Environmental Sciences, 2001). The Eastern
North Carolina region is changing demographically with a noted increase in Latino populations. The United States Census Bureau estimates rapid Hispanic population growth. Although the representative region is served by a large tertiary care medical center, there is a significant indigent population whose healthcare has been underserved. As of 2004, 17.8% of the population was living below the poverty level and as of 2003 approximately 17% were uninsured (United States Census Bureau).

Educational facilities in some rural areas are often substandard. Space allocations per student are overwhelmed and require use of modular units for educational purposes. These accommodations establish environmental safety issues for students and staff.

In response to the concept of serving the client in the community, the interdisciplinary service-learning model described here introduced two major changes into the interior design curriculum: the introduction of service-learning studio-based projects at the freshman level, and a focus on rural healthcare and educational facilities. A significant outcome is that freshmen design students can build on a needs based design approach for subsequent studio projects in their matriculation through a developmental model of design education (Meggs, Greer, Warsco, Clay, 2007).

Quinlan, Corkery, and Castle, (2004) demonstrate an approach to the Scholarship of Integration that illustrates how different modes of interdisciplinarity can be operationalised and acted upon, even in first year learning settings and despite administrative limitations such as timetabling.

Community-campus partnership is an important component that underpinned the success of the demonstrated interior design model of service-learning. Faculty from the interior design program and the Office of Health Science Education (OIHSE) met to
explore potentials for interdisciplinary collaboration. OIHSE facilitated interior design faculty visits in the region with potential partners. The OIHSE had established relationships in the region for over ten years. Several possible projects were reviewed. A childcare center was selected to be developed in partnership with a local processing plant that employed a large population of migrant workers. The influx of Hispanic speaking workers served as an impetus for expanding child care services that would require cultural considerations in planning. Subsequent projects included a community-based obstetrics and gynecology clinic and a regional healthcare center, both designated to serve primarily indigent minority populations. Supportive healthcare service needs were addressed in the project designs of two lounges for medical school Residents.

The most recent design project partnered with a rural elementary school in the re-design of the entry and front office areas of the school building. The school building was originally built in 1951 as a segregated elementary school serving the African-American community. Post-integration the facility was expanded with random additions without a cohesive long-range plan to meet school population needs. The issues in the interior design students’ re-design effort were focused on safety and health as well as cultural and social relevance. The school is surrounded by highways and farmlands that rely on heavy use of pesticides and herbicides. Health issues were presented by the flow of pollutants from this surrounding environment. The creation of healthy interior environments was related to the health concerns of the target population. The surrounding community has high economic disparity and has gang-related crime issues. Considering the population at risk, pathways needed to be redirected and lines of sight
needed to be improved to solve the problem of security at the entrance. An important foundations lesson is for the interior design student to become sensitive to the cultural and social environments for which they are designing. The complexity of the health, safety, social and cultural issues required extensive supportive internal and external partnerships in order to provide a format for understanding the practical application of theoretical interior design principles.

In the introduction to the course, theoretical design principles are applied to abstract design solutions that thematically address issues relevant to the particular project design. Conceptual design is integrated through a developmental sequence that builds students’ skills in conceptual design thinking. For the elementary school project, students researched and examined the economic and environmental basis of the region as a visual and conceptual resource for specific design solutions. For example, “Corn has its own unique defense system. Layers of durable leaves, known as the husk, provide several barriers between outside elements and the ear of kernels it protects. The strong, vertical quality of the stalk emits feelings of authority and importance, demanding respect. Corn produces its own natural antibiotic to prevent unwanted pests from infiltrating… The design for Belvoir Elementary will encompass the protective quality of the husk and the demanding respect of the stalk, while still providing the same sense of welcome and lightheartedness as the silk” (Laffrey, 2007). This example demonstrates concerns for structural safety, social and environmental factors and aesthetics. The innovation in this curricular case study is met through the partnerships formed to allow for application of core foundation principles using an interdisciplinary service learning model.
Building upon an the partnership honor students from the East Carolina (EC) Scholars program were incorporated into a curricular collaboration. Faculty met to determine how curricular goals and objectives were complementary in meeting cross-disciplinary standards. A series of faculty meetings resulted in the formation of a rubric that assisted in clarifying the goals, objectives, and outcomes from internal and external partners plus standards from nationally relevant entities. Thus the internal partners were defined as were the external partners as noted in Appendix A. Standards from national entities were also taken into account (See Appendix A). The primary partnership roles were to provide programming information for the design project and to assist in gathering evaluation information through pre-occupancy surveys and client interaction. The value of the partnership to the interior design curricula are evidenced in student outcomes. Students exhibited foci on the health, safety, cultural and social issues and space planning inherent in the design problem as illustrated in the design solution statement, “The redesigned space of the entry/office area will contain characteristics of a sea shell structure. This spatial reorganization will tackle problems of shelter and security, dynamic work environment, social contact, identity, and future growth. The double door entry will have safety features and serve as a filter. The bookkeeper’s unit will be placed in a protected location, and the secretary’s workstation will allow flexibility and multitasking. The traffic patterns and the sight lines will accommodate the diverse needs of the office staff and visitors.” (Skalova, 2007).

Curricular projects were tailored to accommodate the appropriate needs of the community within the scope of the level of the learners. Curricular innovation resulted in students’ ability to meet course goals and objectives across the disciplines of all the
student learners. Interior design student’s learning outcomes were demonstrated through a final project presentation to the client. The presentation included: presentation portfolio (floor plans, elevations, perspective views, renderings, materials and furnishings specifications, and sample boards) concept and presentation model and journal of the data collection and design development process. The presentation was evaluated using an interior design rubric based on national accreditation standards. The rubric was applied as an evaluation instrument by the faculty, client and peers (See Appendix B).

Service learning integration into existing curricula is best effected when the academic institution and the community partner engage in a collaboration that shares a common philosophy; focuses on partnership strengths and assets; clearly defines roles and responsibilities; sustains commitment; demonstrates continuous assessment and accountability; reflects careful evaluation of community and learner benefits and addresses issues of cultural and social differences. This case study validates the merit of incorporating interdisciplinary service learning into an interior design foundations course: 1) increases awareness of safety and health issues in the design of interior environments, 2) broadens the perspective of students inclusive of cultural and social considerations, 3) embraces the collaborative nature of the interior design professional in working with clients.


Skalova, Irina (December 2007) East Carolina University, Student Interior Design. Personal Communication.

## Appendix A: Integrated cross-disciplinary objectives rubric

<table>
<thead>
<tr>
<th>GOALS</th>
<th>NCIQ</th>
<th>Scholars</th>
<th>IDSN</th>
<th>CIDA</th>
<th>OIHSE</th>
<th>Com /Campus</th>
<th>Belvoir</th>
<th>Service-Learning</th>
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<tr>
<td>Aid Collaborative Problem-solving</td>
<td>√</td>
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<td>Promote Diverse Thinking</td>
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<td>Support Health and Safety</td>
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<tr>
<td>Promote Interdisciplinary Learning</td>
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<tr>
<td>Focus on Community/Socio/Cultural Issues</td>
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<td>Improve the Environment</td>
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<td>Establish Learning Communities</td>
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<td>√</td>
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<td>Address accessibility issues</td>
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<th>OUTCOMES</th>
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<td>Improve social and environmental conditions.</td>
<td>√</td>
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<td>Understand the relationship between</td>
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<td>human factors and social responsibility.</td>
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<tr>
<td>Apply service learning principles in a community service project.</td>
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<tr>
<td>Develop a sense of cultural and social diversity and appreciation.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Understand and address the health issues of rural communities</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</table>

CIDA: Council for Interior Design Accreditation
NCIDQ: National Center for Interior Design Qualification
IDSN: Interior Design Department
OIHSE: Office of Interdisciplinary Health Science Education
Belvoir Elementary School
Service-learning: National Service-Learning Standards
form the Corporation for National Community and Service

APPENDIX B: RATING SCALE

**RATING SCALE** (Based on the National Center for Interior Design Qualification)
1= Little or no evidence of the outcome
2=Beginning of or some evidence of the outcome
3=Moderate evidence of the outcome
4=Detailed and consistent evidence of the outcome
5=Highly creative, inventive, mature presence of outcome

Has the designer met the client’s goals and requirements?

1  2  3  4  5
Do the selection of colors, materials and finishes appropriately convey the design concept?

1 2 3 4 5

Is there adequate preparation of construction documents consisting of:

- plans 1 2 3 4 5
- elevations 1 2 3 4 5
- materials and finishes 1 2 3 4 5
- furniture layouts? 1 2 3 4 5

Do preliminary space plans and design concepts meet socio-psychological and cultural requirements? 1 2 3 4 5

Do preliminary space plans and design concepts meet functional requirements (space, storage, specific needs)? 1 2 3 4 5

Do preliminary space plans and design concepts meet maintenance issues? ("Maintenance" means the ability of a product or material to be kept to its proper condition, and the work required to sustain that condition over the life of that material.) 1 2 3 4 5

Do preliminary space plans and design concepts meet safety/fire codes? 1 2 3 4 5

Is the design aesthetically appropriate and pleasing? 1 2 3 4 5

Does the design meet accessibility requirements? ("Accessibility" means features of buildings or spaces that enable use by people regardless of their level of ability.) 1 2 3 4 5

Do preliminary space plans and design concepts meet environmental guidelines? ("Environmental" means the aggregate of the physical conditions of the interior environment affecting the health and safety of the occupants: air, temperature, ergonomics, circulation) 1 2 3 4 5

Do preliminary space plans and design concepts meet sustainability guidelines? ("Sustainability" means the use of resources in such a way that they are not depleted; a use of materials that is capable of being continued with minimal long-term effect on the environment.) 1 2 3 4 5
Increasing attention has been directed to investigating outcomes of interdisciplinary education (Lattuca, Voigt, & Fath, 2004; Mendoza, Bernasconi, & MacDonald, 2007). These intersections are crucial in design education both because of their positive influence on students’ thinking skills but also because of their contribution to the advancement of the profession. This paper explores the ways in which the intersection between the Interior Design program and other design disciplines: a) creates new identities, benefits our students, and advances the field (ASAE, 2000); and b) engenders beneficial discourse regarding how this model provides access to the benefits of shared knowledge creation as a stepping stone towards inclusive communal validation.

Many international educational opportunities have been created for design students from American universities. This paper addresses a study abroad program, Design in Italy, which is unique however; because students take core courses with students from a variety of design fields and its primary focus on the development of a multi-disciplinary, cross-cultural, study abroad program. Through this exploration it is hoped that students will have a greater understanding of their place within the web of
design not as a pre-defined position, but one that is informed by interrelationships and therefore available for customization.

The Interdisciplinary Design Education Assessment (IDEA) project was developed to determine the success of an interdisciplinary design study abroad experience in increasing student awareness of the interrelationships among design fields and the value of knowledge offered by practitioners of different design fields. The objectives of this project were to develop: 1) strategies for the Interior Design (ID) program to intersect with other design disciplines; 2) an understanding of issues related to the integration and interaction of four design-related programs, namely, ID, Textiles, Apparel & Merchandising (TA&M), Landscape Architecture (LA), and Graphic Design (GD); and 3) a model on which to build a broad-based, multi-disciplinary, cross-cultural program.

We have developed two models to illustrate the existing educational administration structure and a proposed structure. The existing structure employs a “silo effect” where the programmatic areas are distinct entities (see figure 1) while the proposed model (see figure 2), suggests overlapping, fluid areas of interaction. Through this interaction, students would gain an understanding of the interrelationships among design fields, learn to appreciate new perspectives, and recognize the design community as a whole. The design community as one entity then exists in a manner in which boundaries are shared and redefined as a result of intersections and interaction with related design fields.

The model proposed in this paper demonstrates ways in which intersections with allied disciplines provides benefits to design students, creates new identities, and
advances the profession. Design is a qualifier that crosses many professions. It is through the collaboration of these professions that they are reinvigorated and our relevance to society is revisited and renewed. It is our hope that the following discussion sparks new ideas regarding the multitude of options for exchange and connection to revitalize and reinvigorate design education.
Increasing attention is being directed to investigating the outcomes of interdisciplinary education (Lattuca, Voigt, & Fath, 2004; Mendoza, Bernasconi, & MacDonald, 2007). These intersections are crucial in design education both because of their positive influence on students’ critical thinking skills and because of their contribution to the advancement of the profession. This paper a) explores the ways in which the intersection between an Interior Design program and other design disciplines: creates new identities, benefits our students, and advances the field (ASAE, 2000); and b) engenders discourse regarding a model created to provide access to the benefits of shared knowledge creation as a stepping stone towards inclusive communal validation.

The primary focus of the Design in Italy program is the development of a multi-disciplinary, cross-cultural study abroad program. The objectives of this project were to develop: a) strategies for the Interior Design (ID) program to intersect with other design disciplines; b) an understanding of issues related to the integration and interaction of three design-related programs, namely, Textiles, Apparel & Merchandising (TA&M), Interior Design (ID), and Landscape Architecture (LA); and c) a model on which to build a broad-based, multi-disciplinary, cross-cultural program.
Implementation of strategy. The Interdisciplinary Design Education Assessment (IDEA) project was developed to determine the effect of an interdisciplinary design study abroad experience on increased student awareness of both interrelationships among design fields and the value of the knowledge offered by practitioners of various design fields. It was our hope that students would have a greater understanding of their place within the web of design not as a pre-defined position, but one that is informed by intersections and interrelationships.

We developed a customized program with partner design schools in Milan, Italy. This program began in the summer of 2006 and continues each summer. The intent of the program is to expose students to Italian design pedagogy and interdisciplinary design experiences. In the summer of 2006, all of the students who participated in the program (ID, TA&M, and LA) took an Italian culture and art course in Tuscany and an additional course in Milan specific in content to his or her field. Additionally, an overarching project was given to students that encouraged them to integrate their U.S. campus training, their interactions with other design disciplines, Italian design pedagogy, and their observations of Italian culture. Students prepared presentations to share their design observations during a fall semester seminar on campus.

Pilot study. In order to assess the effectiveness of the program, we conducted an assessment. This pilot study included Likert-type and open-ended questions to determine student perceptions of the interdisciplinary interactions offered through this study abroad experience. Also included were questions regarding demographic information to determine relationships between potential differences and student backgrounds. The instrument was administered as on-site, pre- and post-tests and a
follow-up test after the students returned to campus. The survey was designed to reveal student perceptions of this interdisciplinary experience and changes in student attitudes as a result of the program. The pre-test was administered before students participated in the program, the post-test administered the last day of the session in Milan, and the follow-up administered a third time at the end of the first full semester after returning.

Creation of new identities

Through this program, the Design in Italy experience creates new identities at great benefit to our students (Mendoza, Bernasconi, & MacDonald, 2007). The intersection within the programs cultivated in students a broader understanding of the design disciplines. Through the incorporation and application of design methodology outside of interior design fields, students and faculty collaborated on ideas and content that intersected discipline boundaries as traditionally imagined.

Benefits to the students

Knowledge. The combination of both interdisciplinary and international experience created an environment that provided a positive learning experience. Students commented that their study abroad experiences were relevant to their academic goals in that they enhanced their preparation for the next courses taken in their major at their home institution. Other students indicated that their experiences prepared them to become independent adults and to face personal challenges. Work that was produced by the students during this study abroad experience further demonstrated how the intersections with allied disciplines provided benefits to the students.

Critical thinking skills. Students frequently indicated that they encountered a less structured approach to learning and were encouraged to collaborate with designers in
other fields during the study abroad experience. One student commented, "the most desirable aspect of my experiences in Italy was being able to have a better look at design concepts from others around the world," and "it opened me up to a broader and more [imaginative] ways of going about the design process." The Italian approach to design education combined with interactions among students and professionals from different disciplines broadened ways of thinking for the participating students.

Multiple Perspectives. Schommer (1994) argued that college instructors should help students understand learning as a process of seeing connections among ideas. Creating these broader conceptualizations of design within the existing curriculum creates an environment that allows students to develop multiple perspectives. The Design in Italy program broadened the opportunities for students to learn about different areas of design in a global context. The circle of information available as a result of interactions with students from a variety of academic backgrounds increased the awareness of new ideas and directions. Collective mapping of interrelated knowledge created a stronger framework for students. Students further indicated that it was a great benefit for them to interact with students from other design backgrounds and that they gained a broader understanding of design.

Motivating students to learn. Students developed the capacity to cope with the variety of challenges which present themselves in their day-to-day lives. The students revealed that the greatest strength of this study abroad program was experiencing a new culture and a new way of life while communicating with other designers.
A model was developed (see figure 2) to serve as a springboard for curriculum development and to facilitate positive student experiences. The student is at the core of this model encircled by design disciplines. Around this are the support services, including student services (advertising, scholarship, Internships/Career placement, Development), International Programs, financial, clerical, and technical support. This model shows multi-disciplinary approach to design in the near, built, and natural environment through undergraduate education, research, and outreach to public. This was created as an alternative to the Silo Design Education model (see figure 1). In the Silo model, there is little interaction and students do not have exposure to other programs.

*Interdisciplinary Design Education Model*

![Diagram of Interdisciplinary Design Education Model]

*Silo Design Education Model*
Including all forms of the design disciplines into a single model enables us to overcome the ‘silo effect’ and promotes the exchange of ideas. This *Design in Italy* program introduces students to the idea of larger design methodologies common to design professions. This model enables educators to align the support necessary to unify across disciplines within the university. The design community then exists as one entity in which boundaries are shared and redefined as a result of intersections and interaction with related design fields. This ability to interrelate with others creates powerful learning opportunities. Interdisciplinary collaboration makes a step towards the understanding that knowledge is gained through multiple sources. Through connections, students learn that the design process is not held in isolation. This Interdisciplinary Design Education model indicates potential relationships among disciplines for the creation of a collaborative and inclusive design program.

*Plans and follow-up.* The students’ input demonstrated which intersections with allied disciplines provided the greatest benefits to design students and advancement to their professions. Student comments and perceptions have been taken into consideration as plans for the 2008 summer program are made.
Other disciplines will be incorporated into the program as it grows, including Graphic Design, Product Design, Industrial Design, and Theatre. Semester programs using the same philosophy began in January 2007. In addition, plans for a consortium are underway in order to broaden the design intersections across academic institutions as well as disciplines. It is our hope that the preceding discussion sparks new ideas regarding the multitude of options for exchange and connection to revitalize and reinvigorate design education.

CONCLUSION

This paper demonstrates ways in which intersections with multiple disciplines provides benefits to design students, and creates an Interdisciplinary Design Education Model. Design is a discipline that crosses many professions. Integrating multiple disciplines will produce different learning outcomes than covering the topic of single discipline. If interdisciplinary courses encourage students to develop knowledge, critical thinking skills, multiple perspectives and motivate themselves to learn, perhaps the next step is for the researchers to investigate the specific characteristics of the students who were most benefited by this program.


The Wikibok: An Alternative Approach to the BoK

Hannah Rose Mendoza
Savannah College of Art & Design

Abstract

A discussion of the locus of design knowledge is currently underway. Some would claim that design knowledge can reside within clear boundaries defined by a formal Body of Knowledge (BoK). Guerin and Thompson envisioned “jurisdictional boundaries of knowledge” that “allow those who possess this knowledge to claim authority over its application” (2005, p 1). This claim is attractive but such control may no longer be an option in the Internet Age, when even the very call for discussion of the BoK definition process is on the web. Marshall-Baker argued that “the moment knowledge is bordered it is no longer knowledge” (2005, p xiv). This paper explores knowledge as process transcending boundaries and seeks to answer not “where” the locus lies but rather, “what” that locus can be.

I propose that a discussion of the BoK should recognize that knowledge: a) is created by multiple sources; b) is not something which can or should be contained; and c) as traditionally recognized is at the foundation of the existing power hierarchy that denies interior design’s validity as a profession. Established epistemologies define what constitutes knowledge and *how that knowledge can be created* (Brooks, 2006). Cunningham and Williams argued that the provincialization of traditional avenues of knowledge creation so as to not exclude certain types of knowledge (as cited in Marshall-Baker, 2005). By engaging in a closed attempt to define a BoK, we fail to question the exclusive acceptance of current methods of knowledge creation based
upon assumptions that often exclude the types of knowledge created through interior

As such, I propose that the BoK should serve not as documentation of existing
knowledge, but as an organizational system that allows for change, growth, and
personalization. In this spirit, I suggest we look to Wikipedia for an inclusive model of
knowledge creation and dissemination. Wikipedia is a free, internet-based
encyclopedia to which content can be contributed by anyone with internet access
(Wikimedia Foundation, 2006). It provides just such an organizational system and does
not face the same obsolescence issues as traditional print encyclopedias. Through the
Wikibok we can create a new platform from which to proclaim our profession. This
alternate place can be supported through encouraging membership avoiding the
recreation of the inequalities which hamper our professional recognition. I call this
creation a Wikibok.

Content would be contributed, edited, and updated by users at all levels from
professional to student, laypeople and educators alike. The Wiki model both alleviates
the “rear-view mirror” problem noted by Martin and Guerin in their 2005 study and
provides a template for an inclusive, mutable system for the creation of a systemic BoK.
Through this model, the value of the profession is felt as a result of inclusion in the
knowledge creation process, rather than through further fragmentation via the
colonization of fixed knowledge territories.
The Wikibok: An Alternative Approach to the BoK

Hannah Rose Mendoza
Savannah College of Art & Design

Narrative

Introduction

At the 2006 National Conference on the Beginning Design Student (NCBDS), a challenge was issued to identify the locus of design knowledge. The question is intriguing and has generated much interest among interior designers in recent years. In 2006, The Interior Design Profession’s Body of Knowledge: Its Definition and Documentation (Martin & Guerin, 2005) was updated by the same authors and released for review by members of the profession. At the same time, the Journal of Interior Design (JID) issued an invitation for letters and contributions regarding this process.

Martin and Guerin stated “abstract knowledge defines the interior design profession’s jurisdictional boundaries through control of knowledge and skill sets (p 10). Guerin and Thompson cited the importance of defining those boundaries to “allow those who possess this knowledge to claim authority over its application” (2004, p 1). In this view, the position of dominance “allows [practitioners] to expect deference from society for the creation and application of their specialization” (2004, p 1). I will argue that it is not the creation of knowledge boundaries that creates the claim to authority. Rather, it is the practice of design using the most current, accessible, and relevant knowledge that creates a practitioner who society understands deserves their deference.

Establishment of group identity necessarily creates a line of distinction between what we are and what we are not (the x and the non-x). I believe, however, that a discussion
of the BoK can also recognize that knowledge: a) is created by multiple sources; b) is not something which can or should be contained; and c) as traditionally recognized is at the foundation of the existing power hierarchy that denies interior design’s validity as a profession. Through active participation in the mapping of our knowledge, we provide a space for resistance to imposed boundaries and authorities (Blunt & Rose, 1994).

As such, I propose that a primary concern in the creation of the BoK should be to create an organizational system for knowledge which allows for change and growth, as well as personalization. The BoK document as produced by Martin and Guerin provides an extensive source of information however, what is needed now in order to utilize this resource is the placement of this valuable data mine within a framework that allows for access, creation, and growth. We must search for a new platform from which to proclaim our profession. The Wikibok would provide just such a space.

Why a BoK?

The definition and formalization of a BoK is considered one of the steps towards professionalization in addition to educational accreditation, qualifying examinations, and the establishment of professional organizations (Martin & Guerin, 2005). However, a BoK should be explored not only as an answer to a struggle for validity if it is to be useful. It should be a tool for our own growth.

Clutching tightly to the strategy of conquer and hold while constantly defining and caring for impermeable, fixed boundaries between “us” and “them” creates a constant battle among “knowledge territories” for sovereignty. We possess only a finite amount of psychic energy, and if our communal energy remains focused on shoring up
boundaries, the entity cannot explore the creative and reaches stasis (Freud, 1900/1911).

As a profession historically excluded or subordinated, we are well positioned to strike a destabilizing blow at the existing dichotomy of professional (superior)/non-professional (inferior) through the introduction of a variety of professionalisms. Rather than operating within the existing patriarchal, strictly hierarchical system of validation, an opportunity for the discovery of an alternate place of belonging has been presented. It is in the dismantling of binary hierarchies created as opposites which allows for the celebration of alternatives (Derrida, 1967/1997).

We are presented with the possibility of empowerment through internal acceptance of validity, separate and apart from “the other.” When we accept our validity as natural and internally generated, we can cease to accept the external imposition of definitions which create us only in terms of our relationship to others (as the non-x). It is our own realization of the power of our existence which provides the platform from which to proclaim validity. As Dawkins suggest, “Intelligent life on a planet comes of age when it first works out the reason for its existence” (2006, p 1). It is time we claim authority to recognize our reason for existence. This is not an argument for the displacement of other fields’ claims to validity through a reversal of the hierarchy; it is an argument for its disassembly. As the opposite of patriarchy is not matriarchy but fraternity (Eisler, 1996); the opposite of the existing hierarchy is not standing it on its head but leveling it. Validity does not lead to equality; equality itself is the means not the end (Gersten, 2006). It is the removal of the perception of difference as inherently hierarchical, in whatever form it exists, that brings us to validity.
**Wikibok**

A systemic BoK should not be primarily relational, positioning us in reference to others, but rather it should be encompassing and supported by as broad a base as possible. As such, we propose a Wiki\(^1\) approach to the creation of a BoK as an organizational system. Let me introduce you to the “Wikibok.”

Wikipedia is a free, internet based encyclopedia to which content can be contributed by anyone with access to the internet (Wikimedia Foundation, 2006). The encyclopedia is maintained by the Wikimedia Foundation whose goal is to “develop and maintain open content, wiki-based projects and to provide the full contents of those projects to the public free of charge” (Wikimedia Foundation, 2006). Wiki refers to a type of website that allows for easy access, addition, and editing of the content of its pages creating a location for community knowledge creation. The website provides not only narratives and images but links to external web pages and articles.

Wikipedia has become, in essence, an organizing framework for encyclopedic knowledge and its content continually evolves. Rather than being a static document which offers a view of the state of knowledge at the time of its creation, it grows and changes as new information is discovered and old ideas fall away. It provides an organizational system for people searching for up-to-date information regarding whatever subject they wish to pursues.

What I propose is that we devote our attention and energies to the creation of an organizational system that provides a clearinghouse of information accessible to the scholar, student, expert, or layperson both for usage and contribution. This model answers the acknowledged problem of the “rear-view mirror” effect of a documented

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\(^{1}\) Wiki is sometimes said to stand for “What I Know Is…”
BoK (Martin & Guerin, 2005). It also disturbs the sacredness of documented knowledge and knowledge sources and allows for questions regarding the underlying epistemologies of currently established sources (Brooks, 2006).

**Conclusion**

Certain questions have arisen during the writing of this article and discussion with the broader design community regarding the use and creation of a Wikibok as a part of the professionalization and recognition of the. The existence of a Wikibok does not diminish the ability of bodies to accredit programs of study or the examination of practitioners and issuance of credentials. Just as certain bodies (for example universities) confer degrees and individual teachers determine what constitutes a passing or failing grade on an exam that is of their design. CIDA or NCIDQ would not be undermined but rather be instead closer always to relevance.

What defines the interior designer is not solely based upon what comprises the BoK but also upon that person’s ability to practice. The WikiBok model reinforces the need for licensure and title acts. If I were to independently study medicine but be unable to put that knowledge to practice (both for legal reasons and reasons of ability) I am not a doctor. No more is someone who has studied or contributed to the BoK a designer if they cannot practice. This type of body of knowledge rather than dissipating the profession by being too broad, serves as a backdrop for the importance of the NCIDQ examination, CIDA accreditation, and license and title acts.
As Foucault noted, theories and philosophies are the products of engaging in discourse with power structures. Knowledge is a process that cannot exist in “isolation from the discourse that uses them in the disciplining of bodies and the creation of institutional forces” (Brown 2000, p 2). The process is one which questions existing power structures, something which is vitally necessary for the recognition of interior design as a profession. Continuing to approach the BoK as a process rather than a repository denies stultifying power to those engaged in knowledge creation. It allows for growth, change, and vitality all the while reinforcing the importance of practice; of the wisdom of interior designers (seen as knowledge applied over time), and the validity of our voice in the determination of our practice without excluding or limiting ourselves to currently imagined boundaries.

I strongly encourage participation by all in the discussion, development, and creation of a Wikibok as it is in just such measures of open solidarity that we can create our own place of belonging. It is my sincerest hope that this paper contributes to the continuation of this important discussion.
Reference List


Dispelling the Myth of Interior Design: Summer Camp Experience for Rural High School Students

Beth R. Miller, Amy Crumpton, and Margaret Bateman
Mississippi State University

Abstract

Enrollment in interior design as a college major has significantly increased since 2000. This increase is due primarily to the influx of designed-related reality television home improvement and design shows (Waxman & Clemons, 2005). While entertaining, most shows do not depict the profession of interior design in any manner that relates to the practice of interior design. Freshmen enrolled in interior design courses are quickly disillusioned by the technical and rigorous curriculum content upon which an interior design degree is based. These students drop out quickly realizing that their perception of interior design was solely based on television shows. How can interior design programs recruit students who have an accurate perception of the profession of interior design?

One university explored the opportunity of utilizing design camps to introduce the profession of interior design to high school students. The Gear Up Program, sponsored by the United States Department of Education, is designed to increase the number of low-income students who are prepared to enter and succeed in postsecondary education (www.ed.gov/print/programs/gearup/index.html). Summer design camps offered in 2006 and 2007 were designed with two specific goals. One goal of the camp was to expose a diverse group of students to the possibilities in design fields such as architecture, art and interior design. A second and equally important goal for the camp
was to assist students in understanding the college life environment and to develop personal skills that will aid them in achieving the goal of a college degree.

Activities for the camp were designed to be educational, creative, physical and experiential. Content-specific courses were developed that targeted specific skills necessary in design professions. Model building, sketching, rendering, computer applications, principles of design, design psychology and career opportunities in design were some course modules that were offered during the week long residential camp experience. The university offered personality and career assessments as well as college admissions review.

Campers in the 2007 participated in a pre and post survey which revealed significant data such as:

- Students were questioned about their consideration of art, interior design, and architecture as a career. Differences were seen in the pre and post surveys. Those considering art as a career differed in the pre and post from 26% in the pre survey to 35% in the post. Those considering interior design as a career increased from 26% in the pre survey to 45% in the post. However interest in architecture went down from 47% in the pre survey to 35% in the post survey.

- The post survey also indicated that 33% of the campers had changed their minds about their college major after the camp experience.

Successful recruiting and retention will continue to be challenges to universities and programs such as interior design. Design camps are a perfect venue to introduce career opportunities to pre-college student populations and correct the misconceptions about the profession.
Dispelling the Myth of Interior Design: Summer Camp Experience for Rural High School Students

Beth R. Miller, Amy Crumpton, and Margaret Bateman
Mississippi State University

Narrative

Universities across the country are using summer camp experiences targeted at high school and middle school students for a variety of reasons and hoping to achieve a specific result. Some are trying to recruit certain segments of the population such as the underserved including minorities or high school students who would be the first in their family to attend college. Other universities are devising these camp experiences to create excitement and interest in a particular career area. These camp experiences vary from day camps where students are sometimes bussed onto campus and participate in activities only during the day to residential camps where students experience college life by living in dorms and participating in planned activities during the day and night. Camps vary in their fee structure from cost free camps financed through corporate or government sponsors to camps charging a small fee with universities underwriting the balance while still other camps have fees attached to them that cover the entire camp expense.

Universities are not only trying to recruit with these camps but also assist students in deciding upon a major. These camps expose students to various professional programs. Research reveals that only 21% of students entering college are sure of their decision about their major course of study (Kazmer, 2004). When reviewing results of this research, researchers found that many incoming students do not understand their selected discipline. Only 10% of incoming students had participated in some type of college outreach program such as a summer camp. This leaves the majority of students not having the opportunity to
participate in an outreach program which might aid them in their decision making (Kazmer, 2004).

Many college career areas from engineering to interior design face the same problem of students not understanding their majors. Popular reality television shows like those on the Home and Garden channel are influencing students to pursue careers in interior design. Bellevue Community College’s interior design program had 359 students enrolled in 1999 and in 2003 their numbers had increased to 568 (Long, 2004). Florida State University typically had a freshman class of approximately 50 students and in the fall of 2005 freshman enrollment was more than 120 students. This increase was due primarily to the influx of designed-related reality television home improvement and design shows (Waxman & Clemons, 2005). These shows are for entertainment and do not depict the profession of interior design in any manner that relates to the practice of interior design. Can a camp experience recruit students who have an accurate perception of the profession of interior design?

There are many summer camp models that can be studied such as a summer camp at the University of Colorado at Boulder which has established a camp whose focus is on their Business Leadership Program. Their primary goal is showing high school juniors and seniors the importance of a college education not specifically to direct them to careers in business. Theirs is a statewide program aimed at minorities but they encourage rural students and students with international experience to attend as well. This camp was founded more than a decade ago and accepts approximately 30 students per year (Shinn, 2003). Wayne State University holds a camp, E-Commerce, whose primary focus covers the development of technical skills such as Web design, PowerPoint and Excel as well as
finance. These are residential camps which are funded by corporate sponsors and are free to all participants. Some of these sponsors offer college scholarships to students who attend the camp program. Two thirds of these campers will enroll in college at the universities where they attended camp (Shinn, 2003).

Another type of camp is run by Education Unlimited (EU) with nearly 500 students attending six camps at campuses in California, Massachusetts, and New York state. This particular camp focuses on college-admissions prep from one-on-one college counseling, lectures on study skills, time management, and SAT-preparation classes. This is a residential camp experience with the camper being charged for the experience (Tonn, 2005).

The state of Maine offers summer camps and other activities to encourage high school students to aspire to attending college. Central Maine Community College holds summer camp for 10 to 14 year olds who are interested in criminal justice careers. This exposure to potential careers encourages students to work hard in high school and take college prep courses (Plimpton & Quint, 2007).

The College of Architecture, Art, and Design at Mississippi State University explored the opportunity of utilizing design camps to introduce the profession of interior design and related design careers to high school students. Interior design, art, and architecture faculty prepared and submitted a proposal for funding of a camp to the Gear Up Program, sponsored by the United States Department of Education. Gear UP is designed to increase the number of low-income students who are prepared to enter and succeed in postsecondary education (www.ed.gov/print/programs/gearup/index.html).
The proposal was accepted and summer design camps were offered in 2006 and 2007. These camps were designed with two specific goals. One goal of the camp was to expose a diverse group of students to the possibilities in design fields such as architecture, art and interior design. A second and equally important goal for the camp was to assist students in understanding the college life environment and to develop personal skills that will aid them in achieving the goal of a college degree.

Counselors from participating Gear Up schools were contacted and informational packets were mailed. The faculty at MSU began making personal e-mail inquiries to interested students and recruiting participants for the camp. The summer camp in 2006 had two sessions with 8 participants in the first session and 17 in the second session. In 2007 one session of camp was held with 21 campers.

Activities for the camp were designed to be educational, creative, physical and experiential. Content-specific courses were developed that targeted specific skills necessary in design professions. Model building, sketching, rendering, computer applications, principles of design, design psychology and career opportunities in design were some course modules that were offered during the week long residential camp experience. The university offered personality and career assessments as well as college admissions review. Campers were not only immersed in design but also were exposed to the process of college entrance and application.

A pre and post survey was developed which was IRB approved and at registration parents and students signed consent forms allowing the camp faculty to acquire and publish information from the survey instrument. The data collected revealed that students’ awareness and knowledge of design had increased. An increase in their self-confidence
and feeling of accomplishment from the camp experience was disclosed. A significant number expressed considering interior design as a career after participating in the camp. The gender composition of the camp was half female and half male which is very different from the current interior design student population which is predominantly female.

Based on information gathered from the previous camp experiences, future design camps at MSU will charge tuition and offer scholarships. Students will be recruited who have an interest or talent in design. We will continue to offer the curriculum that was developed which exposes students to the opportunities and challenges of a career in interior design. Camps are an invaluable and informational tool for recruiting and exposing students to a major and a career. They assist students in their preparation for their college experience and should be strongly supported by colleges and universities.
References  
(APA Style)


Camp Experience 2007
Abstract

This paper explores themes of simulation and risk through a collaborative digital experiment. Academics at two universities, one in the U.S., one in Europe, jointly developed an experimental brief that sought to digitally simulate real world scenarios, expose the risks, inevitable tensions and emergent conflicts often arising out of the relationship between the designer and client. It occurs within the physicality of the traditional studio and workshop, and the formlessness of the web. Improvisational approaches toward method design were incorporated by adopting and swapping roles throughout a three-week timeframe, switching between roles as *proxy designer* and/or *pseudo client*, and seeking gradually through the designing, exchanging and reflecting on questions, the best soft *design* solution to their *clients* design problem without conforming to a point where creative integrity is lost, risk is disabled, rather than enabled, and mediocrity ensues. The project explored the inherent risk of miscommunication within the ubiquitous web culture we now inhabit, between two potentially opposing parties, client and designer. Learning and creativity within Interior Design are inherently risky activities that have struggled to fit other academic regimes, and other disciplinary shoes. Design is not about the reliability or indeed readability of distinct signposts, but a metaphorical map of unknown territory, uncertain where creative risk taking will lead, but in arriving, we recognize the destination. To the skeptical though, ‘risk’ and ‘play’ are distinctly suspect ‘four-letter-words’ with debatable pedigrees, and almost suggest pedagogically deviant terms which threaten to distance us from the serious Interior and academic rigor of a hard ‘work’ ethic. While other disciplines may define their risk through the physical artifacts they produce, (e.g. painters paint), Interior Design cannot simulate this in a similar artifactual manner. Instead, we operate within a particularly odd, unreliable and distinctly risky paper space abstraction, frequently seeking to simulate, at scale, without the substance of the real thing, within an exclusive visual language of orthogonal drawing. The risk we now face, as a discipline, is in not facing this paradox in our traditional learning process. Significantly, what Interior Design has within its grasp, is the power and persuasion of description, and language plays a pivotal part in supporting what the image fails to say. In embracing risk we also risk failure, and in doing so we must confront conflict, but conflict may be as creatively energizing as it is potentially paralyzing. While Interior Design operates at the intersection of other disciplines, often borrowing both theoretical and pedagogic processes, it also exists metaphorically within a spectrum of spaces of
digital flow, to relative fixedness and undeniable transience, from the distinct physicality of familiar spaces, (the analogue studio and/or workshop), to the deviant otherness of heterotopian places (the flow, flux and virtual). In embracing risk we risk failure, but how can this be nurtured within a growing climate of educational, political and industrial accountability and uncertainty. This paper explores how creativity, risk and a play ethic address the recurring themes of simulation within Interior Design education.
Proxy Designer/Psuedo Client

Cynthia Mohr
University of North Texas
Denton, Texas, U.S.

Andrew Milligan
University of Dundee
Dundee, Scotland, U.K.

Narrative

The presentation describes a student learning experience that created opportunities to personally experience and navigate the interactions of client and designer in a real world/real time project. The collaborative project was the result of a philosophical discussion between academics at two different institutions, The University of North Texas in the United States and The University of Dundee in Scotland, regarding design education, the limits of the studio environment, and the impact of culture on design. Part of the training of design students is learning multiple methods of communication, i.e., drawing and sketching, ideation, and construction documentation. We attempt to support and enhance creativity within our students even though they may not be prepared by their previous educational experiences to respond creatively. Visual literacy is the most commonly addressed form of communication employed within the traditional studio environment. Verbal communication is usually limited to presentations, and general questioning as part of the design process. Writing is done as parts of a whole and virtually never as the sole stimulus for the creative process. The project resulting from these discussions allowed participants to explore and experience the inevitable conflicts, tensions, and misinterpretations between designer and client that may emerge
through the exchange of ideas and values on a virtual design project where language, rather than visual process, is the formative element.

The Project

Our students will work in a global environment where people and cultures collide. Where design professionals must be able to respond sensitively, thoughtfully, and creatively in order to produce environments that meet program requirements without sacrificing originality. A key question asked by faculty leaders was, “How do we encourage, even grow, creativity within a student body that is positioned to receive information, but not to process it in creative ways?” The project attempted to encourage students to explore attitudes towards technology, culture, and their expectations of how designers interact with clients in practice. The three-week project started with the faculty randomly pairing one Dundee student with one Texan. These student pairs then served as each other’s Proxy Designer and Pseudo Client. The critical formative aspect of this project was the strict limitation to the use of written language as a means of communicating thoughts, impressions, and ideas. The project brief identified acceptable means of communication through low-level digital technologies that are often perceived as social portals (e.g. email, texting, but excluded video exchange and social websites). No exchange of facial images was allowed and exchange of phone numbers was permitted only for the purpose of texting. These limits were intended to force the role of dialogue and help students to delve more deeply into the importance of communication and interpretation in the design process. Operating in a virtual environment, proxy designers’ were asked to interview their pseudo client as an exercise resembling the
initial part of a design project where designer and client meet and try to clarify the problem and its boundaries. Students were directed to explore how the *pseudo clients’* sense of cultural identity, values, and qualities (real or perceived) may be reinterpreted and creatively reframed through the designing, interpretation and decoding of questions. As a result of the inquiries, *proxy designers* were asked to create a 3D portrait or ‘experience’ that expressed the cultural identity of the *pseudo client*. The portraits and participants were revealed in a virtual videoconference.

The Process
Prior to sending first questions, students participated in exercises to stimulate open thought in the creation of probing and not simple surface questions. In practice, conversations can be full of ambiguity, meanings can be misconstrued, and interpretations flawed. Asking the right questions to illicit useful responses at the right moment is itself crucial. Careful development of questions to elicit responses that might lead to answers that could be developed visually in three-dimensions became the first hurdle for the participants. “What is your favorite color?” would not provide the kind of information that would lead to ideation in three-dimensions. Trial and error coupled with persistence became a critical factor in project completion. Some pairs fared better in the process while others struggled to acquire any ‘valuable’ information. Faculty stressed to students that answering questions was as important as posing them. Instructors also found themselves outside their comfort zone, as the ‘studio’ wasn’t completely within their grasp. Students discovered that what they thought was a common language of design in reality held subtleties. Patience was a necessary...
ingredient for all participants as they worked to comprehend the cultural colloquialisms of American English, English and Scottish slang.

Time zone differences played a role in the process. A six-hour difference meant that Dundee students were ‘talking’ at the end of their school day, while Texans were ‘talking’ in the morning. Technical glitches sometimes affected communication but were deemed ‘part of the process’ by faculty as this happens in business and the work still has to continue. Most student pairs seemed to establish a rhythm that worked for them and in the end students who had difficulty wrestling good responses used that vacuum to inform their solutions. Differences in structure and facilities that had an affect upon the end product didn’t become completely clear until the final videoconference. In Texas, the fragmented class structure meant that these students had two other significant studio classes that required their attention, while in Scotland, the modular structure of that institution allowed a more fluid and focused exposure to the problem. Dundee students also had access to a well-equipped materials lab, while the Texas students were limited to the tools that they could use within the classroom or were available to them personally outside the college.

The Presentation

The final reveal occurred in a virtual videoconference where students met face-to-face for the first time and presented their design solutions. There were technical difficulties as image transmission came to a halt several times and rebooting equipment resulted in interruption to the flow of verbal and visual presentations. Differences in approach were revealed as the proxy designers presented the projects. Although both groups were
encouraged to record their process through sketching, diaries, maquettes and prototypes, the Dundee group showed a much deeper level of conceptual design thinking. As the Dundee students presented their work, the careful crafting of their process documentation and the clear use of process to reach their end result clearly left the Texan group in the dust. By contrast, the Texan designers gave strong confident verbal support for their projects. Everyone exhibited enthusiasm for this final experience and indeed did not appear to waver in interest even though the virtual conference took many hours to complete.

Conclusion

This project sought to provide an opportunity for students to use only the written word to identify and understand a 'client' and through the process to overcome differences between two cultures that were perceived as being similar and from that written communication create a visual reference. Although there were unintended hurdles, in the end, all participants felt the project worthy and produced excellent end products that many noted ‘captured them completely’. The students had little or no experience working with student peers in an international context. When introduced, students exhibited equal parts skepticism, angst, and curiosity. Many students seriously questioned the purpose of the project within their course of study. They had difficulty grasping the actual seriousness of the project when it dealt with unconventional tasks, play, and the uncertainty brought by a completely new, and unfamiliar, type of project. The resultant diversity of interpretative responses, strong 3D narrative objects and presentations clearly reveal that the initial reluctance was replaced by enthusiasm for the project.
The phenomenological aspects of this project should not be ignored. As referenced in Stephan Clucas article in the Critical Quarterly. “our ordinary world is the closest and yet the most distant from us. We move within our everyday existence without reflecting on it’s meaning or the absence of same.” We pushed our students to move within, to access and face the most meaningful and meaningless aspects of their existence. To tap into the parts of their being that they may ignore and then communicate that information to their designer. On the surface a simple task, but in reality a formidable one that made many participants uneasy. This was more than a simple conversation, for some it was a journey to discovery. Others found it impossible to go beyond the surface and couldn’t address the questions that drew from deeper aspects of the psyche. The final projects were emblematic of these differences. Faculty have repeated the project and hope to expand the participant group in the future.

Reference List

(APA)


Students’ Preparedness upon Graduating from a Traditional or Online Interior Design Program

Windy J. Neff, ASID, IDEC
Lori A. Anthony, ASID, IDEC

Chatham University

Abstract

Interior design intern employers were surveyed to determine students’ preparedness for the internship regardless of the educational delivery system; online or on-ground. The results of the survey indicated that students were equally prepared for employment upon graduation, regardless of the type of program they attended.

The purpose of this study was to see if there is a difference between traditional and online education within the field of interior design. The examined institution offers the same interior design Bachelor of Science degree through two different means: the traditional on-ground format and the online format. The study focused on the internship requirement within that program. The internship employers answered surveys on their students’ performances.

Interviews with two established designers in the area helped to formulate the researcher’s questionnaire. These designers were selected based on a professional relationship with the researcher and their familiarity with supervising student interns. Each employer had similar information to report about what they look for in an intern, which provided consistency in creating the questionnaire. The survey was designed to be anonymous, so the only descriptive questions included such items as whether the student was from the online or traditional program; size of firm; firm specialty; and what
types of tasks the interns were given during their time at the firm. However, the majority of the questions were close ended.

The institution granted the researcher access to the student internship employment records from both programs (online and traditional). This enabled the researcher to create a database of employers for the study.

The survey was successfully distributed to 59 employers through a web-based survey (www.surveymonkey.com). There were a total of 27 questionnaires returned, giving the researcher an overall return rate of 45.76%. The survey was divided into seven different categories: general descriptive questions; organization skills and time management; professionalism; motivation and personality; communication skills; technical skills and quality of work; and writing skills. After comparing the responses given by the employers, the researcher can state with a 95% confidence level that there was very little difference between the competencies of the students in the traditional or online programs. The survey indicated that students upon graduation from a traditional or online interior design program had equal preparedness.
Purpose

Online classes are a relatively new form of teaching in academia. This delivery method is rapidly evolving within the field of interior design. Today there are a limited number of online programs that offer a bachelors degree in the field of interior design; some programs have based their distance learning programs on their associated traditional programs, while other programs are offered by purely online institutions. The interior design program reviewed in this study has the same curriculum, for both traditional and online instruction. The difference in the students interaction within their (virtual) classrooms could greatly affect the students' internship experience, because students online do not have the face-to-face interaction with instructors and peers. The purpose of this study was to examine whether an interior design student from an online program is prepared for placement in the workforce as measured by their internship experience.

Literature Review

Orality & Literacy: For years, philosophers have been studying the differences between the written versus the spoken word. Walter Ong (1982) writes: “Sound exists only when it is going out of existence” (pp. 91). By this, he explains that as soon as you
say a word, that word is gone forever; however, when a word is written, it acts as a perpetual, tangible reference. Ong’s theory about the power of the written word is important when discussing the issues of online education. In a traditional classroom lecture, how a student interprets speech, or possibly even hears it, is how the student will remember these words. If the words are written, then the student, has time to go back, re-read and review the lecture, and he/she has time to reflect on the material. Because spoken lectures become written text in an online environment, students typically have the opportunity to read, and then take time to reflect on, the material prior to responding to a question posed to them.

**Attention & Distraction:** In Marc Prensky’s (2001) article, “Digital Natives,” he discusses in detail how children of today, the “digital natives,” are so preoccupied with computer games and technology that they are accustomed to multi-tasking, causing them to have shorted attention spans. Because of short attention spans, students in today’s classes become bored easily. Crary (2000) talks profusely about the mainstream problem of children diagnosed with ADD (Attention Deficit Disorder). It is believed that students or children with ADD have such a difficult time paying attention because they absorb so much information at once. American children are better at multitasking because of their technological exposure to mass media. Modern schools tend to be based on linear learning, which may actually hinder the “hypertext minds” of children (Prensky). These children think bilaterally due to their extensive exposure to multimedia. The traditional classroom setting may “retard” the students' learning because they are bored; thus, they are not interacting enough with the class. In this
case, the distant learning through web-based (online) environments might actually be beneficial for these “digital natives” as it will capitalize on their “hypertext minds” (Prensky).

**Creativity & Curriculum:** Instructional design is an important concept to understand within the scope of this study because the online program studied hired instructional designers to create their online classes. It is common for there to be five to twenty-five sections of one class offered each quarter within this online program. In order to ensure the consistency of what is being taught in each of those sections, the core curriculum, or lecture portion of the class, is identical. This takes the responsibility of designing a new course off of the online instructor, and only requires instructors to facilitate the class.

**Methodology**

A web-based questionnaire was distributed to internship employers of the traditional and online students’. The researcher uploaded the questionnaire onto an online survey website, Survey Monkey (www.surveymonkey.com), for ease of distribution, record keeping, and evaluation. The employers of the traditional and online students received an e-mail explaining the study and including the link to the survey. The e-mail asked employers to answer the questionnaire based on the most current intern from the research site. The employers had two weeks to fill-out the questionnaire. To encourage greater response two reminder e-mails were sent out both one week and one day before the questionnaire closed.
Summary

The final questionnaire that was sent out to employers was divided into seven different categories: general; organization skills and time management; professionalism; motivation and personality; communication skills; technical skills and quality of work; and writing skills. A total return rate for the survey was 27 out of 59 giving the researcher a total of a 46% return rate. The survey indicated that students, upon graduation from a traditional or online interior design program, had equal preparedness because there was not a significant difference among any of the seven categories examined.

The researcher’s initial response when learning that one may get an interior design degree online seemed ludicrous due to the field being so hands on. After delving into the online environment through researching the program, the researcher now fully supports online interior design. The results of this survey are significant to the growth of online education within the field of interior design. Since there was no significant difference between the traditional and online students preparedness for their internship, there should be no significant difference between their ability to graduate, find a job, and succeed at that job. Students within the studied institution are equally prepared because both programs have the same competencies required for all courses. If students do not fulfill the competencies for the course they are not permitted to continue on within the program.


Is Vinyl Wall Covering toxic?

Linda L. Nussbaumer, Ph.D
South Dakota State University

Abstract

Purpose

Many interior finishes and furnishings emit chemicals that affect indoor air quality (IAQ) and may trigger symptoms of illnesses such as Asthma, Multiple Chemical Sensitivity (MCS), and others. Research indicates that chemicals such as volatile organic compounds (VOCs) may trigger symptoms of these illnesses (EPA, 2003). VOCs vaporize at room temperature and are found in pesticides, solvents, cleaning products, and more (EPA, 1994). Often chemical exposure is the result of indoor air pollution within a tightly sealed building (Thivierge, 1999). Frequently, designers are specifying materials that emit chemicals, and these materials are often installed in airtight buildings. In these buildings, VOCs are trapped, emit gases into the interior, and affect the IAQ—a key factor in triggering symptoms (AIA, 1997). Furnishings, e.g., carpet, synthetic textiles, or vinyl chosen for interior environments may contain VOCs, which emit gases into the interior. A review of literature conducted on MCS revealed a need to test various interior materials for VOCs (Nussbaumer, 2004).

Wall coverings are manufactured with paper, fiber, or polyvinyl chloride (PVC); PVC-based or vinyl is the most commonly used wall covering. However, research has stated that vinyl wall covering emits VOC gases into the indoor air and, when manufactured, create a toxic by-product (AIA, 1997). Some sources state that PVC has
been considered a major environmental health risk to IAQ (HBN, 2005) while others related to the vinyl industry state that PVC has little or no health risks to IAQ (Vinyl Institute, 2005). Vinyl flooring covering has been tested for the VOC emission (Lundren, Jonsson, & Elk-Olausson, 1999); however, no research was found to test VOCs emissions from vinyl wall covering. Since vinyl wall covering may emit VOCs, such materials need to be tested.

Methodology

A pilot study was conducted to test VOCs emissions from vinyl wall covering. The objectives are to measure the VOCs emissions from vinyl wall covering and determine the toxic level of emissions. The expected outcome is that vinyl wall covering contains VOCs at toxic levels. [VOC tests at >0.1 TLV are considered toxic (Greenguard).] Data Chem Laboratories in Salt Lake City conducted the emission tests using Dynamic Headspace GC-MS Analysis. Test results from this study will be shared during the presentation.

Further testing needs to be conducted on vinyl wall coverings to determine reliability. In this pilot study and with limited funds, only one bolt from one manufacturer was tested. Though individual materials or products should also be tested, testing the combination of materials within one space would determine total VOCs (TVOCs) for an entire space. Additionally, it is the combination of chemicals from human activities and materials that affect our indoor air quality.

Study results will be presented at the conference. The audience will participate in a discussion of possible materials to be tested and in what combination as well as discussion of possible collaborative efforts.


Is Vinyl Wall Covering Toxic?

Linda L. Nussbaumer, Ph.D
South Dakota State University

Narrative

Introduction

This presentation will provide a background on causes of indoor air pollution, symptoms that trigger illnesses related to poor indoor air quality, and analysis of finding on vinyl wall covering research. Finally, conclusions will be drawn.

Indoor Environment

Affecting interiors, indoor air contaminants include microbial contamination and/or volatile organic compounds (VOCs). Microbial contamination is from mold and mildew. Volatile organic compounds (VOCs) are either natural or synthetic organic compounds. These compounds vaporize at room temperature and include formaldehyde and other chemicals are found in pesticides, solvents, cleaning agents, and more (EPA, 1994; Godish, 2001; Wittenberg, 1996). Additionally, when these chemicals are emitted into the interior, they are absorbed into the interior components such as the carpet and gypsum board. Then, later chemicals are desorbed back into the interior.

Interior Materials

Many interior finishes and furnishings emit chemicals that affect indoor air quality (IAQ) and may trigger symptoms of illnesses such as asthma, MCS, and others. Research indicates that chemicals such as volatile organic compounds (VOCs) may trigger symptoms of these illnesses (EPA, 2003). VOCs vaporize at room temperature and are found in pesticides, solvents, cleaning products, and more (EPA, 1994). Often chemical exposure is the result of indoor air pollution within a tightly sealed building (Thivierge, 1999). Frequently, designers are specifying materials that emit chemicals, and these materials are often installed in airtight buildings. In these buildings, VOCs are
trapped, emit gases into the interior, and affect the IAQ—a key factor in triggering symptoms (AIA, 1997). Furnishings, e.g., carpet, synthetic textiles, or vinyl chosen for interior environments may contain VOCs, which emit gases into the interior. A review of literature conducted on MCS revealed a need to test for VOCs in various interior materials such as wall coverings (Nussbaumer, 2004).

Wall coverings are manufactured with paper, fiber, or polyvinyl chloride (PVC); PVC-based or vinyl is the most commonly used wall covering. However, research has stated that vinyl wall covering emits VOC gases into the indoor air and, when manufactured, create a toxic by-product (AIA, 1997). Some sources state that PVC has been considered a major environmental health risk to IAQ (HBN, 2005) while others related to the vinyl industry state that PVC has little or no health risk to IAQ (Vinyl Institute, 2005). Vinyl flooring covering has been tested for the VOC emission (Lundren, Jonsson, & Elk-Olausson, 1999); however, no research was found to test VOCs emissions from vinyl wall covering. Since vinyl wall covering may emit VOCs, such materials need to be tested. Thus, a pilot study was conducted to test for VOCs in vinyl wall covering.

*Research of Vinyl Wall Covering: Methodology*

Two sets of vinyl wall covering samples pieces were order. The first set was opened and exposed briefly to the outside air. From this set, one sample piece was selected in order to purchase one bolt. The samples pieces were placed back into their packaging envelope and resealed. The second set was not opened until the beginning of the testing process. When the 54” wide by 30-yard bolt arrived, the packaging was examined, tightly sealed, and stored to await the testing process.

To prepare the materials for testing, the following procedure occurred. Using sterile gloves, the roll was opened and five-inch by 54” strips were cut at the following intervals:

1) First five-inches (the beginning of the bolt)
2) 20 inches (when first indication of odor occurred)

3) 7 yards from the beginning of the bolt

4) 15 yards from the beginning of the bolt

5) Last five-inches (inside the bolt next to the cardboard tube)

Each strip was placed in a glass quart jar and covered with aluminum foil. Then, jar cover was set and tightened to the jar. Next, four samples were placed in jars: two from each set of samples. The jars were packaged and mailed to Data Chem Laboratories in Salt Lake City, Utah where the analysis was conducted.

The samples were analyzed by thermal desorption GC/MS according to method TO17 with modification. All results were semi-quantitative. Measurements used were \( \mu g/m^3 \) formula \( (\text{result/volume}) \); ppb v/v formula \( (24.45*\text{result})/(\text{Volume*MW}) \). Each sample container was purged with pure nitrogen with the bulk sample in the container. The headspace was collected at ambient temperature, using a CarboTrap 300 tube at approximately 200 mL/min. for 30 minutes. The resulting sample tube was then analyzed by thermal desorption GC/MS according to method TO17. Sample weights were reported.

Research of Vinyl Wall Covering: Findings

There are thousands of VOCs, i.e., benzene, toluene, methylene, chloride, ethanol, acetone, formaldehyde, xylene, ethylene glycol, texanol, 1, 3-butadiene, phenol, and many more. Those found in the vinyl wall covering varied with the strip and/or sample.
Samples one through five were from the bolt and were placed and sealed in the jars immediately after cutting. Sample six was allowed to off-gas for four days. In this sample, no VOCs were detected. Sample seven and eight were from the first set of samples pieces that were briefly exposed to the air. Samples nine and ten were from the last set of samples pieces. This package of samples was not opened and exposed until the preparing for the testing process. One additional chemical was found in the second set of samples (nine and ten) than in the bolt or first set of samples. All except the exposed strip contained the chemical Toluene (see Figure 1). Toluene has been known to affect the nervous and upper respiratory system.

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<td></td>
</tr>
<tr>
<td>Sample Na35</td>
</tr>
<tr>
<td>Chemical</td>
</tr>
<tr>
<td>Propene</td>
</tr>
<tr>
<td>Ethanol</td>
</tr>
<tr>
<td>Isopropyl Alcohol</td>
</tr>
<tr>
<td>Acetone</td>
</tr>
<tr>
<td>2-Butanone</td>
</tr>
<tr>
<td>4-Methyl-2-Pentanone</td>
</tr>
<tr>
<td>Toluene</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
</tr>
<tr>
<td>Air Volume</td>
</tr>
</tbody>
</table>

Figure 1: Analysis of VOCs in Vinyl Wall Covering in each strip and sample

The next comparison is of VOCs by strip from the vinyl wall covering: number 135 is the first five-inches; number 256 is at ten inches with the first detection of odor, number 398 is at 13 yards; number 490 is at 26 yards; and number 529 is in the center next to the cardboard tube (see figure 2).
Acetone and ethanol were found to be at the highest level among the strips of vinyl wall covering. Number 398 and 529 were lower than other strips. The lower numbers may be for various reasons. With number 398, there may have been a delay in time during preparing of the strip. It may also be that during manufacture, the machine stopped long enough for the chemicals to off-gas. Number 529 was touching the cardboard tube, which may have absorbed some of the chemicals. In placing the wall covering on the tube, there may have been a longer exposure when it was originally packaged.

Figure 2: A Bar Chart comparing the VOC levels in all five strips from the bolt
The total VOCs (TVOC) by strip is range from 39.6 to 66.2 (see figure 3). Strip number 490, which was located at the middle of the bolt, contained to higher number of micrograms, and strip number 529, located at the end of the bolt next to the cardboard tube, recorded the lowest TVOC of 39.6 (see figure 3). It is possible that the cardboard tube may have absorbed some of the chemicals.

![Figure 3: A Bar Chart comparing the TVOC levels in all five strips from the bolt](image)

**Conclusions**

Further testing needs to be conduct with other vinyl wall covering bolts from the same as well as other manufacturers. In this pilot study, only one manufacturer was included, and one vinyl wall covering bolt was tested. Even though one strip contained no VOCs after four days, clearly, VOCs are present in the wall covering when it is purchased. Vinyl wall covering also must have time to off-gas before occupancy of the space. However, this does not lessen problems for installers or even those in the manufacturing plant who are involved in production.
Individual materials or products should also be tested. But more importantly, testing of combination of materials within one space would also determine the TVOCs for an entire space. Additionally, it is the combination of chemicals from human activities as well as materials that affect our indoor air quality. Whether the consumer or the occupant of a building, the materials and activities within an interior will affect the IAQ.

Designers (architects, interior designers, and others) have realized how they affect IAQ and even outdoor air due to the manufacture of many products and materials. Thus, many in the design community have been and are working to make appropriate changes and have been instrumental in many changes in the manufacturing process. And yet, it is also the combination of human activities and various materials within the interiors that may affect our indoor air quality. Thus, testing individual and combination of materials must be conducted.

Additionally, for the medical professions, clinical trials with those who suffer from MCS need to be conducted. Collaborative research efforts between designers, medical professionals, and other interested researchers also would be advantageous in the effort to make changes that will improve the outlook for those with MCS.

The audience will participate in a discussion of possible materials to be tested and in what combination as well as discussion of possible collaborative efforts.
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New World…New Rules: Educational Explorations into Design Security

Linda O'Shea & Rula Awwad-Rafferty
Kean University/University of Idaho

Abstract

Security and safety are ubiquitous and simultaneously loaded terms; they are not a matter of temporal headlines during periods of fear and uncertainty, nor are they reserved for external threats. They are among the most basic and central of human needs and rights.

Recently, the world citizenry have been more aware and engaged in issues related to security in the built environment. Despite the heightened awareness of threats, and potentiality of security breach, interior design students are often times at the periphery of understanding how interior security can be integrated proactively and seamlessly into their designs.

With the unfortunate realities of increased threats of terrorism, crime, and violence, the design educator is well positioned to generate an increased awareness of the positive impact that interior design has on the health, safety and welfare of the public and to assist students in providing fresh and innovative design solutions to the built environments of the 21st Century.

Process

A team of interior design educators, pursuing scholarly inquiry into issues critical to the interior design profession and its role in the security dialogue, investigated the current depth and breadth of the role of design security in contemporary practice.

This process was accomplished through a two-step approach:

1) Personal one-on-one interviews with members of the architectural and design community, security professionals, and facility managers involved in commercial design, and

2) Case study analyses and experiential investigation of a variety of environments including: healthcare, public spaces, and educational facilities, through site visits, or a review of programming documents.

The information gathered was used to develop a preliminary Interior Design Security Programming Scenario document for use by design educators.

The presentation will highlight information learned through the sharing of project solutions dealing with security issues, provide case study analysis of projects that have been successful in providing transparent security solutions, and most importantly, share information about the resulting Interior Design Security Programming Scenario document. Attendees will receive handouts of programming information, as well as studio assignments that enable them to integrate the security dialogue into design curricula.
Summary

Security considerations have become a critical overlay in almost every major design project. As students learn the fundamentals of their future profession, it is necessary to address the changing context within which they will practice, a context that will demand innovative and congruent security solutions. In preparing students for this significant concern, we must provide them with hands-on experiences and scenarios illustrating the complexity and interdependence of issues and constructs in the security dialogue. We must assist students in understanding that if security is considered from the onset of a design problem, the outcome is a more sustainable and effective design solution, with a seamless connection between security and other functional, social, aesthetic, and economic considerations.

The addition of security issues into interior design curricula, and its integration into the design and programming process, will provide future professionals with learning experiences that have become a priority in the design of commercial architectural and interior design projects since September 11, 2001.

References


New World...New Rules: Educational Explorations into Design Security

Linda O'Shea & Rula Awwad-Rafferty
Kean University/University of Idaho

Narrative

Issue

Security and safety are ubiquitous and simultaneously loaded terms; they are not a matter of temporal headlines during periods of fear and uncertainty, nor are they reserved for external threats. They are among the most basic and central of human needs and rights.

Are safety and security tangible and measurable constructs? Are they physical? Are they psychological? How do we assess the degree of safety and security needs? How can we design environments that satisfy a diversity of basic as well as situational safety and security needs?

What are the characteristics of safe environments? When is it that we feel and are secure? Linguistically, safe/safety according to Merriam-Webster dictionary is the condition of being safe from undergoing or causing hurt, injury, or loss; free from harm or risk, secure from threat of danger, harm, or loss, affording safety or security from danger, risk, or difficulty. Whereas security is defined as the quality or state of being secure and affording safety; and free from risk of loss, and free from danger, fear or anxiety. It is apparent that security is both a feeling and a physical condition. The discussion regarding security and feeling safe must acknowledge that perception is an important aspect in assessing risks and mitigating them.
Recently, the world citizenry have been more aware and engaged in issues related to security in the built environment. Despite the heightened awareness of threats, and potentiality of security breach, interior design students are often times at the periphery of understanding how interior security can be proactively and seamlessly integrated into their designs.

With the unfortunate realities of increased threats of terrorism, crime, and violence, the design educator is well positioned to generate an increased awareness of the positive impact that interior design has on the health, safety and welfare of the public and to assist students in providing fresh and innovative design solutions to the built environments of the 21st Century.

**Context**

As researchers investigate the various aspects related to safety and security from a wide range of disciplines and paradigms, it is critical that the interior designer, in partnership with related design disciplines, investigate the relationship between these perspectives and potential venues for integration and innovation as they relate to the built environment.

In creating successful, functional, and aesthetically pleasing environments, the need to balance life-safety, openness and enhanced security while maintaining high levels of preparedness, demands transparent design solutions. Those solutions provide security while not visible to the public eye, minimize obvious barriers and maximize design excellence.
• Personal one-on-one interviews were conducted with members of the design community such as; registered architects and certified interior designers, security professionals, and facility managers, all involved in projects dealing with security issues, many designed with transparent security solutions, began to define the role, and current depth and breathe, that design security issues play in contemporary practice. Interview questions aimed to identify the diversity of demands that professionals have when addressing security in their work. Questions dealt with the following categories:

• General reflections on when and how the design firm became engaged in designing with security; methods of approaching security issues from design and construction perspectives; specific approaches used, ethical dilemmas encountered, and professional advice for students and faculty.

• Architectural Components dealing with integrating security with design approach, minimizing visual and experiential impact of solution on overall intent of design, identifying critical security concerns related to specific building types, means of mitigating need for sense of community, individuality, and security in the built environment, and considerations of passive survivalability in design.

• Space-Planning questions focused on reconciling the need to minimize public entrances into a building with the need to create adequate connections with the outside/fire egress, identifying variety of “entry control and protection” strategies, considerations of territoriality/zoning considered as a mean of security implementation, reconciling need for privacy and need for security in open space
plans and wayfinding strategies that promote both physical and psychological security.

- Materials and Finishes & Products as well as Life Safety, and Building Systems were the remainder categories investigated through interviews, experiential case studies, and follow up analysis.

These interviews made available specific project information and case studies examples of a variety of commercial environments including; healthcare, public spaces, and educational facilities, and provided valuable insight into the importance of the integration of security issues into design solutions for the built environment.

One scenario, a commercial office building, highlighted lobby security design and dealt with issues of entrances, free zones, screening stations and equipment. A second case study in healthcare facilities reinforced the importance of the security component in the design and planning through it’s consideration of threat assessment, entries, lobby areas, surveillance equipment, biological hazards and emergency power issues. The educational facility project scenario dealt with security issues through entrance security, perimeter control, site lighting, circulation systems, space planning, administrative/nerve centers, common areas and classroom security.

The valuable information gathered was used to develop a preliminary Interior Design Security Programming Scenario document. This document is an initial attempt to articulate how the interior design professional can, along with other members of the design team, during the early programming and planning phases of new construction, renovation, or additions projects, review all operational and design decisions to ensure that they will result in safe and secure environments for all. Ideally this document will
assist design educators in preparing students to address the changing context in which they will practice, one in which the role of design security has become a paramount issue of the design, planning and implementation of the built environment.

**Summary**

Security considerations have become a critical overlay in almost every major design project. As students learn the fundamentals of their future profession, it is necessary to address the changing context within which they will practice, a context that will demand innovative and congruent security solutions. In preparing students for this significant issue, we must provide them with hands-on experiences and scenarios illustrating the complexity and interdependence of issues and constructs in the security dialogue. We must assist students in understanding that if security is considered from the onset of a design problem, the outcome is a more sustainable and effective design solution, with a seamless connection between security and other functional, social, aesthetic, and economic considerations.

The interior designer’s commitment to protect the health, safety, and welfare of the public through her/his professional work demands that we become effective leaders and contributors in the creation and implementation of the new security guidelines and measures as they relate to the built environment in general and the interior domain in particular. As designers grapple with the impetus of the demands of the new heightened risk awareness, and the importance of considering new and safer design alternatives, it is our responsibility to provide cutting-edge information, education and service to students and society concerning security design options.
The addition of security as an integral part of the interior design curricula, and its integration into the design and programming process, will provide future professionals with learning experiences that have become a priority in the design of commercial architectural and interior design projects since September 11, 2001.

References
(APA Style)


Interior Design Students Redefine the Profession: A Research Study on Student Perceptions

Shari Park-Gates, Ph.D.
Auburn University

Abstract

Purpose

The purpose of this study was twofold. The first was to investigate senior interior design students’ perceptions concerning the definition and purpose of a profession. Second was to explore the question: Are educators teaching the definition and requirements of an ongoing vital profession in relation to interior design? In response to survey findings it was concluded that students need the opportunity to explore what a profession means. Students need to identify and discuss design issues vital to society and specific to the survival of interior design as a profession.

Importance

A quest lasting fifty years (Anderson, Honey & Dudek, 2007) validates the significance attached to recognition of interior design as a profession. Anderson, Honey & Dudek (2007) called educators to the task of clarifying the interior design profession’s obligations to society for public good. Since educators are primary purveyors of knowledge they share responsibility for advancing the design profession through tomorrow’s leaders. Beyond clarifying obligations this paper calls for educators to also communicate to students the symbiotic relationship between professions and society. In addition, students need skills which will enable reevaluation of services as society changes. If students are to develop the capacity to promote and advance professional
status and the value of services, then faculty must explore strengths and weaknesses of our profession with them. Educators must encourage students to engage in reflection that will solidify their ability to decisively identify and explain services in relation to societal trends.

Method
A survey was distributed to thirty senior design students in a CIDA accredited interior design program. Students were asked to write a defense for why interior design should be considered a profession. Occupations were listed and students selected which would meet requirements for a profession. In addition, possible requirements for a profession were listed and students selected which would be necessary to define a profession. Then students were asked to select one requirement most indicative for all professions.

Results
Three out of thirty students selected the phrase, “service for public good”, as the one requirement most indicative for a profession. Four out of thirty selected the phrase “monetary reimbursement”. Survey responses will be discussed along with the concept that students will ultimately be responsible to define the profession and devise a mission and vision for the future.

Relevance
Based on results of surveys this paper endorses the call for educators to clarify services for public good. Further, if interior design is to attain distinct professional status this
paper also challenges educators to communicate clearly with students about the importance of those services. Students are the future voice of our professional design community therefore, their preparation and understanding about advancement of the profession is an issue vital to professional survival. Interior designers should be prepared to properly and confidently communicate, “Clearly defined service”, (Beacham, McFall & Park-Gates 2007, p.35) as it relates to interior design and the changing needs of our society. This will directly impact the public’s perception of interior design as a profession.

References


Purpose

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Importance

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status and the value of services, then it is essential that faculty explore strengths and weaknesses of our profession with them. Educators need to encourage students to engage in reflection that will solidify their ability to decisively identify and explain services in relation to societal trends.

Method

A survey was distributed to thirty senior design students in a CIDA accredited interior design program. Students were asked to choose one of the following: why interior design is a profession or why interior design is not a profession, and briefly defend the statement. They were then asked to select from twelve occupations those which would qualify as a profession. Next, eighteen possible requirements for a profession were listed and students indicated the most important components necessary to define a profession. In addition, they were to decide on one requirement they felt was most indicative for all professions. The last question on the survey called for students to answer in their own words, “What makes a profession”?

Results

Table 1, indicates the selections students made when asked to choose one requirement they believed was most common in the definition of a profession. Three out of thirty students selected the phrase, “service for public good”, as the one requirement most common in the definition for a profession. Four out of thirty selected the phrase “monetary reimbursement”.

827
Table 1. Overview of student perceptions about one basic requirement most common in a definition of a profession.*

<table>
<thead>
<tr>
<th>List of requirements</th>
<th>times selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Accreditation</td>
<td>7</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>2</td>
</tr>
<tr>
<td>Ethics</td>
<td>1</td>
</tr>
<tr>
<td>Licensing</td>
<td>1</td>
</tr>
<tr>
<td>Monetary Reimbursement</td>
<td>4</td>
</tr>
<tr>
<td>Mission</td>
<td>0</td>
</tr>
<tr>
<td>Practicing Professionals</td>
<td>1</td>
</tr>
<tr>
<td>Professional Associations</td>
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</tr>
<tr>
<td>Promotion</td>
<td>0</td>
</tr>
<tr>
<td>Research</td>
<td>0</td>
</tr>
<tr>
<td>Respect</td>
<td>0</td>
</tr>
<tr>
<td>Science Base</td>
<td>0</td>
</tr>
<tr>
<td>Self Regulation</td>
<td>0</td>
</tr>
<tr>
<td>Service for Public Good</td>
<td>3</td>
</tr>
<tr>
<td>Specialized Education</td>
<td>4</td>
</tr>
<tr>
<td>Specialized Skills</td>
<td>7</td>
</tr>
<tr>
<td>Testing for Minimal Competency</td>
<td>0</td>
</tr>
<tr>
<td>Vision</td>
<td>0</td>
</tr>
</tbody>
</table>

* total number of students responding 30
Two students picked apprenticeship and the words licensing, respect, practicing professional, and ethics were each selected once from the list. From eighteen words and phrases academic accreditation and specialized skills were selected equally and most often at seven times apiece. The remaining four students believed specialized education to be most common in the definition of profession.

Table 2, indicates the choices of students when asked to select jobs which would meet the requirements to be a profession. Students selected Doctors, Landscape Architects, Lawyers, Nurses, Interior Designers, Professors, and Pharmacists 100% of the time. Professional Engineers was selected 96% of the time as meeting the requirements to be a profession. Ministers and Plumbers were selected equally at 90%. Professional Football Players and Witch Doctors were selected the least number of times at 80% and 33% respectively.

All Students chose to defend the statement interior design is a profession. One student chose to select both statements and defend for both perspectives. Sixteen students defended the professional status of interior design by including references to 4 year degrees, education, training, and knowledge. Six included the act of getting paid or employment in their defense. Five written justifications included the need or demand for the services as a reason for professional status. Five students used certification or the NCIDQ exam as a part of their defense. Four defended professional status by including the concept of service and six referred to help.
Table 2. Overview of student perceptions of jobs which meet the requirements to be a profession *

<table>
<thead>
<tr>
<th>List of Occupations</th>
<th>No. of times selected as a profession</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>30</td>
</tr>
<tr>
<td>Landscape Architects</td>
<td>30</td>
</tr>
<tr>
<td>Lawyers</td>
<td>30</td>
</tr>
<tr>
<td>Ministers</td>
<td>27</td>
</tr>
<tr>
<td>Nurses</td>
<td>30</td>
</tr>
<tr>
<td>Interior Designers</td>
<td>30</td>
</tr>
<tr>
<td>Plumbers</td>
<td>27</td>
</tr>
<tr>
<td>Professors</td>
<td>30</td>
</tr>
<tr>
<td>Professional Engineers</td>
<td>29</td>
</tr>
<tr>
<td>Professional Football Players</td>
<td>24</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>30</td>
</tr>
<tr>
<td>Witch Doctors</td>
<td>10</td>
</tr>
</tbody>
</table>

* total number of students responding 30

Improvement to the environment (6) and or the interaction of humans with their environment (7) were two other defenses used frequently. Knowledge of and attention to health and well being (6) and safety codes (5) were cited as reasons for being considered professionals. One wrote about problem solving skills and three referred to specialized skills as being important criteria for professional standing. Creativity (6) and aesthetics (6) were discussed as a part of professional qualifications. Four mentioned
that we were not decorators and two wrote about the value of talent. Research, science of design, and resources were mentioned as necessary prerequisites for professional rank also. The survey and opened ended survey responses along with the concept that students will ultimately be responsible to define the profession and devise a mission and vision for the future vitality of interior design invites discussion.

Conclusions and Relevance

Based on results of the exploratory survey this paper endorses the call for educators to clarify services for public good. Further, if interior design is to attain distinct professional status this paper also challenges educators to communicate clearly with students about the importance of those services. “Critical to the field is a membership that is learned and communicates well…” (Dohr 2007, p xiii). Students are the future voice of our professional design community therefore, their preparation and understanding about advancement of the profession is an issue vital to professional survival. It is essential that students be given the opportunity to discuss and reflect upon what constitutes a vigorous profession. The ability to articulate the value and purpose of service for public good, specialized education, setting standards for education, testing for minimal competency, a professional society, ethical standards, continued research in order to move the profession forward, and promoting the expansion and quality of services should be a basic competency required for all graduating seniors in interior design programs. Interior designers should be prepared to properly and confidently communicate, “Clearly defined service”, (Beacham, McFall & Park-Gates 2007, p.35) as
it relates to interior design and the changing needs of our society. This will directly impact the public’s perception of interior design as a profession.


Women, Poverty, and Housing: a History of Neglect

Jesse Peck and John Turpin

Washington State University

Abstract

Historical research investigating the relationship of underprivileged urban dwellers and the built environment may provide illustrative insights in contemporary times when an aggressive economic environment, natural disasters, and rapid urbanization in developing countries results in the urgent housing needs of thousands of people. As a sociological topic approached from the design discipline, this paper addresses the relationship of poverty, gender, and housing in the urban environment by focusing on the housing types: the tenements, poorhouses, and shelters and their occupants. As an initial review, the research broadly encompasses seven centuries divided into three main social periods: Europe in the High and Late Middle Ages (13th to the 15th century) the Renaissance to Enlightenment (16th to the mid 18th century) and the Industrial Revolution (mid 18th century to the early 19th century). The purpose of the review of literature is to identify dwelling patterns that exist among the cities’ poor through the various historical eras into the 20th century.

Although the literature represents a broad range of changing philosophical, social, political, and religious thought on the topic of the urban poor, two predominant themes stood out. The first, present in nearly all of the literature, is the penury-based classification system of the poor by the broader social system. The two distinct categories of impoverished persons requiring housing consist of: the deserving poor,
those who are unable to support themselves – the disabled, orphans, elderly, and widows – in contrast with the “less deserving poor,” those able bodied persons who have “fallen into penury through crisis.” ² The second group is larger and, depending on the era, sometimes account for the majority of a city’s population.³ From such ubiquitous social classifications of the poor develop the systems that influence the housing either provided or denied them. Female heads-of-household as the highest percentage of the urban poor is another theme that warrants attention, as it recurs throughout the historical literature and likely into contemporary times as well. Whether young and single, a single parent, widowed, or disabled, women nearly doubled men in number in the poorhouses and shelters in the cities, from the middle ages to the industrial revolution.⁴

Besides the two overarching themes, three additional patterns of housing among the urban poor are prevalent in the literature. These include the migration of the working class to the urban centers in search of work and housing,⁵ ⁶ the pattern of social control and containment of the underprivileged when housing assistance is provided,⁷ and the fascinating occurrence of informal networks that arise among women when government assistance is inadequate or denied.⁸

The initial literature review reveals some key themes that warrant further research and analysis. Although the research is historically based, it may help inform contemporary housing issues; at a time when design is moving toward a greater awareness of special populations, is this one that continues to be overlooked? The housing patterns among the urban poor, consistent over the past seven centuries, suggest an underrepresented and under-researched group.
3 Farmer, 45.
4 Kaiser, 133.
Women, Poverty, and Housing: a History of Neglect

Jesse Peck and John Turpin

Washington State University

Narrative

Introduction

Research regarding the history of the built environment in relation to the poor may provide illustrative insights in contemporary times, when the combination of a hostile economic environment and natural disasters result in the urgent housing needs of thousands of people. As a sociological topic approached from the design discipline, this paper addresses the relationship of poverty, gender, and housing in the urban environment by focusing on the housing types: the tenements, poorhouses, and shelters and their occupants. The purpose of the review of literature is to identify dwelling patterns that exist among the cities’ poor through the various historical eras into the 20th century. The dwelling patterns, once identified, provide insight into contemporary housing issues.

Methodology

The research methodology was a historical-interpretive study that involved an extensive literature review, archival research, and analysis and organization of the findings by era and social issues. Historical books were the primary source of information on gender and poverty in cities. Within that broader context, specifics on the built environment in the respective cities in relation to the poor are discussed. The journals range from The
American Journal of Psychiatry to Studies in the Literary Imagination, but primarily include, Social History, American Historical Review, History Today, and American Heritage. The literature gathered was then organized chronologically by era, spanning seven centuries, under the umbrella of three main social periods: The High and Late Middle Ages in Europe from the 13th to the 15th centuries, the Renaissance to Enlightenment or Pre-Industrial Europe, 16th to the mid 18th centuries, and finally the Industrial Revolution and the development of the early modern cities of Europe and the Untied States from the mid 18th through the early 19th centuries. Within each social era, the research represents a broad range of changing philosophical, social, political, and religious thought about the nature of poverty throughout the early modern western world, evidenced in the respective eras’ public perceptions of the poor, and the charities, welfare, and housing that developed as a result. Despite the evolving views about the nature of poverty and gender from one social era to the next, several patterns of ideas, housing methods, and dwelling among the poor can be identified.

Findings
The research spans nearly five centuries and so provides a broad overview of the various social, working and living conditions of the urban poor from the high middle ages to the industrial revolution. The literary sources reveal some key themes present throughout the various time periods. A persistent theme, evident in nearly all the work, is the penury-based classification systems of the poor by the elite, which identifies those in need or "deserving" of social assistance versus the repudiation of those deemed undeserving. Women heads-of-household as the highest percentage of the poor in the
urban environment is another theme that warrants attention. In addition to the two overarching themes, three additional patterns emerge from the literature: the urban migration of the poor, the pattern of social control when social assistance is provided, and the informal self-help networks that form between women of the lower classes.

**The Deserving and Undeserving Poor**

A predominant theme that runs through a majority of the literature is the two distinct categories used to describe impoverished persons. The first group can be described as the deserving poor, those who are incapable of supporting themselves, which generally include the infirm, the disabled, orphans, elderly, and widows, and less frequently, single women.¹ In contrast, the undeserving poor consist of those able-bodied persons who have “fallen into penury through some crisis, whether meteor logic, epidemic, or economic.”² The poor belonging to the second category are difficult to identify as the requirements of what constitutes deserving evolves and changes throughout the various time periods. The second group encompasses the majority of the poor in need of assistance, and depending on the era, can consist of a large percentage of a city’s population.³ Tax records from 1355-1370 indicate that in the cultural centers of Paris and Florence nearly one-third of urban households are defined as destitute.⁴ The decision of who belongs in what group is determined by cultural stereotypes derived from the writings of clerics, scholars, and bureaucrats of the day.⁵ From such ubiquitous social biases and assumptions about the poor, develop the systems that influence the care and housing either extended to or denied them by government or religious institutions.
Women as Heads of Household

Like the classification system, the second pattern, the predomination of women heads-of-household as the largest group of impoverished persons in the urban environment, is present in nearly all of the literature. Whether young and single, married with an absent spouse, widowed, or disabled, women nearly double men residing in the poorhouses and shelters in the cities, from the middle ages to the industrial revolution.  

A cultural conception of women, whether based on biblical text, social trends, or patriarchal law, directly affects their ability to support and house themselves. A prejudicial or favorable attitude towards archetypical female roles also contributes to access to or exclusion from institutional or charitable welfare.

The Informal, Self-Help Networks among Low Income Women

A fascinating occurrence among impoverished women, described throughout the various pieces of literature, is the informal network that arises between them when government assistance is inadequate or denied. From the networks of poor women praised in medieval illuminated manuscripts for their care of those with debilitating diseases and handicaps, to the female co-housing among non-family members in 18th century Russian towns, low-income women prove to be more resourceful than their male counterparts in alleviating the burden of limited housing. Likewise, female solidarity in the low-income neighborhoods of industrial London is an “important weapon in the battle for survival.” Such relationships of mutual support between underprivileged women prove to be vital in the maintenance of their families, and
indispensable in their unified attempts at combating the injustices that contribute to poverty and oppression.

**The Pattern of Social Control**

Whether housed against one’s will in the Salpitiere Hospital in the 17\textsuperscript{th} century, living in a women’s shelter provided by the church in the middle ages, or trapped by poverty in a workhouse at the turn of the century, a pattern of social disenfranchisement and isolation occurs as a result of the assistance provided. \textsuperscript{11} Farmer discusses the regulations placed upon dwellers of the *beguinage* shelters for unattached women in Paris. Although inhabitants of the *beguinage* are not required to take vows, they are still under the authority of the Dominicans of Paris. \textsuperscript{12} While residing in the shelters, women are under the direct supervision of the mistress of the house and must follow the set rules or face expulsion. Social control in exchange for shelter is a consistent pattern throughout the eras from 18\textsuperscript{th} century Russian almshouses to the New York City tenements.

**The Urban Migration of the Poor**

From the middle ages to the industrial revolution, the poorest inhabitants of the rural farms and towns travel to urban centers in search of improved living and working conditions. The percentage of the poor en route to urban centers increases chronologically by time period. In the high and late middle ages Paris becomes a favorable destination for laborers throughout Europe as the levels of consumption by wealthy nobles creates a considerable market. \textsuperscript{13} Census studies report that between 1240 and 1328 Paris grew from an estimated 160,000 to 210,000, at least twice the size
of any other northern European city. The increase in population is directly related to the migration of the poor laboring class. Women’s migration to the cities in 17th to mid 18th centuries included women from all classes and walks of life. Women were enticed by city life, which proved for many far less constricting and considerably less laborious than provincial life. The city offered low-income women an improved opportunity for housing and camaraderie in shared hostel-style lodgings and a greater freedom from the subservient role of wife as employed domestic workers.

Conclusion

The literature review provides illustrative information on the social condition of the urban poor; the housing patterns among the urban poor, consistent over the past seven centuries, suggest an underrepresented and under-researched group. Significantly more research exists on the topic in the form of social history than as studies approached from the design fields. Historical research on women in the built-environment pre-20th century is confounded by the fact that women are documented in direct relation to their connection to men as wives and widows and possess little to no property or legal rights. As a result, little research is available on single, never married women, except in relation to the church. The largest gap in the literature is in the analysis of the design of the architecture and interiors of low-income housing in relation to the behavior, social stigmatization, and disenfranchisement of the dwellers within. For further study, an evaluation of the effectiveness of current institutional sponsored housing for low-income populations can serve as springboard for future considerations in addressing the needs of an underrepresented population.
5 Farmer, *Surviving Poverty*.
6 Kaiser, 133.
7 Sharon Farmer describes a system of social classification of men and women that correspond to the roles assigned to them in the first few chapters of Genesis. Farmer argues that such attributes of physicality and bodily pain are more consistently applied to the poor in clerical texts than to elite persons. Farmer also opens the chapters of gender discussion (2 and 4) with passages from Genesis 3:16-19 to better demonstrate the basis for medieval associations of women with reproductive labors and men with production. See Sharon Farmer, full citation above.
8 Dean’s essay supports Sharon Farmer’s argument of physicality as a social classification system, although he explores such issues through language use between the sexes. See Trevor Dean, “Gender and Insult in an Italian City: Bologna in the Later Middle Ages.” *Social History* 9 (May, 2004): 217-235.
9 Kaiser.
12 Farmer, “Down and Out . . .”144. (See full citation above).
14 According to sources from miracles of Saint Louis in illuminated manuscripts, 63 percent of women and 73 percent of men living in Paris migrated from somewhere else. See Sharon Farmer’s, *Surviving Poverty*, 17-18.
15 Farmer
17 Ellis, 21-22.
EXPLORING HEALTHCARE DESIGN:  
A PROPOSED EMPHASIS FOR GRADUATE STUDY

Mitzi R. Perritt, Ph.D.  
Lynda J. Martin, Ph.D.

Stephen F. Austin State University

Abstract

Purpose

This paper discusses the need for graduate study in healthcare design and explores options for graduate curriculum development. The creation of supportive, human-centered environments propels the discussion. Degree requirements address the healthcare body of knowledge which includes acute care, ambulatory/outpatient care, long-term care, medical administration, retail/hospitality areas, and support services (AAHID, 2005).

Importance of the Topic

The future of interior design graduate education continues as a topic of discussion among practitioners and educators. Dohr (2007) describes graduate study as “advanced study and the building of research agendas that, in turn, add the depth and breadth of knowledge and skill necessary to a growing field.” The field of healthcare design, with its user-specific needs, requires this depth of knowledge (Brawley, 2006). Firms specializing in healthcare find most design job applicants lacking in healthcare knowledge (personal communication, P. Noakes, August 27, 2007). With the healthcare field continuing to grow, as baby boomers impact yet another aspect of society, the need for qualified and insightful healthcare designers will also grow.
Concept

An interdisciplinary curriculum facilitates a systems approach to healthcare design. As a well-executed design results from the thoughtful combination of aesthetics, safety, and function, the healthcare curriculum should guide students to examine the aesthetic sensitivities of healthcare clients, the breadth of relevant safety issues involving egress and environmental health, and the enhancement of staff efficiency and client independence--through careful spaceplanning and task-enhancing finishes, furnishings, and lighting.

The disciplines of kinesiology and health science, nursing, mathematics and statistics, horticulture, sociology/gerontology, family and consumer sciences (hospitality administration/food service/lifespan); architecture, and interior design can all contribute to the knowledge base necessary for informed healthcare design. Specific topics of study might include research methods for scientific inquiry; statistical techniques for data analysis; code requirements for egress and materials; unique federal/state/municipal healthcare regulations; medical terminology; clinical needs in sanitation and health; accessibility for the aged, infirm, or child; universal features helpful to all users; task-specific clearances for physicians and staff; wayfinding for new admissions or visitors; art to nurture the spirit; sustainability for human and global wellbeing; performance data for material safety and maintenance; equipment needs for optimal function; and restorative gardens for mental and physical renewal. Together, such topics can emphasize the value of a holistic approach to healthcare design, one that views a person as a whole human being (Brawley, 2006; Liebrock, 2000; Rohde, 2007).
Relevance to Interior Design

The proposal of a healthcare emphasis for graduate study manifests IDEC’s commitment to the “advancement of education and research in interior design” (IDEC, 2007). With a thesis option included in the curriculum, the healthcare emphasis will stimulate new design inquiry. Such inquiry will advance the design body of knowledge and inform design decisions of healthcare practitioners. Educators, responding to the profession’s call for new and knowledgeable healthcare designers, may poise their graduate programs for growth and relevancy. In a larger sense, the resulting win-win scenario benefits both the practitioner and educator as each jointly contributes expertise toward the enhancement of the human-environment interaction.

References


EXPLORING HEALTHCARE DESIGN: A PROPOSED EMPHASIS FOR GRADUATE STUDY

Mitzi R. Perritt, Ph.D.
Linda J. Martin, Ph.D.

Stephen F. Austin State University

Narrative

Purpose

The growing field of healthcare interior design requires specialized knowledge that can be delivered through graduate instruction. Options exist in curriculum development, but the content itself is well defined by the American Academy of Healthcare Interior Designers. The six content areas include acute care, ambulatory/outpatient care, long-term/senior care, medical administration, retail/hospitality, and support services (AAHID, 2005).

Importance of the Topic

The future of interior design graduate education continues as a topic of discussion among practitioners and educators. Dohr (2007) describes graduate study as “advanced study and the building of research agendas that, in turn, add the depth and breadth of knowledge and skill necessary to a growing field.” The field of healthcare design, with its user-specific needs, requires this depth of knowledge (Brawley, 2006). Firms specializing in healthcare find most interior design job applicants lacking in healthcare knowledge (personal communication, P. Noakes, August 27, 2007). With the healthcare field continuing to grow, as baby boomers impact yet another aspect of society, the need for qualified and insightful healthcare designers will also grow.
Concept

An interdisciplinary curriculum facilitates a systems approach to healthcare design. As a well-executed design results from the thoughtful combination of aesthetics, safety, and function, so the healthcare curriculum may apply these common principles to the solving of complex healthcare design problems. Learning experiences should encourage students to consider overarching healthcare issues such as the aesthetic sensitivities of clients and staff, the relevant safety issues of egress and environmental health, and the necessary functional requirements that promote staff efficiency, user wellbeing, and client independence.

Many disciplines can contribute to the knowledge base necessary for informed healthcare design. The most apparent connections include the disciplines of kinesiology and health science, nursing, mathematics and statistics, horticulture, art, family and consumer sciences (hospitality administration, food service, lifespan development); sociology/gerontology, architecture, and interior design. Beneficial content within these disciplines includes research methods for scientific inquiry; statistical techniques for data analysis; code requirements for egress and materials; unique federal/state/municipal healthcare regulations; medical terminology; clinical needs in sanitation and health; accessibility for the aged, infirm, or child; universal features helpful to all users; task-specific clearances for physicians and staff; wayfinding for new admissions or visitors; art to nurture the spirit; sustainability for human and global wellbeing; performance data for material function, safety and maintenance; equipment needs for optimal function; and restorative gardens for mental and physical renewal. Together,
such topics emphasize the value of a holistic approach to healthcare design, one that views a person as a whole being (Brawley, 2006; Liebrock, 2000; Rohde, 2007).

Programmatic Features

*Eligibility*

Program entry requirements may vary according to the established mission of individual institutions. Since the healthcare program builds on skills gained through an undergraduate interior design curriculum, a prior interior design degree, either graduate or undergraduate, is necessary. While some institutions no longer require the Graduate Record Examination and elect instead to evaluate the student’s total application package, others remain convinced of the GRE’s value in predicting graduate student success. It is also possible that some programs may require work experience, design certification, and perhaps most importantly, a portfolio review to complete entrance requirements.

*Recruitment*

Scholarships promote interest in a new program by easing the financial worry of tuition, fees, and textbooks for prospective students. In some states, receiving a scholarship also qualifies new out-of-state students for a waiver of out-of-state tuition rates. This fact, in itself, provides a significant reduction in graduate school costs. Moreover, some firms elect to fund a design employee’s graduate education as an investment in the firm’s future.
Delivery Method

Considering that designers who seek advanced education in healthcare design might also be active practitioners or educators, an online course delivery method will enable them to blend gainful employment with advanced study.

Internship

Practical experience and observation enhance student learning. Experts recommend a full-time 10 to 12-week internship so students may be involved deeply in one or more actual healthcare projects.

Curriculum

Healthcare experts recommend a graduate curriculum that includes a thesis option (personal communication, P. Noakes, M. Simmons, & L. Nicholson Carter, January 9, 2008). This option emphasizes the contributing role of research in evidence-based design (Hamilton, 2004). A possible 30-hour curriculum addressing the identified content areas of the healthcare design body of knowledge (AAHID, 2005) is structured as follows:

- Acute Care Facilities (3 credit hours) – Survey of hospital types and the unique design needs of various acute care departments and specialty units.

- Ambulatory Care/Outpatient Facilities (3 credit hours) – Overview of the functional requirements and interior specifications appropriate for elective and non-elective diagnostic and treatment facilities.

- Long Term Care/Senior Living Facilities (3 credit hours) – Exploration of social and healthcare services and the continuum of care available to older adults; emphasis on promotion of independence and quality of life.
• Other Medical Facilities (3 credit hours) – Examination of group clinic, medical office, urgent care, and wellness center features as well as the auxiliary services which support them.

• Healthcare Design Studio (3 credit hours) – Application of learning to the manipulation and development of space.

• Healthcare Design Internship (3 credit hours) – Supervised experience in the healthcare interior design field.

• Research Methods (3 credit hours) - In-depth investigation of research procedures in the discipline.

• Data Analysis (3 credit hours) – Application of statistical methods for data analysis including probability, statistical inference, rank tests, chi-square tests, linear regression and correlation, analysis of variance, and multiple regression.

• Thesis (3 credit hours) – Development of research agenda and data collection methods for independent research project.

• Thesis (3 credit hours) – Analysis of data and written documentation of the thesis experience and results.

Full-time student. Since many scholarship awards depend on full-time student status (9 credit hours taken each semester), degree matriculation could occur within two years. A typical course sequence for the full-time graduate student follows:

• Fall 1 Acute Care Facilities 9 credit hours
  Long-Term Care/Senior Living
  Research Methods
<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 1</td>
<td>Data Analysis</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Ambulatory Care/Outpatient Facilities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Medical Facilities</td>
<td></td>
</tr>
<tr>
<td>Summer 1</td>
<td>Internship (10 weeks/400 hours)</td>
<td>3</td>
</tr>
<tr>
<td>Fall 2</td>
<td>Thesis</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Healthcare Design Studio</td>
<td></td>
</tr>
<tr>
<td>Spring 2</td>
<td>Thesis</td>
<td>3</td>
</tr>
</tbody>
</table>

*Part-time student.* On the other hand, if a student wishes to maintain full-time employment and sacrifice scholarship funding, a slower pace might be desirable. This approach would yield a three-year matriculation.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 1</td>
<td>Long-Term Care/Senior Living Facilities</td>
<td>3</td>
</tr>
<tr>
<td>Spring 1</td>
<td>Ambulatory Care/Outpatient Facilities</td>
<td>3</td>
</tr>
<tr>
<td>Summer 1</td>
<td>Research Methods (first summer term)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Other Medical Facilities (second summer term)</td>
<td>3</td>
</tr>
<tr>
<td>Fall 2</td>
<td>Acute Care Facilities</td>
<td>3</td>
</tr>
<tr>
<td>Spring 2</td>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Summer</td>
<td>Internship* (10 weeks/400 hours)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Internship may be taken any semester.</td>
<td></td>
</tr>
<tr>
<td>Fall 3</td>
<td>Healthcare Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>Spring 3</td>
<td>Thesis</td>
<td>3</td>
</tr>
<tr>
<td>Summer 3</td>
<td>Thesis</td>
<td>3</td>
</tr>
</tbody>
</table>

* Additional topics overlay the four design lecture courses and design studio proposed for the healthcare emphasis. Examples include lighting, wayfinding, material
performance criteria, code compliance, healthcare regulations, and sustainability, among others.

Resources.

The reference list of books, journals, magazines, and websites which supports the qualifying examination for AAHID membership (AAHID, 2005) provides a rich foundation for healthcare design curriculum. Some interior design and architecture professional organizations include knowledge centers on their websites (ASID, 2008; IIDA, 2008), and the InformeDesign website (InformeDesign, 2008) chronicles summaries of interior design research. Healthcare product manufacturers maintain product information online and encourage their sales representatives to connect with students—their future product specifiers.

Other teaching and learning resources emerge from the university and community. University experts—faculty from nursing, gerontology, art, child/family studies, horticulture, health science, disability services, rehabilitation, dietetics/sanitation, and informational technology—may augment course online experiences through guest lectures (chats), relevant case studies, or thesis committee service. Other university programs may already provide online courses in research methods and data analysis which are essential tools for thesis development. The surrounding local and regional communities provide meaningful field trip locations (video clips) to reinforce the study of acute care hospitals, senior living facilities, outpatient clinics, and rehabilitation centers. Similar facilities in the student’s community provide observation or shadowing opportunities as well as information-gathering sites.
Professional healthcare interior designers enrich student learning through project critique as well as providing valuable internship experience.

Relevance to Interior Design

The proposal for a healthcare emphasis in graduate study manifests IDEC’s commitment to the “advancement of education and research in interior design” (IDEC, 2008). With the thesis option, the healthcare emphasis will stimulate new design inquiry. Such inquiry will advance the interior design body of knowledge and inform design decisions of healthcare practitioners. Educators, responding to the profession’s call for new and knowledgeable healthcare designers, may position their graduate programs for growth and relevancy. In the final sense, the resulting win-win scenario benefits both the practitioner and educator with each contributing uniquely to the advancement of the interior design profession.

Reference List

(Publication Manual of the American Psychological Association)


A Study of the Spatial Perception of a Beginning Design Student and a Teaching Method for Visualizing Space

Elizabeth Pober

University of Oklahoma

Abstract

Purpose

The process of designing requires a specialized type of thinking and a unique form of perception. Designers must be able to “think visually and volumetrically” (CIDA, 2006). Acquiring the ability to accurately visualize space is an important skill for design students. Design educators often find teaching this skill to beginning students a daunting task. Design concepts are communicated with a technique and in a context that is a representation of what the real-life version will be. Students must learn to visually make the connection between the techniques for communicating the design, and the design’s real context. This paper will explore the beginning design student’s perception of space and a method for teaching them to more accurately visualize design concepts.

Methodology

Research was initiated investigating the beginning design student’s perceived size of a floor plan drawn at ¼”=1'-0” compared to their perception of the actual scale of 1’=1’. The study used quantitative style questionnaires distributed when the students were drafting the plan, and at two stages when generating the plan at the actual scale of
A total of 117 individual student questionnaires were analyzed and nine student group interviews were conducted.

Summary

Students in a beginning design studio were given an empty floor plan of a "pool house" at a scale of ¼"=1'-0". The students regenerated this plan with a section, learning to draft, to generate design drawings and their components, and to plan circulation paths and furniture arrangements. Once completed, the class went to a large empty parking lot. Each student brought their floor plan, rolls of masking tape, scale, and tape measure. In groups of four, the students regenerated the completed floor plans using their supplies at a scale of 1'=1' (figure-4).

Three questionnaires were distributed throughout the project asking the students to provide their perceived idea of the size of the pool house, ranging from one to five, one being small and five being large scale. In the weeks prior to this project, extensive time was spent learning about design elements and principles, including scale and its many forms. The first questionnaire was distributed after the completion of the drafted plan. The second questionnaire was distributed after the walls of the plan had been masked off, and the third questionnaire was distributed when the furniture had been masked off and the plan was complete. The results revealed that the initial perception of the drafted plan was larger (figure-1) than the perception of the plan were just the walls were masked off (figure-2). The results also revealed that the final perception of the completed plan with furniture (figure-3) was larger than the masked off plan without furniture (figure-2), but smaller than the perception after the plan was drafted (figure-1).
After the completion of the 1’=1’ plan, the students were asked to “walk through”, “use” the spaces and find mistakes in their planning. Overall, the students interviewed felt this exercise was very beneficial in helping them to visualize the true size of the spaces they had been drawing.
Figure 1 Above

Summary of Perception of Scale After Completion of Drafted Plan at Scale of 1/4" = 1'-0"

Figure 2 Above

Summary of Perception of Scale After Masking Off Walls at Scale of 1' = 1'

859
Figure 3 Above

Figure 4 Above
References
(APA Style)


A Study of the Spatial Perception of a Beginning Design Student and a Teaching Method for Visualizing Space

Elizabeth Pober

University of Oklahoma

Narrative

Purpose

The process of designing requires a specialized type of thinking and a unique form of perception. Designers must be able to “think visually and volumetrically” (CIDA, 2006). During the design process, designers must continually evaluate the spaces they are creating. The design solutions are communicated with a method that includes scaled drawings of plans, sections, elevations and models. Unfortunately, these methods communicate representations of the design solutions and do not provide full scale spaces to experience. Designers must have the ability to accurately visualize and analyze the designs they develop because it is only when the design is complete, that the space can be fully experienced.

Acquiring the ability to accurately visualize space is an important skill for design students. Design educators often find teaching this skill to beginning students to be a daunting task. “Complex spatial skills are not easily learned by all interior design students. Instructors are often frustrated by the length of time it takes for basic spatial concepts to become clear” (Zavotka, 1986, p. 45). Although design concepts are communicated both two and three-dimensionally, they are communicated with a technique and in a context that is a representation of what the real-life version will be. Students must learn to visually make the connection between the design’s real context
and the techniques for communicating the design graphically. This paper will explore
the beginning design student’s perception of space and a method for teaching them to
more accurately visualize design concepts.

Context

At the onset of their design education, students must begin learning numerous
new concepts and skills. Although their competence in these concepts and skills
progresses and develops over time, the initial comprehension is sometimes difficult.
The majority of beginning design students have a general idea of the size of common
design components and are quite comfortable in expressing the overall sizes of these
components as a function of other components. For example, they can visualize a chair
and a sofa and know that a chair is smaller than a sofa. They can express that in
general, it takes approximately three common armchairs to equal the size of one
common sofa. However, the design students often cannot provide the basic overall
dimensions of either the chair or the sofa. Passini discusses studies which show that, in
general, people cannot estimate sizes very accurately in measurable units of feet and
inches even though they might be able to evaluate relative sizes. Even when sizes are
compared without measurable units, some distortions still occur (Passini, 1984). If
beginning design students can seldom give you, without using a reference, the overall
dimensions of a sofa, how can one expect that when given the overall dimensions of a
space, that they can visualize what the true size is. Most often times they cannot.

In the room where the first design studio is held at our school, the flooring is a
basic vinyl composition tile that is 1’x1’. Countless times, I have used those tiles to help
provide my students with a basis for what the true size of something they are designing
and drawing is. Standing looking down at the floor, we can count the number of tiles to equal the corresponding basic size of whatever the object or space is being referenced. After looking at the counted number of tiles, we can both “see” how large, small, tall, short or long the object, component or space actually is and discuss its appropriateness to the design solution. The reality of the actual size is almost always different than what the beginning design student originally perceived the size to be.

Review of Literature

An interior designer’s ability to visualize space is one of the main skills used to solve design problems associated with their projects (Guerlin & Nussbaumer, 2000). “It is necessary to be able to estimate sizes and distances fairly accurately, and also be able to visualize what a complicated interior might look like from various viewpoints” (Zavotka, 1986, p. 46). “Visual perception is visual thinking. In looking at an object we reach out for it. With an invisible finger we move through the space around us, go out to the distant places where things are found, touch them, catch them, scan their surfaces, trace their borders, explore their texture” (Arnheim, 1969, p.14, 19). People are generally quite good in experiencing real spaces and experimenting with the spatial relationship between real objects in that space; however, people often possess only a small inherent understanding of the true size of space in an abstract or unfamiliar form (Hinkley, Pausch, Goble, Kassell, 1994). People do not innately comprehend spatial visualizations as well as they experience them.

“One of the most effective ways to learn is by doing” (Eble, 1986, p. 54). “Most human learning is experiential and I learn most of what I use in teaching through active experience” (Eble, 1986, p. 57). Kolb’s experiential learning theory defines learning as
“the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (Kolb, 1984, p. 41).

In educating design students, it is important to provide experiences that simulate the real scale design solutions that they are developing and are learning to communicate graphically. “The closer the simulation is to the actual environment, the less mental visualization ability is needed by the students, while their reaction to the instructional material would be more internalized” (Fowles & Skjelver, 1976, p.46).

Methodology

A research study was initiated investigating the first semester beginning design student’s perceived size of a floor plan drawn at ¼”=1’-0” compared to their perception of the actual scale of 1’=1’. The study used quantitative style questionnaires distributed when the students were drafting the plan, and at two stages when generating the plan at the actual scale of 1’=1’. A total of 117 individual student questionnaires were analyzed and nine student group interviews were conducted.

Results

Students in a beginning design studio were given an empty floor plan of a “pool house” at a scale of ¼”=1’-0”. The students regenerated this plan with a section, and elevations, learning to draft, to generate design drawings and their components, and to plan circulation paths and furniture arrangements. Once the students completed their floor plans sections and elevations, the class took a field trip to a large parking lot on campus. Each student brought their drawings, rolls of masking tape, scale, and tape
measure. The students got into groups of three to four and began regenerating the complete floor plan with FF&E using their supplies at a scale of 1’=1’ (figure-4).

Three questionnaires were distributed throughout the project asking the students to provide their perceived idea of the size of the pool house, ranging from one to five, one being small and five being large scale. In the weeks prior to this project, extensive time was spent learning about design elements and principles, including scale and its many forms. The first questionnaire was distributed after the completion of the drafted plan. The second questionnaire was distributed after the walls of the plan had been masked off, and the third questionnaire was distributed when the furniture had been masked off and the plan was complete. The results revealed that the initial perception of the drafted plan was larger (figure-1) than the perception of the plan were just the walls were masked off (figure-2). The results also revealed that the final perception of the completed plan with furniture (figure-3) was larger than the masked off plan without furniture (figure-2), but smaller than the perception after the plan was drafted (figure-1). After the completion of the 1’=1’ plan, the students were asked to “walk through”, “use” the spaces and find mistakes in their planning.

The students not only were able to more accurately understand the sizes of the spaces they had been drawing, but were also able to test their design solutions by walking through and simulating the use of the spaces. Most students found flaws in their original design solutions due to their misperception of the scale of the spaces. Overall, the students interviewed felt this exercise was very beneficial in helping them to visualize the true size of the spaces they had been drawing. They were also able to
take the more accurate perception of the scale of the spaces to modify their original
design solutions for improved and more functional spatial use.

Conclusion

Spatial representations should allow people to make accurate judgments about
the sizes of individual space, the relative configuration of the spaces to each other and
the qualities and attributes of the individual spaces (Henry, 2007). Interior design
students have little difficulty drawing a plan graphically to a measurable scale, yet they
often experience difficulty visualizing plan drawings into the actual spatial form and size.
The ability to visualize a design concept in one’s mind, and the ability communicate that
same design concept graphically, are both very important skills of being able to explore
and develop design solutions. By providing design students with more opportunities to
translate their design solutions drawn to scale into real scale simulations, and
opportunities to translate real scaled design solutions into scale drawn representations,
the experiences should assist the students in being able to more accurately visualize
space.
Summary of Perception of Scale After Completion of Drafted Plan at Scale of 1/4" = 1'-0"

Figure 1 Above

Summary of Perception of Scale After Masking Off Walls at Scale of 1' = 1'

Figure 2 Above
Figure 3 Above

Figure 4 Above


Integrating Creativity in the Volumetric Design Process:
Creative Concept Integrated Wall Designs

Elizabeth Pober & Janet Biddick

University of Oklahoma

Abstract

Purpose

A concept is the main idea influencing the steps taken and the decisions made during a design project’s design phase (Malnar & Vodvarka, 1992). “Concepts influence the creative process in design by consciously guiding the decisions made while inviting creativity” (Leigh, 2000). Thus, they affect the selection and manipulation of basic design elements and organizational principles to be used in solving specific design problems (Malnar & Vodvarka, 1992). When a concept is developed and used early in the design process, the elements selected to shape the space are reinforced with the concept’s idea, in turn creating a stronger design.

This project was developed to introduce creative concept integration into the design process, to result in a complex volumetric design solution of a component that is often quite simple. The objective was to design three focal wall partitions to communicate and express an associated creative design solution volumetrically for three different clients.

Process

The students were given three client categories to design unique focal wall partitions for use in a main space within the client’s facility: one each for an office, a
retail store and a spiritual gathering center. Each category had size limitations that restricted the outcome of the design solutions.

The first step in the process was for each student to choose a specific client for each category and to research that particular client. The students then developed a list of words that would assist them in exploring diverse dimensions of the concept to be conveyed for each space. These concept words would ultimately guide and shape the design of the walls. The overall atmosphere that was appropriate for the client was to be the driving factor in the list of words.

The second step was to use the list of concept words to develop abstract sketches to define and communicate the concept graphically. The students had to group certain words together, and creatively generate two-dimensional abstract graphic representations of the concepts.

The third step in the process involved combining elements from the abstract sketches and translating them into three-dimensional abstract models. Each student constructed models for each client category, choosing materials to communicate their creative concepts three-dimensionally. To assist them in translating the abstract models into the final design solution, the size of the models was limited to each client’s size restriction for the final design. The models were built at ¼”=1’ scale.

The final step was to use the concept words, abstract sketches, and abstract models to translate into a creative wall design for each client’s space. The students had to consider the materials that would be used, the construction method, and the way shape, size and design would affect the surrounding spaces.
Summary

This project illustrates a method for pairing a creative design development process with volumetric thinking, resulting in a design solution that communicates a conceptual idea directly to the users of the space. The outcome generated numerous creative volumetric design ideas for a component that is often lacking in three-dimensional creativity.
References
(APA Style)


Integrating Creativity in the Volumetric Design Process: 
Creative Concept Integrated Wall Designs

Elizabeth Pober & Janet Biddick
University of Oklahoma

Narrative

Purpose

A concept is the main idea influencing the steps taken and the decisions made during a design project’s design phase (Malnar & Vodvarka, 1992). “Concepts influence the creative process in design by consciously guiding the decisions made while inviting creativity” (Leigh, 2000). Thus, they affect the selection and manipulation of basic design elements and organizational principles to be used in solving specific design problems (Malnar & Vodvarka, 1992). When a concept is developed and used early in the design process, the elements selected to shape the space are reinforced with the concept’s idea, in turn creating a stronger design.

This project was developed to introduce creative concept integration into the design process, to result in a complex volumetric design solution of a component that is often quite simple, the wall. The objective was to design three focal wall partitions to communicate and express an associated creative design solution volumetrically for three different clients.

Context

A wall is generally defined as “an upright structure of masonry, wood, plaster, or other material serving to enclose, divide, or protect an area, especially a vertical construction forming an inner partition or exterior siding of a building” (American
Heritage, 2000). More specifically, “a partition is used to separate and define spaces” (Columbia, 2006). The human race has always needed barriers like walls to shield them from the elements, from their enemies, and as a means and to convey creativity (Van Dommelen, 1965). In Jane Teller’s poem *The Wall*, she states that “a wall is many things - protection, comfort. A wall can be silence. It can be a barrier. It can be open, looking through to a new adventure. A wall can be a garden. It can mean strength and spring from the ground; or it can be a ruin, pathetic and old, but of noble remnants, wearing marks of weather and habitation symbol of the human condition” (Teller in Van Dommelen, 1965, p. xi).

Using a simple stud wall as a component of a design solution provides one method for defining and separating space. However, as designers, we must constantly push the boundaries and try to implement creative solutions to meet functional design requirements. Creativity is the ability to produce work that is novel, both original and unexpected, and appropriate, both useful and adaptive (Sternberg & Lubart, 1999). “Creativity can be defined as both the art and the science of thinking and behaving with subjectivity and objectivity. It is a combination of feeling and knowing; of alternating back and forth between what we sense and what we already know.... problem solutions which merely “work” and last for a time do not represent what we can refer to as creative solutions” (Koberg & Bagnall, 1974, p. 8). Consider that a wall can be more than just studs, sheetrock and paint. Then introduce creativity into the process of designing an element that creates the separation and definition of space, and you are left with a creative wall design that becomes a solution to provide a space with an unexpectedly interesting and appealing functional design component.
Review of Literature

“The creative process is the one most emphasized in design schools, where students explore aesthetic concepts of interior space, usually (but not always) based on research, analysis, and development of a set of design criteria..... a playful artistic sense encourages the discovery of new ideas, and alternative possibilities. From this creative process there evolves a design concept..... the design is developed into a concept that exists in the real world, within certain parameters that are concrete and real” (Vaikla-Poldma, 2003, p. 33). “According to Maslow, primary creativeness “comes out of the unconscious.” It is the result of the ability to “fantasy, to let loose, to be crazy.....with the lid taken off, with the controls taken off, the repressions and defenses taken off, we find generally more creativeness that appears to the naked eye” (Maslow by McKim, 1972, p. 19). “The main design concept addresses the main design problems of the project and provides a dominant structure or idea that all other design ideas adhere to. Concepts can be philosophical, thematic, functional, artistic, mood related, or stylistic (Rengel, 2007, p. 139-140). Designers need tools to understand the conceptual development process and its subsequent relationship to creative potential in the built environment (Leigh, 2000, p. 13).

“In any creative act, there must be a force that drives the creator and infuses the created object with energy. A designer’s motivation for working on a project must be strong enough to produce the best possible end result. The creative energy going into the design should be clearly visible in the final product. (Aspelund, 2006, p. 16). “The design process is a sequence of events which demands creative behavior from its
participant. Its activity is to improve existing conditions and to find clear paths out of dilemmas” (Koberg & Bagnall, 1974, p. 8).

“Creating a physical [design] solution requires that analysis be put aside and a process of synthesis begun. That synthesis requires a creative understanding of all elements of the analysis, to place the programmatic elements in a physical juxtaposition that will satisfy the users’ needs. The word “creative,” in this context, must be seen in its broadest sense; in which functional, esthetic, and technical issues must be addressed and resolved. The heart of the problem solving task in space planning occurs in making the transition from the analytical pre-design phase of the project, to the creative design solution phase” (Karlen, 2004, p. 3).

Interior design educators and practitioners expect design programs to provide opportunities for students to develop their creativeness (Dohr, 1982). CIDA professional standards require that “educational philosophies and goals should be applied in the development of a creative professional who can synthesize information and analyze problems from many different perspectives” (CIDA, 2006). “Heightened creativity will enable design students to become more effective as the demands of the profession increase” (Portillo, 1996, p. 15).

Process

The students were given three client categories to design unique focal wall partitions for use in a main space within the client’s facility: one each for an office, a retail store and a spiritual gathering center. The design of the focal wall needed to creatively communicate a conceptual idea directly to the users of the space. Therefore, the general public, upon walking into the facility, should be able to recognize and
understand the overall design concept and the atmosphere that the wall would create for the space. Each category had size limitations that restricted the outcome of the design solutions.

The first step in the process was for each student to choose a specific client for each category and to research that particular client. Some examples for the categories included a clothing boutique for a retail store, an advertising firm for the office space, and a Jewish temple for the spiritual gathering space. After researching their specific client, the students then developed a list of words that would assist them in exploring diverse dimensions of the concept to be conveyed for each space. These concept words would ultimately guide and shape the design of the walls. Some examples of the concept words developed included distinctive for the clothing store, exciting and expressive for the advertising firm, and welcoming and peaceful for the Jewish temple. The overall atmosphere that was appropriate for the client and their needs was to be the driving factor in the list of words.

The second step was to use the list of concept words to develop abstract sketches to define and communicate the concept graphically. The development of the concept words “expanded the conceptual vocabulary by requiring the student/designer to research dimensions of their project idea through language” (Leigh, 2000, p. 13). The students then had to identify and group certain words together, and creatively generate two-dimensional abstract graphic representations of the concepts. They “explore[d] diverse dimensions of the concept and develop[ed] two-dimensional explorations of their concept using specific word pairs to stimulate thinking” (Leigh, 2000, p. 13).
The third step in the process involved combining elements from the abstract sketches and translating them into three-dimensional abstract models. The students were encouraged to create the abstract models using a combination of ideas communicated in one or more of their abstract concept sketches. Each student constructed models for each client category, choosing materials to communicate their creative concepts three-dimensionally. Some examples of the materials used to produce the models included clay, wire, and beads. To assist them in translating the abstract models into the final design solution, the size of the models was limited to each client’s size restriction for the final design. The models were built at ¼”=1’ scale.

The final step was to use the concept words, abstract sketches, and abstract models to translate into a creative wall design for each client’s space. The students had to consider the materials that would be used, the construction method, and the way shape, size and design would affect the surrounding spaces.

Conclusion

“Creative problem solutions are those which lead, which inspire, which provoke; those which help us to imagine more advanced problems or which provide us with the models for solving other, similar problems and which generally turn others on to their correctness, obviousness or to their simplicity” (Koberg & Bagnall, 1974, p. 9). This project illustrates a method for pairing a creative design development process with volumetric thinking, resulting in a design solution that communicates a conceptual idea directly to the users of the space. The outcome generated numerous creative volumetric design ideas for a component that is often lacking in three-dimensional creativity.
Author's Note:

The authors would like to credit Associate Professor David Boeck as one of the additional instructors of this course for two of the three semesters the project was taught. Mr. Boeck taught the graphic's portion of this studio; however, was still involved with the development and execution of this project.

References

(APA Style)


Support Materials

Project Statement:

**Design Concept Integrated Walls**

A concept is the main idea influencing the steps taking and the decisions made during a project’s design phase (Malnar & Vodvarka, 1992). When a concept is developed and used early in the design process, the elements selected and the shaping of the space is reinforced with the concept’s idea, and in turn the design is stronger.

For this design charrette you have a specific design problem for three different clients. The design problem is to design a focal wall partition that communicates or expresses an associated design concept. You will be designing three walls, one for an office, one for a retail store, and one for a spiritual gathering center.

You may choose a specific type of client for each of the three clients. Meaning that you might choose a shoe store for the retail store, a publisher’s office for the office, and so on.

The walls that you will be designing have certain size restrictions being that in a real life situation or in a complete project, you would only have a certain amount of space to allot to this wall. The restrictions are as follows:

- Retail Store: 15’W x 7’D x 20’H
- Office: 8’W x 3’D x 12’H
- Spiritual Gathering Center: 30’W x 9’D x 20’H

You may choose to use as much or as little of the allotted volume of space as you need for the design of your wall, however, you cannot go outside the boundaries of this volume of space.

*Phase I: Identify Specific Clients*

For each of the three facilities, identify a more specific client.
Phase II: Design Concept Development

For each client, develop a list of words (minimum of 20) that explore diverse dimensions of the concept you want to convey for their space. This concept will ultimately guide and shape the design of the walls. Consider the clients needs and the overall atmosphere you feel is appropriate for the space.

Some example concept words to get you thinking……
- functional, balanced, distinctive, cheerful, smooth, expressive, positive, comfortable, peaceful, welcoming, fun, relaxed, bright, exciting, interesting

Phase III: Concept Sketches

Using the list of concept words, develop a minimum of 9 abstract sketches that define and communicate the concept graphically. You should identify which of the concept words are associated with each of the sketches. Be creative here, there are no restrictions to what you can develop.

Phase IV: 3D Abstract Models

Take the concept sketches that you have developed and translate them into 3D abstract models. You should have 2 models for each client’s wall. These models may be a combination of ideas communicated in one or more of you concept sketches. To help you with translating these models into your final wall designs, limit the size of your models to the volume of space you are restricted within for the final walls. So if you are doing the models for the retail store, your models should be no larger than 15’W x 7’D x 20’H. You should build these models at a scale of ¼” = 1’.

Phase V: Final Design Development

Using the concepts, sketches, and models you have developed, translate your ideas into a creative wall design for each space. Consider the materials you will use for the walls and the way it will be constructed. Pay attention to the way the shape, size and design will affect the surrounding spaces. This wall should creatively communicate a conceptual idea directly to the users of the space. Meaning that when someone walks into the room with this wall in it, they should have an understanding of the overall atmosphere that this wall is creating for the space.
Presentation Requirements:

For each client’s wall (3 sets of the following):

**Board I: (11” x 17”)**
- Identify the client
- List the key concept words for the design (min of 6) with 2 primary words
- Concept sketches (minimum of 3)
- Images of concept models (2)
- Plan view of wall
  - Should be drawn to scale
  - Show allotted space in plan view
  - All allotted space that is unused should be shaded in with a light color or a light gray

**Board II: (11” x 17”)**
- Rendered elevation of wall
  - Should be drawn to scale
  - Show allotted space in plan view
  - All allotted space that is unused should be shaded in with a light color or a light gray
- Wall section
  - Should be drawn to scale
  - Include dimensions
  - Label materials
- Material Selection
  - Material samples of the components for the wall

*Total of 6 boards, 2 for each client/wall design*
Charrette Schedule:

Day 1: Hand out design charrette; assign client identification and concept word development

Day 2: Discuss concept words; assign concept sketches

Day 3: Pin up of client identification, concept words, concept sketches; assign 3D abstract models

Day 4: Pin up of 3D abstract models in class; students work on final design.

Day 5: Students work on final design

Day 6: Design charrette due at the beginning of class: Students will pin up their designs and give presentation
Samples of Student Work:
Thinking as Designers: Heuristics and Patterns as Vehicles to Insight

Roberto Rengel, M.IARCH
University of Wisconsin - Madison

Abstract

One of the greatest challenges for young design students is learning how to understand design situations holistically and develop appropriate design responses. Students have to be taught that good design goes deeper than function and style. Design involves a series of complex relationships and connections. Cesar Pelli identifies at least 8 kinds of connections that need to be considered: connections with the times, construction techniques and practices, place, purpose, culture, design process, a project’s constituents, and with oneself (Pelli, 1999).

This presentation shares a class assignment aimed at helping students develop their ability to understand design situations and develop corresponding design criteria through the use of heuristics. The goals are to help them expand their mental “design library” in general and to teach them how to solve design problems associated with specific projects. A heuristic is “any principle, procedure, or other device that contributes to reduction in the search for a satisfactory solution” (Newell, Shaw, and Simon, 1967). The concept of situation is used two ways: to refer to a set of design circumstances in the ordinary sense and also to describe the students’ inquiry based on Merleau-Ponty’s idea of situation. As Mallin explains “a situation occurs when an individual becomes totally absorbed in something, relates it to himself, and begins to understand it (Mallin, 1979). In heuristic inquiry the search for insight does not rely exclusively on “the
objective realm of those things outside ourselves” or on one’s “own subjectivity”. While both these aspects are present, neither dominates over the other.

The format for the exercise is derived from Alexander’s Pattern Language and uses verbal descriptions and images (Alexander, 1977). For the assignment students were required to identify design issues specific to a particular type of project, get immersed in the situation, and develop heuristic rules in the form of patterns. Students were instructed to draw from concepts discussed in class such as utility, comfort, order, interaction, character, taste, meaning, enrichment, privacy, delight, wholeness, poetic impact, complexity, connection, and authenticity.

These patterns are not intended as universal formulas. As Rachel and Stephen Kaplan explain related to the use of patterns in their work, “their purpose is to suggest a relationship between aspects of the environment and how people experience or react to them. These relationships form the basis for recommendations or possible solutions to recurring situations (Kaplan, 1998). As Alexander explains “each pattern describes a problem that occurs over and over again in the environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice. (Alexander, 1977).

The presentation will emphasize a) the importance of teaching students how to understand design problems and articulate insightful design criteria, b) the reasons for using design heuristics and Alexander’s patterns, and c) the kind of language used to describe solutions that are both specific and general. It will include many examples from students’ work. (Format used for exercise attached as example).
Thinking as Designers: Heuristics and Patterns as Vehicles to Insight.

Roberto Rengel, M.IARCH
University of Wisconsin - Madison

Narrative

Background

At the core of every profession is the responsibility to use professional judgment in the process of practicing the profession. Involved in any situation of professional services are complex circumstances that demand a response that is ethical, economically feasible, technically appropriate, and so on. It is specialized knowledge. As Michael Davis describes, “an engineer without engineering judgment, a lawyer without a lawyer's judgment, or any other professional without the particular form of judgment distinguishing his or her profession from all others, would be an incompetent "layman" who could not honestly practice the profession in question” (Davis, 1992).

While much of a profession’s body of knowledge is documented formally through books, articles, and educational curricula, an important part of a profession’s knowledge comes from experience and personal insight. A doctor attending a patient with a rare disease has to draw not only from the common body of knowledge of the medical profession but, in this case, from personal experience and individual insight. Structural engineers designing a long span bridge can choose from many known approaches that will meet the structural requirements for safety and can even think of new ones that will work. When the time comes to commit to one most-appropriate design direction they base it on their professional judgment. While the formal body of knowledge will inform
the narrowing down of good choices, it is the combination of experience and individual insight that will help them make the final choice.

Part of professional training involves learning to choose among alternatives from a set considered appropriate by the particular profession. Designers, like other professionals have to ultimately choose from among acceptable options, and pick the best one for the situation. Thus, learning the difference between good, better and best becomes important, and books seldom help with this. The built environment and its many interactions are complex. Cesar Pelli identifies at least 8 kinds of connections that need to be considered by designers: with the times, construction techniques and practices, place, purpose, culture, design process, a project's constituents, and with oneself (Pelli, 1999).

**Purpose**

An important task for the young design student is learning how to understand design situations holistically and come up with appropriate design responses. This requires the ability to look at a situation, understand it, and know what a responsive design for that situation would be. In doing so it is important that students judge for themselves and arrive at a personal idea of what and how a certain design element ought to be and how the answer may change according to circumstances. They may have a sense of what a building part or room may want to be in general but they need to also determine what that element wants to be in a specific context. Its application in an office building and a school may demand different particular requirements. Furthermore within similar contexts requirements may vary based on differences between user groups, site specifics, client personality, and so on.
This presentation shares a class assignment aimed at helping students develop their ability to understand design situations and develop corresponding design criteria through the use of heuristics. The goals are to help students expand their mental “design library” in general and to teach them how to understand and solve design problems associated with specific situations. A heuristic is “any principle, procedure, or other device that contributes to reduction in the search for a satisfactory solution” (Newell, Shaw, and Simon, 1967). The concept of situation is used two ways: to refer to a set of design circumstances in the ordinary sense and also to describe the students’ inquiry based on Merleau-Ponty’s idea of situation. As Mallin explains “a situation occurs when an individual becomes totally absorbed in something, relates it to himself, and begins to understand it (Mallin, 1979). In heuristic inquiry the search for insight does not rely exclusively on “the objective realm of those things outside ourselves” or on one’s “own subjectivity”. Both these aspects are present but neither dominates over the other.

Process

The format for the exercise is derived from Alexander’s Pattern Language and uses verbal descriptions and images (Alexander, 1977). For the assignment students were required to identify design issues specific to academic buildings, get immersed in them, and develop heuristic rules in the form of Alexander’s patterns. Students were instructed to draw from concepts such as utility, comfort, order, interaction, character, taste, meaning, enrichment, privacy, delight, wholeness, poetic impact, complexity, connection, and authenticity.
It should be noted that these patterns are not intended as universal formulas. As Rachel and Stephen Kaplan explain related to the use of patterns in their work, “their purpose is to suggest a relationship between aspects of the environment and how people experience or react to them. These relationships form the basis for recommendations or possible solutions to recurring situations (Kaplan, 1998). As Alexander explains “each pattern describes a problem that occurs over and over again in the environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice. (Alexander, 1977).

The assignments were completed by design students at different stages within the interior design program. The resulting assignments revealed students’ ability to look, understand, and synthesize situations from the built environment and to translate them neatly into heuristics they can refer to later. They learned to use language that is both specific and general and capture the essence of a situation. More importantly, the assignment taught the students to trust themselves, their insights, and intuitions and that not all useful information comes from books and other external sources. The hope is that this kind of encouragement will produce design professionals who are confident when they have to exercise professional judgment later as practitioners and, more importantly, who can make excellent professional decisions concerning design.
References


Research-Inspired Design:  
Expanding the Role of Research in Interior Design Education

Lily Robinson, RA, ASID, IDEC  
Design Institute of San Diego

Abstract

Since the early 1960’s, with the advent of the term “architectural programming” by Caudill & Pena (Cherry, 1999), data collection, research methods, analysis and other aspects of the programming process have become integrated into the practice of interior design. More recently, CIDA requirements and the NCIDQ have put a greater emphasis on the role of the interior designer in the programming process in both the interior design education and profession, respectively. No longer considered outside the realm of professional services, research during the programming phase is an activity that involves the active participation of client, designer and users, as well as other points of view, not previously considered. Evidence-based design has now become the norm in healthcare and related design fields. Can research methods for interior design be expanded—can they be an exciting part of the process? Can the research process for interior design rise above the mundane to be a source of inspiration and innovation? I propose a paradigm shift from “evidence-based” design to “research-inspired” design for the interior design education process. To illustrate this concept, I will discuss the collaboration between a forward-thinking scientist, Dr. Jonas Salk (the client), and Louis Kahn (the architect) in the development of the program for the Salk Institute for Biological Studies (1959-1965). This historic event provides an insightful look into the way research informed the program of areas to create a truly original institution. I was
initially inspired by a journal article by Robert Hershberger, AIA in which he states: “architects like Louis Kahn, whose patient search for values led to understandings…that resulted in whole new realizations in form and design… this search for values is a programming, not a design, activity.” (Hershberger, 1999). Further research uncovered transcripts of conversations held at that time between Kahn and Salk which were instrumental in the development of the program. “There are few clients who can understand philosophically the institution they are creating. Dr. Salk is an exception…Usually a written program is handed to you and you must assume the role of the philosopher for the client.” (Kahn quoted by Ronner, Jhaveri, 1987). Kahn’s relationship with the client serves to illustrate how values are transferred from client to designer and ultimately to the built environment. Kahn’s observation of the users, from scientists to maintenance workers, led to unprecedented conclusions that were embedded into the program. Kahn advocated combined research strategies that incorporate both subjective and objective principles, along with two major data collection approaches: (1) direct information gathering: direct observation, experiential/participation observation, interviews and (2) indirect information gathering: historic precedent, archives, maps. Through historic precedent, this paper takes a fresh look at how data collection, analysis and interpretation were transformed into values that were then incorporated into the program and seeks dialog with educators on how we can incorporate these programming ideals into interior design education to further “research-inspired” design.
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Introduction

Shortly after the success of the polio vaccine in 1955, Dr. Jonas Salk “resolved to encourage cross-fertilization of the sciences by creating an environment favorable to collaborative exchange” (Carter, 1966, p. 406). In other words, he set out to build a research facility where top scientists from around the world could live, work and meet in a sort of monastic environment. The Salk Institute for Biological Studies represents a unique collaborative effort between a forward thinking scientist and a top architect, Louis Kahn. The program of areas for the institute was not dictated by the client, but grew out of research undertaken by the architect to create a new paradigm, a series of spaces without precedent.

Purpose

The purpose of this paper is to understand how, through direct information gathering (interview and observation) and analysis during the programming process, Kahn was able to translate the needs of the client and the users (or potential users) into spaces
without precedent. And how he used indirect research methods (maps, books and images of historical precedent) to further inform the program which lead to an innovative design.

Overview and Impact

In his 2007 biography of Kahn, Carter Wiseman denotes the special relationship between Kahn and Salk by naming the chapter dedicated to The Salk Institute for Biological Studies, “The Client Connection.” In fact, according to Wiseman, Salk hired Kahn because of “the way the architect described his underlying concept for the Penn project as a place for research that would benefit mankind” (Wisemen, 2007, p.113). Kahn’s relationship with the client serves to illustrate how values are transferred from client to designer and ultimately to the built environment. Conversations and mutual respect between Kahn and Salk were instrumental in the early development of the program. “There are few clients who can understand philosophically the institution they are creating. Dr. Salk is an exception…Usually a written program is handed to you and you must assume the role of the philosopher for the client.” (Ronner, Jhaveri, 1987, p.130). According to Kahn, the role of the designer is to assume the role of philosopher. What does that mean? Philosophy is the underlying belief system or values. According to Robert Hershberger, “architects like Louis Kahn, whose patient search for values led to understandings…that resulted in whole new realizations in form and design… this search for values is a programming, not a design, activity.” (Hershberger, 1999, p.42). Kahn explains, “Without the restriction of a dictatorial program, it became a rewarding experience to participate in the projection of an evolving program of spaces without precedence.” (Ronner, Jhaveri, 1987, p.131)
One of the tenets of architectural programming is to describe the problems rather than offering a physical design solution. If the problem to solve is a quiet place for sleeping, designers often jump to a physical solution by calling it a “bedroom” in the written program. This may limit creativity, in that, more often than not, the design solution is a room with a bed in it. If the program, instead, calls for “a quiet area for sleeping,” it frees up thinking due to the fact that it describes the problem to solve (the activity that must be performed there) and a qualitative aspect (quiet) rather than embedding a design solution in the program. This renaming device opens up new possibilities in term of an innovative physical solution (design) to satisfy the program. Kahn’s use of language to describe the spaces was inherently vague and referred to their function before form. He termed the main buildings the Living Place, and the Meeting Place, and the secondary buildings as study towers and service towers. Kahn further distinguished general areas from one another as “served” and “servant” spaces. In fact, when describing the spaces in between, Kahn was so sensitive to the use of language to limit thought, he called them the many “unnamed spaces.” By NOT naming them, he allowed the form to evolve to accommodate unknown uses.

Kahn had had extensive interviews with scientist while programming his previous project: The Richards Laboratory at the University of Pennsylvania. There is an interesting distinction between wants and needs, almost a dichotomy in this instance, which Kahn eloquently describes. The scientists, according to Kahn, “said they are so dedicated to what they are doing that when lunchtime comes all they do is clear away the test tubes from the benches and eat their lunch on these benches. I asked them was it not a strain with all these noises? And they answered… everything was terrible
including the noise of air conditioning system. So I would not listen to them as to what
should be done.” (Ronner Jhaveri, 1974, p.138). In this quote, we can see that Kahn
realized that the wants of the scientists did not necessarily match their needs. Kahn
summarized the needs gleaned from the interview as follows: “I realized that there
should be ‘a clean air and stainless steel’ area, and ‘a rug and oak table’ area. From this
realization, form became. I separated the studies from the laboratory and placed them
over the gardens. The garden became the outdoor spaces where one can talk. Now one
need not spend all the time in laboratories.” (Ronner Jhaveri, 1974, p.138).
By separating the functions of the traditional laboratory into spaces that would move
knowledge forward Kahn came to the conclusion that it would be a combination of three
kinds of spaces: (1) space for experimentation, (2) space for private contemplation and
(3) space for socializing. Kahn dismissed the standard laboratory scheme, a one-story
box with a long corridor down the middle (Wiseman, 2007, p94). “The simple beginning
requirement of the labs and their services expanded to cloistered gardens, studies over
arcades and spaces for meeting and relaxation interwoven with unnamed spaces for the
glory of the fuller environment.” (Ronner, Jhaveri, 1974, p.131)
One of the problems of programming the laboratory was that the client did not know
who would come to his institute and he did not want to limit the invited guests. Kahn
recognized, early on, the need for flexibility and translated that spatially in large open
spaces without structural columns, in which laboratory configurations would be infinite
and inherently viable. Kahn accomplished this goal through the use of specially
designed trusses which created an entire floor above the open lab space which also
housed the pipes and ducts. Kahn observed the maintenance worker in existing
laboratories. In order to fix something or re-route services, workers would have to interrupt lab activities by placing a ladder on the floor, breaking open the acoustic ceiling panels and trying to do their work in unlit, unsanitary and congested circumstances. Kahn found this unacceptable. The expansion of the typical plenum space into an interstitial space as a program feature resulted from observations of the shortcomings of existing laboratories.

Kahn’s use of historical precedent and imagery as well as his “reading” of the site as a source of inspiration from maps and personal observation were essential to the development of the program. “Kahn regularly referred to historical monuments, whether famous or obscure in talking with his staff, ‘We were always working in the past,’ recalled one staff member, adding that Kahn would leave illustrated architectural books on the employees’ drafting tables to inspire them. (Wiseman, 2007, p 104).

One of the controversies, or mysteries that surrounds the project, is the source for the inspiration for the water feature which divides the plaza. From one historical account, it was the design of Luis Barrigan who was the source of the inspiration for the open plaza between the two mirror image lab buildings. Another source may have been from Mughal gardens in India and Pakistan. In an interview with Jack McAllister, an employee of Kahn who supervised construction of the Salk Institute, the water feature may have been inspired by a Moorish landmark, the Alhambra (Wiseman, 2007).

A look at Kahn’s sketches and early models indicate site research and analysis was at the forefront of every design decision, including climate, land formations, the site’s proximity to the ocean, personal observation of the ocean view, the path of the sun and solar orientation of the buildings. Site maps were all researched and analyzed in
sketches and model form. Kahn used the similar climates to draw a parallel between La Jolla and the Greco-Roman world and the Middle East, further supporting his use of formal historical references to ancient monuments, plazas and water features.

Conclusion
This case study provides an insightful look into the way research informed the program of areas to create a truly original institution. How we can incorporate these programming ideals: sensitivity to language, developing programmatic statements from interview data, incorporating historic imagery to inform the present and rigorous site analysis into interior design education to further “research-inspired” design?

Reference List
(APA)


Paridera: A Birthplace Portrait
David L. Rodgers, M. F. A., M. S.
Valdosta State University

Abstract

Purpose

The rate of many non-medically indicated, elective birth interventions continues rise in the United States despite findings from decades of research indicating birth supported by midwives occurring in birth centers is as safe, or safer, than birth in hospitals. The purpose of this case study is to describe the origin and influence on birth of the Paridera, an alternative birthplace conceived by Dr. Pedro Enguix, a co-founder of Grupo Acuario Hospital y Policlinicas (Acuario), a women’s care hospital staffed by 25 physicians located in Beniarbeig, Spain.

Method

This study applies qualitative methodologies of social and environmental portraiture developed by Lawrence-Lightfoot and Hoffman Davis (1997) and others to create a portrait capturing the origin and expression of the design of Acuario’s Paridera illustrated in the Appendix. The portrait records how actors belonging to Baladre commune conceived and built it from 1979 to 1980 as a lifestyle necessity and a tool with which to empower women to birth naturally. Deconstructing idiomatic Spanish terms for birth and birthplace reveals how Peridera design implements Grupo Acuario’s alternative, evidence-based birth ideology by incorporating into the birth environmental cues for making responsible birth choices and responding innately. Constructing the portrait relied on interviews, observations, and photo-documentation.
Concept

The Paridera’s concept emerged as Baladre members learned to support women birthing in homes and to care for animals birthing in farm buildings. Dr. Enguix recognized the essential equivalence between a casa de parto for humans and a paridera for livestock. He compares the Paridera parti to a domed, vernacular Arab brick and concrete oven in which rising and baking bread corresponds to pregnancy and birth arising naturally in a mother empowered to rely on the authority of her innate abilities, body, midwives, and doulas.

The organic, cavernous form of the Paridera suggests a placenta and womb imbedded in the earth, an impression enhanced by the voluptuous convexity of its pale tangerine massing, magenta tiling of its concave, domed Paritorio (birth chamber), and meandering bathroom. A luminous, ocular skylight and dimmer-controlled sconces illuminate the Paritorio. Turf growing on earth infill rising to parapets blends the building into the site’s orange and lime orchards. Family members may reside in a living room, kitchen, and two bedrooms. Birth choices include using a triangular bed, birth stool, birth pool, open floor space and other resources as the mother moves freely and positions spontaneously during birth. Acuario’s Women’s Hospital and ambulance are less than half a kilometer away.

Results

Women from across Europe come to birth in the Paridera, as do many second generation Baladre women born in the Paritorio. Healthy, safe natural childbirths in its space corroborate outcomes published by the New England Journal of Medicine (1989) based on a study of 11,814 women admitted for labor and delivery to freestanding birth
centers. The authors conclude “birth centers offer a safe and acceptable alternative to
hospital confinement for selected pregnant women, particularly those who have
previously had children, and that such care leads to relatively few cesarean sections.”

References


Appendix

Figure 1. *Paridera* Southwest Elevation

Figure 2. The *Paritorio* birth chamber and birth pool, bathroom entry, and birthing bed (right foreground)
Figure 3. Paridera furniture plan
Paridera: Un Retrato de Lugar de nacimiento

David L. Rodgers, M. F. A., M. S.

Valdosta Universidad de Estado

Intente la tarifa de muchos intervenciones de nacimiento no médicamente indicadas, electivas siguen la subida de los Estados Unidos a pesar de conclusiones a partir de las décadas de investigación que indica el nacimiento apoyado por comadronas que ocurren en centros de nacimiento es como la caja fuerte, o más salva(segura), que el nacimiento en hospitales. El objetivo de este estudio del caso es de describir el origen y la influencia sobre el nacimiento del Paridera, un lugar de nacimiento alternativo concebido por el Doctor Pedro Enguix, un cofundador de Grupo Acuario el Hospital y Policlínicas (Grupo Acuario), un hospital de cuidado de mujer proveído de personal por 25 médicos localizados en Beniarbeig, España.

El Método

Este estudio aplica las metodologías cualitativas de retrato social y ambiental desarrollado por el Lorenzo-Lightfoot y Hoffman Davis (1997) y otros para crear un retrato capturando el origen y la expresión del diseño de Paridera de Grupo Acuario ilustrado en el Apéndice. Los registros de retrato como los actores que pertenecen a la comuna de Baladre concibieron y lo construyeron a partir de 1979 hasta 1980 como una necesidad de modo de vivir y un instrumento para autorizar a mujeres al nacimiento naturalmente. Deconstructing [para desmontar un sistema para entenderlo] el español idiomático llama para el nacimiento y marcos exteriores de la ventana de lugar de nacimiento como el diseño de Peridera pone en práctica la ideología de nacimiento alternativa, a base de pruebas de Grupo Acuario por incorporándose en el nacimiento señales ambientales para hacer opciones de nacimiento responsables y responder
naturalmente. La construcción del retrato confió en entrevistas, observaciones, y la fotodocumentación.

**El Concepto**

El concepto de Paridera surgió como Baladre miembros aprendió a apoyar a mujeres quien da a luz en casas y preocuparse para animales esto da a luzen edificios de granja. El Doctor Enguix reconoció la equivalencia esencial entre un casa de parto para la gente y un paridera para la ganadería. Él describe a Paridera parti como un horno abovedado, vernáculo árabe de ladrillo y concreto en el cual la rebelión y el pan de cocción corresponden al embarazo y el nacimiento que surge naturalmente en una madre autorizó confiar en la autoridad de sus capacidades innatas, cuerpo, comadronas, y doulas.

La forma orgánica, cavernosa del Paridera sugiere una placenta y la matriz incrustada en la tierra, una impresión realizada(mejorada) por la convexidad voluptuosa de su congregación de mandarina pálida, el embaldosado de magenta de su Paritorio cóncavo, abovedado (la cámara de nacimiento), y el serpenteo el cuarto de baño. Una claraboya luminosa, ocular y candelabros de pared controlados por potenciómetro iluminan el Paritorio. El césped que crece sobre la tierra infill la rebelión a parapetos mezcla la incorporación en de la naranja del sitio y huertos de cal. Los miembros de familia pueden residir en una sala de estar, la cocina, y dos dormitorios. Las opciones de nacimiento incluyen la utilización de una cama triangular, el taburete de nacimiento, el fondo de nacimiento, abren el espacio y otros recursos como los movimientos de madre libremente y posiciones espontáneamente durante el nacimiento. El Hospital De mujer de Grupo Acuario es menos de medio kilómetro de distancia.
Resultados

Las mujeres desde más allá de Europa vienen al nacimiento en el Paridera, como haga mucha segunda generación Baladre mujeres nacidas en el Paritorio. Partos sanos, salvos(seguros) naturales en su espacio corroboran resultados publicados por la Nueva Inglaterra el Diario de Medicina (1989) basado en un estudio de 11,814 mujeres admitidas para el trabajo y la entrega a centros de nacimiento aislados. Los autores concluyen " centros de nacimiento ofrecen una alternativa salva(segura) y aceptable al confinamiento de hospital para mujeres seleccionadas embarazadas, en particular los que antes han tenido niños, y que tal cuidado conduce a relativamente pocas secciones cesarean. "

Referencias


Purpose

Many postmodern birth anthropologists contend language is the filter through which women interpret and express birth experiences and authoritative knowledge (AK) for birth (Davis-Floyd & Sargent, 1997). This study describes how AK typically expressed in spoken language and women’s somatic body language is embedded in a paridera (birthplace) design using Tufte’s (1990) principle to envision information in order to reason about, communicate, and preserve knowledge (p. 33).

Grupo Acuario Hospital Maternidad y Policlínicas’ (Acuario) 25 physicians meet women’s reproductive, pregnancy, and childbirth needs by maintaining “a hospital where the human factor has priority over the technical, though we do no forget the latter. Our atmosphere is homely. We want you to feel at home, welcomed, treated with kindness and respect” (Acuario, 2008) One of its environments, the Paridera shown in Figure 1, provides a home-like context where “the team works on the basis of equality between the professional and the user, which is only possible through the provision of true, operative information” (Acuario, 2008). The Paridera promotes parity by expanding the meaning of paritorio, a meeting place on equal terms between managers and laborers, to include the birth chamber shown in Figure 3 where women and midwives acknowledge one another’s childbirth AK.
Davis-Floyd and Sargent (1997) cite Trevathan’s (1987) theory that women’s assistance at childbirth contributed to human evolution, and document evidence that women posses AK for birth; but they question “when, if ever, anatomically modern human females were the sole possessors of AK in childbirth” (p. 21); and they argue collaborative construction of AK about birth has great potential for creating consensual and interactive systems (p. 22). The Paridera’s system explicitly addresses Lynch’s (1971) goal to bring to the light of day sensuous design criteria (p. 224) by communicating collaboratively constructed birth knowledge through its spaces and forms.

Figure 1. Paridera South Elevation

Founding Acuario in 1976 occurred after gynecologist and obstetrician Dr. Pedro Enguix in 1970 helped establish a commune named Baladre in orange and lime groves near Beniarbeig, located southwest of Valencia, Spain. There he supported madronas (midwives) and women during homebirths. Assisting women homebirth impregnated his fertile imagination with the idea of constructing space where “the protocol was not to
have protocols because every case was unique” (January, 2008). Poetically, he muses, the Paridera grew like a fungus in his mind. Perhaps this analogy explains why its parti is a vernacular Arab oven in which rising and baking of bread in a domed, concrete-covered brick chamber corresponds to pregnancy and birth arising naturally in a healthy mother who trusts her innate birth knowledge, body, midwives, and doulas. The Paridera’s design establishes proper relationships among information layers, adhering to Tufte’s (1990) principle to communicate knowledge “…in relevant proportion and in harmony to the substance of ideas, evidence, and data conveyed” (p. 54).

**Method**

This study applies qualitative methodologies of social and environmental portraiture developed by Lawrence-Lightfoot and Hoffman Davis (1997) to create a portrait capturing the origin and expression of the Paridera’s precedent-setting design. Commune actors conceived the Paridera as a lifestyle necessity, and a means for resisting the dominant medical culture’s birth protocol by improving birth outcomes using alternative practices and spaces. Portrait construction relied on interviews, observations, and photo-documentation. Deconstructing idiomatic Spanish terms for birth and birthplaces reveals how the Paridera manifests an alternative ideology regarding normalcy of birth, birthplaces, and lifestyles by integrating birth service design and environment design in an out-of-hospital birthplace.

**Concept**

The Paridera’s concept emerged as Baladre members learned to support women birthing in homes and care for animals birthing in parideras. Paridera derives from parir, to be delivered of a baby or the ability of an animal to give birth. Parir also means to
become known, and bring to light. Dr. Enguix brought to light equivalence between a *casa de parto* for humans and a *paridera* for livestock. Fittingly, his dog was first to birth in the *Paridera*, soon followed by birth of his son, Rocky. Making human and animal

![Figure 2. A cave located approximately one kilometer west of the Paridera](image)

birthplaces equivalent radically departs from conventional Spanish birth norms. Most Spaniards reject this philosophy and its semantics in favor of prevailing medical authority’s protocols and environments designed to meet customer expectations regarding the safest and healthiest ways and places to birth. Nevertheless, enlightenment often shines among women who naturally *dar a luz* and associate birth light with the vital light of the life force flowing within their bodies and babies.

Supporting natural childbirth reiterates belief in women’s authentic powers despite global trends to the contrary, as shown by founding of such natural birth advocacy organizations as Birthlight, a trust located in Cambridge, England.

The *Paridera* embodies a counter-ideology and challenges conventional technomedical ideology’s intention to confine birthplaces to hospitals. The idiomatic expression for birthplace is *lugar de nacimiento*, and the dominant term for pregnancy,
embarazo, also means embarrassment. Embarazo derives from embarazar, to embarrass or make pregnant. The Paritorio is a private space, a cave comparable in form to a nearby cave shown in Figure 2, in which social support and physical cues enable a woman to release her panoply of emotions and body knowledge in sheltered, safe, healthy privacy, and, if she chooses, supported by people she loves and trusts. Designing stages to support women’s health and well-being is consistent with Acuario’s belief “people who require our services are the protagonists of their own lives and therefore of their health” (January, 2008).

Design of the Paridera and its site support a woman’s impetus to move freely as her baby enters her birth canal, position spontaneously during birth, control access to
her birth space, and restrict who hears or sees her during and following birth. By design, the *Paritorio* in Figure 3 enables her to express innate, authentic body knowledge, and transform *embarazado* into instinctive behaviors by enabling her to *desembarazar*, to disembarrass herself by setting aside rational thought processes and behave with freedom, lack of restraint, ease, and naturalness as pain, fear, stress, joy, sensuality, or other forces or emotions well in or out of her.

*Paridera* builders created an indirect, meter-wide, descending labyrinthine corridor leading to the subterranean *Paritorio* and adjacent family quarters shown in the furniture plan in Figure 4. Earth in-fill nurtures turf and a garden planted atop the building’s organic mass, blending it into its orchard site. The *Paritorio* resembles the uterus and placenta, broadening meaning of the oven *parti* metaphor.

The birthing woman freely moves within the *Paritorio*’s six-meter diameter, hemispherical void and 1.9 meters high cylindrical walls. She may use an adjacent shower and WC, a womb-shaped, magenta birth pool, a trapezoidal birth bed spread with voluptuous pillows, a birth stool, or choose other artifacts and practices during la apex of the domed ceiling, an ocular skylight admits sunlight. Two sideboards contain
emergency equipment. At the apex of the domed ceiling, an ocular skylight admits sunlight. Another skylight illuminates the bathroom. Sconces augment daylight. She may breastfeed seated in a bentwood rocker. Stuccoed, concrete-covered, brick walls do not exceed two meters above grade. Two bedrooms, a kitchen, dining area, and a living room illustrated in Figures 5, 6, 7, and 8 accommodate families. Analogous, healing colors and natural materials harmonize the whole. Within half a kilometer, Acuario’s hospital and ambulance provide emergency backup.

**Results**

Serendipitously, the *Paridera*’s ensemble of architectural elements, interior spaces, lighting, birth pool, and furnishings engender spiritual associations of light and birth expressed by *alumbrar*, which alternatively means to give light, to bring subterranean waters to the surface, and to be delivered of a child. These qualities
attract pregnant women and their families from across Europe for birthing and to stay in
quarters provided by Acuario adjacent to its hospital or in the Paridera for as long as
two weeks. Many second-generation Baladre women among 600-plus babies born in
the Paridera return with their families to birth in their birthplace.

Healthy, safe births in the Paridera since its construction between 1979 and 1980
corroborate findings published by Rooks, Weatherby, Stapleton & Rosenfeld (1989) in
the New England Journal of Medicine based on a study of 11,814 women admitted for
labor and delivery to freestanding birth centers. Study authors conclude “birth centers
offer a safe and acceptable alternative to hospital confinement for selected pregnant
women, particularly those who have previously had children, and that such care leads to
relatively few cesarean sections.” AcUARIO outcomes lend credence to its claim it
provides women with “true operative information” in “homely,” accommodating interiors.
Women’s needs and AK for birth contribute to Acuario’s design of services, interiors,
and architecture operationally, organically, and symbolically.

The Paridera grew out of necessity and resistance to birthing in technomedically
controlled and steriley designed hospitals. Its builders redefined terms of authority on
behalf of mothers and babies and embedded outcome-based knowledge in physical
cues comprising a unique birthplace to communicate information on which women
consciously make informed choices and to which they may respond innately. Building
on Paridera experiences and research outcomes, Acuario infant and maternal morbidity
and mortality rates equal or are superior to hospital birth outcomes experienced across
Spain and elsewhere.
References


The Effects of Culture on the Form and Spatial Development of Vernacular Architecture of Chong Kneas, Cambodia: A Case Study

Tijen Roshko, Assistant Professor,
University of Manitoba, Department of Interior Design

Abstract

Tonle Sap Lake is the largest freshwater lake in Southeast Asia, and lies in the central plains of Cambodia. Due to a unique hydrological phenomenon, cyclical flooding of the Tonle Sap Lake has rendered the whole area one of the most fish-abundant regions in the world. The cultural identity, as well as the economic health and stability of the Cambodian people, are defined by Tonle Sap Lake, and the rhythm of the lake defines the rhythm of the culture (Keskinen 18-21).

While the Cambodian villages are predominantly located on the land surrounding the lake, a substantial population of Cambodians also resides in villages on the surface of the lake itself. One of these is a collection of floating villages known as Chong Kneas. The villages have their own enclosed communities which encompass diverse cultural groups, including the majority ethnic Khmer, as well as Vietnamese, Cham Muslim, and Chinese minorities.

Like the other floating communities on Tonle Sap Lake, Chong Kneas moves location with the seasonal water levels. The inhabitants of Chong Kneas live in floating houses. The floating houses of the villages are of various sizes and types and move with the changing water levels. The village proper contains not only domestic enclosures, but also educational, religious and recreational facilities.

This study investigates the effects of socio-cultural factors on the development of house forms and their interiors within the culturally mixed community of Chong Kneas. The four different ethnic groups have created a complex socio-cultural matrix within the area. While the
physical and environmental factors such as climate, method of construction, available materials and technology have remained the same for all, the individual communities display distinct ethnic variations. In his seminal work “House Form and Culture”, Amos Rapoport (Rapoport 47) has stated that the house form is not a simple result of physical forces, but is the consequence of a wide range of socio-cultural factors. All the rest of the forces are considered to be secondary - modifying elements. Rapoport summarized the five aspects of “genre de vie” which affect the built form as basic needs, family, position of women, privacy, and finally social intercourse (Asquith 132).

This paper reviews the elements listed above from the four different cultural perspectives of Chong Kneas, in the context of domestic built environments. The first stage of the field work was completed during the end of the dry season in April 2007. A total of twelve houses, three houses from each of the dominant cultural groups, were visited, and physical environments were drawn and documented quantitatively. In addition, each head of the household was interviewed as part of the qualitative data gathering process. Interviews with the community leaders also provided a political perspective. This vernacular study will discuss the variations in house forms from the architectural point of view, and will attempt to provide further understanding with its inter-disciplinary methodology, first, in order to verify the effects of culture on house form development and, second, to create a framework for the housing and possible re-settlement needs of the region.
1 Introduction

Tonle Sap Lake is the largest fresh water lake in Southeast Asia, and lies in the central plains of Cambodia. Periodic flooding caused by a unique hydrological phenomenon has rendered the whole area one of the most fish-abundant regions in the world. The people of Cambodia have relied upon the abundance of fish and the agricultural richness of Tonle Sap Lake and the surrounding area for their livelihood since ancient times. The cultural identity, as well as the economic health and stability of the Cambodian people, are defined by Tonle Sap Lake, and the rhythm of the lake defines the rhythm of the culture. The vast majority of the population around the Tonle Sap Area lives in poverty, and their livelihood depends solely on the resources that the lake has to offer. (Keskinen 18-21)

A substantial population of Cambodians also resides in villages on the surface of the lake itself. One of these is a floating village known as Chong Kneas, which exhibits its own unique rhythm and harmony in response to the changing seasons. The villages have their own enclosed communities which encompass diverse cultural groups, including the majority ethnic Khmer, as well as Vietnamese, Cham Muslim, and Chinese minorities.

Like the other floating communities on Tonle Sap Lake, Chong Kneas moves location with the seasonal water levels. The inhabitants of Chong Kneas live in floating houses. The floating houses of the villages are of various sizes and types and move with the changing water levels. During the wet season, the residents of Chong Kneas cluster around the base of
Phnom Kraom while, during the dry season, a small inlet along the edge of the lake is favoured as an anchor point. See Figure 1.

![Map of Tonle Sap Lake, Cambodia](image)

**Figure 1.** Tonle Sap Lake, Cambodia

The village proper contains not only domestic enclosures, but also educational and recreational facilities. The commercial and retail activities are conducted in mobile stores, which float from house to house. Floating churches service members belonging to the Catholic community, while the Mosque serves as the social and the religious center of the Muslim community. See Figure 2.
2. Methodology and Conceptual Framework

The four different ethnic groups have created a complex socio-cultural matrix within the area. While the physical and environmental factors such as climate, method of construction, available materials and technology have remained the same for all, the individual communities have displayed distinct variations in their domestic forms. In his seminal work “House Form and Culture”, Amos Rapoport (Rapoport, 47) has stated that the house form is not a simple result of physical forces, but is the consequence of a wide range of socio-cultural factors. All the rest of the forces are considered to be secondary - modifying elements. Rapoport summarized the five aspects of “genre de vie” which affect the built form as basic needs, family, position of women, privacy, and finally social intercourse (Asquith, 132). This paper reviews the elements listed above from the four different cultural perspectives of Chong Kneas, in the context of domestic built environments, in order to improve our understanding of the development of house forms.

The first stage of the field work was completed during the end of the dry season in April 2007. A total of twelve houses, three houses from each of the dominant cultural groups,
were visited, and physical environments were drawn and documented quantitatively. In addition, each head of the household was interviewed as part of the qualitative data gathering process. Interviews with the community leaders also provided a political perspective. The research methodology was geared to answer the questions within the framework of vernacular studies from an architectural point of view. However, in order to understand the “genre de view” of Chong Kneas, architectural methodologies alone were insufficient to provide all the answers. Anthropological methodologies were borrowed and combined with architectural research techniques. Ethnographic observations were documented via photography and video and field sketch formats. The interdisciplinary approach provided a more focused understanding of the cultural make-up of the area. Specifically, qualitative and quantitative data were gathered in the areas of environment, materials, resources, production services, decoration and symbolisms, typologies and uses.

The data gathering process consisted of three distinct segments. First, the structured questionnaire was prepared and implemented with a focus on the specific household information from each ethnic group in the areas of education, economic structure, ownership, family makeup and socio-cultural engagement. See Figure 3. Second, data on the architectural elements, space planning, decorations, uses and functions along with materials and production was collected quantitatively via photographic and video documentation.
Finally, a third quantitative data set centered on the active measurements and plan and elevation drawings of the floating structures, which provided in-depth information about the architectural elements, spatial planning and functions and, to a degree, space use patterns. See Figure 4. Three households, randomly selected from each ethnic group, were studied. An English speaking guide from Siem Reap was hired along with the two local guides from Chong Kneas, primarily for transportation and translation. The local guides also acted as conduits and provided cultural and traditional introductions to the individual homes.
Figure 4. Typical Floating House Plan and Elevations
In addition to the individual data gathering, the Northern shores of the Lake were also investigated and similar floating villages were visually documented. The overall village layout was visually documented aerially to supplement the body of the research.

Urban migration occurred in the Tonle Sap area following liberation from the Pol Pot regime in 1979. The sparsely populated Tonle Sap region is now flooded with under-privileged and war-ravaged immigrants. Survivors of the regime, devoid of educational and financial resources, migrated to the great lake area to settle. The landless majority used the free resources offered by the lake as the main provider for their survival. During the last 20 years, settlement population has increased and house forms have started to take on more unique shapes and reflect the diversity of cultural backgrounds. This study considers the floating structures of Chong Kneas as a Hybrid Vernacular, where the individual building form manifests the distinct cultural and ethnic backgrounds and traditions. The author considers the emergent urban/rural informalities in the building tradition, and the effects of culture on the development of domestic forms, as the primary conceptual frameworks. Resettlement and spatial use are considered as secondary elements of study within the broader vernacular architecture context.

3. Data Analysis and Discussion

The analysis started with the translation of field drawings to working drawings, in order to understand the subtle differences between the forms. The architectural vocabulary was established, and two main floor plan patterns emerged from the comparative study.

The data showed similar basic needs for all the ethnic groups, such as protection, gaining a livelihood, comfort and shelter. However, Khmer house plans were distinctly different from the other three cultural groups, primarily due to the extended family unit, as
defined in the uxorilocality, which is a term referring to the societal system in which a
married couple resides with or near the mother's parents, thereby forming large clan-families.
The Khmer house plans showed no interior partitions. The historical study of Cambodian
woodhouse forms by Prak Vireak revealed five distinct house configurations: Keung, Rong
Daol, Rong Doeung, Pet and Kantaing (Vireak 74-84). The Rong houses, without interior
partitions, were favoured by the Khmer population of Chong Kneas, and their additive
qualities responded to the Khmer cultural views and family structures. See figure 5.

**Figure 5:** Two dominant floor plans; Typical Khmer House plans are indicated on the left
The remaining cultural groups have interior partitions similar to the Kantaing house, which was developed by the migrants from China, and brought to the Cambodian culture via Vietnam. This configuration reserved the central room for the unmarried daughters, to ensure their privacy. The living room as a public space is separated with interior partitions to provide privacy for the sleeping areas and the kitchen activities, which were located at the rear of the dwelling. The typical back porch of the Kantaing house has been modified to a wrap-around narrow porch which accommodates boat and canoe landings.

The surface articulations, roof lines and façade decorations of the houses reflected the ethnic backgrounds and the economic status of the occupants quite effectively. The use of reeds, palm leafs, bamboo and thatched roofing were utilized by the poorer families, while the sheet goods, koki wood and corrugated metal were favoured by the relatively well-to-do occupants. The houses are renewed approximately every three years, and each occupant generally adhered to the same materials and forms, to maintain their cultural and economic position within the community.

The rural women in the Tonle Sap area have three primary duties to perform: income generation, management of the household, and participation in community affairs. The decades of war and civil unrest killed more males than females and, as a result, many women were left as widows. Consequently, a considerable number of households are headed by a female. Female-led households are among the poorest and most vulnerable. (Keskinen 37-38). All of the cultural groups show a similar size and location for the kitchen and cooking areas, and there are no specific provisions made to accommodate Muslim women, such as cloistered areas and courtyard-like forms, as seen in most traditional Muslim homes. Domestic
environments were definitely defined as the female domain. The social interactions took place mostly in the homes and religious establishments. As a consequence, the living rooms occupy the front two-thirds of the house proper and, on average, floating houses are 40 feet in length and 20 feet in width, with a 2 foot wide surrounding patio and docking area.

The strongest economic power resides in the Chinese community, which dominates the retail activities, with most of the grocery stores being owned by Chinese families. Their shop-houses display more robust material applications such as stainless steel, and are larger in size. The living room functions as the grocery store, and loses its flexibility to operate as an additional sleeping area.

The constant threat of flood and varying water levels were the common threads among the different cultures and, as a result, all the structures were similarly light in weight, mobile and showed great flexibility in construction. This physical factor constitutes the strongest modifying element in house form development in the area. The movement patterns of the village are directly associated with the changing flood levels. The data collected have indicated a minimum of twelve separate movements during which the entire village collectively relocates without any apparent organized settlement pattern or grid system. The relative positioning of the houses and individual communities are maintained, and reverse movement commences as the flood level decreases at the beginning of the dry season.

There is very little in the literature which deals with Cambodian vernacular architecture. As a result of the socio–economic and political development of the country, these newly emerging hybrid/vernacular built environments at the rural and urban intersections represent the macrocosm of the traditional architectural morphologies. Furthermore, cultural integration of the ethnic groups over the last two centuries has reduced
the diversity of house forms to two main types. Even though the expression of social status at a domestic built environment level is still evident, the built environment centres on the celebration of differences rather than on exclusion. By documenting these ongoing social changes in the community of Chong Kneas and their effects on the built environments, this study contributes not only to the existing literature but also to the development of the future re-settlement plans. The Rong and the Kantaing style woodhouse internal configurations have maintained their presence in the village of Chong Kneas, but were strongly modified by the environmental factors to accommodate the yearly physical movements of the dwellings and to reflect the merging ethnic variation and social status of the occupant. The study concluded that the built environments of Chong Kneas were a direct response to the evolving cultural factors and traditions. The theoretical framework in Rapoport’s study of house forms provided the foundation for this study, and the multi-disciplinary approach to the field studies strengthened our understanding of the “genre de vie” of the floating village of Chong Kneas and its evolving domestic environments. See Figure 6.
Figure 6. Aerial views and selected house forms of Chong Kneas
Reference List

(MLA Style)


Who’s Teaching Technology?
Methods and Strategies to Develop Effective Digital Design Curricula

Douglas R. Seidler
The New England School of Art & Design at Suffolk University

Abstract

ISSUE

As the Interior Design profession approaches total transition to digital drawing through software like AutoCAD, SketchUp, and Revit, it is important that educators use appropriate methods to teach technology as an extension of each student's existing knowledge of drawing and representation. Most AutoCAD textbooks and curricula teach through rote memorization and repetition. It was the Author’s experience that in following these teaching methods, students were successfully completing AutoCAD courses with little or no understanding of how to use the software in the academic studio or in the professional studio. This presentation will detail how the Author modified the AutoCAD curriculum, instruction, and grading criteria at the New England School of Art & Design, Suffolk University to help students create strong connections between their existing knowledge of hand drawing and the new knowledge of digital drawing.

CONTEXT

Constructivist education theory suggests that learners construct new knowledge around prior ‘zones of knowledge’. As educators, we can increase retention of new concepts and ideas by creating direct connections or bridges to our students’ prior knowledge. In the instance of digital design education in Interior Design, it is imperative that we shape our curricula to help adult learners identify and understand the merit of manual representation.

The Teaching for Understanding framework builds on this theory by identifying four areas of a curriculum that are critical to develop a student understanding. Within this framework, a strong curriculum includes: (1) Generative topics that are central to a discipline and interesting to students; (2) Understanding goals that focus the objectives for a course; (3) Performances of understanding that allow a student to develop understanding from the beginning to the end of a course; and (4) Ongoing assessment

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1 David Ausubel identifies two things that are necessary for understanding to occur: (1) the content must be potentially meaningful, and (2) the learner must relate it in a meaningful way to his or her prior knowledge. Both are developed from John Dewey’s early research on the role of ‘prior experience’ in education.

2 The Teaching for Understanding Project was started in 1998 at the Harvard Graduate School of Education. Its mission was to develop research-based, classroom-tested approach to teach for understanding.
that provides students appropriate criteria, feedback, and opportunities for reflection. Using constructivist education theory and the *Teaching for Understanding* framework, the Author created new learning environments that help students understand the importance of hand drawing (prior knowledge) while learning new techniques in digital drawing and representation with AutoCAD.

In this revised AutoCAD curriculum, instructors introduce AutoCAD commands in the same order that they are introduced in the hand-drawing curriculum. For example, the first AutoCAD unit builds a student’s understanding of drawing and erasing both orthogonal and non-orthogonal lines through visual and verbal references to the student’s prior knowledge of pencils, erasers, and t-squares (Figure 1). By talking first about the manual tool and then introducing the AutoCAD equivalent tool, students are able to retain the new AutoCAD knowledge by creating mental connections to their zone of prior knowledge.

**SUMMARY**

Using a combination of constructivist education theory and the *Teaching for Understanding* framework, the Author modified an existing curriculum to help students understand digital drawing in Interior Design. As the Interior Design profession transitions to digital technology and places increasing pressure on institutions to educate students, it is important that educators build curricula that use appropriate methods to teach the use of technology as a representation tool in the design studio. The Author has identified that by creating a bridge between manual drawing and digital drawing in AutoCAD, students construct a meaningful understanding of how to use digital technology, and that through this deeper understanding, students are better equipped to transfer this knowledge from the technical studio to future design studios.

**REFERENCES**

(MLA)


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3 Blythe, Tina. The Teaching for Understanding Guide
Who’s Teaching Technology?
Methods and Strategies to Develop Effective Digital Design Curricula

Douglas R. Seidler
The New England School of Art & Design at Suffolk University

Narrative

ISSUE

As the Interior Design profession approaches total transition to digital drawing through software like AutoCAD, SketchUp, and Revit, it is important that educators use appropriate methods to teach technology as an extension of each student’s existing knowledge of drawing and representation. Most AutoCAD textbooks and curricula teach through rote memorization and repetition. It was the Author’s experience that in following these teaching methods, students were successfully completing AutoCAD courses with little or no understanding of how to use the software in the academic studio or in the professional studio. This presentation will detail how the Author modified the AutoCAD curriculum, instruction, and grading criteria at the New England School of Art & Design, Suffolk University to help students create strong connections between their existing knowledge of hand drawing and the new knowledge of digital drawing.

THEORY & LITERATURE REVIEW

Constructivist education theory suggests that learners construct new knowledge around prior ‘zones of knowledge’. As educators, we can increase retention of new concepts and ideas by creating direct connections or bridges to our students’ prior
knowledge. In the instance of digital design education in Interior Design, it is imperative that we shape our curricula to help adult learners identify and understand the merit of manual representation.

The *Teaching for Understanding* framework builds on this theory by identifying four areas of a curriculum that are critical to develop a student’s understanding. Within this framework, a strong curriculum includes:

1. *Generative Topics* that are central to a discipline, interesting to students, accessible to students, and interesting to the instructor;
2. *Understanding Goals* that focus the objectives for an assignment or an entire course;
3. *Performances of Understanding* that allow a student to develop understanding from the beginning to the end of a course and;
4. *Ongoing Assessment* that fosters student understanding rather than simply evaluating it.

Using constructivist education theory and the *Teaching for Understanding* framework, the Author created new learning environments that help students understand the importance of hand drawing (prior knowledge) while learning new techniques in digital drawing and representation with AutoCAD.

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4 David Ausubel identifies two things that are necessary for understanding to occur: (1) the content must be potentially meaningful, and (2) the learner must relate it in a meaningful way to his or her prior knowledge. Both are developed from John Dewey’s early research on the role of ‘prior experience’ in education.

5 The Teaching for Understanding Project was started in 1998 at the Harvard Graduate School of Education. Its mission was to develop research-based, classroom-tested approach to teach for understanding.

6 Blythe, Tina. *The Teaching for Understanding Guide*
CASE STUDY

Overview

At the Author’s university, students previously learned orthogonal drawing in two separate courses: Hand Drafting Studio and Computer Drafting 1. The Author led a team of adjunct faculty in rewriting the drawing curriculum to combine the Hand Drafting Studio and the Computer Drafting 1 studio into a single course titled Orthogonal Drawing. The Orthogonal Drawing studio introduces students to manual and digital representation of plan, section, elevation, and reflected ceiling plan.

Constructing New Knowledge

In this revised AutoCAD curriculum, instructors introduce AutoCAD commands in the same order that they are introduced in the hand-drawing curriculum. For example, the first AutoCAD unit builds a student’s understanding of drawing and erasing both orthogonal and non-orthogonal lines through visual and verbal references to the student’s prior knowledge of pencils, erasers, and t-squares (Figure 1). By talking first about the manual tool and then introducing the AutoCAD equivalent tool, students are able to retain the new AutoCAD knowledge by creating mental connections to their zone of prior knowledge.

Generative Topics (GT)

The Author identified three topics in the existing AutoCAD curriculum that he needed to cover in the digital drawing portion of the course. These topics include an introduction to drawing in AutoCAD, printing and plotting with AutoCAD, and dimensioning and noting drawings in AutoCAD. Construction Drawing is an example of a good GT because: there are ample resources available to students in the form of
textbooks and professional construction documents, the topic is central to the Interior Design profession, and the topic is of interest to the instructor. This GT, however, is not significantly relevant to a beginning design student in an introductory orthogonal drawing course. For that reason the Author selected the more inclusive GT: *Design Drawing and Representation*, which connects directly with a student’s immediate interest to create strong presentation drawings for the design studio.

**Understanding Goals**

Understanding goals help focus student learning within a generative topic. In a strong curriculum, these goals are written for an entire course (overarching goals) and refined for each particular assignment. The overarching course goals for the revised AutoCAD curriculum are:

1. *What are the similarities between hand drafting and digital drawing? What are the differences?*

2. *How does editing your AutoCAD drawing compare to editing a hand drawing?*

3. *What are the requirements and limitations of getting your drawing onto the wall for a pinup or presentation?*

4. *What strategies can you use to successfully incorporate AutoCAD in your design process?*

These four questions create the framework for this revised AutoCAD curriculum reinforcing the connections to prior knowledge and focusing the generative topic. The fourth understanding goal, which engages a student to think about AutoCAD and the design process, is only applicable to the final assignment under the revised curriculum.
Performance of Understanding

The performance of understanding (PFU) is essentially a well-crafted assignment that allows students to test new and prior knowledge in a variety of situations. This type of assignment is more complex than a traditional exam, which only requires a student to demonstrate understanding for the duration of the examination period.

The AutoCAD curriculum in the course is divided into three projects that build on prior knowledge, reinforce course understanding goals, and increase in complexity. *Hand to Computer Drawing*, the first PFU, engages a student’s prior knowledge of drawing and representation by requiring them to redraw a plan, section, and interior elevation they previously drafted by hand. This project allows each student to combine prior hand drafting techniques with digital drafting techniques discussed in the course.

The second PFU, *Draw, Print, Fold*, builds on the first project by modeling techniques for projecting elevations from a floor plan in AutoCAD and reinforcing concepts of representation in plan, elevation, and reflected ceiling plan. Students draw all six drawings of an existing room in the AutoCAD such that the printed drawing can be cut and folded to create an interior model.

In the third and final PFU, students design a small café in a provided building shell. In additional to sharing understanding goals from the previous two PFUs, this project challenges students to consider strategies to successfully incorporate AutoCAD in the design process. This culminating performance is an opportunity for each student to communicate their understanding of all the course objectives and provides a clear transition between this technical studio and a future design studio.
Ongoing Assessment

The ongoing assessment should be a tool that helps students and instructors measure what a student currently understands and the next appropriate measure for each student’s learning through faculty instruction. Throughout the semester, students are assessed in two categories: *Drawing Communication* and *Drawing Accuracy*. The two grading rubrics help students understand their progress and calibrate multiple instructors teaching different sections of the same course.

The *Drawing Communication* scoring guide (Figure 2) assesses student achievement on the printed drawing and is separated into four major categories. Because this scoring guide focuses on the quality of the printed drawing, any studio faculty member regardless of their digital literacy can use it to evaluate student performance. The scoring guide provides students a clear gradation of achievement from superior (A) through most minimal (F). In this scoring guide, an “A” project demonstrates superior drawing communication. It is distinguished by its fully and effectively developed visual communication of interior space. A project in this category typically:

- communicates interior space with insight, accuracy, and enthusiasm while clearly meeting the terms of the assignment;
- clearly and consistently uses appropriate line weight & dashed lines in all drawings;
- clearly and consistently uses appropriate dimension lines and drawing symbols in all drawings;
consistently uses appropriate text labels that are clearly and consistently sized & located in all drawings.

The Drawing Accuracy scoring guide (Figure 3) assesses student achievement and accuracy in the AutoCAD drawing. In this scoring guide, an “A” project demonstrates superior AutoCAD drawing accuracy. It is distinguished by its complete and effective drawing organization and accuracy. A project in this category typically:

- uses clear and consistent layers and layer names to organize the drawings, control visibility/plot status, control line weight, and control dashed lines;
- has all objects drawn on the appropriate layer with BYLAYER Color and BYLAYER Linetype;
- uses clear and consistent blocks that are appropriately scaled and contain editable text when required.

SUMMARY

Using a combination of constructivist education theory and the Teaching for Understanding framework, the Author modified an existing curriculum to help students understand digital drawing in Interior Design. As the Interior Design profession transitions to digital technology and places increasing pressure on institutions to educate students, it is important that educators build curricula that use appropriate methods to teach the use of technology as a representation tool in the design studio. The Author has identified that by creating a bridge between manual drawing and digital drawing in AutoCAD, students construct a meaningful understanding of how to use digital technology, and that through this deeper understanding, students are better equipped to transfer this knowledge from the technical studio to future design studios.
REFERENCES

(MLA)


IMAGES

Figure 1: Creating connections between drawing orthogonal lines in AutoCAD and on the drafting table: Author’s AutoCAD Curriculum
Figure 2: Drawing Communication Scoring Guide

**SCORING GUIDE: DRAWING COMMUNICATION**

**Superior Drawing Communication (A)**

An "A" project demonstrates superior drawing communication. It is distinguished by its fully and effectively developed visual communication of interior space. A project is in this category typically:

- communicates interior space with insight, accuracy, and enthusiasm while clearly meeting the terms of the assignment;
- clearly and consistently uses appropriate line weight & dashed lines in all drawings;
- clearly and consistently uses appropriate dimension lines and drawing symbols in all drawings;
- consistently uses appropriate text labels that are clearly and consistently sized & located in all drawings.

**Strong Drawing Communication (B+)**

A "B+" project demonstrates strong drawing communication. It may be less resolved than the "A" project, but it will be solid in visual communication of interior space. A project in this category typically:

- goes beyond basic communication of interior space while satisfying all the terms of the assignment;
- consistently uses appropriate line weight & dashed lines in all drawings;
- consistently uses appropriate dimension lines and drawing symbols in all drawings;
- consistently uses appropriate text labels that are consistently sized & located in all drawings.

**Adequate Drawing Communication (B)**

A "B" project demonstrates adequate drawing communication. It may be undistinguished in visual communication of interior space, but the project is competent enough for upper-division courses. A project in this category typically:

- may routinely or simplistically communicate interior space, but it satisfies all the terms of the assignment;
- uses appropriate line weight & dashed lines in all drawings, but some lines may be inaccurately drawn in one or two instances;
- uses appropriate dimension lines and drawing symbols in all drawings but some dimensions or symbols may be inaccurately drawn in one or two instances;
- uses appropriate text labels that are consistently sized & located in all drawings, but may be inaccurately sized or located in one or two instances.

**Inadequate Drawing Communication (C)**

A "C" project reflects inadequate drawing communication. It is marked by significant weakness in its visual communication of interior space indicating that the student might not succeed in upper-division courses. A project in this category typically has one or more of the following weaknesses:

- is confusing in its communication of interior space or fails to satisfy the most important terms of the assignment;
- uses inappropriate line weight or dashed lines in plan or section/elevation;
- uses inappropriate dimension lines or drawing symbols in plan or section/elevation;
- uses inappropriate text labels that are either inconsistently sized or improperly located;
- is not printed at the intended architectural scale.

**Very Weak Drawing Communication (D)**

A "D" project represents very weak drawing communication. It is marked either by the severity of weakness or by the combination of weaknesses in visual communication of interior space that severely limit the student's ability to communicate ideas. It is clearly not a "passing" project. A project in this category typically has more than one of the following weaknesses:

- is seriously confused in its communication of interior space or misconstrues the assignment;
- has significant flaws with line weight or dashed lines in plan and section/elevation;
- has significant flaws with dimension lines or drawing symbols in plan and section/elevation;
- has significant flaws with its text labels;
- is not printed at the intended architectural scale.

**Most Minimal Response (F)**

A "F" project represents the most minimal response to the assignment. This score is reserved for projects in which the student manages to produce only a few largely incoherent ideas.
**SCORING GUIDE: AutoCAD DRAWING ACCURACY**

**Superior AutoCAD Drawing Accuracy (A)**
An “A” project demonstrates superior AutoCAD drawing accuracy. It is distinguished by its complete and effective drawing organization and accuracy. A project is in this category typically:

- uses clear and consistent layer and layer names to organize the drawings, control visibility/plot status, control line weight, and control dashed lines;
- has all objects drawn on the appropriate layer with BYLAYER Color and BYLAYER Linetype;
- uses clear and consistent blocks that are appropriately scaled and contain editable text when required.

**Strong AutoCAD Drawing Accuracy (B+)**
A “B+” project demonstrates strong AutoCAD drawing accuracy. It may be less resolved than the “A” project, but it will be solid in drawing organization and accuracy. A project is in this category typically:

- uses consistent layers and layer names to organize the drawings, control visibility/plot status, control line weight, and control dashed lines;
- has all objects drawn on the appropriate layer with BYLAYER Color and BYLAYER Linetype;
- uses consistent blocks that are appropriately scaled and contain editable text when required.

**Adequate AutoCAD Drawing Accuracy (B)**
A “B” project demonstrates adequate AutoCAD drawing accuracy. It may be undistinguished drawing organization and accuracy, but the project is competent enough for upper-division courses. A project is in this category typically:

- uses consistent layers and layer names to organize the drawings, control visibility/plot status, control line weight, and control dashed lines;
- has all objects drawn with the appropriate color, but the objects may not be on the appropriate layer, be set to BYLAYER Color, or be set to BYLAYER Linetype;
- uses consistent blocks that are appropriately scaled and contain editable text when required, but may be inaccurately scaled or labeled in one or two instances.

**Inadequate AutoCAD Drawing Accuracy (C)**
A “C” project reflects inadequate AutoCAD drawing accuracy. It is marked by significant weakness in its drawing organization and accuracy indicating that the student might not succeed in upper-division courses. A project in this category typically has one or more of the following weaknesses:

- is confusing in its use of layers and layer names to organize the drawings;
- is excessive in its non-use of layers to control visibility/plot status, control line weight, or control dashed lines;
- has multiple instances where objects are drawn with an inappropriate color or inappropriate Linetype;
- has multiple instances where blocks are inaccurately scaled or inaccurately located;
- is not scaled at the intended architectural scale.

**Very Weak AutoCAD Drawing Accuracy (D)**
A “D” project represents very weak AutoCAD drawing accuracy. It is marked either by the severity of weakness or by the combination of weaknesses in drawing organization and accuracy that severely limit the student’s ability to communicate ideas. It is clearly not a “passing” project. A project in this category typically has more than one of the following weaknesses:

- is seriously confused in its use of layers and layer names to organize the drawings or misconstrues the use of layers;
- has significant flaws with layer use to control visibility/plot status, control line weight, or control dashed lines;
- has significant flaws with objects drawn with an inappropriate color or inappropriate Linetype;
- has significant flaws with block scale and location;
- is not scaled at the intended architectural scale.

**Most Minimal Response (F)**
A “F” project represents the most minimal response to the assignment. This score is reserved for projects in which the student manages to produce only a few largely incoherent ideas.
A New Way of Seeing: Looking to Environmental Philosophy for Insights on Sustainable Design

Johnnie Stark
University of North Texas

Abstract

Purpose
Based on a comparison of findings from a topical inventory of interior design survey texts (Stark, 2007) and an examination of an environmental philosophy discourse, this paper suggests new models for communicating sustainable design concepts. The goal is for a more thorough understanding of the complexities of sustainability in the context of the interior design profession.

Methodology
In this qualitative study, environmental philosophies outlined in Infinite Nature by R. Bruce Hull (2006) are used to inform the foundational sustainable design themes which emerged from introductory interior design literature. The interior design themes clustered around several categories including history, nature, social responsibility, health, the design process, and the designer’s role. The desirability of a “trained eye” was frequently cited (Abercrombie & Whiton, 2007; Pile, 2007; Slotkis, 2006). Sustainability as a philosophy ranged from product selection criteria to a comprehensive project rationale. Conceptual models were typically linear, although life cycle analysis was mentioned as a sustainable strategy.
In Infinite Nature is Hull’s (2006) response to a climate of public debate often characterized by polarization or apathy. His goal is for “pragmatic pluralism” where multiple viewpoints of nature exist simultaneously. His arguments are influenced by social constructivism and the philosophies of Henry David Thoreau and Aldo Leopold. Hull presents twelve distinct “Natures” including investigations of the noble savage, social Darwinism, inspiration and stewardship, nature versus nurture, vegetarianism, and recreation. While all of the discussions are instructive, the chapters addressing Ecological Nature, (In)finite Nature, Economic Nature, Healthy Nature, Fair Nature, and Moral Nature were analyzed based on specific topics relevant to an environmental philosophy for interior design.

In Ecological Nature, for example, Hull (2006) determines that the metaphor of an “ecological web” accurately captures the reality that nature is interconnected and dynamic. He discusses ecology in the context of three models: machines, wholes, and hierarchies. In another example, Hull addresses issues of scarcity as the result of unlimited growth and consumption. He sees the cradle-to-cradle philosophy of waste elimination as a combination of “hard” and “soft” technologies, combining thoughtful product design with closed-loop recycling. Additional sections address sustainable development, consumerism, environmental health policy, and social responsibility.
Importance

This study occurs as green design enters the mainstream of workplace and marketplace. Membership in the U.S. Green Building Council (USGBC) recently reached 10,000 companies, and the green building industry is now valued at $12 billion (Beautyman, 2007). Sustainability is becoming a standard practice for building design, construction, and related professions.

By introducing new models and presenting new perspectives on established themes, the findings presented by Hull in *Infinite Nature* (2006) provide a more balanced and complete view of sustainability.

Relevance

Through the exploration of literature from related disciplines, new insights emerge which enrich the understanding of sustainable design. Research on new sustainable models informs future study, increases the ability of designers to communicate with a more diverse audience, and heightens the possibilities for achieving sustainable goals.
This study was done in the context of a larger investigation of student perceptions of sustainability in the continuum of interior design higher education. Understanding sustainable design is mandated by the Council for Interior Design Accreditation (CIDA), and graduates now enter a field where sustainability is becoming a standard practice. The baseline used to define sustainable design theory was the IDEC Preliminary Teaching Manual for Sustainable Design Education (Stewart-Pollock & Pillote, 2006). Stewart-Pollock and Pillote identified a holistic approach to design and the elimination of waste as core principles supported by a strategy of life cycle assessment. Multi-disciplinary communication, critical analysis, global views, and long-range planning are implied by these principles. The authors recommended an integrated presentation of sustainability in which the subject matter is not marginalized or compartmentalized.

A topical inventory of interior design survey texts was the first piece in the investigation (Stark, 2007). The initial inventory examined numerous subjects including interior design origins and professional preparation. The texts were not equal in introducing students to sustainable design. Sustainability was not consistently presented as a holistic concept and not fully integrated into the
material. Based on the IDEC directive, it was determined that more examination was needed. The nature of the subject encouraged broadening the investigation to include perspectives from other disciplines.

Methodology

In this qualitative study, comparisons were made between the sustainability themes revealed in the interior design literature and the environmental philosophies presented in *Infinite Nature* by R. Bruce Hull (2006). Of particular interest were the conceptual models used to present sustainable design. The purpose was not a content evaluation but a search for commonalities and new insights useful in framing complex discussions of sustainability issues.

Discussion

This review identified several applications of models in the interior design literature. The first tier was the pedagogical framework used to organize the book as a whole. The next level included the explanation of subject categories. Within the subject categories, models were often used to describe specific processes.

In most of the texts, an outline defines broad sections with sub-categories in chapters. The introductory section typically addresses some aspect of interior design practice, the history of the profession or role of the designer. Sustainability and environmental ethics are discussed as emerging areas of responsibility (Allen, Jones & Simpson, 2004; Binggeli, 2007; Nielson & Taylor, 2002; Pile, 2007; Slotkis, 2006). The exception is *Interior Design & Decoration* (Abercrombie & Whiton, 2007), which is organized by historical periods, timelines, a “model of determinants,” and a hierarchy of architecture,
interiors, furniture and decorative arts. Indigenous materials, climate, and global interdependencies are addressed, but “sustainable design” is not mentioned.

Throughout *Interior Design*, Pile (2007) evaluates subject matter based on a criteria model of function, structure and materials, and aesthetics. In *Beginnings of Interior Environments* (Allen, Jones & Simpson, 2004), sustainability is a unifying concept. This text is organized by elements, principles, and content areas including building systems, space planning, furnishings and finishes. There is a sustainable design section in each category, and case studies are “green.” Building system topics facilitate discussions of interconnectivity and energy conservation (Allen et al, 2004; Binggeli, 2007; Nielson & Taylor, 2002; Pile, 2007; Slotkis, 2006). Biomimcry is introduced as a natural systems model (Allen et al.).

Compositional models describe the creation of unity through manipulation of design elements and principles (Allen, Jones & Simpson, 2004; Binggeli, 2007; Nielson & Taylor, 2002; Pile, 2007; Slotkis, 2006). Pile emphasizes human factors and social responsibility to separate the human impact of design from formal considerations. Other authors address sustainability as a design specialty along with historic preservation, universal design, or health and life safety (Binggeli, 2007; Slotkis, 2006).

The design process is presented as a linear, problem-solving model (Allen, Jones & Simpson, 2004; Binggeli, 2007; Nielson & Taylor, 2002; Pile, 2007; Slotkis, 2006). It is introduced in terms of phases, or a sequential progression of tasks over time. Supporting graphics include critical path charts and time schedules. Analysis and synthesis are cyclical thought processes that occur during the planning phases.
Product selection utilizes criteria models to identify design solutions. A “trained eye,” or an internalized evaluative skill informed by disciplined observation, is desired in some form by all authors. Matrices and checklists are included for data evaluation. The LEED (Leadership in Energy and Environmental Design) Green Rating System® developed by the U.S. Green Building Council is also mentioned. (Allen, Jones & Simpson, 2004; Binggeli, 2007; Pile, 2007; Slotkis, 2006). Cyclical models are referenced as well, including life cycle assessment (Allen et al., 2004) and William McDonough’s “cradle-to-cradle” model (Pile).


In Ecological Nature, Hull (2006) determines that an “ecological web” metaphor describes the interconnectivity and flow of nature. He discusses ecology in the context of three models. A mechanistic model is concerned with the rearrangement of parts to produce desired outputs. A holistic approach values the whole as more than the sum of its parts. In a dynamic equilibrium model, nature is characterized by “complexity, nonlinearity, and randomness” rather than “balance and harmony.”
In (In)finite Nature, Hull (2006) addresses issues of scarcity as the result of unlimited growth and consumption. He cites the Brundtland Commission definition: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Hull, 2006, p.65). The Brundtland statement is commonly referenced in interiors instruction (Green Design Education Initiative, 2003). In this view, technology is the source for solutions. Rather than preserve ecological systems, the current generation passes along technical capabilities to future generations to reengineer systems as required. Hull frequently utilizes extremes for the sake of argument, e.g., technology, as either “good” or “bad,” and concludes that a more helpful analogy is “hard” and “soft” technology.

Green consumerism, product labeling, and life cycle analysis are addressed in Economic Nature. Hull (2006) notes that while life cycle assessments can be useful in determining environmental impact, gathering data is difficult and findings are often incomplete. Despite progress in green business practice and policy: “The long-term challenge of balancing ecological sustainability and economic development is daunting” (Hull, 2006, p.95).

In Healthy Nature, Hull (2006) explores the links between human health and air quality, water quality, food source safety, and nature as a source for stress reduction. Rachel Carson’s Silent Spring exposed the human population’s vulnerability to industrial toxins, and society responded with guidelines and regulations. Fair Nature expands the model of life cycle assessment to include social equity implications of environmental decisions. A standard cost-benefit analysis is inadequate to fully evaluate the consequences.
Concluding with Moral Nature, Hull (2006) urges the reader to learn from Leopold’s philosophies of ecological stewardship and Thoreau’s poetic discovery of deep cultural meanings through the interconnectedness of human beings and nature. Finally, Hull warns against the acceptance of a single perception about nature, accepts the validity of social constructs, and encourages a balanced view through “pragmatic pluralism.”

Summary

This study discovered that interior design and environmental philosophy share many areas of interest. Based on insights from Infinite Nature, the following methods are recommended to enrich sustainable design instruction:

*Acknowledge the complexity of environmental issues.* The goal is for increased understanding rather than an absolute answer. Pluralism not only encourages multiple viewpoints but also allows them to exist simultaneously.

*Understand sustainable design as a holistic concept.* Sustainable design may be discussed more meaningfully on a continuum than as a specialty.

*Recognize that the Brundtland statement is only one perspective.* Hull not only identifies more possibilities but also points out that this definition prescribes a mechanistic, economically driven model.

*Understand that the model affects the outcome.* In addition to the Brundtland example, if “cradle-to-cradle” is followed to its logical conclusion, the typical product stream would differ significantly from current practice.
Address contradictions in the interior design profession. Consumerism and trends have implications for conservation and scarcity. Low cost solutions may contradict fair wage compensation.

Distinguish compositional considerations from goals for nature. Harmony and symmetry are imposed on, rather than exhibited by, naturalness and wildness.

Think differently about time. Expand linear and systemic models to be three-dimensional, four-dimensional, and interactive.

Discuss technology as a source for solutions. Add increased analytical tools to reengineering capabilities.

Study people and their philosophies. Include narratives about individuals in addition to project case studies.

Expand the “trained eye” phenomenon. The designer’s ability to recognize embedded information can add sensitivity and humanity to life cycle analysis by addressing aesthetics, quality, and authenticity.

These approaches can enhance the ability to communicate in a multi-disciplinary environment, analyze data from many perspectives, and develop a new way of seeing sustainable design issues.


Interior Environmental Poetics and Beginning Design Students: Developing Observation and Drawing Skills that Define a Sense of Place

Rebecca Sweet, MFA, CID, ASID, IDEC
East Carolina University

Abstract

Purpose

In the introduction to *Chambers for a Memory Palace* Lyndon and Moore state that “Places are spaces that you can remember, that you can care about and make a part of your life” (p. xii). This concept originated with the ancient Latin art of rhetoric. Orators would imagine defined architectural structures with specific rooms and decorative items that would be markers for concepts they would develop in their speeches (Yates, 1974). With concepts such as Axes that Reach (Figure 1), Walls that Layer (Figure 2), Canopies that Center (Figure 3), Shapes that Remind (Figure 4), and Light that Plays (Figure 5) Lyndon and Moore are defining markers they believe create a sense of place. Beginning design students are challenged to visually document these markers—to pause, observe, plan and draw. But before instrument meets paper an intellectual understanding of the concepts to be drawn takes place.

Process

Interior environmental poetics involves the art of designing interior environments that evoke aesthetic and emotional experiences between the designer and the user to convey a sense of place and a perception of human spirit. So what exactly is a poetic way of seeing? How is a sense of place captured in a drawing? Most beginning design
students do not know how to observe and draw and capture the aesthetic which is the poetic expression of the interior environment.

Lyndon and Moore document 27 themes and compositions that provide opportunities for learning how to observe places that evoke aesthetic and emotional experiences. The process begins by asking questions about how these concepts are related to principles and elements of design, how they order the environment, how they are experienced by users within the environment, and are they part of a shared understanding of space? Do they trigger memories of other places with similar concepts?

Relevance to Interior Design

To see an environment in a poetic manner means capturing the essence of the place by considering viewpoint, framing, light, shadow, value, and contrast (Ching, 1998). White in Travel Drawing describes the spirit of place as the essence that may not just be the physicality of the buildings but also the light, the ambience, the activity, the history, and the people. (White, 2004). These elements are what set extraordinary projects apart from those that are functionally adequate both in the educational and professional studios. Understanding, discussing and applying these concepts in student drawings and later in projects is developing the art of design that connects with users and creates a sense of place.

Conclusion

“When I first began this assignment I had a totally different view towards it then I do now. I began looking around for pictures to sketch, and was strictly looking for the 27 items on the list, without really thinking about them. It wasn’t until a few days later when
I was walking through campus that I noticed myself visualizing certain landmarks or objects that would be a great way to abstractly show Lyndon and Moore’s concepts and compositions. Since that day, I started looking deeper into each picture, always struggling to find an underlying meaning, or abstract way of seeing common forms and landmarks” (Radspinner, K., 2006). As the project has now developed over several semesters the next challenge will be to ask the students to develop their own concept that defines a sense of place.

References

(APA)


Figures

Figure 1. Illustrating the concept of Axes that Reach as a real or imaginary line that organizes, balances and focuses attention.

Figure 2. Walls that Layer provide energy and visual interest and move the eye.
Figure 3. Visually embracing students arriving at the dining hall is the function of this *Canopy that Centers*.

Figure 4. An antique door knob and keyhole remind the design student of her grandmother's house.
Figure 5. A dramatic illustration of *Light that Plays* reminds the student of a cobweb of colored light.
Interior Environmental Poetics and Beginning Design Students: Developing Observation and Drawing Skills that Define a Sense of Place

Rebecca Sweet, MFA, CID, ASID, IDEC
East Carolina University

Narrative

Purpose

In the introduction to *Chambers for a Memory Palace* Lyndon and Moore state that “Places are spaces that you can remember, that you can care about and make a part of your life” (p. xii). This concept originated with the ancient Latin art of rhetoric. Orators imagined and memorized defined architectural structures (locus) with specific rooms and decorative items (images) that are markers for concepts they developed in their speeches (Yates, 1974). With concepts such as Axes that Reach (Figure 1), Walls that Layer (Figure 2), Canopies that Center (Figure 3), Shapes that Remind (Figure 4), and Light that Plays (Figure 5) Lyndon and Moore are defining markers they believe create a sense of place (locus). Markers are comprised of images and/or words that capture the essence of the place (Yates, 1974). Beginning design students are challenged to visually document these loci and define markers—to pause, observe, plan and draw. But before instrument meets paper an intellectual understanding of the concepts to be drawn takes place.

Background

Interior Environmental Poetics (IEP) involves the art of designing interior environments that evoke aesthetic and emotional experiences between the designer and the user to convey a sense of place and a perception of human spirit. Interior
design is both an art and a science. IEP seeks to provide a balance in the design process that allows a design to be functionally appropriate, address life safety issues, and incorporate poetics. One of the first statements about poetics in interior design is from *Interior Design Visionaries’ Explorations of Emerging Trends*. In the article, Dohr explains a trend identified as Environmental Poetics: “Poetics form a language and expression that touches people on several levels of meaning. It is thinking of cultural symbols, of celebrating people in places, and providing a soul or passion to spaces’” (Hassell & Scott, 1996, p.12).

What is a language for poetic design? Greek philosopher Aristotle’s treatise *Poetics* (Aristotle, 350 B.C.E) addresses the creation of poetry through three principles that relate to structure, character, and execution (Aristotle, 350 B.C.E.) which he cites as the foundation of design. Structure denotes a form and order to the development of a design that allows an end user to see and experience a new place that is at once perceived as familiar. The fundamentals of form and order are achieved by the skillful use of the designer’s tools—the principles and elements of design. But what is the subject of those tools? Images and words, the markers for a sense of place are derived from careful research into cultural and behavioral expectations of an end user by the designer. The research is analyzed and through the design process a creative and imaginative interpretation is developed. That becomes the character or style of the design. The resulting design addresses functional issues as well as deeper spiritual or cultural values held by the client that bring a strong connection to place and spirit, which is the execution of the poetic design.
Norberg-Schulz (2000) discusses place as a relationship among diverse images that expresses a unique character and has presence. He acknowledges that an image can be more than a single entity; it can stimulate the memory of many related images. This process of establishing relationships between images and creating a sense of wholeness is a component of an artistic expression. Gestalt is important in the experience of a sense of place. It is a perception of imparting order and recognition of form that is memorable or familiar for the end user. A sense of place is an integral component of Interior Environmental Poetics that is a perceptual connection between the user, designer, and environment that defines the spirit of the design.

Process

So what exactly is a poetic way of seeing? Lyndon and Moore document 27 themes and compositions (markers) that provide opportunities for learning how to observe places that evoke aesthetic and emotional experiences. They do not establish any rules defining the markers. The process begins by asking how these markers are related to principles and elements of design, how they order the environment, how they are experienced by users within the environment, and how they are part of a shared understanding of space. Do they trigger memories of other places with similar concepts?

Discussions of ordering devices from Ching’s *Architecture: Form, Space and Order* identify formats such as linear, clustered, centralized, grid and radial organizations. Examples of university buildings or other familiar structures that exhibit those characteristics are described in terms of principles and elements of design from Ching’s *Interior Design Illustrated*. With a clearer understanding of the fundamentals,
Lyndon and Moore’s themes and compositions (markers) are analyzed and documented before the sketching assignment begins.

How is a sense of place captured in a drawing? Most beginning design students do not know how to observe, draw, and capture an aesthetic which is the poetic expression of the interior environment. The challenge is to meld the drawing skills learned in early interior design studio classes with the understanding of principles and elements of design into a drawing that captures the spirit of place. To see an environment in a poetic manner means capturing the essence of the place by considering viewpoint, framing, light, shadow, value, and contrast (Ching, 1998). White in *Travel Drawing* describes the spirit of place as not just the physicality of the buildings but also the light, the ambience, the activity, the history, and the people. (White, 2004). These elements are what set extraordinary projects apart from those that are functionally adequate both in the educational and professional studios. Understanding, discussing and applying these concepts in student drawings and later in projects is developing the art of design that connects with users and creates a sense of place.

The most significant learning from this assignment comes from the development of observation skills by sketching *in situ*. Arrangements are made for two studio periods outside the classroom in significant residential structures where students are challenged to find as many of the themes and compositions as they can either from interior or exterior viewpoints. The process is to observe, draw and then document through photography each of the themes and compositions. 90% of the drawings must be *in situ*. Students become keenly aware of the nuances of their environments when they are looking for “Shadows that haunt” or “Space that leaks up into the light.”
Documentation of the assignment continues the idea of poetic. The form of the presentation is a 12” x 12” hand-made book. The drawings are formatted into a 2 page lay-out with the theme or composition, a photograph, and a short explanation of the concept. Everything is hand-lettered. A reflection paper is typed and inserted in a pocket on the inside of the back cover. Chambers for a Memory Palace as a multi-dimensional exercise for beginning design students is a step towards recognizing and documenting markers and loci in their immediate surroundings. It creates an awareness of the importance of poetics that is then applied in their residential design studio project.

Relevance to Interior Design

Interior Environmental Poetics provides a key component within The Interior Design Profession’s Body of Knowledge (Martin & Guerin, 2005), which is the aesthetic or artistic solution that researches, analyzes and addresses cultural, social and psychological needs of the end users (p. 52) through a design solution. IEP is concerned with creating balance, wholeness and well-being in interior environments. It is a human-focused component of design that has a relevance to the entire scope of interior design projects.

IEP is a difficult concept to document in interior design projects. Interior design results in an experience-based outcome supported by research and design processes. Is there a difference in a project that address poetics and one that does not? It is really not possible to say decisively. It can be said that in studying projects that have survived the test of time and been documented (which are few) and exhibit a sense of place and a human spirit connection there are traits that are similar. Moving forward as a profession it will be to our advantage to consider the research and suggestions
concerning narrative inquiry ((Danko, Meneely, & Portillo, 2006) & (Portillo & Dohr, 2000)) as a means of documenting the value of the work of the profession.

Conclusion

From an educational viewpoint this project addresses a multitude of accreditation standards. For our department it is an excellent indicator of skill level for movement through portfolio review. From a design perspective it illuminates new ideas, new ways of seeing and a deeper understanding of the spirit within an excellent design. It has also created awareness that documentation of interior design projects needs to move beyond still photography to capture the importance of our work for our clients.

Now from a student’s viewpoint:

“When I first began this assignment I had a totally different view towards it then I do now. I began looking around for pictures to sketch, and was strictly looking for the 27 items on the list, without really thinking about them. It wasn’t until a few days later when I was walking through campus that I noticed myself visualizing certain landmarks or objects that would be a great way to abstractly show Lyndon and Moore’s concepts and compositions. Since that day, I started looking deeper into each picture, always struggling to find an underlying meaning or abstract way of seeing common forms and landmarks” (Radspinner, 2006).

As the project has now developed over several semesters the next challenge will be to ask the students to develop their own concept that defines a sense of place.
References

(APA)


Figures

Figure 1. Illustrating the concept of *Axes that Reach* as a real or imaginary line that organizes, balances and focuses attention.

Figure 2. *Walls that Layer* provide energy and visual interest and move the eye.
Figure 3. Visually embracing students arriving at the dining hall is the function of this *Canopy that Centers*.

Figure 4. An antique door knob and keyhole remind the design student of her grandmother’s house.
Figure 5. A dramatic illustration of *Light that Plays* reminds the student of a cobweb of colored light.
Abstract

"You must be the change you wish to see in the world." - Mahatma Gandhi

Purpose

The purpose of this paper is to outline an ecological and sustainable research methodology for students in Materials and Specifications classes. This approach emphasizes selection and specification of interior materials and finishes based on research and comparison of product performance, application, and maintenance. The process that is described developed as a result of a 2004 EPA P3 Award: Student Design Competition focusing on People, Prosperity and the Planet (Sweet, Warsco, & Chin, 2004).

Ecology is defined as the interrelationships of systems to their environment. With the building industry accounting for 40% of the raw materials used internationally interior designers and merchandisers must understand the interrelationships of their selections on the environment and on the lasting effect their decisions may have for future generations (McGowan). Sustainable design is making decisions today that will have a positive impact or no impact on the quality of life of future generations. Understanding how sustainable design decisions impact ecological systems (social, environmental and economic) will lead to better decision making processes for the selection of materials and finishes for the interior environment (Spiegel & Meadows). To understand the
ecological approach to product knowledge students will develop complex problem-solving and analysis skills that will lead to an evaluation methodology for sustainable products.

Method

Awareness of the scope of sustainable issues is developed through reading, discussing and reflecting on McDonough and Braungart’s book *Cradle-to-Cradle* (C2C) (Appendix A). Beginning the process of understanding a whole-systems or cradle-to-cradle approach to the selection and specification of interior materials and finishes is acquiring information about how products are made, what’s in them, where they come from, and where they go when they are no longer wanted. Development of a life cycle impact analysis for a selected interior product fosters understanding of the seven steps in the life of a product from “Materials Acquisition” to “Reuse, Recycling or Disposal” (http://www.epa.gov/osw/students/finalposter.pdf) and dramatically illustrates the environmental and economic impact of that interior product (Appendix B). Further increasing understanding about the complexity in sustainable product selection is conducting a modified literature review to identify evaluation systems currently in use—what they evaluate, how they evaluate it, and the most important materials identified that are positive or negative contributors to the environment (Appendix C).

Application of knowledge developed throughout these assignments is exhibited through the construction of a rubric (Appendix D) and an evaluation tool for defining and evaluating critical attributes of interior materials and finishes (sample evaluation tool, Appendix E). The analysis of assigned CSI product categories using the evaluation tool (with 90% completion in each category) illustrates the success of the research through
the ease of its use or the need for revisions to address areas in question. Students leave the class with valuable tools for the profession, which include a deep understanding of the importance of making the right decisions in the specification of interior materials and finishes, a tool to enable the right decisions to be made, the ability to explain or defend the selection process with facts, and the passion to be advocates and educators for a sustainable future in the industry and beyond.

References

(APA)


Appendix A
C2C Reflection Paper

Reflection Paper #1 (Intro & Chapter 1)
Reflection Paper #2 (Chapter 2 - 3)
Reflection Paper #3 (Chapter 4 - 5)
Reflection Paper #4 (Chapter 6)

Reflection: contemplation: a calm lengthy intent consideration; observation: a remark expressing careful consideration
wordnet.princeton.edu/perl/webwn

- This paper is meant to be a reflection and summary of what was learned in these chapters.
  o It is meant to express your opinion.
  o It is NOT just a recap of what was written by the authors.
  o Use your own words and if you quote the authors use quotes and reference information.
- What did you learn in this chapter?
- What were the central ideas being expressed?
- What are key terms that relate to our focus of materials, sustainability, research or specification?
- The reflection paper will be 500 - 750 words at 12 pt Arial font, using 1-1/2 spacing between lines with 1” margins on all sides.
- REMEMBER to save it as a Word document with a .doc extension.
- Put your name, assignment name (C2C1 or 2, etc.) and Fall 2007 in the upper right corner of the paper.
- The style is informal, but grammar, spelling, sentence structure and flow of ideas will be taken into account in the grade.
- Attach the paper to an e-mail and submit it electronically prior to the start of class on the date it is due.
  o In the Subject line of the e-mail write: 3550_lastnamefirstinitial_C2C1 or 2, etc.
  o Example: 3550_xxxxx_C2C1
Appendix B
Life Cycle Impact Analysis

Life Cycle Research

Research is an active, diligent and systematic process of inquiry in order to discover, interpret or revise facts, events, behaviors, or theories, or to make practical applications with the help of such facts, laws or theories. The term "research" is also used to describe the collection of information about a particular subject.

- The purpose of this exercise is to expand your knowledge from Cradle to Cradle and your research for a product evaluator to follow a product through its Life Cycle. This will illustrate the complexity involved in the design, manufacture, distribution, use, maintenance and disposal or recycling of a product. It will also illustrate how far manufacturers must go to produce a biological or technical nutrient.
- Select ONE (1) CSI product that you are researching for the final project that you may have found at NeoCon East and that is interesting to you.
- Use the seven (7) steps from Life cycle of a CD as an example of what I am looking for.
- The following links will provide excellent information about what is included in life cycle research:
  - These 4 articles were published for NeoCon (the BIG one in Chicago in June 2007). They represent the most current thinking about green materials and the disclosure of life cycle information.
  - See Blackboard Resources: Environment Australia—Life cycle of a typical product.
- This will be submitted with your team documents for the final project.
- Each individual will receive a separate grade for their project.
- Each person will submit a file to be included on the team CD with 3550_lastnamefirstinitial_lifecycle
  - Example: 3550_xxxxx_lifecycle
Appendix C
Modified Literature Review

~ Literature Review ~

The purpose of a literature search for a research article is to identify the existing information sources (including books, journal articles, and Web documents) most relevant to the research question being studied. (http://www.vanguard.edu/faculty/ddegelman/index.aspx?doc_id=3380)

- What is a literature review and how do I start?
  - [http://www.library.ncat.edu/ref/guides/literaturereview03.htm](http://www.library.ncat.edu/ref/guides/literaturereview03.htm)
- This will be a modified literature review to help focus on specific research that builds your knowledge about evaluating interior materials for sustainability.
- QUESTION: If designers and specifiers don't know what to look for when specifying environmentally friendly materials and finishes for interiors then how can they know that their interiors will be healthy?
- How can they explain to customers or clients why one selection is better than another when they don’t understand the technical details about the product?
- The purpose of this literature review is:
  - To identify how green products are evaluated, certified, or endorsed
  - To determine what are the most important qualities and components that define sustainable products according to these evaluators
  - To identify what components of products are the most harmful and why
  - To understand how the components are measured and what are safe or harmful levels
  - To ultimately develop a personal sustainable product evaluator that will be a tool to use (or market) in other classes and in the profession.
- The research questions:
  - How are products recognized as green or sustainable products?
  - What qualities of the product are the most important to measure?
  - Are there standard “thresholds” for product components that can be easily referenced and understood?
  - What evaluators, certifications or endorsements are most recognizable and indicate reliable sustainable or green products?
- This modified literature review will uncover many sources to help you as students learn how to make educated decisions about merchandising and specifying interior materials and finishes.
- Sources: These are all excellent, but try and find some new ones on your own.
  - [http://www.epa.gov/iaq/ia-intro.html](http://www.epa.gov/iaq/ia-intro.html)
    - Everyone read this first!
  - [http://www.healthybuilding.net/target_materials.html](http://www.healthybuilding.net/target_materials.html)
- http://www.green.ca.gov/EPP/Introduction/understand.htm
- http://www.environmentalchoice.com/English/Home/
- http://www.gen.gr.jp/
- http://www.mbdc.com/c2c_home.htm
- Greenguard Product Spec Comparator--On Blackboard
- Building Green –accessed through Joyner Library website, Electronic Database List, Building Green

- Deliverable:
  - Provide an **annotated bibliography** of sources researched (APA format) [http://www.docstyles.com/apacrib.htm#Examples](http://www.docstyles.com/apacrib.htm#Examples) Tell why they are important.
  - Provide a **summary page** of your research with key areas investigated and their importance to the research questions. Same format as C2C papers.
Developing a rubric

A rubric is the guide used to score performance assessments in a reliable, fair, and valid manner and is generally composed of dimensions for judging performance, a scale for rating performances on each dimension, and standards of excellence for specified performance levels.

http://www.google.com/search?hl=en&q=define%3A+rubric&btnG=Google+Search

- Developing a rubric applies knowledge gained from the literature review in two ways:
  - The first is from research regarding environmental properties of materials, finishes, and furniture for interior design that affect the occupants of interior spaces.
  - The second is from studying evaluation tools already existing for determining “levels” of green of products marketed for use in interior environments.
- Places to start:
  - On Blackboard in Resources: How to develop a rubric
  - http://www.greenseal.org/certification/standards.cfm
  - http://www.blauer-engel.de/englisch/navigation/body_sitemap.htm
  - http://www.epa.gov/oppt/epp/pubs/envlab/report.htm
  - http://www.gen.gr.jp/members.html
  - See LEED-CI Worksheet in Resources
- The goal is to develop a rubric that evaluates interior materials and finishes to determine whether or not they meet the criteria for use in a project.
  - The rubric will give you a score from 4 (best) to 0 (worst) for products that you evaluate.
  - If your project has high environmental protection as a criterion, then products with 4 as a score would be selected. If environmental protection is desired, but cost and availability are more important than the environmental protection score would not need to be as high.
  - Examining the categories that are defined for all projects seeking LEED certification may help in developing and organizing information in the rubric.
- The sources above will help your team determine the criteria for each cell in the rubric (excel spreadsheet).
- Deliverable: A preliminary excel spreadsheet rubric with an annotated bibliography.
## Appendix E
### Sample Evaluation Tool

<table>
<thead>
<tr>
<th>Category CSI</th>
<th>Product A</th>
<th>Product B</th>
<th>Product C</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREenguARD</td>
<td><a href="http://www.greenguard.org/Default.aspx">http://www.greenguard.org/Default.aspx</a></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Energy Star</td>
<td><a href="http://www.energystar.gov/">http://www.energystar.gov/</a></td>
<td>1 (Isn’t labeled, but addresses energy reduction)</td>
<td>1 (Isn’t labeled, but addresses energy reduction)</td>
</tr>
<tr>
<td>EPA - EPP</td>
<td><a href="http://www.epa.gov/">http://www.epa.gov/</a></td>
<td>2 (Has some qualifications)</td>
<td>2</td>
</tr>
<tr>
<td>Green Seal</td>
<td><a href="http://www.greenseal.org/index.html">http://www.greenseal.org/index.html</a></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>FSC</td>
<td><a href="http://www.fscus.org/">http://www.fscus.org/</a></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Carpet and Rug Institute</td>
<td><a href="http://www.carpet-rug.com/">http://www.carpet-rug.com/</a></td>
<td>3</td>
<td>2 (Only backing meets requirements)</td>
</tr>
</tbody>
</table>

### Environmental Literacy Council - Notes: Indoor Air Pollution
http://www.enviroliteracy.org/article.php?id=657&print=1

- IAQ - Indoor Air quality includes the following pollutants:

| Total VOC's | www.greenguard.org | 4 (VOC Rating 0) | 4 |
| Styrene | www.greenguard.org | 4 | 0 |
| Formaldehyde | www.greenguard.org | 4 | 3 |
| 4-phenylcyclohexene | 4 (4 PC) | 0 |
| Mold or Microbial growth | 4 (ASTM G-21 Rating (No Growth)) | 2 |
| Toxicity including endocrine disruptors | 4 (Does not exceed industry recommendations) | 3 |

### Environmental Impact

| Recyclability | 4 (100 % Natural Fibers) |
| Product transportation | 1 (Merida, Mexico) | 2 (South Carolina) |

### Life/Safety/Accessibility

| Fire Ratings: (http://ccmaonline.com/NewPages/FireRating.html) | 4 (Class A Flame Rating) | 4 (Class A) |
| ADA | | 4 | 0 |
Teaching Materials and Specifications for Interior Design: How Sustainable is it?

Rebecca Sweet, MFA, CID, ASID, IDEC
East Carolina University

Narrative

"You must be the change you wish to see in the world." - Mahatma Gandhi

Purpose

The purpose of this paper is to outline an ecological and sustainable research methodology for students in Materials and Specifications classes. This approach emphasizes selection and specification of interior materials and finishes based on research and comparison of product performance, application, and maintenance. The process that is described developed as a result of a 2004 EPA P3 Award: Student Design Competition focusing on People, Prosperity and the Planet (http://es.epa.gov/ncer/p3/designs_sustain_rfp_2004.html).

Ecology is defined as the interrelationships of systems to their environment. With the building industry accounting for 40% of the raw materials used internationally interior designers and merchandisers must understand the interrelationships of their selections on the environment and on the lasting effect their decisions may have for future generations (McGowan). Sustainable design is making decisions today that will have a positive impact or no impact on the quality of life of future generations. Understanding how sustainable design decisions impact ecological systems (social, environmental and economic) will lead to better decision making processes for the selection of materials and finishes for the interior environment (Spiegel & Meadows). To understand the
ecological approach to product knowledge students will develop complex problem-solving and analysis skills that will lead to an evaluation methodology for sustainable products.

Background

In 2004 Sweet, Warsco and Chin were awarded an EPA P3 grant to “produce an information distribution mechanism that equips consumers with the means for encouraging the homebuilding industry—designers, homebuilders, retail suppliers—to use environmentally preferable products (ENP) and processes in the design and construction of affordable homes—people and planet health. The design approach closes the gap that exists in the literature available to consumers and the data produced by the scientific community on the selection of ENP…. Students will be required to review literature on environmental performance considerations of homebuilder materials and construction techniques with respect to pollution prevention, multiple attributes over the product life cycle, comparisons of environmental impacts on human health and ecosystem, and accuracy and disclosure of product data” (Sweet, Warsco & Chin, http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/7146/report/0). Following the development and implementation of the research methodology for the EPA grant the focus changed from residential to commercial interior design products to relate to the original intent of the course. The information distribution mechanism changed to a product evaluator for use by a designer rather than a homeowner. The gap between scientific information produced and understanding by consumers became the gap between scientific information produced and product marketing and advertising claims to the design community. The use of the evaluator is
one tool for a designer to reference in making decisions about specification of interior products.

Method

Students follow a process of information gathering and education about ecological and sustainable systems, life-cycle impact analysis, modified literature review, development of a rubric to evaluate interior materials and finishes, creation of a product evaluator that tests the rubric through the evaluation of products, and reflection on the outcome.

Awareness of the scope of ecological and sustainable issues is developed through reading, discussing and reflecting on McDonough and Braungart’s book Cradle-to-Cradle (C2C) (Appendix A). Beginning the process of understanding a whole-systems or cradle-to-cradle approach to the selection and specification of interior materials and finishes is acquiring information about how products are made, what’s in them, where they come from, and where they go when they are no longer wanted. McDonough and Braungart take everyday items such as a book or shoes and illustrates how each material and process of production impacts the earth in a dramatic fashion. They emphasize the importance of evaluating a complete process not just an outcome.

This excerpt from the first reflection paper required of the students reading the book is typical of the impact made by C2C.

“Why does it seem like the industrialized world is trying to kill us all? Who thought that it was a good idea to include so many different poisons in the items that we use daily? I am starting to look around my apartment in fear. As I read this book, it now seems that the question is when, as opposed to if, I and all of my loved ones will develop a raging case of cancer. This is a pretty scary thought.

At this moment, I feel rather betrayed by human intelligence. We are determined enough to go to the moon, we are smart enough to
manufacture iPhones; we should be able to band together and design products that will be safe for us and our future generations to handle and use” (Davis, K., 2007, IDSN 3550).

For the last four years every Materials class has read C2C with the same reaction, commitment and passion to change the status quo. It is a very effective tool to begin the discussion and gives validity to the need for a research process to evaluate interior materials.

A life cycle impact analysis dramatically illustrates environmental and economic consequences from the use of consumer products. From materials acquisition, processing, manufacturing, packaging, transportation and distribution, useful life and finally reuse, recycling or disposal students become aware of the complex systems that are part of the process of manufacturing, distribution and consumption. (http://www.epa.gov/osw/students/finalposter.pdf) (Appendix B). In addition to the easy to understand EPA poster the class reviews an interior product life cycle analysis from the AIA Environmental Resource Guide (1998). Even though the Guide has not been updated since 1998 and dramatic strides have been made in the manufacture of many interior products (i.e., carpet industry), the process of the analysis (inventory analysis, impact assessment, impact valuation, and improvement assessment) is a valid methodology for the students to learn. In addition, the impact assessment provides environmental performance guidelines in environment and ecosystems, health and welfare, energy, and building and operations measures. These categories become possible evaluation categories for the rubric the students will develop later in the semester.
Further increasing understanding about the complexity in sustainable product selection is conducting a modified literature review to identify evaluation systems currently in use—what they evaluate, how they evaluate it, and the most important materials identified that are positive or negative contributors to the environment (Appendix C). Through this exercise students uncover the explosion of information in this area. Through reading sources such as the Healthy Building Network’s “Worst in Class Chemicals” the students familiarize themselves with chlorinated building materials that includes PVC as well as PBT material treatments (Scotchguard and Teflon), heavy metal additives, formaldehyde, phthalates, and preserved wood additives such as arsenic and creosote (http://www.healthybuilding.net/target_materials.html).

Application of knowledge developed throughout these assignments is exhibited through the construction of a rubric (Appendix D) and an evaluation tool for defining and evaluating critical attributes of interior materials and finishes (sample evaluation tool, Appendix E). The analysis of assigned CSI product categories using the evaluation tool (with a goal of 90% completion in each category) illustrates the success of the research through the ease of its use or the need for revisions to address areas in question. Students leave the class with valuable tools for the profession, which include a deep understanding of the importance of making the right decisions in the specification of interior materials and finishes, a tool to enable the right decisions to be made, the ability to explain or defend the selection process with facts, and the passion to be advocates and educators for a sustainable future in the industry and beyond.

This is how one group summarized their experience with the methodology.

“In conclusion, the term ‘green products’ implies the use of non-toxic materials that make use of recycled materials, can be recycled
themselves, and are produced in a sustainable manner in regards to environmental resources and energy use. Some of the most important things to regulate in interior environments include indoor air quality, the presence of PVC, and the presence of formaldehyde. There are numerous certifications and endorsements for green building. Some of the best resources include the U.S. Green Building Council, the Environmental Protection Agency, the Healthy Building Network, and sites devoted to public safety such as that of the National Safety Council. With everyone wanting to designate themselves as green and sustainable, the best resources are those that provide detailed data and cite how they derived this data" (Davis, K., Henry, K. Sessoms, N. & Spruill, A., 2007).

Conclusion

There are several significant developments since this class format was initiated four years ago: (1) the 1400 series of standards from the International Standards Organization (ISO). These standards “encompass environmental management systems and all types of product specifications and ‘EcoLabels’” (Interiors & Sources, 2007, p. 14); (2) Sustainable Product Standards that are being developed by American National Product Standards through American National Standards Institute (ANSI) and stakeholders in commercial design textiles, carpet, furniture and resilient flooring (I&S, 2007, p. 20); and (3) Environmental Product Declarations that describe product performance based on Life Cycle Assessment (I&S, 2007, p. 24). Once these evaluation and labeling methods are fully operational the design methodology of this class will become outdated and the focus will shift to understanding the evaluation frameworks being applied, what the EcoLabels measure, what the Sustainable Product Standards measure and how to apply the Environmental Product Declarations. These are the stepping stones to a global product base that will equalize comparisons, save time, and most importantly make strides in tending to the health of our people and our planet.
References

(APA)


Appendix A
C2C Reflection Paper

Reflection Paper #1 (Intro & Chapter 1)
Reflection Paper #2 (Chapter 2 - 3)
Reflection Paper #3 (Chapter 4 - 5)
Reflection Paper #4 (Chapter 6)

Reflection: contemplation: a calm lengthy intent consideration; observation: a remark expressing careful consideration
wordnet.princeton.edu/perl/webwn

• This paper is meant to be a reflection and summary of what was learned in these chapters.
  o It is meant to express your opinion.
  o It is NOT just a recap of what was written by the authors.
  o Use your own words and if you quote the authors use quotes and reference information.
• What did you learn in this chapter?
• What were the central ideas being expressed?
• What are key terms that relate to our focus of materials, sustainability, research or specification?
• The reflection paper will be 500 - 750 words at 12 pt Arial font, using 1-1/2 spacing between lines with 1” margins on all sides.
• REMEMBER to save it as a Word document with a .doc extension.
• Put your name, assignment name (C2C1 or 2, etc.) and Fall 2007 in the upper right corner of the paper.
• The style is informal, but grammar, spelling, sentence structure and flow of ideas will be taken into account in the grade.
• Attach the paper to an e-mail and submit it electronically prior to the start of class on the date it is due.
  o In the Subject line of the e-mail write: 3550_lastnamefirstinitial_C2C1 or 2, etc.
  o Example: 3550_xxxxx_C2C1
Appendix B
Life Cycle Impact Analysis

Life Cycle Research

Research is an active, diligent and systematic process of inquiry in order to discover, interpret or revise facts, events, behaviors, or theories, or to make practical applications with the help of such facts, laws or theories. The term "research" is also used to describe the collection of information about a particular subject.

en.wikipedia.org/wiki/Research

• The purpose of this exercise is to expand your knowledge from Cradle to Cradle and your research for a product evaluator to follow a product through its Life Cycle. This will illustrate the complexity involved in the design, manufacture, distribution, use, maintenance and disposal or recycling of a product. It will also illustrate how far manufacturers must go to produce a biological or technical nutrient.
• Select ONE (1) CSI product that you are researching for the final project that you may have found at NeoCon East and that is interesting to you.
• Use the seven (7) steps from Life cycle of a CD as an example of what I am looking for.
• The following links will provide excellent information about what is included in life cycle research:
  o These 4 articles were published for NeoCon (the BIG one in Chicago in June 2007). They represent the most current thinking about green materials and the disclosure of life cycle information.
  o http://www.enviroliteracy.org/article.php/322.html (Environment and Society—Life cycle)
  o See Blackboard Resources: Environment Australia—Life cycle of a typical product.
• This will be submitted with your team documents for the final project.
• Each individual will receive a separate grade for their project.
• Each person will submit a file to be included on the team CD with 3550_lastnamefirstinitial_lifecycle
  o Example: 3550_xxxxx_lifecycle
Appendix C
Modified Literature Review

The purpose of a literature search for a research article is to identify the existing information sources (including books, journal articles, and Web documents) most relevant to the research question being studied. (http://www.vanguard.edu/faculty/ddegelman/index.aspx?doc_id=3380)

- What is a literature review and how do I start?
  - http://www.library.ncat.edu/ref/guides/literaturereview03.htm
- This will be a modified literature review to help focus on specific research that builds your knowledge about evaluating interior materials for sustainability.
- QUESTION: If designers and specifiers don't know what to look for when specifying environmentally friendly materials and finishes for interiors then how can they know that their interiors will be healthy?
- How can they explain to customers or clients why one selection is better than another when they don’t understand the technical details about the product?

**The purpose of this literature review is:**

- To identify how green products are evaluated, certified, or endorsed
- To determine what are the most important qualities and components that define sustainable products according to these evaluators
- To identify what components of products are the most harmful and why
- To understand how the components are measured and what are safe or harmful levels
- To ultimately develop a personal sustainable product evaluator that will be a tool to use (or market) in other classes and in the profession.

**The research questions:**

- How are products recognized as green or sustainable products?
- What qualities of the product are the most important to measure?
- Are there standard “thresholds” for product components that can be easily referenced and understood?
- What evaluators, certifications or endorsements are most recognizable and indicate reliable sustainable or green products?

- This modified literature review will uncover many sources to help you as students learn how to make educated decisions about merchandising and specifying interior materials and finishes.
- Sources: These are all excellent, but try and find some new ones on your own.
  - http://www.epa.gov/iaq/ia-intro.html
    - Everyone read this first!
  - http://www.healthybuilding.net/target_materials.html
• Deliverable:
  o Provide an annotated bibliography of sources researched (APA format) [http://www.docstyles.com/apacrib.htm#Examples](http://www.docstyles.com/apacrib.htm#Examples) Tell why they are important.
  o Provide a summary page of your research with key areas investigated and their importance to the research questions. Same format as C2C papers.
Appendix D
Rubric

Developing a rubric

A rubric is the guide used to score performance assessments in a reliable, fair, and valid manner and is generally composed of dimensions for judging performance, a scale for rating performances on each dimension, and standards of excellence for specified performance levels. http://www.google.com/search?hl=en&q=define%3A+rubric&btnG=Google+Search

- Developing a rubric applies knowledge gained from the literature review in two ways:
  - The first is from research regarding environmental properties of materials, finishes, and furniture for interior design that affect the occupants of interior spaces
  - The second is from studying evaluation tools already existing for determining “levels” of green of products marketed for use in interior environments.

- Places to start:
  - On Blackboard in Resources: How to develop a rubric
  - http://www.greenseal.org/certification/standards.cfm
  - http://www.blauer-engel.de/englisch/navigation/body_sitemap.htm
  - http://www.epa.gov/oppt/epp/pubs/envlab/report.htm
  - http://www.gen.gr.jp/members.html
  - See LEED-CI Worksheet in Resources

- The goal is to develop a rubric that evaluates interior materials and finishes to determine whether or not they meet the criteria for use in a project.
  - The rubric will give you a score from 4 (best) to 0 (worst) for products that you evaluate.
  - If your project has high environmental protection as a criterion, then products with 4 as a score would be selected. If environmental protection is desired, but cost and availability are more important than the environmental protection score would not need to be as high.
  - Examining the categories that are defined for all projects seeking LEED certification may help in developing and organizing information in the rubric.

- The sources above will help your team determine the criteria for each cell in the rubric (excel spreadsheet).
- Deliverable: A preliminary excel spreadsheet rubric with an annotated bibliography.
### Sample Evaluation Tool

#### Category CSI 
09770

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<tr>
<th>Endorsements and Certifications</th>
<th>Product A</th>
<th>Product B</th>
<th>Product C</th>
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<td>GREENGUARD <a href="http://www.greenguard.org/DeskTopDefault.aspx">http://www.greenguard.org/DeskTopDefault.aspx</a></td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Energy Star <a href="http://www.energystar.gov/">http://www.energystar.gov/</a></td>
<td>1 (Isn't labeled, but addresses energy reduction)</td>
<td>1 (Isn't labeled, but addresses energy reduction)</td>
<td>1 (Isn't labeled, but addresses energy reduction)</td>
</tr>
<tr>
<td>EPA - EPP <a href="http://www.epa.gov/epd/database.htm">http://www.epa.gov/epd/database.htm</a></td>
<td>2 (Has some qualifications)</td>
<td>2</td>
<td></td>
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<tr>
<td>Green Seal <a href="http://www.greenseal.org/index.html">http://www.greenseal.org/index.html</a></td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Environmental Literacy Council - Notes: Indoor Air Pollution**

[http://www.enviroliteracy.org/article.php?id=657&print=1](http://www.enviroliteracy.org/article.php?id=657&print=1) -- IAQ - Indoor Air quality includes the following pollutants:

<p>| Total VOC's <a href="http://www.greenguard.org">www.greenguard.org</a> | 4 (VOC Rating 0) | 4 |
| Styrene <a href="http://www.greenguard.org">www.greenguard.org</a> | 4 | 0 |
| Formaldehyde <a href="http://www.greenguard.org">www.greenguard.org</a> | 4 | 3 |
| 4-phenylcyclohexene | 4 (4 PC) | 0 |
| Mold or Microbial | 4 (ASTM G-21 Rating) | 2 |</p>
<table>
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<th>Topic</th>
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<th>Notes</th>
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<tr>
<td>Growth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity including endocrine disruptors</td>
<td>4</td>
<td>(Does not exceed industry recommendations)</td>
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<tr>
<td>Environmental Impact</td>
<td></td>
<td></td>
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<tr>
<td>Recyclability</td>
<td>4</td>
<td>(100% Natural Fibers)</td>
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<tr>
<td>Product transportation</td>
<td>1</td>
<td>(Merida, Mexico)</td>
</tr>
<tr>
<td>Life/Safety/Accessibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Ratings: (<a href="http://ccmaonline.com/NewPages/FireRating.html">link</a>)</td>
<td>4</td>
<td>(Class A Flame Rating)</td>
</tr>
<tr>
<td>ADA</td>
<td>4</td>
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</tr>
</tbody>
</table>
Daylighting School Classrooms: A Field Report

Judy Theodorson, Assistant Professor
Rebecca Bunker, MA ID Candidate
Washington State University, Spokane, Interdisciplinary Design Institute

Abstract

The classroom window in the early 20th century school was generously sized, designed to function as the “principle source of illumination for the school” (Wu and Ng, 2003, p. 13). By 1950, electric lighting had assumed the job of providing illumination, consequently diminishing the size and value of the window. In the 1970’s, educational theorists deemed the outside world a distraction to the learning process (Holland, 2004, p. 355). Accordingly, architects turned the spatial focus inward and nearly eliminated the window in the classroom. In response to the last energy crisis, schools were designed with tight envelopes, producing small, heavily tinted apertures. Ironically, the evolution of the classroom window has completed a full circle; today’s schools are once again being shaped to provide abundant light and views for the classrooms. The current movement is driven by research that supports the premise that a classroom with good daylighting and pleasant views positively affects student health and performance (Kuller & Lindsten, 1992; Heschong Mahone Group, 1999, 2001, 2003; Erwine & Heschong, 2002). Furthermore, there is the potential to save energy: “Employed correctly, daylighting can dramatically cut electric lighting, energy, and maintenance costs, even in cloudy or northern latitudes.” (Benya, 2001, p. 2).
This paper presents a post occupancy study of three new elementary schools that intentionally employ the classroom window for daylighting and views. The schools, completed in 2006, provide an interesting comparative opportunity, as they were designed by three different architecture firms. The owner emphasized “high performance design” and encouraged compliance with a draft sustainability protocol that required daylighting in 50% of teaching spaces. This research documents and evaluates the daylighting strategies within the context of occupation. The intent is to use empirical evidence to better understand the issues of a daylit classroom and to suggest modifications to improve operations.

This work is significant to Interior Design as it underlines the importance of fieldwork in fine-tuning occupancy patterns to achieve design goals. Additionally, it provides an interiors and end-user perspective to the current design dialogue around daylighting in schools. When the architect, interior designer, and engineer work together as a team, the entire environment can better support the daylighting scheme (Winsor, 2001, p. 43).

A faculty-student team collaboratively designed and executed the methodology, which involves both fieldwork and teacher surveys. Field data was collected over spring break with the assumption the classrooms had been left “as is” for the week. Researchers used hand-held tools to measure the luminous environment (illuminance, color temperature, luminance) under a variety of lighting conditions. The spaces were photographed with HDR techniques and observations were noted on control systems, interior shade positions, and spatial organizations. Shortly after the fieldwork was completed, teachers were given an anonymous survey, designed to gather information.
on satisfaction and behaviors. All the data was compiled in Excel for descriptive
statistics analysis. In addition, the data is visually analyzed with “light maps”
constructed from field measurements and false color renderings produced from the
HDR photography.
Daylighting School Classrooms: A Field Report

Judy Theodorson, Assistant Professor, Rebecca Bunker, MAID Candidate
Washington State University, Spokane, Interdisciplinary Design Institute

Narrative

Background

Over the past 100 years, the window in the K-12 classroom has undergone a full circle transformation. Early in the 20th century, windows were generously sized, functioning by necessity as the “principle source of illumination for the school,” while allowing ventilation and transparency to the exterior world (Wu and Ng, 2003, p. 13). However, these large expanses of single pane glazing with little or no shading made for uncomfortable thermal and visual environments. The 1920’s open-air school movement adopted bilateral apertures, creating balanced luminous environments and allowing for cross ventilation. By 1950, electric lamps had assumed the role of lighting the classroom, greatly diminishing the value, and thus the size, of the window. In the 1970s, educational theorists deemed the outside world a distraction to the learning process (Holland, 2004, p. 355). Accordingly, architects turned the spatial focus inward, nearly eliminating the window altogether. The 1970’s oil crisis created a need for energy efficiency in the next generation of schools; this was often achieved with insulated building envelopes that included minimal glazing.

Today’s schools once again resemble those of 100 years ago; windows are designed to provide abundant light, views, and ventilation for the classroom, but this time with the benefit of glazing technology and a variety of shading devices. This
movement is driven by research that supports the premise that a classroom with good
daylighting and views positively affects student health and performance (Kuller &
Lindsten, 1992; Heschong Mahone Group, 1999, 2001, 2003; Erwine & Heschong,
2002; Edwards, 2006). The human benefits associated with daylighting seem to be
realized through view and light exposure. View is thought to be particularly important; in
Heschong’s studies, “a better view was always associated with better student
performance” (Heschong, 2006, p. 90). The view provides a connection to the cycles of
the natural world and offers the psychological benefit of repeated opportunities to find
“respite from the immediate tasks and demands, thus providing a micro-restorative
experience” (Kaplan, R., 2001, p. 508). Exposure to natural light also affects
physiological processes in the body, helping to maintain the circadian systems and
regulate hormonal levels (Boyce, 2003, 2006; Heschong, 2006; Kuller & Lindsten,

A further advantage is that daylighting strategies have the potential to
significantly reduce the use of electrical energy (Benya, 2001; Hartman, 2007; Kendler,
2004; Eley, 2006). These efficiencies come from “daylight harvesting,” a system of
technological controls and user behaviors that reduce electric lighting when the daylight
source is providing adequate ambient light.

Recognizing the many benefits of daylight, sustainable school design guides
such as California High Performance Schools (CHPS), Washington Sustainable
Schools Protocol (WSSP) require teaching spaces to utilize daylight and provide views
(Collaborative for High Performance Schools, 2008; Washington Sustainable Schools,
2004).
Context

This paper presents a post occupancy study of three new elementary schools in that intentionally employ the classroom window for light, views, and energy savings. Although the programs for design were essentially identical, the implementation and details vary within each school, providing an interesting comparative opportunity. The owner emphasized “high performance design” and directed the architects to comply with a draft version of Washington Sustainable Schools Protocol (WSSP). To meet the daylighting requirement, 50% of the teaching areas had to achieve a daylight factor of 2%. To meet the view requirement, 90% of the classrooms had to have an unobstructed view to the exterior (Washington Sustainable Schools Protocol, 2004, p. 45-46). All of the classrooms rely on unilateral sidelighting and are sited to have either north or south orientation. Fixed exterior sunshading and interior light shelves are used on the south-facing classrooms. Typical classrooms were modeled and tested for daylighting during the design process. At the time of the study (April, 2007), the classrooms had been occupied for seven months and the teachers had not received any special training in managing a daylit classroom.

Intent

The intent of the field study was twofold. First, there was the need to provide measured data that verified the accuracy of daylighting prediction during the design process. Second, there was the opportunity to study daylighting within the context of occupation, providing insight to the following questions: Does the perception, use, and management of a daylit classroom correspond with the intent? Has the daylight
resource been fully realized in terms of energy and human factors? Of particular interest to interior design are the issues of teacher satisfaction, luminous comfort, spatial organization, and user control. This field study is significant as it underlines the value of fieldwork in fine-tuning occupancy patterns to achieve design goals. Additionally, it provides an interiors and end-user perspective to the current design dialogue involving daylighting in schools. When the architect, interior designer, and engineer work together as a team, the entire environment can better support the daylighting scheme (Winsor, 2001, p. 43).

Method

A faculty–student team, operating from Washington State University Spokane’s Daylighting and Integrated Design Lab, collaborated on the research study. The research uses a multiple method approach, combining field study and end-user (teacher) surveys. The field study collected observational, measurable, and photographic data, while the teacher surveys were used to obtain satisfaction and behavioral information. When combined, these sources help provide a visual and empirical understanding of how the daylighting strategies function within the realities of occupation.

The School District supported this study, allowing full access to the schools during spring break. For the most part, the classrooms were left “as is,” allowing the researchers to record details of user behaviors such as shade position and spatial organization. At each school, typical classrooms were selected to measure illuminance, luminance, and color temperature under a variety of lighting conditions. These spaces
were photographed with high dynamic range (HDR) techniques for later analysis. The teacher survey employed a five-point Likert scale assessing satisfaction and behaviors specific to daylighting and the luminous environment. In addition, the teachers ranked attributes they considered important to creating a quality learning environment, provided demographic data, and had an opportunity to submit additional information. The survey was anonymous, and was distributed through the school mail system. The return rate on the survey was 75%.

Analysis and Results

The field study confirmed that the schools were meeting the WSSP design requirement of providing enough natural light in 50% of the classroom area, allowing reduction or elimination of electric lighting. This verified the model study predictions from the design phase. However, there was evidence that patterns of occupation impacted daylighting performance in terms of the quality of the visual environment, access to views, and potential energy savings. The arrangement of furniture, placement of computers, and management of the window shading devices indicated a lack of information regarding how to use daylight to the best advantages in the classroom.

The end-user response regarding daylight in the classroom was extremely positive, with teachers reporting highest satisfaction with ‘natural light,’ followed closely by ‘overall classroom’ and ‘views.’ In the ranking of eight attributes of a quality-learning environment, ‘daylight and views’ was a strong second to ‘space (size),’ suggesting the teachers recognize the value of a daylit space.
The daylight source created visual challenges in many of the classrooms. Reverse color analysis of HDR photographs show ‘hot spots;’ luminance measurements confirmed that the ratios were well in excess of comfort levels. Yet, computer stations were located facing the window in approximately 75% of the classrooms. Curiously, this is also how it was shown on some of the architectural drawings, indicating that internet access and electrical outlets were perhaps located in that space, thus restricting options for classroom arrangement. For the most part, the teachers reported they did not organize their classrooms around light or views.

The teachers did report that they adjusted the interior shading devices regularly. The most cited reasons were to darken the space for media presentations, and to control sunlight and glare. Unfortunately, the shade installations were not ideal. At one school, the shades were the wrong type for the room orientation, creating added issues with glare. In other locations, the ability to manipulate the shades was compromised by interior light shelves and furniture placement. A visual inspection found that 60%-80% of shades were engaged in the south facing classrooms, thereby blocking access to exterior views, while reducing the amount of natural light. The north facing classrooms were less affected, just 12% of shades engaged at one school. At all of the schools, the window was conceptually (and on the south, physically) divided into an upper “daylight” aperture and the lower “view” window. It was found that the shades were commonly closed on the upper windows, thus minimizing daylight penetration into the space and thereby increasing the likelihood that electric lights would be engaged. At one school, the photocell was aimed at closed shades in nearly every classroom, signaling the electric lights to turn on when they weren’t needed.
This analysis had the immediate effect of helping the school district fine-tune the environment to better meet educational needs and design goals. The findings demonstrate the value in creating a feedback loop between the end-user and designers by revealing that interior solutions and user behaviors are critical to the ultimate success of daylit spaces. It is valuable for interior designers to understand the daylight source, the intent of the architectural strategies, and potential user behaviors. This allows interior designers to successfully collaborate in the building design process and to further enhance the benefits of daylight in the interior environment.

References
(APA Style)


The Architects’ Small House Service Bureau and Interior Design in the 1920s and 1930s

Lisa M. Tucker
Virginia Tech

Abstract

Purpose

This research examines interior design done under the auspices of the Architects Small House Service Bureau (ASHSB) between 1919 and 1934. The impact of this group on interior design of the early 20th century single family house is also presented.

Background

A group of Minnesota architects created the ASHSB in 1914 to provide a solution to the shortage of middle class housing in the U.S. By 1919, the bureau had offices throughout the U.S. and received the endorsement of both the American Institute of Architects and the Department of Commerce. During this time, the members of the Bureau produced hundreds of plan sets and monthly bulletins to assist homeowners with their housing choices. The monthly magazine *The Small Home*, in conjunction with the published plan books--*Your Future Home* and *How to Plan, Finance, and Build Your Home*--dispensed valuable information to potential homebuyers across the nation. To date, only one master’s thesis (Lisa Schrenk, University of Virginia 1990) and a single article (Thomas Harvey, 1991) have been written about the ASHSB. Neither discussed the interior design aspects of these designs and publications nor dealt with the broad impact of the interior design done by the ASHSB.
Process/Contexts

This research involved extensive archival research at the AIA. Records from the early 20th century were analyzed to determine the relationship between the AIA and the ASHSB in the early 20th century. An interpretive-historical approach was used for this research. An examination of the publications produced and distributed by the ASHSB reveal a specific design approach to the domestic interior at the beginning of the 20th century which was taking place at the same time as developments within the home economics movement and other reformative ideas about the family home. In *House, Form and Culture*, Amos Rapoport claimed “the assumption behind any historical approach is that one can learn form the part; the past is of value philosophically as well as in making us aware of the complexity and overlapping of things” (Rapaport, 1969, 11). This paper tells the story of the ASHSB and places it within its larger historical context.

Summary

It is important to note that interior design was barely a profession in this period (1919-1934), so the study of its early history often involves the work of architects and others. Architects of the ASHSB specialized in interior design including kitchen design, bathroom design, and over all advice on good design for interiors, and this provides a piece of interior design history in the U.S.
Sources
The Architects Small House Service Bureau and Interior Design

Lisa M. Tucker
Virginia Tech

Narrative

Introduction

The single-family, detached house epitomizes the American Dream. As such, it has received a great deal of study in several academic realms including environment and behavioral studies, anthropology, sociology and housing. This particular dwelling type captures the spirit of the United States and represents a free and affluent democratic society. Homeownership in the U.S. reached an all time high during the 20th century. The dream of homeownership was made accessible to most Americans as a result of several federal initiatives introduced in the early 20th century.

Purpose and Method

The purpose of this paper is to provide an overview of the Architects’ Small House Service Bureau and its contributions to the field of interior design in the early 20th century. As an agency founded by a group of Minnesota architects in 1914, the ASHSB sought to provide a solution to the shortage of affordable middle class housing in the U.S. By 1919, the Bureau had offices throughout the U.S. and received the endorsement of both the American Institute of Architects (AIA) and the Department of Commerce (DOC). During this time, the members of the Bureau produced hundreds of
plan sets and monthly bulletins to assist homeowners with their housing choices. The monthly magazine *The Small Home*, in conjunction with the published plan books--*Your Future Home, How to Plan, Finance, and Build Your Home*, and others--dispensed valuable information to potential homebuyers across the nation.

In accordance with Michael Crotty’s guidelines for social research, the primary framework for this research is an interpretive historical approach that is constructivist by nature.¹ There is no one truth that can be proven; rather, this is a possible interpretation of the facts and documents. According to Groat and Wang, “even as the narrative is nearing completion, ‘you must keep an eye on events and publications for the latest relevant facts.’”² The narrative constructs a reality based on the sources available at the time in an effort to answer the questions posed by this research.

The research itself involved extensive archival investigation at the American Institute of Architects (AIA). Records from the early 20th century were analyzed to determine the relationship between the AIA and the ASHSB. A content analysis of many of the publications produced and distributed by the ASHSB reveal a specific design approach to the domestic interior at the beginning of the 20th century which coincided with the developments within the home economics movement and other reformative ideas about the family home.

In *House, Form and Culture*, Amos Rapoport claimed “the assumption behind any historical approach is that one can learn from the past; the past is of value philosophically as well as in making us aware of the complexity and overlapping of things.”³ This paper tells the story of the ASHSB and places it within its larger historical context. It is important to note that interior design was barely a profession in this period.
(1919-1934), so the study of its early history often involves the work of architects and others. Architects of the ASHSB specialized in interior design including kitchen design, bathroom design, and over all advice on good design for interiors, and thus provide a piece of interior design history in the U.S.

Literature Review

Abundant amounts of research have been conducted on housing and home under the auspices of many disciplines. Barbara Lane’s recent treatment of the housing and dwelling field covers many of the research directions related to housing including: meaning of place, methods of research, phenomenology and other theoretical positions, and the impact of culture on meaning of the home. Much of the past research in architectural history as it relates to housing falls within the framework outlined by Nicholas Pevsner summarized in his famous statement “A bicycle shed is a building. Lincoln Cathedral is a piece of architecture.” More recently, historians have begun to concern themselves with what Rapoport calls the vernacular and what N. J. Habraken terms “the field” the buildings of the everyday that surround us. The majority of these buildings are dwellings: apartment buildings, townhouses, and single-family dwellings.

While the literature related to housing is extensive, little has been written about the ASHSB or its impact. To date, only one master’s thesis (Lisa Schrenk, University of Virginia 1990) and a single article (Thomas Harvey, 1991) have addressed the ASHSB. Neither discussed the interior design aspects of these designs and the group’s publications nor dealt with the broad impact of the interior design done by the ASHSB.

While the ASHSB is occasionally mentioned, it is treated as another of the plan book producing agencies prevalent in the early 20th century. What distinguishes this particular group, however, is its ability to get the endorsements of both the Department of Commerce and the American Institute of Architects, albeit for a short time. The involvement of licensed architects in all design work also distinguished this group from its competitors of the time.

The ASHSB and Interior Design

Several of the written materials produced by the ASHSB include advice and direction on the design of the interior spaces of the house. These range from instructions for kitchen design to basic decorating tips. In *How to Plan, Finance, and Build Your Home* (1921), there is an entire chapter devoted to these issues entitled “How to Furnish Your Home in Good Taste.” Several topics together compose this chapter including: Good Taste Results from Common Sense, Furnishings Form Background for People, Gaudy Patterns Should be Avoided, Selecting and Placing the
Furniture, Arranging and Hanging Pictures, Advantages of Built-in Furniture, Beware of Horizontal Lines, How to Make Rooms Appear Larger, Use Strong Color Sparingly!, and Beauty Comes from Simplicity.

A later chapter in the same publication describes the design and arrangement of the ideal kitchen “Your Kitchen Planned to Save Time, Steps, Labor: The latest up-to-date ideas on kitchen arrangement, ‘routing steps,’ grouping tools to save miles of needless walking.” This chapter includes subtopics such as: Why Small Kitchens are Best, How one Woman Saved 105 Miles, Detached Pantries Poor Investments, Grouping Tools Gives Efficiency, Location and Height of Sink Important, and Ice Box; Rear Entry, Dining Alcoves.

Similar advice is provided on landscaping yards and mechanical equipment for the home. Other specific articles within this particular book include “Good Taste and Savings; Bad Taste and Waste and “Painting Your Home—Inside and Out.” The plans themselves are divided into three-room, four-room, five-room, and six-room examples. Each design includes a plan for each floor with dimensions, and an exterior 3D rendering accompanied by a couple of paragraphs explaining the design benefits of the specific design.

Your Future Home (1923) contains designs presented in a similar fashion to How to Plan, Finance, and Build Your Home as well as advice on how to select your home and site, financing, and how to read a set of plans. The first part of the book is devoted to an explanation of the need for an architect. “Persons who imagine that money is to be saved by dispensing with the services of an architect usually place themselves in the
hands of some firm which undertakes to combine the functions of architect and builder. Unfortunately, however, a builder is rarely a good designer, nor should he be…

Authentic Small Houses of the Twenties (1929) edited by Robert T. Jones, the Technical Director for the ASHSB, includes designs for 254 homes. In this publication, renderings are sometimes replaced with photos of actual houses built from the specific design. This publication differs from the earlier two in that it also includes interior views of the proposed designs. These perspective views include window treatments, furniture, art work and other accessories to instruct the homeowner as to how to properly treat the interiors of these well-designed homes. The majority of the interior vignettes feature a fire place in the perspective, although stairways, bedrooms, and dining rooms are also occasionally depicted. A handful of designs also include interior photographs of completed houses.

The ASHSB monthly service bulletin, The Small Home, often provided homeowners and homebuyers with more specific interior design direction. The April 1923 volume includes interior and exterior photographs of a model home built by the Bureau for public relations purposed to educate the public about the Bureau’s mission and design goals. The caption accompanying the interior photographs reads “these photographs show the complete way in which this demonstration house was furnished. Certainly the living room, kitchen and breakfast nook have the appearance of a home ready to live in. And the house shows how good taste in furnishings and building is possible by the proper use of materials and equipment assembled from common stocks but assembled uncommonly well.” An article in the same issue provides advice on how
to select the woodwork for your home because a house without it “would be like a skeleton without flesh.” The August 1923 issue discusses flooring options including cork, linoleum, rubber and wood. The article compares the choices in terms of resiliency and other qualities and advises homeowners to “Mix brains with your floors.”

The interior images and design descriptions included in the literature of the ASHSB reflected these concerns and demonstrated the use of new functional features throughout the home. The Small Home monthly magazine included multiple advertisements throughout for interior appurtenances that could enhance the function of the home. General Electric, a frequent contributor, advertised its toasters, light switches, outlets, and other inventions designed for home efficiency. Other advertisements included information about and photographs of medicine cabinets, built-in kitchen “dressers,” dressing tables, and fold-out ironing boards.

The type of advice being dispensed by the ASHSB parallels that of the domestic reform movement. Beginning with the 1890s, the home economic movement created demand for changes to house design. According to Gwendolyn Wright, there were 195 schools with home economic programs serving 17,778 students by 1919. The leaders of this movement, who preferred it be called “domestic science” or “household administration” viewed the home as a laboratory in which the function of the space informed each detail. “Built-in conveniences abounded: bookshelves and cabinets in the living room, fold-down tables, benches, and ironing boards in the kitchen; medicine cabinets in the bathroom; and more closets throughout the house.” The ASHSB represents an important, yet solitary, organized and endorsed foray by architects into the realm of the home interior.
Endnotes

(Chicago Manual of Style)

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iv Barbara Miller Lane *Housing and Dwelling: Perspectives on Modern Domestic Architecture* (London: Routledge, 2007).

vi Ibid.


x ASHSB. "The Small House*, April 1923: 15.


Shaw, Leffingwell and System:  
Early Influences on the Design of Offices and their Furnishings  

Terrence L. Uber, Ph.D.  
Kent State University  

Abstract  

Two individuals in the early 20th century were major contributors to the development of new office practices, and as a result, greatly influenced the design of offices and related furnishings. Long before there were designers who specialized in office settings, Arch W. Shaw and William Henry Leffingwell developed and promoted business practices and played a direct role in the evolution of office and furniture design as the office furniture industry developed in the first two decades of the twentieth century.  

Arch W. Shaw had a brief career as an office furniture salesman before joining with Louis Walker to form the Shaw-Walker Company of Michigan, in 1899. The Shaw-Walker Company was formed to sell card-filing systems for business which Shaw had developed. Based on the Dewey Decimal System from the Library of Congress, card-filing revolutionized the manner in which records were processed and stored in the office, and Shaw introduced these methods to the business community through his journal System. While the purpose of System was to present broad, generic examples of business operation, not exclusive to the office setting, the journal promoted changes in office procedures to implement new business practices and included articles, illustrations and photographs dealing with space planning in offices and furniture design. Articles in System also addressed issues of furniture arrangement, lighting, and positioning of employees within the office. The success of System guaranteed that these ideas were disseminated in management offices throughout the country.
William Henry Leffingwell was a disciple of Frederick Winslow Taylor and his principles of scientific management. Leffingwell took the concepts which Taylor had applied to the factory and adapted them to the office. While the emphasis in his work was on scientific management of business practices as applied to the office, he included discussions on the design of offices and furnishings in his publications which included *Scientific Office Management* (1917) and *Making the Office Pay* (1918). In *Scientific Office Management* (1925), Leffingwell stated: “Less thought is devoted to the design and construction of desks, chairs, and tables than perhaps any other equipment, by either the users or office managers, or even the makers.”(391). He critiqued existing furniture forms, described the ideal forms, and proposed several of his own designs through line drawings. Considering the popularity of Leffingwell’s business philosophies, it is not surprising that articles by Leffingwell appeared in Shaw’s *System*, and The A. W. Shaw Company published Leffingwell’s treatises on scientific management in the office.

For the early years of the twentieth century there have been no notable designers identified as being dedicated to the practice of office design. The majority of historical inquiries into early office design have focused on the role of furniture manufacturers and the furniture produced. Individuals, such as Arch W. Shaw and Henry W. Leffingwell, played a significant role in the development of office design during the formative years of the modern office. Their expertise in developing business procedures and practices exerted a direct influence on the design of offices and furniture in this period.
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(Chicago Manual of Style)

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Leffingwell, W. H. “What ‘Scientific Management’ Did For My Office,”
*System, 30* (Dec. 1916) 615-621.


----- “Offices Pleasant to Work In” (Photo Essay), *System, 30* (Nov. 1916) 551-553.

----- “Work Benches” (Photo Essay), *System, 43* (Jan. 1923) 41-42.

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In Wright, John S. and Parks B.Dimsdale, Jr., eds. *Pioneers in Marketing.*
Atlanta: Georgia State University, 1974.


Forty, Adrian. *Objects of Desire: Design and Society since 1750.*


For the early years of the twentieth century there have been no notable designers identified as being dedicated to the practice of office design. The majority of historical inquiries into early office design have focused on the role of furniture manufacturers and the furniture produced. Two individuals in the early 20th century were major contributors to the development of new office practices, and as a result, greatly influenced the design of offices and related furnishings. Long before there were designers who specialized in office settings, Arch W. Shaw and William Henry Leffingwell developed and promoted business practices and played a direct role in the evolution of office and furniture design as the office furniture industry developed in the first two decades of the twentieth century.

As the “modern” office developed in the late nineteenth century, businessmen’s interest in controlling the work of the office was encapsulated in their focus on the creation of systems as organizing structures. The concept of system, as applied to business, included the tenets of organizational structure modeled after the work of Frederick Winslow Taylor and his theories of scientific management for the factory. These structures, which were designed to organize business and increase the efficiency of workers, were applied to the office in numerous ways – from the overall programming and space planning of the office, to the development of the vertical filing cabinet, to the...
positioning of paper and pencil on the desk top to minimize movement and maximize work output.

**TESTIMONIALS** (From Wooton Desk Catalog, 1876)

Atlanta, Ga., April 7, 1875
Gentlemen—It is my opinion that your desk is the most admirable and compact of any extant. It has certainly as many essentials of system and convenience as can possibly be combined in the small space it occupies. It deserves the popularity it is doubtless receiving.

Yours very truly,

J. A. Morris
Sec’y Southern Life Ins. Co.¹

(Testimonial in catalog for Wooton Patent Desk Secretary, 1875)

Office of the “Leader”
Cleveland, Ohio, Feb. 1, 1875
I must say that your patent desk is the most perfect thing of the kind that I have ever seen. Its use saves an immense amount of labor and begets a taste for system in taking care of one’s papers. It has more drawer, shelf and pigeon-hole room than any desk that has been constructed. I consider it the *ne plus ultra* of a desk.

Yours truly,

E. Cowles
Ed. Cleveland Leader²

These testimonials from the Wooton Desk Catalogue expressed the concern for managing paperwork which was already occupying business owners’ and manufacturers’ thoughts as business organizations in the United States rapidly expanded in the late nineteenth century. The manufacturer offered the Wooton desk (see Fig. 1) in the late nineteenth century as one solution—a self-contained desk and storage cabinet for all of one’s business papers. The use of the term system was prophetic, foreshadowing the work of A. W. Shaw and W. H. Leffingwell early in the next century.

¹ Wooton Desk Company. Descriptive Catalogue and Price-List of Wooton’s Patent Cabinet Office Secretary, TC – SI, 1875, 11. Author’s bold type.
² Ibid., 12. Author’s bold type.
In his novel *Main Street*, Sinclair Lewis included a reference to system -

"Daily she determined, “But I must have a stated amount (of money)—be business-like about it. **System**. I must do something about it.” and daily she didn’t do anything about it." \(^3\)

Carol Kennicott in Sinclair Lewis’ *Main Street*, 1920

which illustrated how pervasive the concept had become in contemporary society in the 1910s and early 1920s. System was not confined to the office or factory; it reached out to every aspect of society and held business as an ideal to emulate.

As defined by Arch W. Shaw: **system** was a method of organization—one that animated office work, guided it, and brought control across and throughout businesses. It was the system which would effectively integrate the tools of the office, i.e. the furniture and equipment, with the overall functions of the business office. Shaw did not identify one specific method applicable to a particular situation, but proposed a general concept which could be adapted to provide an organizational outline for almost any business condition. **Arch W. Shaw** had a brief career as an office furniture salesman before joining with Louis Walker to form the Shaw-Walker Company of Michigan, in 1899. The Shaw-Walker Company was formed to sell card-filing systems for business which Shaw had developed. Based on the Dewey Decimal System from the Library of Congress, card-filing revolutionized the manner in which records were processed and stored in the office, and Shaw introduced these methods to the business community through his journal *System*. As editor of *System – The Magazine of Business*, A. W. Shaw’s definition of system (1904) was purposefully meant to be all-inclusive. By including articles and ads treating systems in office furniture, office work, paper handling

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\(^3\) Words of Carol Kennicott, lead character in Sinclair Lewis’ *Main Street*, when discussing the handling of money and the organization of the household accounts. The concept of “system” had permeated every aspect of life by the 1920s. Author’s bold.

and storage, and management applied to different types of businesses, and to various divisions within a business—manufacturing, distribution, and office, Shaw's goal was to draw readers from every type of business and encourage them to use these examples to create a system which was applicable to their own business. While the purpose of System was to present broad, generic examples of business operation, not exclusive to the office setting, the journal promoted changes in office procedures to implement new business practices and included articles, illustrations and photographs dealing with space planning in offices and furniture design. Articles in System also addressed issues of furniture arrangement, lighting, and positioning of employees within the office. The success of System guaranteed that these ideas were disseminated in management offices throughout the country.

**William Henry Leffingwell** was a disciple of Frederick Winslow Taylor and his principles of scientific management. Leffingwell took the concepts which Taylor had applied to the factory and adapted them to the office. While the emphasis in his work was on scientific management of business practices as applied to the office, he included discussions on the design of offices and furnishings in his publications which included *Scientific Office Management* (1917) and *Making the Office Pay* (1918). In *Scientific Office Management* (1925), Leffingwell stated: “Less thought is devoted to the design and construction of desks, chairs, and tables than perhaps any other equipment, by either the users or office managers, or even the makers.”(391). He critiqued existing furniture forms, described the ideal forms, and proposed several of his own designs through line drawings. Considering the popularity of Leffingwell's business philosophies, it is not surprising that articles by Leffingwell appeared in Shaw’s System,
and The A. W. Shaw Company published Leffingwell’s treatises on scientific management in the office.

The influence of Shaw and Leffingwell on the design of office furniture was both direct and indirect. Early in his career, Shaw’s design of card filing systems required card filing cases constructed to accommodate the system. While he did maintain his financial interest in the Shaw-Walker Company after establishing System as an independent journal and moving to Chicago, it is not know how much, if any, input he had on the design of the furniture which the company manufactured. Through System, Shaw had an indirect influence on the design of office furniture in three distinct ways. First, furniture manufacturers advertised in the journal. And although the journal most likely did not screen or edit paid advertisements to see if they followed System’s philosophy, the majority of advertisers would recognize the benefits of associating with a well-known business publication and drew upon its popularity to promote their own furniture. In turn, readers of the journal would associate those advertisements with the journal’s content and begin to identify the products with the concepts of systems. Second, a small number of articles or entries dealt with the office and its furniture. These articles would discuss specific furniture forms, i.e. desks or vertical filing cabinets, and how they could be appropriately used in the office, but no evidence has been found that the journal promoted one manufacturer’s product over another. Short

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4 Since the purpose of System was to present broad, generic examples of business operation which could be applied to many different aspects and types of businesses, the office comprised only a small area of concern for the journal. See: Affleck, B. F. “My Work Tools,” System 43 (May 1923) 597; Owen, O. A. “How My Desk Saves Time For Me,” System 32 (Aug. 1916) 200-201; ----- “Work Benches” (Photo Essay), System 43 (Jan. 1923) 41-42, as examples of the types of articles on furniture which appeared in System.

5 In the late 1920s, after Shaw sold System to McGraw-Hill Publishers, market reviews appeared which announced new product offerings by office furniture and supply manufacturers. However, the copy read
entries were often submitted by readers who suggested “new” ways to utilize or adapt furniture for current uses. The third and most indirect way in which System influenced or promoted furniture design was through the inclusion of photographs. Some photographs were used to illustrate specific points, both good and bad, about an office interior, such as furniture arrangement, lighting, positioning of employees.\(^6\) Other images, like those seen in the “Battlefields of Business” series, showed the offices of executives in many different types of businesses and manufacturing concerns. Sometimes the caption referred to a specific furnishing or unique design feature, but often the reader was left to extract whatever meaning they could from viewing the image. Once again, it was likely that the simple association of an image with System gave it a more favorable reception from readers who would assume implied consent on the part of the journal and incorporate ideas garnered from the photographs into their own business interiors.

Through his publications, Leffingwell also influenced the design of office furniture. In *Scientific Office Management* (1917) and *Making the Office Pay* (1918), he discussed the arrangement of offices (see Fig. 2) and some specific furniture forms. One example was the “so-called ‘tub’ desk, so designed that the boxes containing the cards are distributed over the entire working space of the desk, thus avoiding the pulling out of drawers. Writing space is provided for on a sliding shelf.”\(^7\) As in most discussions, the

\(^6\) One example of a photographic essay was “Offices Pleasant to Work In: How Six Concerns Make Their Offices Serve as More Effective Tools,” System 30:6(June, 1917)551-53. The article included photographs of office interiors at the Dodge Brothers’ plant, the Equitable Life Assurance Society and Burroughs Adding Machine Company.

description was generic in nature, not identifying the manufacturer or distributor. He also discussed office interiors and furniture arrangement with suggestions for “generic” furniture forms. Photographs were also an important source of information for office furniture in these publications. Correct and inappropriate furniture forms as well as good and bad office layouts were illustrated through photographic images and discussed in the captions and text. In Office Management (1925), Leffingwell was more prescriptive in his discussion of office furniture. “Less thought is devoted to the design and construction of desks, chairs, and tables than perhaps any other equipment, by either the users or office managers, or even the makers.”  He described the purpose of each furniture form, what was currently available and why it was or was not appropriate, and what would be the preferred characteristics of the ideal forms. He proposed several of his own designs, illustrated by line drawings (see Fig. 3) while also offering advice to the manufacturers on what they should be producing. He stressed the importance of standardization of production,

Both Shaw’s and Leffingwell’s greatest influence was seen in the generation of business people who learned from their publications and applied the principles as they were presented. Their ideas were implemented by the new generation of leaders who were educated and trained with the concepts of systems and the principles of organization, standardization and control. For them it was not a changing of the old ways, but a continuation of the modern business office and structure.

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9 In *Objects of Desire*, these were the drawings which Adrian Forty used to illustrate the typical office furniture in the United States at this time. However there was no indication that these pieces were actually manufactured.
Figure 1. *Wooton Desk Company Catalog*, 1876.
Figure 2. From: Leffingwell, William Henry. *A Textbook of Office Management*, p. 255.

Note: The “whisky” is a pencil notation added (by reader?) after publication!
Figure 3. From: Leffingwell, William Henry. *A Textbook of Office Management*, p. 199.
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*System,* 30 (Dec. 1916) 615-621.


-----.. “Offices Pleasant to Work In” (Photo Essay), *System,* 30 (Nov. 1916) 551-553.

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Atlanta: Georgia State University, 1974.

Forty, Adrian. *Objects of Desire: Design and Society since 1750.*

*Grand Rapids Made: A Brief History of the Grand Rapids Furniture Industry.*


An Investigation of Teaching Design Theory through Inquiry

Robin J. Wagner
Marymount University

Abstract

Purpose

Although the application of theory is practiced in the design of built environments in architecture and interior design, there continues to be confusion concerning the difference between an un-tested theory and a tested theory. In order to design successful environments, it is necessary that interior designers be able to differentiate between techniques and strategies that have been proven effective, and those that have not.

The teaching objective was to increase student understanding of the difference between un-tested and tested theories by utilizing the technique of teaching design theory through inquiry. To that end, the teaching study was developed to determine the following: 1) whether student observers could identify the differences between un-tested and tested theories, and 2) after identifying theory differences, could students develop models to further test design theories.

The Process

In The Art of Questioning, Dennis Palmer Wolf refers to the hypothesis question not only in relation to the sciences but as “predictive thinking matter in all domains” (Wolfe, 1987, pg. 4) and notes the utility of using the hypothesis question when reading a novel. In this study, students adopted Wolf’s practice of questioning content and drawing from
evidence within the novel to form perspectives; however, because design students are visually inclined, instead of reading novels, students watched four to five films depicting a specific historical period.

Students were instructed to consider each film as an exploratory case study, and to develop rubrics based on variables either observed or not observed in the film. They were subsequently required to develop theories about the period’s fashion, interior design, and architecture based on their observations and rubric evaluations. Students then presented an overview of their theories, emphasizing the dependent and independent variables in each. Finally, students were required to develop a hypothesis to be tested through historical research utilizing primary sources and journaled secondary sources.

The ability to assimilate theories and tested theories

To further test how the use of inquiry relates to a students’ ability to assimilate the difference between un-tested and tested theories; students were required to apply their newfound knowledge in a real world setting. Students were challenged to identify current design trends that are based on tested or un-tested theories, and to develop a small model for testing the design theory in a public environment such as a kiosk display, a museum inter-active display, or a children’s playground.

Results

In the first stage of this study, students demonstrated that they could identify the difference between un-tested and tested theories. In several cases, after careful analysis, students could not confirm the validity of their theory or a percentage of their
theory; thus underscoring the fact a theory only becomes valid once evidence is in place to support it.

The second stage of the study is ongoing. Students have begun identifying design theories, and are analyzing research methods to apply to the development of design models. I believe their previous success in identifying the difference between untested and tested theories will support their understanding of testing theories through inquiry based learning methods.

References


<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>THEORIES</th>
<th>FUNCTION</th>
<th>THE MESSENGER</th>
<th>BRAVEHEART</th>
<th>BECKET</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHITECTURE</td>
<td>ROYALTY: NOBLES big, stone castles, churches and houses showed and protected their wealth &amp; power</td>
<td>keep money/valuables inside and enemies out</td>
<td>stone castles with places for guards &amp; archers to stand watch, moats, drawbridges, cathedrals with stained glass, fancy ornament</td>
<td>stone castles, forts with pointy sticks around the top</td>
<td>stone castles, fancy, decorated tents at the war</td>
</tr>
<tr>
<td></td>
<td>COMMONERS owned very little, homes were cobbled together from what they could scavenge public events were organized around a town square</td>
<td>provide basic level of shelter and protection from elements</td>
<td>Tudor, wood framing with plaster, thatched roofs</td>
<td>piled stone foundations, thatched roofs, no glass for windows, no doors</td>
<td>crummy shack in the woods, piece of leather in place of a door</td>
</tr>
<tr>
<td></td>
<td></td>
<td>meeting place/information shared</td>
<td>Joan of Arc burned at the stake in town square</td>
<td>William Wallace beheaded in town square</td>
<td>Becket beheaded in town square</td>
</tr>
<tr>
<td>INTERIORS</td>
<td>ROYALTY: NOBLES lived luxuriously, with cushy furniture &amp; expensive textiles</td>
<td>create comfortable environment, display wealth</td>
<td>decorative carving on wood furniture, cushions, tapestries</td>
<td>carved wood furniture, cushions, tapestries</td>
<td>lots of cushions/bedding, tapestries</td>
</tr>
<tr>
<td></td>
<td>COMMONERS had little, if any decoration inside their homes</td>
<td>utility, storage for personal effects &amp; tools</td>
<td>plain wood tables &amp; benches, tools hung on walls</td>
<td>dark, dirty</td>
<td>ragged blankets, little furniture</td>
</tr>
<tr>
<td>FASHION</td>
<td>ROYALTY: NOBLES displayed their wealth with bright colored clothes, big jewelry &amp; fancy hairstyles</td>
<td>display wealth, indicate societal position &amp;/or role</td>
<td>heavy embroidery, trimmings, tassels, chains, jeweled crown for the King, lamed curls for the men, fancy up-do's for the ladies</td>
<td>guards of the nobles wear orange jerseys; Wallace &amp; crew steal them as disguises.</td>
<td>embroidery, henleys, decorative chains, armor</td>
</tr>
</tbody>
</table>
Fig. 2
Student’s presentation of observations for Baroque period films.

Intricate adornments to fashions. Lace and trims.

Vivid colors. Men tend to wear more vivid earthy tones. Example in the plum and pumpkin colors — pulled from nature and vibrant.

Women tend to wear more vivid pastels. Example the pink and seafoam colors.

AMADEUS
Orion Pictures, 1984

CASANOVA
Touchstone Pictures, 2005

COMPARITIVE ON FASHION
BAROQUE FILMS
An Investigation of Teaching Design Theory through Inquiry

Robin J. Wagner
Edit/Assistance by Marianne Ernesto

Marymount University

Narrative

Although the application of various design theories to the development of built environments is common in the fields of architecture and interior design, there continues to be confusion concerning the difference between procedures and practices that have been proven to be effective, e.g., tested theories, and those that remain unproven, e.g., untested theories.

As both a practitioner and interior design educator, I have seen designs fail when professionals and students utilize untested theories in design application. One example of failed design application that I regularly present to students is the design of educational facilities in the 1970’s and 1980’s. The educational facilities of the ‘70’s and ‘80’s were designed to mirror the concept of “open learning,” a popular educational theory at that time. As years passed, and subsequent research emerged on effective learning environments, the utility of some of these theories of learning, and the resulting design applications, have been reconsidered. For example, a component of the design of the open learning environment in the 70’s, was to reduce glazing and create solid-walled classrooms. It was thought that by limiting students’ access to the distractions of the outside world, their concentration and ultimately their learning, would be enhanced. As we now know, research has shown that learning can actually be
enhanced by exposure to natural elements such as visual depth in landscape and
daylighting. The unfortunate result of this application of philosophical based (as
opposed to research based) design theory is that now many school districts are facing
expensive and disruptive renovations of outdated and underperforming facilities.

What can be learned from these lessons of the past? Two things, 1) in order to
design successful environments, it is necessary that interior designers be taught how to
differentiate between tested and untested theories and, 2) interior designers must be
able to identify techniques and strategies proven to be effective in testing and modeling
theories.

The purpose of this paper is to describe a classroom based study that examined
how student learning is affected by the application of inquiry-based lessons to the
teaching of design theory. The objective of this study was to increase student
understanding of the difference between design theories that had been tested and those
that remained untested. The study was developed to determine the following: 1)
whether students, acting as observers, could identify the differences between a tested
theory and an untested theory, and 2) after identifying the difference between the two,
could students then develop their own models to evaluate design theories.
**The Process - Student Observations**

In the “The Art of Questioning,” Dennis Palmer Wolf refers to the hypothesis question not only in relation to the sciences, but, as “predictive thinking matter in all domains” (Wolf, p.4). As an example, Wolf notes the utility of using the hypothesis question when reading a novel. For the first portion of this study, students were asked to adopt Wolf’s practice of questioning content and drawing from evidence in order to develop perspectives and formulate conclusions. Because design students are for the most part visual communicators, movie viewing was used as a substitute for novel reading.

**The Procedure - Student Observations**

Students were required to approach their movie observations as if they were exploratory case studies. Each student was asked to view four or five period films (each depicting a specific historical period) from a list of ten. All the film choices had received either a nomination, or an award, for best picture, set, or costume design from the Cannes Film Festival, the Hollywood Foreign Press Association (Golden Globe Award), the Toronto Film Festival, or the Academy of Arts and Sciences (Oscars).

Prior to viewing the films, students developed an assessment rubric which identified various dependent variables. Evaluation of these variables would eventually help the students to define and formulate their theories concerning various characteristics of a particular historical period. Additionally, several students identified independent variables such as the director’s or set designer’s insight on the film’s interior and architectural
outcome, (especially in areas related to color or lighting) that could have affected their (the student’s) evaluation of the dependent variables.

Although, students independently developed their rubrics, common categories of assessment appeared on each. As instructed, students divided their rubrics by the general categories of architecture, interiors, and fashions. Topic areas for assessment that emerged spontaneously included: design elements such as color, form, texture, line, light; and aspects of function, e.g., utilitarian purposes or mere comfort. In addition, students took it upon themselves to further divide the observations in the three general categories of architecture, interiors and fashion into sub-categories by class standing, nobility and commoners (Fig. 1). Students would formulate theories based on several films showing like commonalities in variables, and based on this analysis, developed theories pertaining to the fashion, interior design, and architecture of the historical period depicted in the period films they observed. To support their theories, the students were required to present visual clips from the movies they evaluated (Fig. 2).

Finally, the students were required to gather research from primary sources and peer reviewed secondary sources to either verify or disprove their hypotheses. By verifying their theories through historical research, the students were able to successfully prove or disprove their theories. As a result of having to substantiate their theories through historical documentation, several students were unable to confirm the validity of their theory. By concluding (through research evaluation) that their theories remained unproven,
the students had demonstrated their understanding of the difference between a tested and untested theory.

**The Process – Student Applications**

In cognitive learning, a means of defining the need to visually describe learning objectives in relation to instructional design theory is necessary. Consequently, to further test students’ use of inquiry to differentiate between a design theory that is tested and one that is untested, the demonstration of the application of knowledge is essential. To that end, students were challenged to identify current design trends that were based on tested or non-tested theories. Using David Dourish’s paper on *Implications for Design* as a primary resource; and class lectures on empirical design research framework, methods, and developments as a foundation, students were asked to develop a research plan for testing a theory behind a current design trend. This plan was to be implemented in a public environment that could include such venues as, a kiosk display, a museum interactive display, or a children’s playground.

**The Procedure – Student Applications**

Students were assigned to research a current design theory. They were asked to do a literature review on the theory and present their findings in poster session format. The poster was to contain two types of information: information about the particular design trend and information concerning any studies that had been done related to the trend. Additionally, students were asked to define what needed to be
assessed (via a built model) to successfully implement the design theory into a larger-built environment.

After class lectures on the topic of research application, students developed models to test design theories. In preparation for developing their own models, the students conducted literature reviews of various survey and observational studies. In developing their own models, students began by identifying relevant independent and dependent variables. For example, in a project comparing how color saturation affects color preference (fig. 3) the independent variables identified were color preferences, gender preferences, and psychological and physiological affects. The dependent variables were: primary and secondary colors, all painted walls and door frames to were to remain the same width and height, and lighting levels and air temperature was to remain consistent in the tested spaces. Once students had identified and assessed the independent and dependent variables, they combined observational and survey research components in order to assess the effective use of space.

By applying their research to develop controlled test environments, the students created innovative and cost effective 2D and 3D test models to evaluate design theories.
Results

In the first portion of this investigation of teaching design theory through inquiry, students demonstrated the ability to differentiate between an untested and a tested theory. By engaging in the processes of focused observation, data collection, causal analysis, and evaluative research, students were able to develop and test theories about the fashions, interiors, and architecture of a specific historical period.

In the second portion of the study, which was designed to assess students’ understanding of cognitive application of design testing, students demonstrated an understanding of the methodology for the development of models for application to smaller-built environments developed to assess a design theory’s efficacy. Students evaluated such topics as: gender differences in symbols and colors in way-finding, color preference in relation to saturation, the 3rd place theory, and the prospect and refuge theory. Through the process of model development, students demonstrated the ability to build small, self-contained, low cost, low risk environments where theories regarding current design trends could be assessed for utility prior to application in the large-built environment.


# Fig. 1

## Student Rubric, assessing medieval films

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>THEORIES</th>
<th>FUNCTION</th>
<th>THE MESSENGER</th>
<th>BRAVEHEART</th>
<th>BECKET</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCHITECTURE</td>
<td>ROYALTY/NOBLES: big, stone castles, churches and houses shored and protect their wealth &amp; power</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>keep money/valuables inside and enemies out</td>
<td>stone castles with places for guards &amp; archers to stand watch, moats, drawbridges, cathedrals with stained glass, fancy ornament</td>
<td>stone castles, forts with pointy sticks around the top</td>
<td>stone castles, fancy, decorated tents at the war</td>
<td></td>
</tr>
<tr>
<td></td>
<td>COMMONERS: owned very little, homes were cobbled together from what they could scavenge public events were organized around a town square</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>provide basic level of shelter and protection from elements</td>
<td>Joan of Arc burned at the stake in town square</td>
<td>pitted stone foundations, thatched roofs, no glass for windows, no doors</td>
<td>crummy shack in the woods, piece of leather in place of a door</td>
<td></td>
</tr>
<tr>
<td></td>
<td>meeting place/information shared</td>
<td>William Wallace beheaded in town square</td>
<td>Becket beheaded in town square</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERIORS</td>
<td>ROYALTY/NOBLES: lived luxuriously, with cushy furniture &amp; expensive textiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>create comfortable environment, display wealth</td>
<td>decorative carving on wood furniture, cushions, tapestries</td>
<td>carved wood furniture, cushions, tapestries</td>
<td>lots of cushions/bedding, tapestries</td>
<td></td>
</tr>
<tr>
<td></td>
<td>COMMONERS: had little, if any decoration inside their homes</td>
<td>plain wood tables &amp; benches, tools hung on walls</td>
<td>dark, dirty</td>
<td>ragged blankets, little furniture</td>
<td></td>
</tr>
<tr>
<td>FASHION</td>
<td>ROYALTY/NOBLES: displayed their wealth with bright colored clothes, big jewelry &amp; fancy hairstyles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>display wealth, indicate societal position and/or role</td>
<td>heavy embroidery, trimmings, tassels, chains, jeweled crown for the King, lamed curls for the men, fancy up-do's for the ladies</td>
<td>guards of the nobles wear orange jerseys; Wallace &amp; crew steal them as disguises.</td>
<td>embroidery, henleys, decorative chains, armor</td>
<td></td>
</tr>
</tbody>
</table>
Fig. 2
Student’s presentation of observations for Baroque period films.

Intricate adornments to fashions. Lace and trims.

Vivid colors. Men tend to wear more vivid earthy tones. Example in the plum and pumpkin colors — pulled from nature and vibrant.

Women tend to wear more vivid pastels. Example the pink and seafoam colors.

**CASANOVA**
Touchstone Pictures, 2005

**AMADEUS**
Orion Pictures, 1984

**COMPARITIVE ON FASHION BAROQUE FILMS**
Fig. 3 Student Model on Color Preference in Relation to Saturation.
CREATING THE CRITICAL BEING: MATERIAL CULTURE IN THE STUDIO

Catherine J. Wallack, Nancy G. Miller, Ph.D., Jennifer D. Webb, Ph.D.
University of Arkansas

Abstract

Purpose

As Galen Cranz (1998) explains, “In the past century we have come to appreciate rather than condemn the way people in other cultures do things.” (p. 26). Material culture offers a vehicle for improving intercultural awareness and for developing critical thinking through design analysis and application in a first-year interior design studio. Not only is critical thinking valued in today’s educational environment but it remains significant in today’s global context. The greater challenge is to encourage students become socially engaged critical thinkers, what Ronald Barnett (1997) described as “critical beings,” not just competent designers. The purpose of this presentation is to describe and demonstrate how the concept of material culture can contribute to the development of critical thinking skills in a first-year design studio.

Background

Material culture is “the totality of artifacts in a culture …[that] facilitate social intercourse, to delight our fancy and to create symbols of meaning” (Schlereth, 1982, p. 2). Material culture is an appropriate way to introduce students of interior design to cultures outside of their own because it associates designed objects with meaning: “… almost everything… should be understood in its cultural context.” (Cranz, 1998). Learning
through material culture allows students to appreciate meaning through context, an idea that translates to their professional lives.

Method

The first-year studios in this program focus on two- and three-dimensional design through use of various media. Principles and Elements of Design are introduced and their application is reinforced through multiple projects. The projects focus on developing not just sound design, but also on critical thinking. The Culture and Identity Project is a unit in a series during the semester. Material culture is used as a springboard, in this unit, to teach design and critical thinking.

A class that develops critical thinking skills requires clear tactics defined by the instructors (Paul, 2007). Design problems are inherently complex and require a variety of pedagogical approaches. Complex tactics require multiple parts over a period of time (Paul, 2007). The Culture and Identity project is composed of a series of related components. To expose students to a wide range of aesthetic sensibilities and culture, we assign each student a country, many of these being non-western. Students conduct visual and verbal research of their country, explore multiple design solutions, and create two- and three-dimensional interior elements. Each step of the project demands different thinking skills. The initial research paper establishes a body of knowledge on which much of the project is based. Next, sketching and ideation requires interpretation of the research. Finally, application is realized through the development of culturally
derived pattern making. Artifacts produced include one- and two-color prints and carved friezes.

Conclusion
In the Culture and Identity project, critical thinking skills are enhanced through a sequence of increasingly complex assessments. Students’ exposure to material culture broadens their understanding of the world and simultaneously allows students to move beyond the visual to recognizing the importance of context in design. Introducing students to a wider range of perspectives will help them become socially engaged professionals and therefore "critical beings."

References


CREATING THE CRITICAL BEING: MATERIAL CULTURE IN THE STUDIO
Catherine J. Wallack, Nancy G. Miller, Ph.D., Jennifer D. Webb, Ph.D.
University of Arkansas

Purpose
As Galen Cranz (1998) explains, “In the past century we have come to appreciate rather than condemn the way people in other cultures do things.” (p. 26). Material culture offers a vehicle for improving inter-cultural awareness while developing critical thinking through design analysis and application in a first-year interior design studio. Not only is critical thinking valued in today’s educational environment but it remains significant in today’s global context. The greater challenge is to encourage students to become socially engaged critical thinkers, what Ronald Barnett (1997) described as “critical beings,” not just competent designers.

In his critique of higher education, Barnett (1997) argues that mere development of critical thinking skills is insufficient preparation for our future graduates. Educators must enlarge the notion of critical thinking with the more expansive construct of the critical being. In kind, the educational process needs to transform. In addition to critical thinking skills, students must strengthen their skills of self-reflection in order to become capable of “critical action” (Barnett, 1997). Critical action implies engagement outside of one’s own realm.
The purpose of this presentation is to describe the role material culture can contribute to the development of first-year students as “critical beings” (Barnett, 1997). In this program, the first-semester studios introduce many concepts and the application of principles and elements of design; it is essential for students even at this level to begin to recognize a connection between their work and the world at large. Implicit throughout the semester is the goal of developing critical thinking skills and increased social responsibility. To achieve this enhanced awareness, a number of different approaches are used. In one unit, students, exploring three-dimensional design through building a habitable space, address sustainability issues through their selection, use, and most significantly their disposal of materials. Addressing two and three-dimensional pattern making and color usage in another unit requires students to investigate other countries from a Material Culture perspective. This unit, *Culture and Identity*, is most significant relative to the ‘critical being’ (critical thinking in hand with social responsibility) concept (Barnett, 1997).

Background

Material culture is “the totality of artifacts in a culture … [that] facilitate social intercourse, to delight our fancy and to create symbols of meaning” (Schlereth, 1982, p. 2). Material culture is an appropriate way to introduce students of interior design to cultures outside of their own because it associates designed objects with meaning: “… almost everything… should be understood in its cultural context.” (Cranz, 1998). Learning through material culture allows students to appreciate meaning relative to context, an idea that translates to their professional lives. The students often are
unprepared to understand the perspective of people whose backgrounds are not similar to their own. Design, unlike art, is not an individual expression, but rather client-centered. Beginning design students’ understanding of someone else’s needs is important given their goal of working in a service-related profession.

This idea of recognizing and engaging cultural context helps students understand man-made objects and their significance in their own culture, and allows them to apply this perspective to other cultures. Objects are understood not simply as design elements—meant strictly to be evaluated by aesthetic criteria. Instead, the Material culture approach encourages students to appreciate that these items are themselves specific cultural expressions. Challenging students early in their educations to recognize alternative viewpoints is an important aspect in their development. These are the habits that allow them to become both responsible and responsive designers.

Method

The first-year studios in this program focus on two- and three-dimensional design through use of various media. Principles and Elements of Design are introduced, and their application is reinforced through multiple projects, most of which are not explicitly interior design projects. Instead these projects are generally more abstract and compositionally or strictly aesthetically driven. The projects focus on developing not just sound design, but also on critical thinking. The Culture and Identity Project is the final unit in a series during the semester. Material culture is used as a springboard in this unit, not just for design and critical thinking, but also to reinforce social awareness.
A class that develops critical thinking skills requires clear tactics defined by the instructors (Paul, 2007). Design problems are inherently complex and require a variety of pedagogical approaches. Complex tactics require multiple parts over a period of time (Paul, 2007). The Culture and Identity project is composed of a series of related components. Initially, the students are introduced to the idea of material culture through a slide lecture. To expose students to a wide range of aesthetic sensibilities and cultures, each student is assigned an individual country. The first phase of the project is research. Students investigate their respective countries from a visual and cultural perspective. Emphasis is placed on recognizing themes and values through the material cultural. Students are instructed to broadly explore their respective countries at first. Religious Iconography, clothing, architecture, etc… are all considered as cultural expressions. This exercise is intended to provoke the self reflection that Barnett (1997) identifies as a key element in the development of the “critical being”. In addition to the research paper, the students create an image library for reference in the latter parts of the project. Through informal presentation of their research, the entire studio benefits from the range of cultures explored. Research is not merely a collection of data. Students develop the ability to evaluate and discern the connections between the objects and the culture that created them.

In the second phase students transform reoccurring imagery from their research into multiple design solutions. The creation of two- and three-dimensional interior elements distinguishes this project from those previously assigned. Each student designs and
produces repetitive patterns for a wall-covering and explores the idea of repetition linearly as well as three-dimensionally through the creation of an architectural frieze.

The steps in each phase work together to challenge the students in the manner suggested by Paul (2007). Each step of the project demands different thinking skills. The initial research paper serves as a basis for the rest of the design specific components of the project. Next, sketching and ideation requires interpretation of the research; self critique and subsequent revision of ideas reinforces the goals of critical thinking. Finally, application is realized through the development of culturally derived pattern making. This combination of development of critical thinking skills in concert with increased social awareness begins to address Barnett’s (1997) demand for the critical being.

Conclusion
Beginning design studios provide a crucial opportunity for educators to introduce students to the significant foundational design concepts. The development of critical thinking skills has long been considered an essential goal of higher education. Engaging students in these pursuits simultaneously, especially in early design studios is demanding -- and essential. In addition, interior design educators have challenged themselves to integrate social justice issues and global perspectives within the classroom. Including these ideas early in the curriculum communicates their significance to students. Fulfilling these needs, in addition to those more traditionally associated with design coursework, requires revised strategies for creating a more
synthetic curriculum. The objective is to graduate students who reflexively consider the impact and meaning of their actions. The Culture and Identity project begins to stimulate awareness of larger issues while developing critical thinking skills through design work. In this unit, critical thinking skills are enhanced through a sequence of increasingly complex assessments. Students’ exposure to material culture broadens their understanding of the world and simultaneously allows students to move beyond the visual to recognizing the importance of context in design. Introducing students to a wider range of perspectives will help them become socially engaged professionals and, therefore, “critical beings” (Barnett, 1997).

References

(APA)


**Spatial Journeys: Introducing Environment and Behavior Theories to Beginning Design Students**

Lisa K. Waxman

Florida State University

**Purpose**

This presentation will provide insight into an assignment created for an environment and behavior class for interior design students with the goal of applying theories to “real-world” settings.

**Relevance**

One of the most important goals of an architect or interior designer is to create a good fit between people and their physical settings. To accomplish this goal, those creating the space must understand the behavior of people in various environments. Creating an environment that is functional and visually satisfying, fosters a positive attitude, and is likely to contribute to feelings of well-being requires knowledge and experience (Scott, 1989).

Interior design students often begin their studies with a very limited idea of what interior designers do and the factors that must be considered to create spaces that support the users. The relevance of this topic is reflected in the *Council for Interior Design Accreditation (CIDA)* requirement stating that “student work must demonstrate understanding of the theories of human behavior and interior environments” (CIDA, Standard 3, 2007). It follows that it is the responsibility of the design educator to assist students in expanding their knowledge of how these theories affect users.
Framework

Throughout this project, behavioral setting theories, stimulation theories, and environmental perception theories were used as the theoretical underpinnings by which beginning interior design students became more aware of the relationship between humans and the built environment. The assignment was developed with input from several sources including Bigge and Shermis (1999), Deasy (1985), and Anderson (1997). Regarding transfer of learning, Bigge and Shermis (1999) emphasized the importance of interacting with the social and physical environment in order to make sense of it and “their psychological nature that arises from their personal-environmental relationships” (p. 16). Eight factors impacting human use of space that were suggested by Deasy (1985) were also part of the evaluations. These included friendship formation, group membership, communications, personal space, personal status, territoriality, cue searching, and personal safety. Anderson’s (1997) evaluation methods for art were modified to accommodate the evaluation of the built environment. Those overarching categories included: reaction, description, interpretation, and evaluation.

Process

Prior to beginning this assignment, students received several lectures on relevant theories in their environment and behavior class to help them prepare for the experience. Students were then asked to immerse themselves in an environment that held meaning for them. They recorded their impressions of the space, participated in behavioral mapping, took photos, sketched the space, and responded to a series of prompts detailing the social and physical features of the space. The final project was
presented as a “spatial awareness” with details reflecting their chosen space, their personal impressions, and their method of presentation.

Conclusion

The real-life experience of recording the details of the space along with the behavior exhibited in the space promoted a better transfer of learning than other methods. Class discussions were also enhanced when students shared their place experiences. Students have been able to apply the information learned in this class to studio classes taken in subsequent semesters.

References


Spatial Journeys: Introducing Environment and Behavior Theories to Beginning Design Students

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Purpose

This presentation will provide insight into an assignment created for an environment and behavior class for interior design students with the goal of applying theories to “real-world” settings. Students were asked to immerse themselves in spaces that held meaning for them and then evaluated a number of factors impacting their place experience.

Relevance

The interaction between humans and the environment can be examined from a number of different perspectives. Creating an environment that is functional and visually satisfying, that fosters a positive attitude, and that is likely to contribute to feelings of well-being requires knowledge and experience (Scott, 1989). To accomplish this goal, those creating the space must understand the behavior of people in various environments. Young designers can learn from their own spatial experiences as they begin to examine and evaluate the spaces they experience.

Interior design students often begin their studies with a very limited idea of what interior designers do and the factors that must be considered to create spaces that support the users. The relevance of this topic is reflected in the Council for Interior Design Accreditation (CIDA) requirement stating that “student work must demonstrate an understanding of the theories of human behavior and interior environments” (CIDA,
Standard 3, 2007). It follows that it is the responsibility of the design educator to assist students in expanding their knowledge of how these theories affect users.

**Framework**

As a foundation for this project, behavioral setting theories, stimulation theories, and environmental perception theories were used as the theoretical underpinnings by which beginning interior design students became more aware of the relationship between humans and the built environment. Barker (1968) defined *behavioral-setting theories* as those public places or occasions that evoke particular patterns of behaviors. This theory emphasized the importance of studying behavior in its natural context. *Stimulation theories* explain the environment in terms of what is perceived via sight, sound, touch, taste, and smell (Wohlwill, 1966). A number of environmental perception theories including the *Probabilistic Lens Model* (Brunswik, 1956), *Affordances* (Gibson, 1976), and the *Preference Framework* (Kaplan & Kaplan, 1982) were also included in class lectures prior to the assignment.

The assignment was developed with input from several sources including Bigge and Shermis (1999), Deasy (1985), and Anderson (1997). Bigge and Shermis (1999) emphasized the importance of interacting with the social and physical environment in order to make sense of it and “their psychological nature that arises from their personal-environmental relationships” (p. 16). Deasy’s (1985) factors impacting human use of space were also part of the evaluations. These included friendship formation, group membership, communications, personal space, personal status, territoriality, cue searching, and personal safety. Anderson’s (1997) evaluation methods for art were modified to accommodate the evaluation of the built environment. Anderson’s
overarching categories include: reaction, description, interpretation, and evaluation. Students were asked to use these categories as a framework for their evaluations. The first category, *reaction*, is about the first global response a person has upon entering the space, which may be used to direct the inquiry. *Description*, the second category, involves the overall description of the space. The *interpretation* category focused on determining the meaning associated with the space. Finally, the space can be *evaluated* with the focus on the feelings associated with encountering the space.

**Process**

Prior to beginning this assignment, students received several lectures on relevant theories in their environment and behavior class to help them prepare for the experience. Students were then asked to immerse themselves in an environment that held meaning for them. They took photos, responded to a series of prompts detailing the social and physical features of the space, and diagrammed the space.

Students were asked to give a description of the architectural details and design features of the space. They were asked to answer the following:

- What information are you able to get from your five senses?
- Note the interior and architectural characteristics of the space:
  - What architectural features make the space unique?
  - How big or small is the space?
  - How high is the ceiling?
  - What colors are used?
  - What kind of lighting is used, both natural and artificial?
  - Is there access to views?
  - What is the focal point of the space?
  - Is the furniture comfortable?

Students were also asked to evaluate the spaces based on the social aspects of the space examining issues such as opportunities for friendship formation, group formation, establishing territories, and communication. Specifically, they were asked:
- Does the space contribute to friendship formation?
- Does the space accommodate the formation of groups?
- Are people able to define a personal space or establish a territory?
- Does the space clearly communicate?
- Are people confused by signage or lack of signage?
- How easy or difficult was it to access this space?

Students were also asked to diagram the space to examine various elements of the space (see figures 1 and 2). They were asked to include the following on the drawings:

- Approach- how people reach the space
- Major and minor circulation paths
- Primary and secondary activities
- Major architectural features
- Access to natural light
- Focal points
- Boundaries and Edges
- Other fixed features in the space- (permanent built aspects of the space)
- Protective elements of the interior space
- Enclosure vs. Exposure- where does the space feel exposed; enclosed?
- Disclosure- what is revealed beyond the immediate space- both inside and outside
- Major points of social interaction (if applicable)
- Ideal spots for those sitting alone (if applicable)
- Negative areas of the space- parts of space that may alienate, or have clutter, dark corners, etc. (if applicable)
- Access to views of interior as well as exterior & brief description of what constitutes the view
- External forces exerted on the building (wind, traffic, sun, etc.)
- Use line weight variation that indicates apparent weight of spaces
Figure 1. Diagramming Example 1

Figure 2. Diagramming Example 2
Finally, students were asked to interpret and evaluate their experience in the space. They were prompted with the following questions:

- Use your interpretive skills to evaluate the space using the following guidelines:
  - How do you feel in this space?
  - What elements make you comfortable?
  - What is the mood of the space?
  - Have you bonded with this space and why?
  - To whom might this space be important?
  - Who might this space alienate?
  - How does this space fit into the surrounding community?
  - What does it mean to belong to this space? (if applicable)
  - Overall, what meaning does this space hold for you?

- Finally, evaluate the space based on the following guidelines:
  - Would you consider this space beautiful? If so, in what way?
  - Do you think this space successfully works for the purpose it was intended?
  - Does it have the power to make you feel something strongly or something new?

The final project was presented as a “spatial awareness board” with both written and graphics details reflecting their experience in their chosen space (see figures 3 & 4). Students presented these projects to the class and shared the meaning these spaces held for them.
Figure 3. Spatial Awareness Board
Conclusion

It is important to note that these projects are unique to each student and their own lived experiences. Students bring a variety of influences to bear on their personal interpretation of these spaces. This was in no way meant to be a precise research study, but more of an exploration of meaning-making through space. Ideally, students
should constantly be "making sensitive connections between description, interpretation, and evaluation" (Anderson, 1997, p. 24).

The real-life experience of recording the details of the space along with the behavior exhibited in the space promoted a better transfer of learning than other methods. Class discussions were also enhanced when students shared their place experiences. Although it is difficult to measure the long-term success of such a project, the instructor has noticed students have been more likely to mention social and psychological considerations in their designs in subsequent studio classes. Ideally, students will adopt a practice of looking sensitively at the spaces they inhabit and analyzing the successes and challenges of those spaces.

References (APA Style)


Rethinking the Future: Disability, Definitions, and Design

Jennifer Webb, Brent T. Williams, Korydon H. Smith, and Nancy G. Miller

University of Arkansas

Abstract

For many, the meaning of disability is clear: the inability to do something. The design community has responded to this definition of disability by providing standardized solutions for particular populations. However, the concept of disability and, concomitantly, required design solutions continue to evolve. There are several dichotomous relationships that are redefining design approaches to what is commonly known as Universal Design. The purpose of this paper is to identify these dichotomous relationships and to make recommendations for more effective design solutions.

Polarization to Continuum. Disability definitions originally polarized the population on the basis of ability: those with disabilities and those without. More correctly, each person has a range of ability that is unique to the individual.  Judy Heumann is credited with the term “temporarily able bodied” which further suggests that no person is or will be without a disabling condition at some point in his/her future. The immediate image of a person with a disability is someone who uses a wheelchair or other device. These disabilities carry visual cues. However, the greater majority of persons with disabilities are those that have a wider range of abilities and the question is then posed: At what point does the individual become disabled? Designers must understand that there is no special or separate population for which he or she designs.
Prescriptive to Performance. Standards have moved from prescriptive (maximum and minimum) to performance guidelines. Just as ability is variable, so too must design solutions vary. The American National Standards Institute (ANSI) A117.1 standard that forms the foundation of the Americans with Disabilities Act Accessibility Guidelines is in revision and will reflect a different approach to environmental design. Current legislation and accessibility guidelines are based upon standards that allow no variation and consist of narrowly defined criteria. This legal stranglehold caused by prescriptive standards limits responsive design solutions and promotes non-integrated, percentage based solutions for the “disabled.”

Integration to Inclusion. Early legislation strived to remove architectural barriers in public spaces. More recent legislation requires that individuals with disabilities be integrated into communities. Integration means providing specific features and arrangements that allow some people to access and participate in their environment in limited circumstances for stated needs. It is reactive and non-anticipatory which provides for limited independence for specific, marginalized groups. Alternatively, inclusive environments maximize choice and enhance the ability of a wider range of the population to participate in their communities with a high quality of life. It is a proactive, anticipatory approach intended to facilitate as much independence as possible for as many as possible.
Today, designers must respond to human need at its most basic level: the need to belong to and participate fully within a chosen community. To achieve Inclusive Design, design educators and professional designers must recognize that 1) there is no special population or defining characteristics of a person with disabilities, 2) there is no prescription for creating inclusive environments, and 3) solutions must be generated in advance of a specific need.

1 The Center for an Accessible Society, “Supreme Court Upholds ADA 'Integration Mandate' in Olmstead Decision,” . http://www.accessiblesociety.org/topics/ada/olmsteadoverview.htm
Narrative

For many, the meaning of disability is clear: the inability to do something. The design community has responded to this definition of disability by providing standardized solutions for particular populations. This is exemplified by terms such as handicapped accessible and design for the disabled. These standardized solutions are founded in segregating, “separate but equal” building amenities typified by many responses to the “accessibility” movement. The concept of disability and the design paradigms that have resulted, however, continue to evolve and are spurred by changing social mores and legal mandates (e.g. the Olmstead Decision of 1999).

Disability models have resulted from differing paradigms. The prevailing model of disability has emerged as a response to the inadequacies of the two previous models. The oldest and arguably first model, the medical model, views disability as a feature of the person, directly caused by disease, trauma or other health condition. The medical model implies that the cause of disability is impairment that the individual has and is best managed by helping the individual reduce or make allowances for the impairment. Disability within the medical model calls for “interventions” to “correct” the problem with the individual. The social model of disability, on the other hand, sees disability as a socially created problem and not at all an attribute of an individual. The social model implies that disability is due to the physical and/or social environment and is best
managed by altering the environment. Within the social model, disability demands a societal response, since the problem is created by an unaccommodating environment brought about by attitudes and other constructs of the social environment.

On their own, neither the medical model nor the social model has proven adequate, although both can be argued as being partially valid. Disability is a complex phenomenon that exists at the level of a person's body and as an intricate social phenomenon. Disability is always an interaction between features of the person and features of the overall context in which the person lives. Some aspects of disability are almost entirely internal to the person while other aspects are almost entirely external. A better, more "functional" model of disability is one that synthesizes the medical and social models without making the mistake of attempting to reduce the complex notion of disability into a singular non-interactive construct.

This more useful model of disability is generally referred to as the biopsychosocial model. Within this prevailing model of disability aspects of the medical and social models merge within the context of a reciprocal person-environment relationship. The biopsychosocial model acknowledges that disability is a changing condition and that everyone experiences a form or degree of disability at some time in their lives due to confluences of impairment and environmental barriers. By recognizing disability as a universal human experience, the biopsychosocial model "normalizes" disability.

In the design disciplines, there is no prevailing model with regards to disability. Instead, many professionals and students operate under the assumption that fulfilling code is an adequate means to create accessible and integrated environments. The
emergence of the various “enabler movements”—such as “Universal Design,” “Visitability,” and “Life-span Design”—illustrates the inadequacies of both accessibility codes and underlying conceptions of disability. The purpose of this paper is to identify and discuss three major transformations in design ideology that result in more effective design practices. For clarity, each of these three ideological shifts is discussed as part of a dichotomous pair, a comparison of previous design philosophies to emergent ones.

Polarization vs. Continuum

Historically, Western culture has polarized human ability into two groups: those individuals that are capable of a specific physical, sensorial, or cognitive task—abled—and those that are not capable of the same task—disabled. The popular line between these categories has not been a function of any clearly defined measurement but has been set arbitrarily. This binary is rooted in sociological or cultural preconceptions, not from empirical or scientific study. This socially-defined binary, nevertheless, has influenced the decision-making of policy-makers, designers, and the public regarding the built environment.

Judy Heumann is credited with the term “temporarily able bodied”, a concept suggesting that no person is or will be without a disabling condition at some point in his/her future. These temporary conditions include the aftereffects of the flu and those of chemotherapy, stroke, or car accident. Within the aforementioned popular context, someone with a short term reduction in ability is not considered disabled, while a permanent or lengthy change results in a reclassification of that individual. Persons with disabilities, however, have a wide range of abilities, which often change over time,
resulting in the question “At what point does the individual become disabled?” and a clear indication that an alternative conception is needed. Categorization of any variable must be questioned when measurement is continuous; therefore, ability must be examined not in discrete categories but on a finely calibrated continuum. Conceived in this way, designers must understand that there is no demarcation which defines a special or separate population for which he or she designs. If human ability exists on a continuum, it follows then that the constructed environment should respond to that same continuum.

Prescription vs. Performance

Accessibility codes and standards have been in existence in the US since 1961. It was not until the development of the Americans with Disabilities Act Accessibility Guidelines in 1991 and the International Building Code in 2000, however, that regulations became standardized throughout the country. While no one argues that both of these efforts have had a positive impact on the constructed environment, it is apparent in light of the earlier discussion that they fall short of actual need and have stigmatizing, segregating effects.

One major problem with existing standards is that they are prescriptive rather than performance-based. Door openings and clearances, for example, have been carefully quantified with specific maximums and minimums in both the ADAAG and the ANSI standards. These prescriptive standards have resulted in a checklist of criteria that, if applied consistently, are supposed to result in an accessible environment. Current legislation and accessibility guidelines are built on a small, though growing,
body of anthropometric research, but consist of narrowly defined criteria with little
design flexibility. Moreover, these standards do not anticipate future technological,
medical, economic, or demographic changes. This legal stranglehold caused by
prescriptive standards limits responsive design solutions and promotes non-integrated,
percentage based solutions for the "disabled." Prescriptive codes also mask the
foundations and principles upon which they have been developed. Designers are often
confused by "what" they are truly being asked to do and “why” it is important, as
prescriptive codes tend not to reveal their underlying intent. The development of
performance-based criteria, on the other hand, may provide more flexibility, more
innovative, and more integrative design that meets a wider range of needs.

Integration vs. Inclusion

Early legislation strived to remove architectural barriers in public spaces. More
recent legislation requires that individuals with disabilities be integrated into
communities. Integration has come to mean: providing specific features and
arrangements that allow some people to access and participate in their environment in
limited circumstances for stated needs. It is reactive and non-anticipatory, which
provides for limited independence for many groups.

Alternatively, inclusive environments maximize choice and enhance the ability of
a wider range of the population to participate in their communities with a high quality of
life. It is a proactive, anticipatory approach intended to facilitate as much
independence as possible for as many as possible. The challenge is to design
inclusively rather than create new forms of accommodation. This sensitivity toward the
social implications of design is itself informed by detailed investigation into the everyday life of those for whom the design is intended now and in the future.

Conclusion

Disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others. The problem of design rests not on theoretical notions of how we define disability, but on how to ensure that the needs of all people are translated into appropriate, or simply “good,” design that is empowering to all. Poor design can present dramatic compromises in social activities, role definition, and identity, whereas good design can facilitate individual actualization and social inclusion.

Today, designers must respond to human need at its most basic level: the need to belong to and participate fully within a chosen community. To achieve inclusive design, design educators and professional designers must recognize that (1) there is no special population or defining characteristics of a person with disabilities, (2) there is no prescription for creating inclusive environments, and (3) solutions must be generated in advance of a specific need.
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Architecture Inside/Out

Lois Weinthal
Parsons The New School for Design

Narrative

Introduction

As new technologies, programs, and materials emerge in the practice of interior design, the discipline has learned to address these complex and nuanced problems that are altering the practice. Recognizing these issues and placing them in a framework is the focus of *Architecture Inside/Out*, an exhibit looking at the interior realm with projects integrating new intricacies affecting the practice. As curator of the exhibit, I focus on eleven projects completed within the last decade and establish six themes around which the projects are organized that are core to the discipline along with new topics that have emerged. By developing a framework of themes, it allows for the projects to be organized by categories rather than typologies revealing commonalities between different programs, scale and materiality. Inherently, the themes expose preconceptions about the practice of interior design as the discipline evolves to meet new agendas.

Six Themes

Eleven projects are presented in light of the following six topics revealing the integration of emerging issues in the practice of interior design:
Eco-Friendly Practices

The dialogue concerning architecture’s impact on the environment has surfaced and become increasingly important. Eco-friendly practices exist at local and global levels, requiring both individuals and organizations to implement these into practice.

Flexible Components

Interiors are inherently flexible spaces, responding to varying programmatic strategies, circulation patterns, and occupancy levels. With the increasing demand for adaptable spaces, designers are often asked to reconsider typical furniture and fittings for alternative variable elements.

Technology + Fabrication

Current advances in technology are influencing how integrated infrastructural systems and fabrication methods create new performance capabilities for interiors. Detailing reveals hybrid hand-driven and computer-generated methods of fabrication that offer new solutions for material performance.

Color, Light + Phenomenon

With advances in the technology of illumination and concerns regarding energy usage the integration of day-lighting and artificial lighting is changing our perception and use of space in innovative yet subtle ways.

Material Intersections

The spatial consequences of relationships between textiles, finishes, light and interior components that we experience 1:1, reveal how the coordination of intersections amongst elements in a space contributes to the design of a complete interior.

Inner Worlds
Spatial sequences between interior and exterior rely upon thresholds and phenomenal qualities of color, light, and detail to evoke memorable experiences that transcend time.

**Summary**

Viewing the discipline through these six themes highlights the role of authorship and collaboration amongst designers. Authorship reveals non-traditional interior design education and practice backgrounds, stemming from varying degrees of design inclusive of a textile and landscape designer, artist, sustainability advocate, architectural designers and fabricators. Similarly, the crossover and pairing of different typologies form unexpected links between projects, shedding new light on traditional areas. It is unavoidable that the practice of interior design will evolve to address these new technologies, environmental and social issues confronting the field. These six themes focus on a current point in time where interiors are now beginning to show their response to these changes as seen through the eleven projects.
Architecture Inside/Out

Lois Weinthal
Parsons The New School for Design

Narrative

Introduction

Architecture Inside/Out focuses on the threshold between interior and exterior space, looking both inward and outward to challenge assumptions about the realm of interiors. Since the interior has evolved into a complex and nuanced problem, it often confronts the field, rather than the object. Circulation patterns, use and adjacencies, sociologies of hierarchy and networks, and sustainability are thrown into the mix. The fully integrated interior considers not only light, color and materiality, but also new ways of programming space, the latest technological advances, innovative methods of construction and eco-friendly practices. Architecture Inside/Out considers these issues by focusing on eleven projects of local, national, and international scale at an exhibit at the Center for Architecture in New York City.

Themes and Case Studies

Six themes: Eco-friendly Practices, Flexible Components; Technology + Fabrication; Color, Light + Phenomenon; Material Intersections; and Inner Worlds bind eleven projects together revealing commonalities between projects of different programs, scale and materiality. The themes expose preconceptions about the practice of interior architecture and design, such as the division of labor amongst professions and the territory claimed by each. Though large-scale projects are often associated with an architect, the interior, where the average American spends 18 hours indoors for
every hour outdoors (National Human Activity Pattern Survey Data Base), is seldom
showcased or credited. By understanding the complexity of interior space we can
understand how important issues, such as sustainability, can become inherent to design
and construction without jeopardizing the ability to explore design practices that produce
phenomenal and memorable effects.

Of interest to the President of the AIA/NY Chapter is the topic of interiors, which
was chosen for an exhibit at the Center for Architecture, home of the New York Chapter
of the AIA. In order to establish a direction as curator, questions were raised about the
role of the interior, such as how can one exhibit address larger global issues
surrounding interiors, such as sustainability, while at the same time, focusing on details
that reveal phenomenological attributes that only interiors can reveal. By identifying six
themes, the topics could allow for a multitude of crossover between varying size
projects. The eleven projects chosen overlap with themes, and thereby, with one
another in ways that are often not made explicit. A matrix was developed that guided
the organization of themes to case studies. Although typologies are not the focus of the
exhibit, the projects represent multiple examples of libraries, hospitality, retail and
workplaces. All projects were completed after 2000 in order to reflect the most recent
application of technologies and fabrication, and include interiors of an international
scope.

Characteristics inherent in the interior are color, light and their ability to produce
phenomenal effects. These characteristics are one of the topics by which every project
touches upon in unique ways through the use of natural and artificial light, textiles,
glass, and color used in branding strategies. One case study, the Peckham Library and
Media Center by Will Alsop in London combines colored glass with northern light to bring natural light into the interior. In another case, Petra Blaisse and her office Inside/Outside at the Seattle Central Library designed by Rem Koolhaas forms a dialogue between interior and exterior. The garden and plantings on the periphery of the library are designed in parallel to the textiles on the interior by interpreting photographic images of gardens into textiles. The artist and designer Vito Acconi achieves phenomenal effects through his use of backlighting and stretched PVC in the design of a curved wall system reminiscent of the skin of the body for the clothing store United Bamboo in Tokyo.

The need for interiors to respond to eco-friendly practices are found in the Hearst Tower, being the first Gold rated LEED building in New York City designed by Sir Norman Foster with interiors by Gensler. Initiatives in sensor technologies are employed to monitor lights and computer usage, turning off both when a space is vacant to help solve issues of energy consumption. On a smaller scale, the local bakeries ‘Birdbath’ and ‘Sparrow’ in New York City showcase do-it-yourself eco-friendly design, using a range of materials including new sustainable composite products and vintage fixtures. Cork, bamboo and wheat products are fabricated into wall, floor, ceiling and counter surfaces, representing new eco-friendly manufacturing technologies.

Technology and fabrication challenge conventional practices whether responding to sustainable materials or new applications of materials. Hotel Puerta America in Madrid designed by Jean Nouvel is a composition of 16 designers each given a floor in the hotel to implement their signature designs. Zaha Hadid uses thermoformable materials and digital fabrication throughout the design of her hotel rooms allowing for
seamless transitions between floor, wall, ceiling, while giving new meaning to the term ‘built-in-furniture’. Another example of new technologies and fabrication can be seen on the interior of the IAC Headquarters building in New York City by Frank Gehry and interiors by STUDIOS Architecture. The interior includes large indoor screens with LED technology and projection to a large scale made visible from the West Side Highway. Stemming from technology and fabrication are new forms of flexible components, which allow the designers LOT-ek to re-use shipping containers for the retail store Uniqlo. The shipping containers are transformed into retail containers that inherently have the ability to ship with ease from one destination to another, assigning a new temporal dimension to the retail typology. Building upon the re-use of readily available materials as flexible components, Shigeru Ban uses cardboard tubes to provide structural arches for his temporary office at the Pompidou Centre in Paris.

The way in which materials intersect with one another can produce phenomenal spaces as seen in the Casa Camper Hotel by Fernando Amat and Jordi Tió. Located in Barcelona, the Casa Camper Hotel is an extension of the shoemaker Camper. Hotel rooms look into an interior courtyard with a ‘Vertical Garden’ consisting of 117 potted plants in a vertical matrix, thereby bringing the outside to the inside. The twelfth floor of the Hotel Puerta America designed by Jean Nouvel merges the interior with the Madrid sky through imagery, glass and reflection, bringing the outside to the inside with a different palette of materials.

Conclusion

The concept of six themes to make connections between projects was continued in the exhibition design at the Center for Architecture by the exhibition designers,
Images of the projects were located along parallel paths with established views allowing themes to merge together in one view. As such, six vantage points were located throughout the exhibition. A number of projects in the exhibition reflect works in New York City, at the same time, the goal of the exhibition was to show the range of new possibilities in design taking place nationally and internationally, and the implementation of strategies leading the construction of interiors into new directions.

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Abstract

Of the 114 accredited architecture programs within colleges and universities across America, at the time this study was completed, only 18 (or 16%) had females filling the highest administrative positions as deans, directors, chairs, or heads (NAAB, 2006). Of those 18, only one was an interior designer by trade and education, despite the fact that 34 of the 114 schools and departments of architecture house interior design departments and programs. Interior design programs nationwide are aligning with schools and departments of architecture by collaborating in various capacities. The historical dichotomy of architecture and interior design perpetuates the stigma that females in interior design are not sufficiently masculine or technically qualified to lead architects in professional practices or institutions of higher education (Havenhand, 2004).

Little is known about female administrators in architectural higher education, in part, because there are so few. Further, less is known about female interior designers who lead in architectural higher education perhaps because there was only one, but also perhaps because the formal alignment of the two programs is fairly recent. The central question that guided this study is: What personal and professional factors characterize a female administrator in architectural higher education with an interior design background? Additionally, the study identified this administrator's career path,
characteristics she believes aided her in her advancement and in her current work, sacrifices she made in order to advance and as a result of her current work, her current work responsibilities, and her future aspirations. This study is part of a larger research project that identified characteristics common to female administrators in architectural higher education.

Qualitative research methods were employed for this study. Specifically, the case study tradition (Creswell, 2003) was utilized in order to obtain thick, rich descriptions of the case. Interview, document, and observation data were included in the analysis.

A within-case analysis was conducted, in which five major themes emerged. While feminist leadership theories were used to guide the current research, themes emerged from the study that point toward a potentially new theoretical construct. This new construct requires characterizing pioneering women in male-dominated fields differently than females in existing leadership theories.

Five conclusions are presented that relate to the themes that emerged for each secondary research question. The following five conclusions were drawn based on the research findings and describe the personal and professional characteristics of the administrator: (1) Pioneering; (2) Unwavering Ambition in the Face of Obstacles; (3) Post-heroic Leader; (4) Prioritize Career over Family, and (5) Committed to the Design Profession.

Although currently no female interior designer leads in a college or school of architecture, the alignment of interior design with architecture in colleges and universities nationwide suggests that more leadership opportunities for female interior designers in higher education will become available. Therefore, identifying the
characteristics of female interior designers who have held these positions could prove helpful to other females with similar expertise who aspire to become administrators in architectural education.


Of the 114 accredited architecture programs within colleges and universities across America, at the time this study was completed, only 18 (or 16%) had females filling the highest administrative positions as deans, directors, chairs, or heads (NAAB, 2006). Of those 18, only one was an interior designer by trade and education, despite the fact that 34 of the 114 schools and departments of architecture house interior design departments and programs. The historical dichotomy of architecture and interior design perpetuates the stigma that females in interior design are not sufficiently masculine or technically qualified to lead architects in professional practices or institutions of higher education (Havenhand, 2004). However, the increasing number of interior design programs aligning with architecture programs in colleges and universities nationwide suggests that more leadership opportunities for female interior designers in architectural education administration will become available.

Little is known about female administrators in architectural higher education, in part, because there are so few. Further, less is known about female interior designers who lead in architectural higher education perhaps because there was only one, but also perhaps because the formal alignment of the two programs is fairly recent. The central question that guided this study is: What personal and professional factors characterize a female administrator in architectural higher education with an interior
design background? Additionally, the following secondary questions also guided the study:

1. What career paths did she embark upon that led her to her positions, and how has her career path impacted her professionally and personally?

2. What personal and professional characteristics does she possess that she believes aided her advancement to her current positions? How have these characteristics aided her?

3. What obstacles does she believe she overcame in her career to achieve her position, and how did the obstacles impact her?

4. What personal sacrifices, if any, did she make in order to achieve her position, and how did these sacrifices impact her?

5. What is she responsible for in her current work?

6. What personal and professional characteristics does she possess that she believes aid her in her current work? How do these characteristics aid her?

7. What obstacles as a result of their gender does she face in her current work, and how do these issues affect her advancement and/or satisfaction with her work?

8. What personal sacrifices, if any, does she make now as a result of her advancement, and how do the sacrifices affect her?

9. What short-term and long-term aspirations does she have regarding her personal and professional life?

This study is part of a larger research project, conducted in 2007, that identified characteristics common to 10 of the 18 female administrators in architectural higher education.

At the time this research was conducted, Crystal Weaver was the dean of the School of Building Arts at Savannah College of Art and Design (SCAD) in Savannah, Georgia. She received a Bachelor's of Science degree in home economics from Morehead State University, and a Master's of Science degree and Doctor of Philosophy
degree in interior design and housing from the University of Tennessee at Knoxville. The Savannah College of Art and Design offers a four year Bachelor’s of Fine Arts degree and a five year Master’s of Architecture degree. In August 2007, after seven years serving as dean, Crystal resigned. To the researchers’ knowledge, no female interior design educators currently administrate in an accredited school or college of architecture.

Qualitative research methods were employed for this study. Specifically, the case study tradition (Creswell, 2003) was utilized in order to obtain thick, rich descriptions of the case. Interview, document, and observation data were included in the analysis. Before the research commenced, the Institutional Review Board at Clemson University (where the researcher was a doctoral student) approved the study. Crystal participated in an in-depth, face-to-face interview conducted in her office at SCAD. The interview was audio-taped, and Crystal gave written consent to participate and to have her identity and interview data disseminated in scholarly venues.

The interview was transcribed by the researcher. A within-case analysis was conducted by the researcher, who utilized a qualitative software package (NVivo7©) to aid in the analysis. Major themes emerged from the analysis, and five conclusions were drawn from those themes. While feminist leadership theories were used to guide the current research, the themes that emerged from the study point toward a potentially new theoretical construct. This new construct requires characterizing pioneering women in male-dominated fields differently than females in existing leadership theories.

Five conclusions are presented that relate to the themes that emerged for each secondary research question. The five conclusions were drawn based on the research
findings. The conclusions describe the personal and professional characteristics of the administrator and are summarized as follows: (1) Pioneering; (2) Unwavering Ambition in the Face of Obstacles; (3) Post-heroic Leader; (4) Prioritize Career over Family, and (5) Committed to the Design Profession. Brief summaries of the conclusions follow.

According to research regarding females in male-dominated fields (Aldridge, 1994; Bagilhole, 2003; Rose, 1996), women who are the first to fill positions historically held by men and who seek to change the male-dominated organizational culture are considered pioneers. Crystal's journey to leadership was riddled with obstacles, including issues she faced because she was the first female administrator in her college, and often the only female in many other aspects of her educational experiences. Further, Crystal noted that she was active in recruiting female faculty and students into the current architecture and interior design programs, indicating that she served as a change-agent concerning the male-dominated culture of the architecture profession.

Although she was often the only woman in various environments, Crystal bridled unwavering ambition in order to overcome the obstacles she faced. Crystal discussed hardships she faced due to the organizational and societal culture of academe and the male-dominated profession of architecture. She described occurrences of discouragement and pernicious behavior toward her because of her gender. She recalled a guidance counselor discouraging her from taking college preparation courses. She recounted the counselor’s words, “Crystal, you might as well go look at the vo-tech programs, and see if there is something there because otherwise you are just not going to amount to anything.” Crystal indicated that discouragement caused her
to work harder. Existing literature regarding negative experiences of females in male-dominated fields focused on discussions of the negative impacts those experiences had on the females studied (Chu, 2005; Frieze & Olson, 1994; Peng & Jaffe, 1979; Steele, James, & Barnett, 2002). The current study adds to the literature by identifying that discouragement, for driven females, can be used as motivational tools.

Crystal described her leadership style using words that are closely aligned with aspects of post-heroic leadership (Fletcher, 2004), an emerging, feminine leadership paradigm wherein egalitarian leaders exhibit mutual respect among those they lead and view leadership as a social process. Crystal indicated that she embraces a culture of mutual respect and understanding with the faculty members that she worked with.

Crystal poured her life into her work as a professor of design and an administrator in higher education. She has never married and has no children. She said, “my relationships have not worked…I am just too driven.” Further, she said that she adopted a pet in order to force herself to leave work at night. She said, “I got a rescue [dog] four years ago to make me go home. You know if you have a dog, you’ve got to go home to walk the dog.”

Crystal indicated that she intended to return to practicing and teaching in order to advance the design field; however, according to existing research, she might return in order to reestablish her professional identity. Carroll and Wolverton (2004) found that approximately 70% of department chairs return to faculty positions at the conclusion of their tenure as administrators because they link their professional identity to their faculty positions more than to their administrative positions. Crystal also indicated that she chose to pursue a career in teaching because of her love for design. This finding is
linked to Frieze and Olson’s (1994) findings that indicated that females in male-dominated fields often align their self-identity with their profession. Female faculty and administrators in practical fields, such as interior design or architecture, might more closely identify with their practical professions, versus their academic professions, and may therefore choose to return to their primary source of identity.

Although currently no female interior designer leads in a college or school of architecture, the alignment of interior design with architecture in colleges and universities nationwide suggests that more leadership opportunities for female interior designers in higher education will become available. Therefore, identifying the characteristics of female interior designers who have held these positions could prove helpful to other females with similar expertise who aspire to become administrators in architectural education.


Impact of Color and Student Participation on Student Learning Experiences in a Studio Setting

Yun Zhu, Ph.D.
Kansas State University

Abstract

This paper explores the impact of color and student involvement in the color selection process of their studio environment on students’ perception of learning experiences. Colors allow people to perceive the physical environment, and people attribute meanings to colors (Pile, 1997). Although studies showed that colors might affect people’s sensations, perception of temperature (Allen, Jones, & Stimpson, 2004) and task productivity (Knez, 2001; Knez & Kers, 2000; Stone, 2001), the use of colors in classrooms, labs, and studios in a higher education institute is minimal.

In addition to colors, participation might also play an important role in increasing task performance. The most famous example is the Hawthorne Effect phenomenon, which describes a series of lighting experiments conducted in the 1920s’ at the Western Electric company’s plant. The researchers first found that employee performance increased as the lighting environment was improved. However, later studies showed that employee performance improved regardless of what changes in working conditions (such as pay, light levels, humidity, rest breaks) but their reaction to being part of a special group and being cared about (Franke & Kaul, 1978). Therefore, it is expected that if the students get involved in the design process of the color for their studio, student performance will improve regardless of what physical changes in the learning environment for those who participate in the process.
Methods

The ongoing research settings are two Interior Design studios in a university in the Midwest region. The two studios are taught by the same instructor. Both studio walls were white paint. After students enrolled in the fall semester in spring 2007, approximately nine students were randomly selected from one studio. Collectively, these students chose one color from a color palette. Other students in the same studio did not involve in the selection process. Students in the other studio were in the control group. The chosen color was painted on the walls and columns in one studio. At the end of fall semester, a self-report survey and open-ended questions will be used to collect data on students’ perception of learning and physical environment.

The independent variables are color and student participation. The dependent Variables include: the number of design solutions generated within a certain time frame; students’ perception of the physical environment; work efficiency; frequency of studio use; and students’ satisfaction with physical environment.

Significance and Conclusion

Although studies showed that color has impacts on human perception and performance, the most common color in higher education institutes is the “colorless” white. When certain lecture or conference rooms use colors, the decision making process excludes the users—students and faculty. By changing the color of the studio walls, it constructs empirical evidence to color and environmental behavior theories. Exploring student involvement in the design process builds a new structure that empowers students to take control over their learning environment. That experience might encourage students to promote user participation in their future interior design
practice. It also builds evidence to support design participation and student empowerment in higher education.

References


Impact of Color and Student Participation on Student Learning Experiences in a Studio Setting

Yun Zhu, Ph.D.
Kansas State University

Introduction

Colors allow people to perceive the physical environment, and people attribute meanings to colors (Gifford, 2002; Knez, 2001; Miller, 1997; Pile, 1997). Studies showed that colors were associated with anxiety levels, arousal (Valdez & Mehrabian, 1994), personality (Lange & Rentfrow, 2005), people’s sensations, perception of time, perception of temperature (Allen et al., 2004) and task productivity (Knez, 2001; Knez & Kers, 2000; Stone, 2001). Physical environment plays an important role in behaviors as well (Gifford, 2002). A recent research showed that colors were one of many design features that children preferred for their classrooms (Beacham & McFall, 2005). In higher education classrooms, studios, and laboratories, the most common color is white. When certain lecture or conference rooms use colors, these decisions are made by designers rather than students who need to learn in that environment. Will colors impact college students’ perception and performance too? If a color is used, who determines the appropriateness of the color?

Background

The literature of color widely spreads out in different disciplines such as physics, psychology, ecology, art, and design. Ball (1965) reviewed comprehensively the literature of the aesthetics of color since the twentieth century. He indicated the difficulties to measure the affection and psychological meanings of colors due to different contexts and multiple factors that would play certain roles. Ball’s concerns were
still valid for recent studies of color perception. By studying wavelengths of light on human psychological feelings, Fisher and La Garce (2005) found that blue environment was associated with happiness, feelings of anxiety, and a low level of stress; while red environment was associated with fatigue, and white was associated with happiness. The results were different from Valdez and Mehrabian’s (1994) findings that long wavelength hues (warm hues) were more arousing than short wavelength hues (cool hues) because higher state of anxiety was associated with red and yellow than with blue and green.

Knez (2001) studied the influence of color of light on subjects’ mood, cognitive performance and room light estimation. He found that warm color of light had positive impacts on short-term memory and problem solving. While in Stone’s (2001) study of color in a learning environment, she found a difference in students’ positive mood between a blue cubicle compared to a red cubicle in an open-plan setting. Lower performance was related to tasks in a red environment. However, Fehrman (1987) found that red was no more arousing than blue or yellow, and performance of math, reading, and motor tasks did not differentiate significantly in a learning setting.

These conflicting results made it difficult for applications. Gifford (2000) argued that differences in people may impact how they perceive colors. Gifford believed that students’ personality, physical and social environment all impact the person-environment relations in learning settings. He considered participation as an outcome rather than a factor. Different from Gifford’s opinion, the author believes that user participation plays an important role in learning. One of the most famous examples is the Hawthorne Effect phenomenon, which describes a series of lighting experiments
conducted in the 1920s’ at the Western Electric company’s Hawthorne plant in Chicago. The researchers first found that employee performance increased as the lighting environment was improved. However, later studies showed that employee performance improved regardless of what changes in working conditions. The improved productivity was related to their reaction to being part of a special group and being cared about (Franke & Kaul, 1978).

Participation was often categorized by the level of active involvement of the stakeholders (Arnstein, 1969; The World Bank, 2002). The World Bank (2002) classified participation as information dissemination, consultation, collaboration, and empowerment. Even though the employees in the Hawthorne plant did not have active control over their working conditions, participation played a positive role in increasing productivity.

Based on the participation concept, a new theoretical model (see Figure 1) was developed to incorporate participation as a critical part into Gifford’s conceptualized model. According to this new model, the color in a learning environment should be selected by the students rather than the designer or researcher. Students thus are a part of the decision making process. It was hypothesized that in addition to colors, participation also impacted performance.
Methods

This study explored the roles of colors and participation in two interior design studios in a university in the Midwest region. Both studios had white paint. Approximately half of the students from one studio were randomly selected after fall enrollment. Collectively, these students chose one color from a color palette. The chosen color (blue) was then painted on the walls and columns in the studio. Surveys and open-ended questions were used to collect data on students’ perception of learning and physical environment at the end of fall semester.

The independent variables were color and participation. The dependent variables included creativity; perception of the physical environment; work efficiency; frequency of studio use; and satisfaction with physical environment.
Results

A total of 24 surveys were collected: nine students were from the white studio and fifteen were from the blue studio. Seven students participated in the color selection process completed the survey.

Creativity was measured by the number of design solutions generated within 60 minutes in three in-class exercises. No significant difference existed in the numbers of design solutions except the last exercise when students in the white studio generated significantly more solutions than students in the blue studio, $F(1, 27) = 10.377, p < 0.01$.

Students’ perception of the physical environment included the perception of temperature, level of excitement, and lighting. Most students perceived their studio temperature as cool or cold (70.8%) and felt their studio look boring (54.2%). About 37.5% of students felt their studio lighting was unsatisfying. No significant difference existed in students’ perceptions of physical environment between the studios.

Work efficiency was measured by perception of stimulation, productivity, work efficiency, and motivation. Approximately 45.8% of students believed that their studio was not stimulating and they did not feel motivated, but 45.8% of students also thought their studio environment was productive and they could work efficiently. Stimulation, productivity, work efficiency, and creativity were found highly correlated ($p < 0.01$). There was no significant difference between two studios in stimulation, productivity, work efficiency, and motivation.

Frequency of studio use was measured by the number of hours a week students used their studio after regular hours. Twelve students (50.0%) avoided using the studio
after class, and only eight students (33.3%) definitely used the studio after class. Students worked about 11.2 hours a week in the studio after regular class. Although students in the white studio worked fewer hours than students in the blue studio, there was no significant difference in the number of hours between the studios.

Students’ satisfaction with the physical environment included whether students felt happy with current studio design and satisfied with the color of their studio, whether the color was appropriate and interesting. About 62.5% of students felt unhappy about the current studio design and 50.0% were unsatisfied. About 54.2% felt the color was appropriate, but only 33.3% felt the color was interesting. Students in the blue studio were significantly more satisfied with the color in their studio, $F (1, 22) = 5.404, p < 0.05$, but both studios hold similar opinions towards current studio design. The open-ended question that explored students’ perception of the color verified students’ more positive perception toward the blue studio, $F (1, 22) = 8.104, p < 0.01$.

Twenty students (83.3%) felt that the studio design was important to them. Students also suggested other important features for their learning experiences: layout and furniture (33.3%), followed by color (20.8%), overall interior design (20.8%), temperature (12.5%), cleanliness (8.3%), interactions (8.3%), and other features.

Although there was no evidence that indicated students participated in the color selection process performed better than other students in the blue studio, students described the importance of participation in the open question. Twenty-one students (87.5%) had positive attitudes toward participation.

**Discussion and Conclusion**
This research tested the color preference of a particular student group. The data supported the hypotheses that color impacted students’ perception and satisfaction but did not support the hypothesis of increased performance. The small sample of the exploratory study and other physical and social factors may contribute to the lack of significant difference in students’ perception of the physical environment, work efficiency, and studio use after regular hours. Although there was no evidence to indicate participation in the color selection process made a difference in students’ perception and performance, students’ satisfaction with the colored studio and statements about the importance of design participation and willingness to contribute more confirmed the importance of stakeholders’ participation in a studio setting. A large sample in different design programs and in studios at different levels would allow more significant outcomes in future studies. With multiple levels of student participation and multiple colors generated by students will help designers and interior design educators to design the physical and the social environment for better learning experiences.
Reference List
(APA)


Student Empowerment in a Studio Setting: Incorporating the Supplementary Instruction Methods

Yun Zhu, Ph.D.
Kansas State University

Abstract

This paper explores using Supplementary Instructions (SI) to empower interior design students in their studio learning experiences. The majority of the pre-college students lack the ability to analyze, synthesize, and evaluate as needed in the collegial environment. In the studios, the lower level students do not take full responsibility for their learning and expect everything specified and demonstrated. Although dynamic studio projects require individual’s unique solutions, most students are passive learners. Since student outcomes are related to their motivation and their ability to learn, it is necessary to incorporate teaching students the learning skills and empowering students to learn in current interior design education.

According to Zimmerman, empowerment is a process where people take control over their own destiny and decisions that affect their lives; the process is empowering and the outcome is the consequences of the process (Zimmerman, 1995). The effort to gain control is critical in the empowering process (Rappaport, 1987; Zimmerman, 1990). The empowering process also allows participants to learn and realize the meaning of their participation (Zhu, 2006). Research found that the outcomes often involve individual perceptions and skill building, collectivity, network, and behavior changes.

The Supplementary Instruction (SI) model was introduced in the 1990s as special sessions that motivates students to learn knowledge in a peer-led cooperative format (McGuire, 2006). SI was originally designed for large high-risk classes where certain
percentages of students fail or withdraw. The empowerment concept fits well into SI model when students actively seek information to solve problems and integrate information they learned. The results of SI showed increased student engagement in learning and better class performance. Although interior design studio is smaller in scale and at lower risk, SI is still appropriate because students need to analyze and synthesize problems and develop their solutions individually or in teams.

Methods

The suggested research setting is the sophomore interior design studios. A modified SI strategy is introduced in a series of short-term interior design projects. Once students familiarize with the SI model and have more design skills, the SI strategy might be used for more sophisticated long-term projects. Volunteers are called for team leaders. The trained team leaders are responsible for leading discussions, finding problems, exploring answers, and maintaining regular peer critiques. Each team gets involved in the overall project design as well. Expected results include increased perception of control, higher motivation to learn, higher frequency of mutual help, better performance in the studio and leadership skill development for the team leaders.

Significance

Student empowerment in the interior design education is critical to help students build learning skills and leadership skills, and motivate them to learn. The SI model allows students to learn in teams and is advocated in many higher education institutions. The modified SI model provides a fresh prototype in a studio setting that encourages students to collectively analyze, synthesize, evaluate, and apply the learned skills. Students are empowered by defining the problems, developing and
executing the strategies in their design solutions, and getting involved in the evaluation stage.

References


Student Empowerment in a Studio Setting: Incorporating the Supplementary Instruction Methods

Yun Zhu, Ph.D.
Kansas State University

Introduction

As the quality of teaching paired with quality of learning became the criteria for Council for Interior Design Accreditation (CIDA), students’ roles in the learning process gained increasing attention in higher education. The majority of the pre-college students tend to memorize and regurgitate information because they lack the ability to analyze, synthesize, and evaluate as needed in the collegial environment (Hansen, 1998). These abilities are critical for interior design students in the CIDA Professional Standards 2006. Therefore, there is an urgent need for students to learn how to learn and motivate them to learn in a collegial environment.

In the studios, the lower level students often do not take full responsibilities for their learning. When they are requested to read instructions or assigned readings, they often lack the ability to understand what they read and miss important issues in the readings. Although dynamic studio projects require individual’s unique solutions, most students are passive learners. Since student outcomes are related to their motivation and their ability to learn, it is necessary to incorporate teaching students learning skills in current interior design education. This paper explores using Supplementary Instructions (SI) to empower interior design students in their studio learning experiences.
Empowerment is a process by which individuals, organizations, or community gain control over issues of their own concern (Rappaport, 1987). At the individual level, the empowerment is also called psychological empowerment where people take control over their own destiny and decisions that affect their lives; the process is empowering and the outcome is the consequences of the process (Zimmerman, 1990). The effort to gain control is critical in the empowering process (Rappaport, 1987; Zimmerman, 1990). The empowering learning process also allows participants to realize the meaning of their participation (Zhu, 2006). The effort of gaining control might be present in shared leadership, skill development, a sense of community, and active participation in the process (Zimmerman, 1995). There are two basic types of empowerment depending on the active roles participants play. In a bottom-up empowerment (such as Action Research), people in need (stakeholders) define the problem, develop a strategy, implement the strategy, and evaluate the process and outcomes. In a top-down empowerment (such as Empowerment Zone), the authority defines the problem, develops a strategy for the stakeholders who implement the strategy, and the authority evaluates the outcomes. The measurement of empowerment is difficult because empowerment is widely related to perceptions, skills, behaviors, belief systems, cultural influences, and the social environment. In general, research (Perkins & Zimmerman, 1995; Spreitzer, 1995a, 1995b) found that the outcomes often involve individual perceptions and skill building, perceptions of the community and social network, and behavior changes. The empowerment in this study refers to the psychological
empowerment that encourages reciprocity, skill development, and collectivity in the studio.

Although empowerment is not the mainstream in pedagogy, the Modern learning theories do emphasize student-centered learning experiences. Based on the level of active roles students take during their learning, there are three learning theories: Behaviorism, Cognitivism, and Constructivism (McGuire, 2006). The Behaviorism regards students as passive recipients and students learn when they give correct responses to the questions. The Cognitivism considers students as active learners in receiving, processing, storing, and retrieving information to solve problems. The Constructivism encourages students build their own knowledge and integrate information they learned. Gifford (2002) illustrated in a conceptualized framework to show how students’ personality, physical environment, and social-organizational climate would impact the learning attitude and behaviors. Motivation was listed as a part of personality in Gifford’s model, but according to the empowerment theories, motivation is both a factor and an outcome of students’ participation in their learning.

Realizing the importance of students’ active roles, the Supplementary Instruction (SI) model was introduced in the 1990s as special sessions that motivated students to learn knowledge in a peer-led cooperative format (McGuire, 2006). Supplementary Instruction was designed for large high-risk classes where certain percentage of students taking the class repeatedly failed or withdrew. The basic SI construct encourages students to develop their own learning strategies and motivate them to learn (Hurley, Jacobs, & Gilbert, 2006; McGuire, 2006). The results of SI showed increased student engagement in learning and better class performance (Blanc &
Martin, 1994; Ogden, Thompson, Russell, & Simons, 2003). The empowerment concept fits well into SI model when students actively seek information to solve problems and integrate information they learned. The empowerment in the SI model is a top-down empowerment, since the instructor initiates and facilitates the active learning. If participating students carry the SI methods on their own into future study activities, it would be a bottom-up empowerment experience.

Although interior design studio is smaller in scale and at lower risk, SI is still appropriate because students need to analyze and synthesize problems and develop their solutions individually or in teams. In fact, the CIDA requires the curriculum to incorporate team approaches for both teaching and learning methods, encourages students’ critical, analytical, and strategic thinking and active listening skills leading to effective interpretation of requirements. Problem identification, identification of client and user needs, and information gathering research and analysis are also required by CIDA. Because SI model encourages students collectively discuss course materials, solve their problems, and even predict test items, it is possible to use SI for studio teaching so that it empowers students to learn.
In a studio setting, the SI model is proposed in Figure 1. The conceptualized SI model in a studio setting illustrates the level of control the instructor and students have.

Figure 1. Conceptualized SI model in a studio setting
The instructor(s) have full control of the curriculum and project goals. They suggest the project schedule, provide basic framework for project statement and evaluation criteria. The student teams have full control of individual design solutions. They also have partial control over project schedule, project statement (to identify the project details, such as client profile, context, building type, etc.), and evaluation criteria in a team effort.

The independent variable is the SI, the dependent variables include items regarding resources identification (self-efficacy), leadership, helping behavior and reciprocity, perceived control, participation in student organizations, programming skills, and motivation to learn. The qualitative measurements explore what other factors contribute to the SI model.

**Methods**

The proposed research setting will be the sophomore interior design studios. The freshmen may lack the confidence to explore and learn on their own. And the upper level students may already form certain learning habits. The modified SI strategy will be introduced in a series of short-term interior design projects. Once students familiarize with the SI model and have more design skills, the SI strategy might be used for more sophisticated long-term projects. Three to four volunteers who demonstrated good performance in their first year studios will be called for team leaders in the studio (3-5 students per team). Three training sessions will be provided for the participating team leaders to learn how to lead the team and how to identify problems and seek solutions in a team effort. Other students could choose their own team by choosing the team leader. The team leaders meet the instructor on a weekly basis. They are responsible to lead team members to learn the required course materials, find problems and explore
answers within the team, and maintain regular peer critiques inside and outside studio. Each team has a chance to get involved in the studio project design stage. They are given the general requirements for a particular project and further develop the detailed description about the project (floor plan, the context, client profile, schedule/process, final submission requirements, etc.). Expected results include increased perception of control, higher motivation to learn, higher frequency of mutual help, better performance in the studio and leadership skill development for the team leaders. If the SI model is introduced for students in all sophomore studios, data can be collected before and after the studio introducing the SI. If both an experiment group and control group are available, data can be collected once after the semester ends. Multivariate analyses could be used to explore the common and unique variance of each component.

**Significance**

Student empowerment in the interior design education is critical to help students build learning skills and leadership skills, and motivate them to learn. The SI model allows students to learn in teams and is advocated in many higher education institutions. The proposed SI model in a studio setting provides a fresh prototype that encourages students to collectively analyze, synthesize, evaluate, and apply the learned skills. Students are empowered by taking over their learning process: defining the problems, developing and executing the strategies in their design solutions, and getting involved in the evaluation stage.
Reference List
(APA)


PRESENTATIONS - STUDENT TRACK

ABSTRACTS AND NARRATIVES
A revised paradigm for designing interiors and products to support stress-reduction in children removed from familiar environments.

J. Davis Harte

Oregon State University

Abstract

Stress experienced by children away from familiar environments is well documented (Compas, Connor-Smith, Saltzman, et al. 2001; Honig, 1986; Lawhon, 1997; Legendre, 2003; La Greca, Silverman, Vernberg, et al. 1996 and Wells & Evans, 2003). Many situations can lead to separations, e.g. natural disasters, family relocation and foster care. How can designers provide comfort objects and/or near environments that facilitate a child’s natural coping mechanisms during stressful situations? Literature suggests that children with a greater sense of control over their immediate surroundings, via techniques of regulating their level of social interactions and by becoming active participants in their situation, tend to demonstrate better coping strategies (Clarke, 2006; Miles, 2003; Sadeh, Hen-Gal, Tikotszy, 2008; Zehnder, Prchal, Vollrath, et al. 2006 and Zeidner, Klingman, & Itskowitz, 1993). The answer(s) to this question requires a revised multi-disciplinary framework (Figure 1) grounded in the fields of design (organismic, categorical-motivational, stimulation, affordances, attention restoration and performative), psychology (cognitive, social learning, humanistic and developmental), child development (developmentally appropriate practice and constructivism), neuroscience and human ecology. This project is an exploration towards a more unified conceptualization of these frameworks into a more manageable
platform from which to study children’s stress responses to being removed from familiar environments. A master’s thesis is in the early phases of development based on this literature.

Assuming the physiological needs (food, water, shelter), described by Maslow’s humanistic Hierarchy of Needs model are satisfied, the next stages of safety and belongingness are revealed. Using a comfort object as mediator, the child may navigate potentially stressful experiences feeling safer and more in control. Perhaps the comfort object serves as a connection point to another person, so the solitary child is able to find social solace with another person, satisfying Maslow’s belongingness need (Kopec, 2006).

A recent article designates a category of objects, entitled performative objects, which inspires and sustains more mindful interactions between multiple humans and objects, mediated by social and cultural meaning. This expands on the human ecological belief that comfort objects or home-like environments may influence social interactions and increase the sense of security for children in unfamiliar situations (Niedderer, 2007).

Considering Bronfenbrenner’s Ecological Systems Theory, we see the child as a member of the nested system. The near environment most closely experienced by the child is the microsystem, e.g. foster home, church or temporary shelter. These regions may interact, thereby becoming a mesosystem. Barker’s behavior-setting theory also contributes to our current understanding of the interplay between social and physical environment. By providing environments based on specific performance criteria design guidelines (Zeisel, 2006), interactions may become more meaningful and are an
impetus for a child’s adjustment and coping skills. Buchanan’s (2001) cognitive interaction design theory, describes the shift to new levels of understanding of the role of objects in society (Buchanan, 2003). Other theories and models are considered in relation to each other, attempting to increase the understanding of the relationships between the designer’s provision of comfort objects and/or home-like environments for children who experience stress stemming from unfamiliar environments. This may contribute to the field of interior design, especially for vulnerable populations.


A revised paradigm for designing interiors and products to support stress-reduction in children removed from familiar environments.

J. Davis Harte
Oregon State University

Narrative

Stress experienced by children away from familiar environments is well documented (Compas, Connor-Smith, Saltzman, et al. 2001; Honig, 1986; Lawhon, 1997; Legendre, 2003; La Greca, Silverman, Vernberg, et al. 1996 and Wells & Evans, 2003). Many situations can lead to such separations, e.g. natural disasters, family relocation and foster care to name a few.

Literature suggests that children with a greater sense of control over their immediate surroundings, via techniques of regulating their level of social interactions and by becoming active participants in their situation, tend to demonstrate better coping strategies (Clarke, 2006; Miles, 2003; Sadeh, Hen-Gal, Tikotszy, 2008; Zehnder, Prchal, Vollrath, et al. 2006 and Zeidner, Klingman, & Itskowitz, 1993). How can designers create home-like interior environments and/or comfort objects that facilitate the most effective adjustment of control and active coping for children in stressful situations? What do we need to know in order to design in such a way as to reduce the stress levels of children who are removed from familiar environments? In order to suitably answer these questions, a revised platform of inquiry is required.

This revision of an existing theoretical framework is an integral step in this process...
of writing a master’s-level thesis. Being aware of numerous confounding variables, such as: socio-economic status, family structure, geographic location, political atmosphere and pre-existing mental and physical health status, is also a necessary progression in developing a comprehensive theoretical framework. The overview of this revised multi-disciplinary environment-behavior framework (Figure 1) is grounded in numerous fields. These theories and models include, but may not be limited to: design (organismic, categorical-motivational, stimulation, affordances, attention restoration and performative), psychology (cognitive, social learning, humanistic and developmental), child development (developmentally appropriate practice and constructivism), neuroscience and human ecology – itself considered to be an interdisciplinary field with the holistic purpose of approaching problems with the mindset of enhancing human potential within the near environment (Steiner, 2002). This paper is an exploration towards a more unified and applicable understanding of these many theories and frameworks into a comprehensive platform from which to study children’s stress responses to being removed from familiar environments. An experimentally designed research master’s thesis is in the pre-proposal phase of development based on this literature.

Existing paradigms articulate the necessary holistic analysis from many fields of thought. Kopec (2006) created a table (2.3, p 32) entitled Theories, Models and Perspectives of Environmental Psychology, which includes 12 separate theories that are relevant for design work. From this basis, the author attempts to articulate the integration of these accepted environment-behavioral theories with the established theories of children’s development, place preference and the stress and coping
literature. A gap in the existing literature is a unified comprehensive theory, addressing the possibility of comfort objects or home-like interior environments that act as intermediaries by facilitating social coping techniques, such as the ability to control privacy needs and self-regulation skills, via personalization of place.

A recent article designates a category of objects, entitled performative objects, which inspire and sustain more mindful interactions between multiple humans and objects, mediated by social and cultural meaning (Niedderer, 2007). This expands on the belief that well-designed comfort objects and/or favorite interior environments may influence social interactions and increase the sense of security for children in such situations (Hobfoll et al, 2007; Korpela, Hartig, Kaiser, & Fuhrer, 2001; Korpela, Kyttä, & Hartig, 2002 and Read & Sugawara, 1999).

Based on the concept of performative objects (Neidderer, 2007) and other literature on favorite possessions (Dyl & Wapner, 1996), it can be considered that a comfort object may act as a mediator, directly and indirectly helping children navigate potentially stressful experiences. One possibility is that the comfort object serves as a connection point to another person, so the solitary child is able to find social solace with another person, satisfying Maslow’s belongingness need. Assuming the physiological needs (food, water, shelter), described by Maslow’s humanistic Hierarchy of Needs model are satisfied, the next set of needs: safety, belongingness and self-esteem, can begin to come into focus (Kopec, 2006). Another possibility is that the object and/or near environment can be manipulated by the child to either personalize or otherwise increase choice making and thereby increase their feelings of control (Zeidner, Klingman and Itskowitz, 1993).
Imagining a child in their familiar context suddenly being removed, may bring to mind questions of development in context. In Bronfenbrenner’s Ecological Systems Theory, children are seen as members of a nested system. The near environment most closely experienced by children in an unfamiliar environment situation, is the microsystem, e.g. foster home, church or temporary shelter. These regions will potentially interact, thereby becoming a mesosystem. (Bronfenbrenner, 1979). Social support may be better facilitated if it is able to be moderated by privacy designs or other personal space concepts. Literature supports the concept that personalization and control of display areas in temporary spaces can be beneficial, in the case of both elder patients (Zeisel, 2006), office workers (Wells, 2000) and pregnant women (Shin, Maxwell and Eshelman, 2004).

Barker’s (1968) behavior-setting theory also contributes to our current understanding of the interplay between social and physical environments. As a proponent of natural context research, Barker contributes much to the understanding of how an environment plays a role in expected behavior. The upcoming research question and experiment is planned so as to explore relationships between well-designed environments and the resulting interactions between the child and the social support system and the child’s stress level. The goal is to generate, as Zeisel says (2006) specific performance criteria design guidelines. What are the best components of the interior environment and comfort objects? How can it be achieved so that is able to be replicated, cost effective and popular? Buchanan’s (2001) cognitive interaction design theory, describes the shift to new levels of understanding of the role of objects (both technological and ordinary) in society, e.g. service or experience (Buchanan,
2003). Such may be the case with designed comfort objects in the near environment of children away from familiar environments.

Developmentally appropriate practices are so important to early childhood educators that they are a primary expectation for the National Association for the Education of Young Children, found in their 22-page position statement (NAEYC, 1996). The idea of constructivism is also a popular practical theory for educators. Both of these theories integrate the variety of needs and stages of children into the curriculum. The Reggio Emilia approach is a well-documented and highly relevant theory of learning for children, which emphasizes the notion of the classroom, or near environment, as the third teacher. (Ceppi & Zini, 1998; Strong-Wilson & Ellis, 2007 and Hewett, 2001).

Threading throughout the theories and models discussed is the emerging integration of neuroscience with environment-behavior theories. It is beyond the scope of this narrative to describe the impact neuroscience research has had on design implications, especially for learning environments. (Zeisel, 2006, pp. 365-367).

With a revised paradigm as a platform for inquiry, it is hoped the forthcoming research thesis will succeed in evaluating relationships between the designer’s provision of comfort objects and/or well-designed near environments for children who experience stress due to being in unfamiliar environments. The implications for the revised theoretical framework and subsequent experimental research may provide insight and practical implications for interior designers, architects, industrial designers, educators, hospitals, parents, homeless shelters, foster care organizations and emergency and disaster relief organizations to the overall benefit of children and their loved ones.


Miles, J.C. (2003). Control beliefs as mediators and moderators of stressful events for


Paradigm to facilitate the design of interiors and products to support stress-reduction in children removed from familiar environments

J. Davis Harte, January 25, 2008
Abstract

Continuing professional education for interior design practitioners has become common practice. CPE refers to learning opportunities a person experiences throughout the course of their life. CPE, as predicted by Houle (1980), has become a growing area of practice for educators. Being held accountable within one’s area of professional practice has evolved as a trend within the past 20 years (Cervero, 2001). Within the interior design profession, CPE programs have predominantly become the way to satisfy re-licensure requirements, enhance and expand skills, and keep member status of various professional organizations. It is important that the learning format of CPE programs strongly relates to the learning style preferences of interior design practitioners so the participants garner as much knowledge as possible and the experiences are deemed worthwhile and pertinent. The goal of most education programs should be a learner-centered approach. However, people learn in different ways. They gather, interpret, organize, and evaluate information differently. Learning style refers to the broadest range of preferred modes and environments for learning (Knowles, Holton, & Swanson, 1998). What happens when the teacher teaches to a particular learning style? Do the other learners, whose learning styles are not being reflected, remain interested or do they disengage from the learning activities? The purpose of this exploratory study was to determine the preferred learning styles of
interior design practitioners. In addition, relationships were examined between
dominant learning styles and selected personal and professional characteristics. The
Gregorc Style Delineator (Gregorc, 2004), an adult learning style instrument, was
administered to 161 interior design practitioners within a metropolitan area. Data were
collected in the form of a survey design to determine the dominant learning styles of
interior design practitioners and selected instructional, professional, and demographic
characteristics. To determine the dominant learning styles, frequencies and
percentages were tabulated using descriptive statistics. Chi-square analyses were
performed to determine if relationships existed between dominant learning styles and
independent variables including preferred format for CPE programs, years of work
experience, and age. The most important finding included the predominance of bi-
modal (two dominant) learning style preferences. Chi-square analyses revealed no
significant differences between dominant learning style and age, years of work
experience, or preferred format for CPE programs. Interior design practitioners use
CPE as a means to conform to state statutes and as a way to enhance and expand their
skills, knowledge, and abilities to remain current and render competent professional
services. Most importantly, CPE programs serve as a creative outlet to promote
awareness regarding pertinent issues surrounding the public’s health, safety, and
welfare within the practice of interior design. Findings within this study can be used to
improve the development and delivery of continuing professional education programs
for interior design practitioners, improve practitioner and client communications, and
further enhance the body of knowledge for the profession.
References


Interior Design Practitioners: How do They Learn?

Julie E. Peterson, MS, WRID & Dr. Stephanie Zollinger

University of Minnesota

Narrative

Purpose and Context of the Issue

Continuing professional education (CPE) has become a predominant and often mandated component of many professions, including interior design. CPE refers to learning opportunities a person experiences throughout the course of their life. Many states require continuing education as a requirement for continuing licensure or certification and for interior design practitioners, is considered common practice today.

CPE programs should have a learner-centered approach to attain learning goals. However, people learn in different ways because they gather, interpret, organize, and evaluate information differently. Learning style refers to the broadest range of preferred modes and environments for learning (Knowles, Holton, & Swanson, 1998). How many times has an interior design practitioner attended a workshop, sat and listened to lecture after lecture, taken a plethora of notes based on slide presentations, only never to refer to the notes or information again? What happens when the teacher teaches to a particular learning style? Do the other learners, whose learning styles are not being reflected in the overall scheme of instruction, remain interested or do they disengage from the learning activities?

The phenomenon of learning styles is of interest and how teacher’s consideration should be taken when formatting education programs, including those within the interior design profession. Gregorc (1982) suggests that each person has four mediation
abilities that comprise one’s learning style. He describes a person’s innate tendency or dominance towards one or more of these abilities, or learning styles. Based on his research, he developed the Gregorc Style Delineator (Gregorc, 2004), an adult self-report learning style measure.

The purpose of this study was to identify the learning style preferences of interior design practitioners within a selected Midwestern metropolitan area. In addition, relationships were explored between learning styles and selected instructional, professional, and demographic characteristics.

Method

Data were collected in the form of a survey design to determine the dominant learning style of interior design practitioners and selected instructional, professional, and demographic characteristics. The population for this study was interior design practitioners from selected Minneapolis and St. Paul, Minnesota metropolitan areas. This geographical area was chosen as the population of interest for two reasons: first, because this geographical area employed the highest density of interior design practitioners in Minnesota, and second, because the researcher targeted design firms that employed five or more interior design practitioners.

The estimated sample size for this study, based on a target population of 623 with a ±7% precision level, was 153 (Israel, 2002, Table 1). Thirty-four design firms were originally asked to participate and 22 (64.7%) agreed to participate in the study via a learning style seminar. All design firms fit the purposeful characteristics of interior design, architecture, and/or engineering firms and the majority employed five or more interior design practitioners. In addition to conducting learning style seminars at the 22
design firms, four learning style seminars were conducted during the data collection period by the researcher at interior design professional affiliation meetings including the ASID Minnesota Chapter and the IIDA Northland Chapter. A total of 161 interior design practitioners completed both questionnaires correctly and were included in this study.

The instrument used to collect the learning styles data was the Gregorc Style Delineator (2004). The instrument identified and quantified learning styles of adults and consisted of ten sets of four words, totaling 40 words that the individual rank ordered (Gregorc, 1984). The instrument determined four potential dominant learning style abilities including concrete sequential (CS), abstract sequential (AS), abstract random (AR), and concrete random (CR). Some participants were defined as bimodal with dominance in two learning style categories in which the two highest scores were within five or less points of each other.

In addition to the Gregorc Style Delineator, a demographic and professional characteristics instrument, created by the researcher, was administered for this study. The Interior Design Practitioner Learning Style Biographical Profile Sheet consisted of eight items that were used to determine the participant’s preferred format for continuing professional education programs, highest level of educational attainment, years of experience as an interior design practitioner, professional credentials held, primary design business and design focus areas, gender, and age.

To determine the dominant learning styles of interior design practitioners, frequencies and percentages were tabulated using descriptive statistics. Chi-square analysis was performed to determine if relationships existed between dominant learning styles and independent variables or other professional and demographic characteristics.
Results

Some statistical highlights of the study follow. Of the 161 participants, 72 (44.7%) were unimodal; 86 (53.3%) were bimodal, with dominance in two learning style categories and 3 (2.0%) were trimodal. Including all learning style combinations, the concrete sequential (CS) and bimodal category of abstract random-concrete random (AR/CR) scored identically ($n = 33$) as the dominant learning styles of sampled Minnesota metropolitan interior design practitioners. Concrete random (CR) was the next predominant learning style with $n = 26$ (16.1%).

Chi-square analyses were used to determine if learning styles of the sampled interior design practitioners varied according to age. Comparisons were made between participants with dominance in each of the three highest-frequent identified learning styles (CS, AR/CR, and CR) and those showing no dominance in the style via a crosstabulation of frequencies of observed and expected population counts. Based on the findings of dominant CS and non-dominant CS participants, according to age, the variables remained independent and were not significantly related, $p = .533$, with a level of significance set at .05. No matter what the age, amount of work experience, or preferred format for continuing professional education, the chi-square tests for independence determined that relationships were not significant.

A final highlight included preferred format of continuing professional education. The majority of interior design practitioners preferred a face-to-face learning format conducted at their place of business during the luncheon hour ($n = 84$, 52.2%). Face-to-face continuing professional education format ranked in the top three of four choices.
overall. This preferred educational format corresponds to the preferred learning method characteristics for abstract random/concrete random (AR/CR) in that they prefer hands-on opportunities for learning in small groups.

Discussion

Specifically, this study found that the bimodal learning style of abstract random/concrete random (AR/CR) had equal representation at 20.5%, along with the single learning style of concrete sequential (CS), as the top two identifiable dominant learning styles among Minnesota metropolitan interior design practitioners. This study also found that the concrete random (CR) learning style was the third most identifiable learning style at 16.1%. These findings directly correspond to current research pertaining to interior design students and other design-related disciplines where out of 523 undergraduate students inventoried within a human ecology college over a three-year span, the top three identified dominant learning styles included AR/CR, CS, and CR (Martinson & Zollinger, 2006).

Is dominance in two learning styles more prevalent among interior design practitioners than interior design students? Do learning styles change with age and real-life experiences or do they stay the same forever? There is mixed evidence to-date, but one reason in support of the claim could be that most students have not yet had many real-world concrete experiences to draw upon for creating a basis of learning. Their foundations are thin and the frameworks for learning are just beginning to be put into place, as compared to practitioners, who have deep foundations and intertwining knowledge frameworks based on years of experience.
The study revealed that of the total number of participants, a significant majority (94.5%) preferred some type of face-to-face instruction for CPE. This result is interesting as Gregorc (2003) identified concrete sequential (CS) learners to prefer instructional media including, but not limited to worksheets, manuals, kits, and computer-assisted instruction, all of which have an “independent” quality to them. In addition, dominant CS learners are perceived as being more product-oriented, rather than people-oriented. The concrete sequential (CS) profile presents a discrepancy with the preference of face-to-face learning, as identified in the study.

However, all three of the identified dominant learning styles in this study (CS, AR/CR, and CR) preferred face-to-face instruction. Specifically, the most preferred format for CPE education was face-to-face learning at the learner’s place of business during the luncheon hour. One potential rationale for this observation could be because the selection appeared to be most convenient for the learner, which is a current societal norm.

Conclusions

Formatting continuing professional education programs that directly relate to the learning style preferences of interior design practitioners and measuring the transfer of learning of the participants could prove to have positive implications on the profession. Interior design practitioners attending these CPE programs would garner new knowledge in have positive experiences. It is imperative that the learner, the content, the medium, and the instructor all be considered when developing and carrying out educational programs. The interior design profession is rooted in both the science and
art philosophies and these findings support the theoretical and philosophical framework of the profession.

Findings within this study can be used to improve the development and delivery of CPE programs for interior design practitioners, increase the general body of knowledge for the profession, improve practitioner and client communications, and study relationships between interior design practitioners and interior design students via future research.


R-AISON D’ETRE
reason for being

PANEL PRESENTATIONS
ABSTRACTS AND NARRATIVES
Graduate Education: Taking Interior Design Education to the Next Level

Lynn Chalmers, University of Manitoba  
Jill Pable, Florida State University  
Lisa Waxman, Florida State University  
John Weigand, Miami University, Ohio

Abstract

A Panel Presentation on graduate interior design programs, their diverse structures and the challenges and opportunities they offer students and educators. The purpose of the proposed panel presentation is to build upon the discussion and interest generated by the white paper *Defining Graduate Education in Interior Design*. Commissioned by Past President Eric Weidegreen, it was presented and debated at last years’ IDEC Conference in Austin, Texas (Weigand, 2007) providing a fulcrum for dialogue around the subject.

The proposed panel will consist of four short papers delivered by 4 experienced graduate educators addressing the structure, purpose and nature of graduate education as it is evolving.

Papers will focus on:

1. The structure and form of graduate interior design programs
2. The distinguishing elements of graduate education
3. Supervising and supporting graduate students
4. Graduate student diversity, and Teaching and Learning approaches

The Proposed Panelists are drawn from across North America, and bring diverse experience in the development, teaching and administration of programs at the graduate level.
The issue of graduate terminal degrees was further examined by Joy Dohr, in her recent article *Continuing the Dialogue* (2007). A well-respected interior design educator and writer, Dohr uses the graduate white paper session at Austin as a springboard for her advocacy of scholarly endeavor and the advancement of a matrix of scholarly cultures encompassed by Interior design. The matrix begins to characterize the possibilities for graduate level study in Interior Design developing a much-needed discussion of the intellectual content of graduate degrees, however the practical attributes of structure and form remain unresolved, continuing to cause a great deal of confusion.

There are postgraduate degrees in North America with design project or research thesis outcomes, and first professional Masters degrees that build on divergent undergraduate orientations and terminate in a project or thesis. These degrees have a variety of different nomenclature, years of study required and recognition by the profession and the discipline. Significantly we have yet to define the essential difference between a first professional degree offered at the Masters level and the current professional Baccalaureate degree. Clarification of this issue may greatly assist IDEC and interior design generally in determining the value of advocating ‘moving to the next level’, and/or the appropriateness of a singular model of interior design education.

Developing and administering graduate programs is providing significant challenges across North America. Issues of the maturity and diversity of the student body also affects graduate study and raises questions about the best methods for teaching, supervising and supporting the new millennium’s graduate students.

The panel session will conclude with a moderated discussion of why and how IDEC and its’ members could support the growth of Masters and PhD programs in North America.
Graduate Education: Taking Interior Design Education to the Next Level

Lynn Chalmers, University of Manitoba
Jill Pable, Florida State University
Lisa Waxman, Florida State University
John Weigand, Miami University, Ohio

Narrative

Presentation 1  The structure and form of graduate interior design programs.

John Weigand

I will begin by referencing the white paper presented at the national IDEC conference last year in Austin. This white paper recognized an increased emphasis on graduate education, and argued for a clear definition of the professional master’s degree in interior design, especially when understood as qualifying the degree-earner for college-level teaching.

The need for a clear definition of the professional master’s degree is driven by:
• the confusion surrounding current graduate offerings, which vary in terms of degree name; their focus on professional content, research, or teaching—or some combination of these; their specific curricula and required time to degree; and their accredited status.
• the need for greater clarity around what constitutes a terminal degree for college-level teaching.

The white paper thus argues for a professional master’s degree that:
1. integrates professional design content and research methods, and promotes evidence-based design.
2. is defined as a terminal teaching degree, distinct from the Ph.D., as well as a terminal practice degree.

Comment [LC1]: this is a conflation of a number of arguments that require explanation in more detail
3. would have a specified degree name, recommended to be the Master of Interior Design (MID), and
4. would receive CIDA accreditation at a level consistent with advanced-level, graduate study.

Long-term, this clarifies the career track—especially in support of college-level teaching, it increases the pool of eligible teachers with degrees in interior design, it further distinguishes the discipline from allied disciplines such as architecture or decoration, and—most importantly—it continues to “raise the bar” for the profession.

Presentation 2 : The distinguishing elements of graduate education

Lynn Chalmers

The distinguishing elements of graduate education are I believe diversity, complexity, reflection and integration. These components are not unique to graduate level education but the graduate student is more responsive to the possibilities they present and a more experienced learner.

DIVERSITY encompasses the diverse backgrounds and experiences of both students and professors; the diverse sources of inspiration and information that are increasingly accessible through new technologies, interdisciplinary theory and research; and considerations of diversity of culture, physical abilities and religious affiliations.

COMPLEXITY: Students at the graduate level need breadth of knowledge in complex contexts – contexts which may require social and ethical responsibility, environmental knowledge and phenomenological understanding - in addition to all the skills and theory learned in undergraduate programs.
REFLECTION also builds on undergraduate students knowledge, developing concepts with greater depth of understanding and knowledge of history, evaluating the profession and the world critically and developing the capacity to take a well-considered position.

INTEGRATION of all of the components of interior design, at a more sophisticated level is evidenced in the designed graduate project or thesis incorporating environmental and global perspectives, interdisciplinary theory, new materials, diverse research methods and rigorous writing.

Graduate education is an opportunity to build on the strong foundation established by undergraduate education to create design leaders, critics, writers and innovators for the future of discipline, and the profession of Interior Design.

Presentation 3: Supervising and supporting graduate students

Lisa Waxman

One of the most important missions of the university is to create an environment that enhances the overall student experience. For many graduate students, one of the greatest benefits of graduate school is the opportunity to interact regularly with faculty mentors. Mentors may serve in official capacities, as a thesis or dissertation director, or in more informal capacities, as a role model or interested listener. Mentoring can be seen as a relationship between mentors and students, with that relationship leading toward professional excellence (see Figure 1) (University of Washington, 2005). The opportunity to talk regularly about research interests, coursework, teaching, as well as the expectations of the interior design profession is invaluable to the student.
Faculty must remember that students come from different backgrounds and different life experiences. Students may also arrive with varying amounts of preparation for the demands of graduate school. Assigning an advisor immediately will provide the student with a contact person and can alleviate some of the anxiety associated with the first semester. Peers can also be effective mentors and help facilitate the transition to graduate life. Often graduate school, with prelims, committee selection, prospectus defenses, and final defenses may seem intimidating. Knowing that graduate faculty are available to assist and that they want the best for the student is helpful. Faculty/student socialization mixed with casual conversation and valuable professional advice can also be a plus. Any efforts, either with “brown bag” lunches or other casual opportunities to interact with faculty have lasting benefits to students.
<table>
<thead>
<tr>
<th>Mentoring Techniques</th>
<th>Implementation</th>
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<tbody>
<tr>
<td>1. Develop a mentoring policy</td>
<td>Make a core component</td>
</tr>
<tr>
<td>2. Assign a first year temporary advisor</td>
<td>Assign based on shared interests</td>
</tr>
<tr>
<td>3. Establish peer mentoring</td>
<td>Facilitate transition to graduate life</td>
</tr>
<tr>
<td>4. Demystify graduate school</td>
<td>Offer seminars on various steps</td>
</tr>
<tr>
<td>5. Offer teaching mentors</td>
<td>Specifically for teaching- offers suggestions</td>
</tr>
<tr>
<td>6. Connect with graduate alumni</td>
<td>Explore realities of their future career</td>
</tr>
<tr>
<td>7. Faculty/Student “Brown Bag” lunches</td>
<td>Develop relationships &amp; shared interests</td>
</tr>
<tr>
<td>8. Create community</td>
<td>Find special space or lounge for grads only</td>
</tr>
<tr>
<td>9. Enhance professional socialization</td>
<td>Department seminars, presenting research, receive constructive feedback</td>
</tr>
<tr>
<td>10. Reward effective mentoring</td>
<td>Factor into merit</td>
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Adapted from: The University of Washington, (2005)

For many graduate students, their first teaching experiences also occur in graduate school. Assigning a faculty mentor specifically to assist the student with teaching related issues is a plus. Alumni can also serve as mentors to students who want input from the world of the practitioner, and therefore, departments that connect with alumni can utilize those resources to help current students.

Beyond the traditional mentoring role, faculty can also assist graduate students’ by facilitating workshops to better prepare students and demystify the graduate school
experience. Providing a lounge, studio, or similar “hang-out” can enable a student community to thrive creating a cohesive graduate student cohort group.

Finally, rewarding effective mentors sends the message that mentoring is valued at the university. Good mentoring provides support for students while moving the profession forward.

Presentation 4: Graduate student diversity, and Teaching and Learning approaches

Jill Pable.

Some challenges in interior design graduate education can be seen clearly at the classroom level. The sheer diversity of this learner population and their views and expectations are not the least of these issues. This variety likely stems from a ‘perfect storm’ of higher education diversity, the nature of the interior design profession, and choices currently present in the graduate career path:

1. Interior design graduate education is undertaken by both interior design undergraduates as well as ‘pre-professionals’ who have come to interior design from other undergraduate degrees. The naturally inclusive nature of design attracts learners from architecture, art, housing, law, business, photography, as well as other degrees such as nursing, social work and liberal arts.

2. The progression through higher education and work varies for these learners. Some move directly from undergraduate to graduate studies without work experience, while others possess years of design practice or other work
background. This introduces varying levels of ‘real world’ awareness and expectation to the classroom.

3. While little specific documentation verifies this to date, interior design graduate education populations likely mirror higher education’s increasing diversity in learners’ ethnicity, socio-economic status, race, and religious views.

4. The burgeoning population of older ‘non-traditional’ learners is widening the diversity of ages found in a single class. This couples traditional ‘millennial’ or ‘generation Y’ learners, now age 28 or younger (those born 1980-2002), with ‘generation X’ learners (those age 29 or older).

This mixture of many characteristics presents great opportunity for graduate-level learning, as it can stimulate lively discussion from a variety of viewpoints in seminar classes and can bring diversity to studio project solutions. Simultaneously, it also presents challenges to graduate course planning, choice of learning strategy, and instructors’ own current views on teaching and learning.

Given that millennial learners will increasingly make up interior design graduate student populations, it is helpful to examine select characteristics of this generation. As with all systems that attempt to characterize population groups, it is prudent to avoid relying too heavily on stereotypes, and variables including geographical location, locally embraced values, and ethnic and racial influences may violate the conclusions noted below. With that caveat in place, the millennial student group poses their own unique differences from previous learner populations. They are driven and ready to engage the college
experience and, more notable still, are seen by at least one researcher as “poised to
become the next great generation, one that will provide a more positive, group-oriented,
can-do ethos. Huge in size as well as future impact, they're making a sharp break from
Gen-X trends and a direct reversal of boomer youth behavior. Why? Because, as a
nation, we've devoted more concern and attention their way than to any generation in,
well, generations.” (Reed 2007)

The changes this generation compels are superimposed against the backdrop of rapid
transformation within higher education in general. Active learning, highly integrated
technology and global perspective are but three added elements affecting graduate
curriculum and teaching and learning strategies. It is an exciting era charged with
potential, yet challenging in its expectations of learners and instructors alike.
REFERENCES
(Chicago Style)


Building Information Modeling:
State of the A&D Industry and BIM integration into design education

Amy Crumpton and Beth Miller, Panel Organizers
Mississippi State University

Panel Participants:
Vicky Borchers. Kansas State University
Amy Crumpton, Mississippi State University
Rich Garti, International Academy of Design & Technology
Seunghae Lee, Ph.D. Purdue University
Jana Macalik, Ryerson University
Virginia North, D.Arch. Lawrence Technological University
Douglas R. Seidler, New England School of Art & Design at Suffolk University
Crystal D. Weaver, Ph.D. Savannah College of Art and Design

ABSTRACT
Purpose

Building Information Modeling (BIM) technology is taking the architecture and design industry by storm. In the last year, the number of licensed seats of Autodesk REVIT has grown from 100,000 to 200,000 worldwide (Cadalyst, 2007). Compare that to the approximately 500,000 currently licensed seats of Autodesk AutoCAD, and although AutoCAD is not going away any time soon, it appears that the architecture and design industry is firmly headed in the BIM direction. As early as 2005, design programs across the globe began to investigate BIM and many decided to add this to their curriculum (Rundell, 2005). Others have more recently begun incorporating this new technology into their design programs to respond to industry needs for these skills. The purpose of this presentation and panel discussion is to give educators an overview of BIM technology, and discuss its implementation in programs around the nation.
**Context**

BIM is a technology that uses parametric modeling to minimize the time spent in coordination of design details like locating and moving architectural elements and the corresponding required documentation changes. It also has the added benefit of allowing the entirety of design development to occur in three dimensions possibly leading to better quality designs and enabling timely creation of realistic renderings. It allows greater control of document information, such as schedules, and can produce and manage information like occupancy plans for use in the long term facility management process.

A transition to BIM in the professional world requires a paradigm shift in terms of the design process and especially time spent in different project phases (Holness, 2006). Adaptation of the technology in design programs may also require a shift in curricula and projects in order to create graduates skilled in application of this type of computer software.

**Method**

The initial presentation will contain a general introduction by the researcher to BIM and discuss the current state of BIM integration in the A&D industry. The following questions will be addressed: 1) What is BIM?; 2) What software is available?; 3) Who (in the profession and in education) is using BIM?

Additionally, a panel composed of educators from around the nation who are currently applying BIM technology in Interior Design programs will answer the following questions: 1) How are interior designers, and design students, applying the
technology?; 2) How is each specific Interior Design program incorporating these tools into the curriculum?.

Findings
Many large design firms across the country have begun implementing BIM technology into their work process. Educators’ currently in midst of the BIM-in-education revolution, will share successes and pitfalls encountered in teaching, learning, and applying these tools – while keeping our students focused on good design.

Summary
As the number and type of firms employing BIM technology continues to increase, it will be essential to provide design students experience with this technology. A first step in this direction is to share knowledge across university boundaries to best enhance our students’ educational experience and prepare them for the ever-changing, technology-intensive, profession of Interior Design.
Building Information Modeling: State of the A&D Industry and BIM integration into design education

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Crystal D. Weaver, Ph.D. Savannah College of Art and Design

NARRATIVE

Building Information Modeling (BIM) technology is quickly becoming increasingly adopted in design firms across the nation. Some firms are implementing the technology in a limited aspect – using the technology for specific clients, specific project types, or may still be researching the technology. These firms may have one or two design teams exploring the technology. Other firms have completely converted to BIM for the majority of their business. Wherever a design firm is on this continuum, as they search for new, young designers, an understanding and practical skill with BIM is increasingly a “hot commodity”. As educators in the A&D field, we are obligated to determine how to prepare our students for this ‘new world’ while at the same time – providing an ever-increasing set of design competencies. BIM has become a topic interior design educator’s can’t ignore.
What is BIM?

Building Information Modeling is a technology (not a specific program) that offers an integrated platform to improve design, increase the speed of delivery for both design and construction, and provide a seamless flow of information. Both from software manufacturers and practicing professionals have discussed the benefits of BIM. (Bhatt, 2006; Holness, 2006; Horwitz-Bennett, 2007). The value proposition includes significant benefits for all three parties involved in a construction project: the owner/operators, the A/E firms, and contractors (Wong, 2007a).

Those involved in the architectural design and construction process recognize the inadequacy of typical 2D CAD software, simply a replication of the traditional hand drafting process, in the complex world of today’s large design projects. Although 3D design has been embraced by many as a visualization tool, expanding the use of BIM tools to manage the large amounts of data generated by different project members offers an intriguing value proposition. The true vision of BIM includes “providing a common database of intelligent information that can be seamlessly and sequentially used by all members of the design team and ultimately the owner/operator of the facility throughout the facilities lifecycle” (Holness, 2006). This 4th dimension, often called 4D, is the added layer of design information that truly differentiates BIM from traditional CAD. The possibilities of the tool to improve project coordination, reduce errors, and streamline the process of design and construction – some say by up to 40% - is the real draw for implementation of the technology (Gonchar, 2007; Wong, 2007a).

There are several current software applications that fall into the BIM category. In October 2007, AECbytes and Bentley Systems published the results of a survey which
questioned which BIM applications were currently being utilized nationally. AutoDesk Revit was the leader with a 68% market share, Graphisoft ArchiCAD was second with a 31.69% market share and Bentley Architecture was third with a 14.79% market share (Khemlani, 2007). The market share held by Revit is likely strengthened by the backing of AutoDesk, the industry standard CAD program manufacturer.

**Who is using BIM?**

In a recent publication of Architect, published by the AIA, Riskus (2007) writes that as of 2006, 16% of AIA member owned firms had acquired BIM software, and 64% of those firms were using the technology for billable work. Interestingly, 46% of large firms, those with over $5M in gross billings, had acquired BIM software. Additionally, 35% of firms working internationally had acquired the software.

Some design specialties, such as educational and institutional design, have been quicker to embrace BIM than others. Since 2007, the General Service Administration (GSA) has required that ‘appropriate new construction or major modernization projects’ employ BIM technology. GSA defines BIM as “a data rich digital representation cataloging the physical and functional characteristics of design and construction” (Buckley, 2006; "GSA Building Information Modeling Guide," 2007). The GSA BIM guide indicates that the technology is used primarily to “make the design information explicit, so that the design intent and program can be immediately understood and automatically evaluated.” While the GSA has not standardized on a specific BIM software product, they have committed to this technology as the future of their design and construction program.
Although large firms have been the primary drivers of the technology adoption, a recent online search of job banks: www.ASID.org, www.monster.com, www.interiordesign.net, www.hotjobs.yahoo.com and www.revitcity.com, yielded over 300 job postings across the U.S. and abroad, searching with the terms Revit and interior design. In an AIA article on emerging professional issues in the architectural internship, Jason Henson, an architectural graduate of Louisiana Tech, notes that his internship at a large architectural firm, HKS in Dallas, included a crash course in Revit. He describes his adjustment to this technology as “an entirely different way of thinking than conventional drafting or modeling programs” (Henson, 2006). He also notes that using Revit has enabled him to “insert himself more in the design process, while giving [him] a medium to express [his] talent to learn and take initiative”.

**Teaching BIM**

Over the last five years, interior design and architecture programs have begun incorporating BIM into their curriculum. While there is currently no CIDA standard on the inclusion of BIM, many programs have recognized the need for adoption based on the professional acceptance of the technology. As more programs introduce BIM, each program must determine at which student level to teach the technology, how to best utilize the information management aspects and how to fit BIM into an ever shrinking credit hour allocation. Complicating the implementation is that currently there is no seminal textbook or process for teaching BIM. (Rubenstone, 2007).

However, manufacturers of the three widely accepted software applications have begun to aggressively market to universities. At this point in time, each of the three
manufacturers mentioned above has instructional materials available for download. Some also have free versions of their software, student workbooks, educator materials, and student and faculty support networks to supplement the teaching material. (Wong, 2007b). Given the newness of the technology, and the rapidly changing versions and options, it is difficult to find anyone who has actual field experience to teach these courses. Realizing that everyone is in a learning curve, taking advantage of these resources is key to successful incorporation.

Additionally, currently there are no interior design-specific instructional materials. By definition, interior designers will only use a specific set of BIM tools, given that they are not usually responsible for generating exterior construction or structural systems. Since BIM was developed to encompass the entire construction process, teaching the technology in interior design programs becomes even more problematic. Over the last 15 years, faculty have made extensive use 2D existing ‘building shells.’ They often get these from past projects, design firms, or self-generate these very basic 2 dimensional representations in CAD. This is no longer an easy option with BIM. Teaching materials are geared to exterior construction and materials first, with a couple of chapters devoted to interior elements at the end. This is an identifiable gap in the existing available teaching tools. Several schools have developed their own ‘workbooks’ or must adapt existing texts to meet their needs.

**BIM and Design – Help or Hindrance?**

Most design and construction professionals classify BIM capabilities as process improvements that will positively affect clients’ and design firms’ bottom line. But some
have voiced their concerns that ‘design’ may suffer with the transition to the technology. (Chang, 2006; Seletsky, 2006; "Will BIM be the Death of Design? [Weblog Entry]," 2006). BIM software is, by its nature, more complex. To use BIM effectively, interior design students must understand significantly more construction detailing than was required when using a 2D CAD application. For this reason, some educators link the teaching of BIM with the teaching of construction detailing. Others choose to focus on the technology’s ability to help visualize space and work with conceptual designs. In this implementation, students may not be encouraged to explore the ‘construction aspects of the application, but rather use it in a representational way, sometimes exporting the drawings to traditional CAD packages to complete the construction documents. Given the newness of the industry, universities will have to determine their own course for software implementation. Each of the uses listed above, in addition to the myriad of other capabilities, are legitimate applications. The educator’s responsibility to the professional world, at this point, may hinge on exposure to the technology rather than its mastery.

Summary

The expanding role that BIM is playing in the professional world has created an pedagogical imperative that the technology be introduced at some level in the interior design curriculum. Over the next five years, students who have these skills will have an opportunity to quickly become important resources for their design organizations. In the past some educators were concerned that designers with technical knowledge would be pigeonholed into a CAD-only position, with no real ‘design’ opportunity. Because BIM is
as much about the design process as a tool for implementation, exposure to it offers a unique opportunity to become valued additions to any firm. While BIM skills will not guarantee a job for interior design students – it will guarantee a second look at their portfolio.
Panel Contact Information

Vicky Borchers
Associate Professor Interior Architecture & Product Design
Kansas State University
PH: (785) 532-5992
E: vborch@ksu.edu

Amy Crumpton
Assistant Professor
College of Architecture, Art and Design
Mississippi State University
PH: (662) 325-5753
E: acrumpton@caad.msstate.edu

Rich Garti
Interior Design Technical Coordinator
International Academy of Design & Technology
Tampa, FL
PH: (813) 880-8086
RGarti@academy.edu

Seunghae Lee, Ph.D. NCIDQ
Assistant Professor
Interior Design Program
Department of Visual & Performing Arts
Purdue University
PH: (765) 494-0556
E: lee30@purdue.edu

Virginia North, D.Arch.
Assistant Dean, Graduate Studies
Lawrence Technological University
College of Architecture and Design
Southfield, MI
PH: (248) 204-2848
north@ltu.edu

Douglas R Seidler, Associate AIA
Assistant Professor, Interior Design
New England School of Art & Design at Suffolk University
Boston, MA 02116
PH: (617) 973-5390
E: dseidler@suffolk.edu

Crystal D. Weaver, Ph.D.
Professor of Interior Design
Former Dean, School of Building Arts
Savannah College of Art and Design
PH: (912) 525-6927
cweaver@scad.edu

Jana Macalik
Assistant Professor / Lower School Coordinator
Ryerson University, School of Interior Design
Toronto, ON,
PH: (416) 979-5000 x7627
E: jmacalik@ryerson.ca
References (APA Style)


Will the Future of Interior Design Include Two and Three Year Programs?

Professor Jan Cummings
Johnson County Community College

Panel Participants
Scott Ageloff, New York School of Interior Design
Charles Cooper, Scottsdale Community College
Diana Ingham, Johnson County Community College

Abstract
Statistics show that increasing numbers people no longer just change jobs over the course of their adult work experience, they change careers. In the textbook *The Career Fitness Program-Exercising Your Options* a career is defined as “a pursuit of consecutive progressive achievement in public, professional or business life.” Many students are choosing community colleges and Associate Degree options to help them make the career changes they desire in a condensed time frame rather than choosing to return to school for a second four or five year degree, or even a master’s degree. The average student in two and three year interior design programs is a non-traditional student. (*Keeping America’s Promise*) Many students already have Bachelors Degrees or Masters Degrees in another discipline.

This panel is comprised of two and three year program educators from across the country. The panel will address the following topics:

- Maintaining alternate pathways to professional competency in interior design
- Philanthropy and community involvement within two and three year interior design programs
- Serving the needs of traditional and non-traditional students in the 21st century
The panel presentation will discuss:

- Achievements of two and three year interior design programs
- Specific examples of achievements in graduates of two and three year programs
- What happens to the graduates following the completion of their degrees –
  additional education vs. entry into the marketplace
  - Employment prospects and earnings
  - Regional variations
- Philanthropic and community accomplishments of two and three year programs
- Is the industry and discipline served by variety in the educational market place?

Panel discussion attendees can benefit from learning more about a major sector of the interior design education field to which they may have no direct exposure. Attendees can also begin to evaluate how education options for future professionals can provide strong and viable assets to our communities. As educators we can work together to support the industry, the discipline and the needs of students.

Works Consulted

Bureau of Labor Statistics Frequently Asked Questions
www.bls.gov


Will the Future of Interior Design Include Two and Three Year Programs?

Jan Cummings, Moderator
Johnson County Community College

Panel Participants
Scott Ageloff, New York School of Interior Design
Charles Cooper, Scottsdale Community College
Diana Ingham, Johnson County Community College

Narrative
Statistics show that increasing numbers of people no longer just change jobs over the course of their adult work experience, they change careers. In the textbook *The Career Fitness Program-Exercising Your Options* (2004) a career is defined as “a pursuit of consecutive progressive achievement in public, professional or business life” (Sukiennik, Bendat and Raufman). Many students are choosing community colleges and Associate Degree options to help them make the career changes they desire in a condensed time frame rather than choosing to return to school for a second four or five year degree, or even a master’s degree. The average student in two and three year interior design programs is a non-traditional student (*Keeping America’s Promise, 2004*). Many of these students already have Bachelors Degrees or Masters Degrees in another discipline.

Our panel is composed of two and three year program educators from across the United States. We will discuss the following topics:

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• Needs of traditional and non-traditional students in the 21st century
• Achievements of two and three year interior design programs
• Specific examples of achievements in graduates of two and three year programs
• Tracking graduates following the completion of their degrees – additional
education vs. entry into the marketplace
  o Employment prospects and earnings
  o Regional variations
• Is the industry and discipline served by variety in the educational market place?

Maintaining alternate pathways to professional competency in interior design is significant for a variety of reasons. The definition for the interior design profession is ever changing, as is the profession itself. From the US Census Bureau to interior design practitioners, we do not always agree on terminology and we frequently find ourselves attempting to redefine the profession only based on education and skill sets required and ignoring “the social compact to do good” (Anderson, Honey & Dudek, 2007).

Second career students often begin their course of study as part-time students because many work for a livelihood while attending classes. The opportunity to maintain employment while achieving a degree towards another career provides security for a non-traditional student taking courses while juggling mortgages or rent and other bills. Often this student is taking evening and weekend classes or building a work day around first attending classes in the morning and then going to work. More and more in today’s uncertain economy traditional students are also working at least part-time and going to
school. The growth in community college and two/three year enrollment correlates directly to growth in part-time student enrollment (Kane and Rouse, 1999).

People also can be bound geographically, whether in rural or urban settings. They need the alternative paths to professional competency. Students in two and three year programs often have employment and/or family ties to an area. Geographic boundaries can be created by their own employment or a spouse’s position or perhaps it is caring for a family member that ties them to the area. They find the convenience of attending a local or community college to be a determining factor for enrolling in classes (Applebome, 2008).

Another consideration for students is cost per credit hour. Tuition at a community college can be significantly less than at a private school or public university. This can sometimes be the deciding factor for the traditional and non-traditional student alike. Both private and public universities can also provide two and three year programs along side Bachelor degree options. What’s more, it is important to remember in our quest for excellence and professionalism as educators to consider the realistic potential for income and employment for our graduates.

As presented by Caren Martin “Interior design includes a scope of services performed by a professional design practitioner, qualified by means of education, experience and examination, to protect and enhance the life, health, safety and welfare of the public” (Martin, 2007, p. 15). Martin then sites a list of parameters from National Certification
for Interior Design Qualification, NCIDQ, 2004 each beginning with competencies such as formulation, confirmation, selection, preparation, coordination, etc. These competencies are routinely found in two/three year program course syllabi. Alternative paths to professionalism can also include real world experiences while students are in school, outside the classroom environment. These paths may include traditional internship or practicum experiences, both paid and unpaid. Many two/three year programs require internships, practicum or perhaps service learning and volunteerism activities.

Interior design students at Johnson County Community College recently gained real world experience working on a project at the Kansas University Medical Center Child Development Center. Students provided much needed design concepts, space planning and specifications to an organization with limited funding. Students also partnered with IIDA professionals on another project developing a plan for the Gillis Center living quarters. The Gillis Center is an organization that assists at risk boys and their families in the Kansas City Metropolitan area. Community volunteer activities and service learning opportunities can be important education and experiential components of two/three year programs instilling social responsibility while providing learning opportunities.

Serving the needs of students traditional and non-traditional alike in the 21st century is a changing landscape. Peter Applebome, national education correspondent, for The New York Times in a January 24, 2008, sited the following statistics, …in a nation whose students are increasingly older adults, minorities and workers looking to upgrade their skills, community colleges have become
an increasingly attractive alternative. The nation’s 1,500 community
colleges now enroll 10 million students, including more than half the
freshmen in higher education, 44 percent of all undergraduates, 45
percent of all the black students in higher education and 52 percent of the
Hispanic students.

As educators we need to ask - How will these statistics and colleges without walls
whether public or for profit affect the landscape of interior design programs in the 21st
century? Two/Three year programs should no longer be ignored by established
universities and accrediting bodies. The quality of education is as consistent in many
two/three year schools as in university programs (Carey, 2007).

IDECC should consider taking a stand to support two/three year programs to guarantee
the quality of educational requirements in all interior design programs. Another question
that should be asked is - Would it be beneficial for CIDA to reconsider accreditation of
two/three year programs to maintain the consistency and quality of education for interior
design? In many respects it would guarantee that individuals who study the field of
interior design are qualified and ready to move to the next “E”, experience, beyond
degree and finally the final “E” of examination.

IDECC’s Strategic Plan can be strengthened by two/three year program involvement. As
example Objective 1.B Encourage the practicing professional to enter the field of
education. Practicing professionals can be excellent adjunct faculty members. Who
better than those familiar with the products of interior design to teach a materials and
resources class or a practicing designer to teach a space planning class? With
guidance and proper training, such as the Adjunct Certification Training (ACT)
sponsored by Johnson County Community College, faculty can learn classroom
techniques and skills. Those practicing professionals may then choose to go to
graduate school to gain formal teaching training or seek an advanced interior design
graduate degree.

A second example Objective 3.E *Expand relationships with organizations/associations outside of IDEC to seek mutually beneficial collaboration.* With the assistance of The Kauffman Foundation for Entrepreneurship, community colleges have taken the lead nationally in promoting Entrepreneurship AAS and Certificate programs. This is an excellent example of how faculty and students can learn more about the business side of interior design while establishing alternative pathways for professional competencies. The League of Innovation, an international organization serving community colleges, can benefit from the knowledge of interior design educators at two, three, and four year programs. The nationwide movement for sustainability, commitment to LEED buildings on campuses and the greening of college campuses through recycling, changes in food service and vending options, etc. are all on the front edge of conversations on campuses across the country.

“The American College and University Climate Commitment” can provide another platform for developing relationships as college presidents sign a commitment to the environment ([www.presidentsclimatecommitment.org](http://www.presidentsclimatecommitment.org)). No barriers are in place as community colleges, prestigious universities, public, private and for profit schools have
signed the commitment. All interior design professionals should be aware of and hopefully involved in this important initiative.

Panel discussion attendees can benefit from learning more about a major sector of the interior design education field to which they may have no direct exposure. Community Colleges and two/three year programs are not the same as community colleges or junior colleges of 20-30 years ago. Attendees can also begin to evaluate how education options for future professionals can provide strong and viable assets to our profession, our professional organizations and our communities. As educators we can work together to support the industry, the discipline and the needs of students in the 21st century and beyond.
References

(APA)


Strategies for Empowering Interior Design Students as Critics

Stephanie Watson Zollinger, Ed.D.
Denise A. Guerin, Ph.D.
Caren S. Martin, Ph.D.
Tasoulla Hadjiyanni, Ph.D.

University of Minnesota

Abstract

Purpose

Critique has always been at the core of educational activity in the interior design studio setting. Although content delivery and knowledge acquisition come in other formats such as lecture and discussion, positive design outcomes are heavily dependent upon critique as an important vehicle for students’ knowledge acquisition and growth. Many educational methods have undergone dramatic change over time, but studio critique has remained fairly constant, typically utilizing an unformatted approach or framework in which work is assessed according to the experience, opinions, and biases of the critic(s) (Anthony, 1991). Criticism by the instructor, a knowledgeable source, is generally accepted by students. When peer students serve as critics, their opinions tend to be de-valued because all too often they do not have adequate depth of knowledge for a thorough assessment. Yet, it is vital for students to become good design critics, whether of team work, peer work, or even professional-level work because this experience helps foster their self-critique abilities. It is time to consider new approaches to teaching students how to critique. This panel discussion will present student-based critique strategies as well as strategy goals and outcomes for all levels of interior design projects.
Context

Criticism serves to educate within the context of a design problem. The critic delineates, defines, and evaluates, thereby further refining the viewer’s perceptions (Dickson & White, 1997). Criticism is a way of communicating design knowledge to the student, bridging the gap from theory to practice by reflecting professional design studio critiques but in a safe environment.

Critiques in the studio also help students develop their own critical faculties by instilling the process of reflecting and reacting to design intentions that lead to their design decisions, and then reacting to the consequences of each action. Research among students indicates that the most successful design studios are those where traditional power relationships are broken down. This can occur where students become actively involved in the critique process, and when they have the opportunity to discuss their work with jurors and with each other, all within an environment of mutual respect. The least successful studios are those that disempower students by leaving them out of the review. This results in their becoming confused and mystified about the evaluation process, leaving them unprepared for practice (Anthony, 1991).

Design critique is a vital component in interior design education and practice. Teaching students how to critique and how to utilize the critique session to benefit their specific projects are important educational goals. During the panel discussion, four, full-time faculty members will address and outline strategies that will emphasize:

- The Complexity of Critique: Using it as a Tool for Learning
- Using Specific Guidelines and Framework
- Substituting Judgment for Objectivity
• Being Open to Change
• Listening Skills and Observation
• Encouraging Learning-Centered Motivation
• Student Involvement

These critique strategies and examples will serve to further students’ ability to become knowledgeable critics.

References


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Narrative

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Critiques in the studio also help students develop their own critical faculties by instilling the process of reflecting and reacting to design intentions that lead to their design decisions, and then reacting to the consequences of each action. Research among students indicates that the most successful design studios are those where traditional power relationships are broken down. This can occur where students become actively involved in the critique process, and when they have the opportunity to discuss their work with jurors and with each other, all within an environment of mutual respect. The least successful studios are those that disempower students by leaving them out of the review. This results in their becoming confused and mystified about the evaluation process, leaving them unprepared for practice (Anthony, 1991).

Currently, many critique sessions serve as opportunities to reinforce the inadequacies of student, rather than to build upon developing competencies. Our goal is to have the critique serve as a celebration of student work, as well as benchmarks for growth which supports a process that ends in constructively building student self-confidence, knowledge, and critical thinking abilities. It concludes with the recognition of their accomplishments, even if limited, and what is left to achieve, which could be substantial! We are not saying that we strive to be “nice,” rather that we foster a safe,
constructive environment that focuses on inputs and outcomes in an objective way so students focus on learning not from tone of voice, demeaning perceptions, and argumentative exchanges. The following discussion provides strategies to increase student critique abilities.

Panel Discussion

Design critique is a vital component in interior design education and practice. Teaching students how to critique and how to utilize the critique session to benefit their specific projects are important educational goals. The panel members will focus on:

1. Defining the critique process and review commonly used interior design studio critique methods. The panel will also discuss why it’s time for a change.
2. Emphasizing that overall, the critique method used depends on the educational goals the instructor seeks to achieve. Will the critique focus on formal ideas, subject matter, or more conceptual issues? Will media and/or technique be the focus? Are the students beginners in a skill set or more advanced? The answers to these questions help determine the method. Miller (1999) listed the attributes of a successful critique as knowing one’s role, the goal of the critique, the establishment of a positive and consistent structure and showing appropriate interest and concern for all students. Critiques are not just negative remarks about a person’s design or ability but can be positive validation of the students’ work occurring at any stage in the design development.
3. Addressing and outlining critique strategies that emphasize:
   - **Specific Guidelines and Framework**

   It is crucial for students to use a framework when critiquing their peers’ work.
Strategies will be discussed that utilize simple guidelines based on student readings or class discussion. The panel will also share examples of taxonomies of criticism developed with student input and encourage a more formal taxonomy as suggested by Attoe (1978) that employs normative, interpretive, and descriptive criticism as types of criticism within which to frame critiques. By requiring students to use a solid basis upon which they will form their opinion, students can contribute to each others’ projects in a meaningful way, and can personally benefit from the increased knowledge they have gained because they had to understand the ideas behind the format of the critique in order to use it. Empowering students in this way demonstrates to the students that they can play an important role in the learning process for themselves and lends greater legitimacy to their opinions.

- **Engagement/Student Involvement**

To realize enriched educational goals, studio critique must promote a culture of engagement and optimism. Strategies will be discussed that encourage and actively involve each individual student. It is hoped that by using the discussed strategies that students are optimistic about the skills they are learning, hopeful that interior design can make a difference to society, and confident that they will succeed within the profession. Motivationally, peer learning has the advantages of interaction with peers, thus providing an opportunity for mutual support and stimulation. Cognitively, it provides an opportunity for elaboration – putting material into one’s own words – as well as a chance to begin using the language of the discipline.
- **Substituting Judgment for Objectivity**

Critique strategies, such as role playing will be discussed to move students' thinking toward maximum productivity. Strategies such as this are powerful techniques that help students explore different perspectives towards a complex situation or challenge. In addition, strategies such as role playing help students understand the complexity of design decisions and identify issues and opportunities that otherwise might be blind. Strategies will be discussed that are blatantly artificial, a feature that helps students separate their individual ego from the activity they have undertaken. These strategies help to emphasize the separation of the various roles that are executed in the thinking process while eliminating the unrestrained opinion. This minimizes the confusion, facilitates coordination, and provides a definitive focus and framework for the process.

**Conclusion**

Criticism in the fields of art and literature is well established and respected. Interior design criticism, however, both in the written and verbal forms has not received sufficient attention as an important part of our discipline. There exists a plethora of literature on theories of criticism that can be adapted for use in the field of interior design. Where art and literacy criticism is used to inform and advance these fields, criticism as currently applied in an interior design studio is less understood. There exists a need to further develop the understanding of criticism, particularly as a main feature of the studio setting to contribute to students' understanding of the physical environment and their responses to it.
Studio critique is a vital component in the education of the student of interior
design and teaching students how to critique as well as how to utilize the critique
session to benefit their specific projects are important educational goals. The
suggested strategies proposed in this panel discussion will offer new ways to approach
a much-used vehicle in the interior design studio classroom. These strategies offer the
advantage of focusing attention on specific categories and building student knowledge
in those particular areas.

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POSTER PRESENTATIONS
ABSTRACTS AND NARRATIVES
Extending the Limits: Interior Design and Disabled Spatial Identities

Brunel, C.

University of Manitoba

Abstract

This study looks at human movement of an individual with Thrombocytopenia Absent Radius syndrome (TAR) in order to formulate a technique that can potentially enrich the understanding of interior design and disabled spatial awareness within it. It considers the spatial identity of the disabled body by looking at the importance of the embodied experience in relation to environment.

The body has dynamic abilities; therefore it is an instrument for creating form. The movements of an individual with TAR were captured using choreographic dance software. These animations were then imported into 3D architectural software, which produced volumetric spatial identities that directly informed the design of a personalized environment. These computerized tangible forms in context with interior design can inform our understanding of spatial needs and be used as a design-informing tool.

The contribution of this study is noteworthy because it informs the Interior Design community of innovative and useful spatial explorations to humanize interiors. This study is particularly important for disabled individuals because it focuses on individual movement patterns rather than generalize needs. There is a strong need to create personalized human-centred spaces for specific tasks, particularly for people with altered physical abilities. This study contributes to the examination of the detail that is
required for the alteration of personalized space. There is limited Interior Design knowledge about people with unique levels of ability therefore this strategy adds to the understanding and body of knowledge of design.

To understand spatial capacities choreographic dance software *DanceForms* by *Credo Interactive* was used. The software allowed for the creation of an exact scale model of the client. These models were designed by the use of collected research from the client. By entering the client’s collected static anthropometric data into the software an exact model of the client was created. Ergonomic evaluations of the client were conducted to decipher physical limitations. The virtual model's movements were limited precisely the same as the clients by entering in numerical data which was collected during the ergonomic evaluation.

![Choreographing of client's unique movements using Danceforms by Credo Interactive](image)

Figure 1. Choreographing of client’s unique movements using *Danceforms* by *Credo Interactive*

By using the person-environment-occupational (PEO)\(^1\) model commonly used by occupational therapists, a combination of scenarios were studied to create the best fit for the client. These situations pertaining to occupation and environment were then

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choreographed in the software. The client’s unique movements could then be plotted out. A clear understanding of spatial needs arose from these drawings (Fig.1). Digital choreography aided in the documentation of motion and allowed for a visual representation of spatial identity (Fig.2).

**Figure 2.** Model of client and digitally created spatial identities compared with that of the average able-bodied person.

**Figure 3.** Model of client in imported into 3D architectural software, showing design development.
Models and schemes from the dance software were then brought into 3D architectural software. This transfer of information was the critical discovery point as importing these models into design software allows for exact representation of the client within design software (Fig. 3). The spatial identities provide visual 3D volumes, which directly inform the design. The design then radiated from the physical dimensions of the client’s movements (Fig. 4 & 5).
Extending the Limits: Interior Design and Disabled Spatial Identities

Brunel, C.

University of Manitoba

Narrative

1. Introduction

The purpose of this case study is to design a workspace that enables an individual with Thrombocytopenia Absent Radius syndrome (TAR) who aspires to be an apparel product developer to carry out the range of work that is typical for that profession. An individual with TAR syndrome has short arms that cause his or her hands to rest on the chest. Many built environments are not designed to accommodate the unique body motions of individuals with TAR. While universal design principles have been applied to interior design in the past, it has had limitations in regards to specialized situations. This research project demonstrates a new technique for designing human centered environments using chorographic dance software in combination with 3D architectural software.

“If societies wish to punish or disempower particular individuals or groups, one of the key ways that this can be done is through placing limitations on mobility”.2 Unfortunately, there is a marginalization of people with unique disabilities, as some disabilities do not benefit from what is commonly known as universal design. “Universal design is a bit of an oxymoron because it has to fit the individual, not the universe”.3

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Universal design attempts to create space that is easily used by all, this is problematic for individuals who require highly specialized or obscure environments. This type of specialized environment would only be totally functional for the individual it was designed for, and not the average population. Individuals with unique disabilities require interior environments that are ergonomically correct for their needs.

This project aims to support the idea of universal design, but recognize the fact that it has limitations. The principles of universal design are important and progressive because they aim to restore disabled people’s self-esteem, dignity and confidence. Some design and development processes are failing to recognize the needs of all disabled people. Human behaviour should not be seen as being predictable because it denies differences in body experiences and forms. Many design concepts claim to be neutral and inclusive at the same time but fail to acknowledge difference. Until there are further advancements in the practice of universal design we should at the very least be able to provide individuals with functioning personal spaces. Every human should be allowed to have a degree of freedom within intimate settings. As stated by Robert Sommer, “There can be no dichotomy between good design and usable design or between beauty and function in architecture”⁴. Universal design advances are positively affecting society, but as we have discovered do not address all needs.

This study formulates a technique that can potentially enrich the understanding of interior design and disabled spatial awareness within it. Spatial identity is the space

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around an individual as defined by the movements of his or her body (Figure 1). It is the tangible form of the body’s movement and occupation of space. The way it moves through space has a direct relation to the design of the built world.

Figure 1. This figure shows a model of both the studied client as well as a model of an average able-bodied person. These models are exact scaled representations created in choreographic software Danceforms. The green meshing demonstrates outline of these individual’s spatial identity. The green mesh volumes were created by importing the models into 3D architectural software. These built volumetric forms can be manipulated, sliced and studied at a number of angles. These models maybe studied as static objects or animations, animated using the choreographic software.

Understanding spatial identity of a person with TAR is noteworthy because it acknowledges the need to create personalized human-centred spaces for people with altered physical abilities. Specifically, the objectives of this case study are:

Objective 1: To use the person-environment-occupational (PEO)\(^5\) model as a way of gathering numerical data from a person with TAR. This data is to be used as input into choreographic software that would capture the movements of this person.

Objective 2: To observe the workspace of the product development department of a local apparel firm to ascertain the range of work and the design of the environment.

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Objective 3: To use data from #1 and #2 to design a creative work environment that would enable an individual with TAR to carry out her work as an apparel product developer.

2. Methodology

The case study method was chosen because it demonstrates the need for a customized work environment for an individual with a disability. The client is a twenty-two year old female who is completing a four-year undergraduate degree in textile product development. Her range in motion is unique because of her physical attributes. Universal design principles have limited application in this case because most universal environments are built to accommodate wheelchair users. “Where design professionals, such as architects or interior designers, incorporated disabled people’s needs into projects, there is a tendency to reduce disability to a singular form of mobility impairment, that of the wheelchair.”

The client often finds that universally designed environments are even more debilitating for her. For example, individuals in wheelchairs require horizontal surfaces to be lowered to accommodate their needs. The client, however, requires that surfaces be raised above average heights. Therefore, placing the client in a common universally designed environment with lowered surfaces is twice as debilitating as non-universally

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designed environment. For this reason, the chosen client was a perfect example of the need for specializes human centered design.

An apparel product developer’s work entails conceptualizing seasonal lines, communicating design ideas by using an apparel design software, manipulating patterns using a computer aided pattern development software, constructing prototypes, and communicating final designs to clients. The typical product developer’s studio is not designed to accommodate a person who has physical disabilities. The client has been able to execute the product development activities by adapting her movements to operate computer keyboards, cut fabric, draft patterns, and construct prototypes. A correctly designed workspace will lessen the physical demand on the client and to enable her to maximize her creative and technical abilities.

Objective 1: To fulfill this objective, I observed and recorded all three aspects of the PEO model. A maximized occupational performance is directly linked to a fit among person, environment and occupation. In this case, the client, who has TARS, has unique attributes. I chose to identify those attributes specifically by recording all the client’s static anthropometric data. To analyze the client’s environment I conducted an ergonomic analysis. Finally, to understand the occupation, I conducted a productivity demands analysis.

Objective 2: To fulfill this objective, I visited a local apparel firm which designs and distributes apparel for women ages twenty to forty throughout Canada. The
conceptualization of ideas takes place in this office. Colors, trends and consumer needs are considered. The office has conceptual spaces which are open and free of traditional office structure. The product development department also has individual and group offices, with desking systems for each employee.

Objective 3: To fulfill this objective I captured the client’s movement using a choreographic software called DanceForms. Subsequently, these animations were imported into a three-dimensional architectural software which produced spatial identities that directly informed the design of a personalized workspace.

3. Results

The choreographed animations along with the constructed spatial identity directly informed the design of the work environment. The area of attention was a personalized desking system.

Traditional ergonomic design is numerically based, as designers use key measurements from which to build a design. The method that I used have an animated model derived from precise measurements. This allows me to see three-dimensional volumes as a design bases. This is beneficial because designers in general are visual workers. In addition, it allows for a more precise design, which can be derived quickly and can be manipulated for various situations and multiple designs in a fraction of the time. The quality of design is also heightened because the precision and ease of manipulation result in the best possible solution. The ability to import an animated
model into three-dimensional software results in a clear understanding of the client’s spatial needs and promotes a correctly designed environment. The use of this new technique resulted in:

Result 1: I was able to enter the numerical static anthropometric data into the dance software to create an exact replica of the client in model form and to understand the limitations on range movement. The productivity demands analysis resulted in a range of occupational situations in which the client might be in. These situations could then be animated using the model (Figure 2). For example some given occupational situations were arranging clothing on racks, keyboard and desking situations as well as cutting and laying out fabrics.

Result 2: As a result of visiting a local apparel firm I became aware of the many physical needs of an apparel product developer. The focus became the desking system which needed to accommodate for clothing racks as well as keyboard and computer systems. The office was in constant motion and interaction was a continual part of the

Figure 2. Choreographing of client’s unique movements using Danceforms. Situations pertaining to occupation and environment were animated to give an understanding of the client’s spatial needs.
atmosphere. Figure 3 and 4 compare that of the desks in the apparel office that I visited to that of the final customized desk design.

![Figure 3](image1.png)  
**Figure 3.** Image of typical apparel office. The desking system which needed to accommodate for clothing racks as well as keyboard and computer systems. Courtesy of Ricki's of Winnipeg.

![Figure 4](image2.png)  
**Figure 4.** Final design of the customized desking system. The choreographed animations along with the constructed spatial identity directly informed the design of the desk.

Result 3: The desking system was designed in a two-step process. The first step included finding basic volumetric dimensions and proportions. This included overall sizes, surface heights and depths (Figure 3). Basic volumetric shapes were created from the animated model. Theses shapes created parameters in which the prime area of work occurs; therefore the parameters of the design would be within these volumes. The design bases radiated from the physical dimensions of the client’s movements
Figure 3. Basic volumetric shapes were created from the animated model. This included overall sizes, surface heights and depths. These shapes are viewed pulled away from the model.

The second step in the design process is to use constructed spatial identities to articulate the design details. For example, spatial identities directly influenced the shape of the desking surface. The height and size of the desk was determined by the parameters of the animation as previously mentioned. By studying the individual's movement through spatial identity, I created the surface shape which mimics the shape of the individual's motions (Figure 4).

Figure 4: Plan view of desk design showing design details. I create the surface shapes, following the shape of the individual’s motions. Details were configured with input from the model.
The same can be said for other details such as drawers, shelves and hanging systems (Figure 5). Overall shape and size were derived from animation of the model; details such as handle shapes were created by the physical construction of the individual’s body in space. This process created the best possible ergonomical fit and a human centered design response leading to a custom design.

![Image of elevation views of desk design showing details](image)

**Figure 5**: Elevation views of desk design showing details. These views help describe how greatly the model representation of the client effects the design of the desk.

The procedures used to design the desk were then continued through to the entire design of the individual’s environment. The desk remains the key aspect of this study because it demonstrates the benefits of using new techniques. The final design enables the client to perform at the best of her abilities. The ease and comfort this desk provides allows the client to function with ease within a work setting. Using spatial identity as a design tool created a desk that was a direct extension of the client’s body and interior space that considered the occupant.
4. Conclusion

This study informs Interior Design community of innovative and useful spatial explorations and to identify the need for humanizing interiors. These techniques also have value in the field of disability as it provides measuring tools to create accessible and inclusive design for work and daily living environments. The use of spatial identity as a design-informing tool creates a highly proficient design method. The proficiency level of the described technique maybe overshadowed by the complexity of the method due to the use of two software. Future research would include condensing the process possibly by combining software together.

5. References (MLA)


Learning by Doing:
Weaving the Americans with Disabilities Act Accessibility Guidelines and Code Compliance into a design curriculum.

Holly L. Cline & Julie A. Temple
Radford University

Abstract

Purpose

The purpose of this poster is to present various experiential learning methods related to the understanding of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and Code compliance. Providing students with experiential learning exercises increases their sensitivity toward and appreciation for people with disabilities. According to Dewey’s (1913) learning-by-doing theory, participation, or the doing process, involves learning experiences. Through a series of projects, woven throughout their curriculum, students develop a heightened awareness for how the designed environment functions for people with a variety of impairments.

Process

To facilitate experiential learning of codes and ADAAG, the projects presented incorporates activities that require students to interact with others in the classroom and on campus.

Disability Simulation, Reflection, & Discussion. The Disability Simulation project, is introduced the student’s first semester in the design major. It requires all
students in the major to experience one of five different altered abilities. Each student participates in an exercise that involves an individual activity and an activity with a team partner. Both activities require each student to complete various tasks related to their selected altered state. Throughout the process the students document their experiences through photographs and journal entries. After the simulation is completed students reflect and discuss the activities with the entire class.

**ADAAG, Universal Design, & Codes Check sheet.** Students were required to create an ADA Code compliance check sheet in the third year of the design program. After developing the check sheet, students utilized this sheet as a guide for their student design projects for the remainder of the semester.

**Video Documentary.** After the students completed their codes check sheet, students were required to create a video documentary based on Universal Design Issues, Implications, and Codes. Students were grouped into teams. The assignment required the students to incorporate a variety of topics associated with ADA and universal design into their documentary. Students were taught how to do video editing to produce their film. In addition, this project required students to collaborate with a variety of people within the community. Many of the videos produced included documentation of code violations, highlights of good design applications and interviews with people with disabilities.

**Summary**

There are many important topics to be taught throughout an interior design curriculum. The understanding of ADAAG and building codes are among the most crucial issues interior designers face today. By humanizing the rationale behind these
standards, students gain a better appreciation for understanding the importance of proper implementation and compliance to these standards. Students indicate that these exercises are very beneficial to their understanding of others and the role the environment, guidelines, and codes plays in the life of all people. This poster presentation will provide examples of the above projects and will foster one-on-one interaction with other faculty from different programs.

Reference

Learning by Doing:
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Holly L. Cline & Julie A. Temple
Radford University

**Narrative**

“We can make anything more universally usable, but to do that, we must pay attention to details. Sometimes it’s merely the *placement* of an item or an element that makes the difference. Offset controls are mandated by the ADA for bathtubs, showers and other fixtures. This simply involves taking the same control and moving it over so it is easier to reach—not a difficult thing to think about or do.” Ron Mace (1998)

**Purpose**

The purpose of this poster is to present various experiential learning methods related to the understanding of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and Code compliance. Providing students with experiential learning exercises increases their sensitivity toward and appreciation for people with disabilities. According to Dewey’s (1913) learning-by-doing theory, participation, or the doing process, involves learning experiences. Through a series of projects, woven throughout their curriculum, students develop a heighten awareness for how the designed environment functions for people with a variety of impairments. By becoming aware of the issues related to accessibility guidelines and the rationale behind the
standards, students become more sensitive to the issues that people with disabilities encounter with the built environment.

**Process**

To facilitate experiential learning of codes and ADAAG, the projects presented incorporates activities that require students to interact with others in the classroom and on campus.

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*ADA Audit.* The ADA Audit project, presented in the second year, is a site Investigation exercise that introduces students to the specific elements used to access the level of compliance associated with the Title III provisions of ADAAG: Public Accommodations and Commercial Facilities. Students work in small teams and are assigned one of four priorities: Priority 1: Accessible approach and entrance, Priority 2: Access to goods and services, Priority 2: Access to goods and services, or Priority 4: Any other measures necessary. Buildings selected for audit consist of campus facilities that are newly constructed or have undergone recent renovation. Audits are performed using *The ADA Checklist for Existing Facilities, version 2.1* form in conjunction with
ADAAG and documented with measurements, notes, and digital photos. Results are presented in report format as well as PowerPoint presentations given directly to the buildings facilities manager and the campus architect, (often with heated discussion).

Another project in the second year involves the design of a small residence for a person with limited mobility and who uses a wheelchair. This project is done after the audit and educates the student on the similarities and differences between the ADA (code) and Universal Design (guidelines).

**ADAAG, Universal Design, & Codes Check sheet.** Students were required to create an ADA Code compliance check sheet in the third year of the design program. Students utilized the American National Standards Institute, Inc. (ANSI) Specifications for making buildings and facilities accessible to the physically handicapped (ICC/ANSI A117.1-1998) in order to include the appropriate codes for their check sheet. After developing the check sheet, students utilized this sheet as a guide for their student design projects for the remainder of the semester. Utilizing the check sheet for their design projects required the students become more familiar with the meaning of the code and its application.

**Video Documentary.** After the students completed their codes check sheet, students were required to create a video documentary based on Universal Design Issues, Implications, and Codes. Students were grouped into teams. The assignment required the students to incorporate a variety of topics associated with ADAAG and universal design into their documentary. Students were taught how to do video editing to produce their film. This project required students to collaborate with a variety of people within the community. Many of the videos produced included documentation of
code violations, highlights of good design applications and interviews with people with disabilities. In addition, students were excited to learn a new presentation method (video) and skill (video editing).

Summary

There are many important topics to be taught throughout an interior design curriculum. The understanding of ADAAG and building codes are among the most crucial issues interior designers face today. Weaving the ADAAG and Code Compliance issues throughout the design curriculum reinforces the seriousness and the impact of these issues on the health, safety, and welfare of all people in interior spaces. By humanizing the rationale behind these standards, students gain a better appreciation for understanding the importance of proper implementation and compliance to these standards. Students begin to pay closer attention to the design details and think about accessibility issues throughout the design process. Students indicate that these exercises are very beneficial to their understanding of others and the role the environment, guidelines, and codes plays in the life of all people. This poster presentation will provide examples of the above projects and will foster one-on-one interaction with other faculty from different programs.
References


Making a Difference: Service-Learning in the Studio

Timothy D. Dolan, M.S.
Appalachian State University

Abstract

Though research and statistics support the positive impact design professionals can have on the built environment, the services of designers are viewed by many as unaffordable luxuries. Non-profit organizations, though, are eager to engage design students. Design students provide a resource that most non-profits and service organizations cannot afford, but desperately need. Utilizing service-learning in studio classes creates a win-win situation for non-profits and students alike. This poster presentation highlights the town and gown partnership developed through service-learning by focusing on student designs for non-profit organizations. Project types are all commercial applications and range from a child-care facility to a food bank to an adult living facility. Integrated classroom projects provide students with actual clients, unique programming requirements, and professional interaction unequalled in the classroom. The community gains knowledge regarding what design can do for them, their business and clients. In addition to achieving course objectives and community service, students begin to see design as a connection to community and how public service can become part of their professional practice. Exposure to such firms and organizations as The Rural Studio, Architecture for Humanity, Design Corps, and Public Architecture allows students to envision their careers, or a part of their practice, with an emphasis on society and service to the public good. Service-learning is an invaluable
resource for studio instruction and a connection to community important for all designers.
Making a Difference: Service-Learning in the Studio

Timothy D. Dolan, M.S.
Appalachian State University

Narrative

Though research and statistics support the positive impact design professionals can have on the built environment, the services of designers are viewed by many as unaffordable luxuries. According to a 1995 article in the Philadelphia Inquirer, only 2% of new home-buyers worked directly with an architect to design the space in which they live (Bell, 2004). Non-profit organizations, though, are eager to engage design students. Design students provide a resource that most non-profits and service organizations cannot afford, but desperately need. Utilizing service-learning in studio classes creates a win-win situation for non-profits and students alike. Service-learning allows the instructor to assume a role much more consistent with that of a studio project manager while still providing for learning opportunities and teachable moments. The reality of interior design as a career and not merely a hobby becomes increasingly clear, particularly when dealing with underserved populations and end-users.

This poster presentation highlights the town and gown partnership developed through service-learning by focusing on student designs for non-profit organizations. The project types exhibited are all commercial applications and range from a child-care facility to a food bank to an adult living facility. Integrated classroom projects provide students with actual clients, unique programming requirements, and professional interaction unequalled in the classroom. Throughout the process the community gains
knowledge regarding what design can do for them, their business and clients. The interest in interior design services has been unprecedented. Since integrating service-learning in studios, the request for services has exceeded capacity. These opportunities have also allowed interior design to engage the civic community and leaders through invitations for presentations at public hearings, community workshops, designated taskforces and planning commissions.

In addition to achieving course objectives and community service, students begin to see design as a connection to community and how public service can become part of their professional practice. Concrete exercises in design, space planning and programming are matched with theoretical research exploring environmental psychology and the impact of place. The necessity of design research, standards and best practices comes full circle as students see the impact design possesses. Exposure to such firms and organizations as The Rural Studio, Architecture for Humanity, Design Corps, and Public Architecture allows students to envision their careers, or a part of their practice, with an emphasis on society and service to the public good. Very few of our students have prior experience with service learning. However, informal statistics suggest these experiences create a desire by students to either continue, or for some, make a career out of design for the greater good. Utilizing reflection journaling, students are encouraged to process not only the mechanics of their designs, but also to question their preconceptions of society and design’s impact. Student Alisha Echerd (2005) wrote, “I learned that people need our help as designers. We can help them to overcome their problems with the solutions we come up with.” Additionally, students are stretched to question and find commonalities and solutions for populations and
community groups unique to their experiences. “…how to respond to and relate to people different than myself and still accomplish a design to suit their needs…” responded Sheila Bryan (2005) when asked to journal regarding a service learning client.

Through connections and relationships, students also begin to break down a number of the stereotypes associated with non-profit organizations. The homeless couple attending the same university as the students, an elderly couple the same age as a student’s grandparents struggling with aging-in-place, or the local youth center trying to reach kids where they are and where many of ours just were, are realities that replace misconceptions and misinformation permeating contemporary culture. For a number of students, seeing the toll addiction can take on a life, the impact domestic violence makes on a family or the struggles of an unwed mother provide a wake-up call. Service-learning is an invaluable resource for studio instruction and a connection to community important for all designers.


Abstract

Today's students are born into a world of rapidly developing computer technologies. They casually go about their daily lives with the help of walkie-talkie cell phones with built-in MP3 players and video cameras with a direct link to the World Wide Web. They have a better ability to multi-task than the previous generation and may, in fact, have trouble processing educational systems based on strictly linear thinking (Richardson, 2006).

Blogs—or web logs—are a form of free online self-publishing wherein thoughts are shared via individual entries, much like an old-fashioned pen and ink journal (Richardson, 2006). More than simply a soapbox (Williams & Jacobs, 2004), a blog can be an interactive learning system for social networking (Richardson, 2006).

Because blogs are relatively easy to use, they may shrink the technological gap between instructor and student and eliminate some of the barriers between instructor and technology. Unlike traditional web pages, it is not necessary for users to understand HTML code or file transfer protocols in order to begin blogging—it requires about as much expertise as sending an email (Richardson, 2006). Despite this relative simplicity, interior design faculty have been hesitant to incorporate blogs into the standard curriculum because they are often unfamiliar with the technology.
In Spring 2007, the authors were provided an opportunity to make web tools less intimidating and developed an interactive installation think piece entitled *The Design Dialogue Blog*. The goal was to design and implement a learning tool with a spatial component as part of a "Theory to Action" assignment in a Design Theory and Criticism course. The project took a foreign technology and transformed it into something familiar to its academic participants. More specifically, a digital blog in cyberspace was transformed into a tangible blog in the physical world.

Using only masking tape, string, and black markers, participants posted observations and opinions upon various surfaces and connected related ideas with string. As days passed and comments from other users of the space were added, the blog became a tangible, unavoidable reality to the students that frequented the building. It was a spacious, participatory forum for the entire community, where individual voices visually combined to form a great web of design dialogue. *The Design Dialogue Blog* asked, “Is this the best lighting for this space?” and, “Is this Interior Design?” The foyer became a spirited commons that boasted, “This is ugly,” and “I like this.”

The inherent spatial qualities of this project indicate that it is most valuable as a participatory experience. Therefore, the authors intend to initiate a new tangible blog in “poster” format, utilizing the space provided. This hands-on opportunity will also include classroom resources for instructors.
Design pedagogy and the tangible blog: Bringing cyberspace down to earth

Veronica Fannin and Lindsay A. Clark

Florida State University

Narrative

Introduction

Today's interior design students are plugged in. They have access to computers in every aspect of their lives. They are multi-taskers, able to process multiple streams of thought better than the previous generation (Richardson, 2006). Today's students are non-linear thinkers. They can take in information "seemingly randomly" (Sabry, 2003, p. 451) in large chunks. They may, in fact, have trouble processing information that is presented in a strictly linear, compartmentalized format (Richardson, 2006). “Students studying design generally seem to prefer an ill-structured, flexible and global teaching style compared to non-design students, who prefer a more sequential and structured approach” (Baldwin & Sabry, 2003).

As this new generation of students enters college, some institutions see a need (Williams & Jacobs, 2004) to enhance traditional pedagogical methodologies with new philosophies that incorporate technology and global thinking in an active learning environment. Interactive learning systems (Richardson, 2006) – including web-based structures (Bowman, 1999) like weblogs, forums, and other social networking tools – allow interrelationships between chunks of information to be "explicitly illustrated" (Graff, 2003, p. 407) for the global learner. In addition, an interactive learning system (ILS) provides students with opportunities for self-reflection and exposure to external feedback from classmates, professionals, and scholars through a variety of media (Sabry, 2003; Tsai, 2008)
An ILS allows students to make an individual contribution to the collective body of knowledge within the classroom. In this democratic, constructive system, knowledge is a personal understanding developed by each student through collaboration with other points of view (Hyslop-Margison, 2004; Tsai, 2008). Web-based interactive learning systems give students flexibility in shaping the learning process on an individual level (Tsai, 2008). This adaptability may be more suited to design students' more "exploratory and flexible manner" of learning (Durling et al, 1996, p. 5).

Web-based ILSs encourage active learning and global thinking. Weblogs – or blogs - are more informal and therefore less intimidating than other methods of student-web interaction (Clark & Fannin, 2007). Most importantly, blogs allow for reflection and criticism (Stefanac, 2007) in the context of the blogosphere, or the greater community of interconnected blogs (Wikipedia, 2008). Educators have begun to incorporate web-based technologies, specifically blogs, into their curricula (Williams & Jacobs, 2004). The learning styles supported by blogs can become the foundation for a new, spatially oriented learning tool that is especially suitable for design students.

**Tangible Blog**

When the basic components of a blog are translated into everyday tactile materials, the result is a tangible blog. In a tangible blog, the three essential parts of a digital blog—blogosphere, comments, and tags—manifest in a similar way, corresponding to a physical space rather than a web page (Clark & Fannin, 2007). The blogosphere shifts from the Internet at large (Richardson, 2006) to a physical, three-dimensional space. Comments become hand-written notes that may be applied to all surfaces. Tags link related ideas with string rather than keywords and hyperlinks. By retaining these three components in the move to tangible space,
the essence of a blog is transplanted into a dialogue atmosphere that is more relevant to spatially oriented participants, like design students. In a tangible blog, as with digital blogs, students construct knowledge via solitary exploration as well as peer-to-peer collaboration and synthesis of the big picture (Clark & Fannin, 2007). The tangible blog is an innovative learning technology that has two major implications for Interior Design education: analysis of a physical space and exploration of a design theory.

**Analysis of a Physical Space**

When using a tangible blog to analyze physical space, the goal is to foster an informal, low-stakes environment in which interior design students can critically examine their surroundings. A site-specific tangible blog benefits from placement in a high traffic area with a large number of potential participants.

One example of this type of tangible blog is *The Design Dialogue Blog*, developed in Spring 2007 by Fannin and Clark as a design solution to a "Theory to Action" project proposed by Dr. Jill Pable, a member of the Interior Design faculty at Florida State University. In this case the blogosphere was the main lobby of an Interior Design department, a renovated room with elements in several distinct design styles. Students and faculty used hand-written notes to comment upon the design characteristics of the environment and to respond to other participants. These notes were written on strips of masking tape with black permanent markers—an unattractive, but durable posting solution that could be removed at the conclusion of the project. Students tagged related comments by connecting them with lengths of string, sometimes from one end of the room to the other. Some participants re-purposed the masking tape to delineate observed traffic flow patterns in the lobby. In this way, a conceptual tool
(bubble flow diagrams) used in preliminary sketches became a new way to physically analyze the everyday spatial experience (Clark & Fannin, 2007).

**Exploration of a Design Theory**

In the exploration of a design theory, the tangible blog aims to engage students in freely exploring the interrelationship of ideas within the context of a design theory. This type of blog can also initiate dialogue about a design style or movement, generate collaborative design criticism, and facilitate discussion of current design issues.

This form of tangible blog is not site-specific – it is a visual diagram of ideas, much like a mind map. Instructors may find it useful to initiate this type of dialogue by creating a simplified map on the wall and asking each student to add one related thought to the web of ideas. Student additions can include related articles, white papers, URLs, comments, ideas, and images.

**In the Classroom**

The tangible blog transforms the benefits of blogs and other web-based structures into a learning tool appropriate for interior design students. The process is an exercise in critical thinking that helps students formulate clear, concise thoughts and develop an individual, scholarly voice. The public nature of the dialogue gives students an opportunity to reflect upon how their thoughts are perceived by others (Clark & Fannin, 2007). In the Design Dialogue Blog, students enjoyed the opportunity to interact in a public forum and reacted positively to the new "technology" (Clark & Fannin, 2007).

This tool shares its potential with other web-based structures: forums, wikis, and other tools for social networking. For example, students could create a tangible wiki to share with other interior design majors. The development of more three-dimensional collaborative tools, like Second Life and Google Earth, may merge the digital and tangible in new ways that benefit
interior design pedagogy. Further study into the success of web-based technologies may assist educators in connecting with the next generation of interior design students.

For classroom resources and information on implementing a tangible blog go to:

http://www.clarkcraft.net/learning/blog.html


Williams, J. & Jacobs, J. (2004). Exploring the use of blogs as learning spaces in the higher education
Freehanded Feedback: Improving Onscreen Critique in the Digital Design Studio

Jason Meneely, M.S.
University of Florida

Abstract

Issue and Purpose

As the computer expands in interior design education, educators are increasingly asked to critique in-process digital work directly on the computer screen. Unfortunately, the computer screen is not an effective venue for conducting a design dialogue between faculty and student since it is difficult to incorporate freehand drawing as part of the onscreen conversation. Although faculty can ask students to print out their work for review, it is often impractical to have an entire class print on a regular basis for daily desk critiques. In some cases students may be reluctant to repeatedly print out their work if their school charges printing fees. Consequently, even the most well intentioned faculty and students sometimes find themselves in a compromised position of pointing at a computer screen with no effective mechanism for leveraging drawing during the critique process.

The importance of employing freehand drawing during the critique process cannot be underestimated. Interior design is a visually and spatially oriented field where language and drawing go hand in hand; as Donald Schön (1983) noted, “drawing and talking are parallel ways of designing, and together make up…the language of designing” (p. 80).

Recent advances in digital pen tablet technology now make it possible to sketch directly on the surface of the computer screen with a level of sophistication and
sensitivity that is quite similar to sketching on paper. As such, digital sketching technology appears to have significant potential for improving onscreen design critiques. This presentation details a project that integrated digital pen tablets into an upper division studio course to improve the dialogue of onscreen critiques among interior design faculty and students. Although some preliminary investigations have recently examined the role of digital sketching in design education (Meneely & Danko, 2007) little to no work has explored its application in the critique process.

**Process**

The current author integrated a total of three digital sketch tablets into an upper division studio course of 30 undergraduate students. Due to a college computer requirement each student was already using a personal laptop to support their studio work. Two digital sketch tablets were permanently stationed in studio where students could individually dock their laptops to the tablets and begin drawing onscreen. The third digital sketch tablet was configured as a mobile teaching cart that permitted onscreen critique to extend into other venues (lecture halls, faculty training, etc.). A screen capturing system was utilized so that onscreen freehand drawing could be used to critique student work in any software application.

The poster presents qualitative insights from faculty and students collected during the project. Benefits, challenges, and future directions for onscreen critique will be discussed using Nardi and O'Day's (1999) framework for employing technology with heart. Finally, this presentation will provide IDEC conference participants a hands-on
opportunity to experience digital sketching technology and onscreen critique processes for themselves.

References


Freehanded Feedback: Improving Onscreen Critique in the Digital Design Studio

Jason Meneely, M.S.
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Narrative

Issue and Purpose

As the computer expands in interior design education, educators are increasingly asked to critique in-process digital work directly on the computer screen. Unfortunately, the computer screen is not an effective venue for conducting a design dialogue between faculty and student since it is difficult to incorporate freehand drawing as part of the onscreen conversation. Although faculty can ask students to print out their work for review, it is often impractical to have an entire class print on a regular basis for daily desk critiques. In some cases students may be reluctant to repeatedly print out their work if their school charges printing fees. Consequently, even the most well intentioned faculty and students sometimes find themselves in a compromised position of pointing at a computer screen with no effective mechanism for leveraging drawing during the critique process.

The importance of employing freehand drawing during the critique process cannot be underestimated. Interior design is a visually and spatially oriented field where language and drawing go hand in hand; as Donald Schön (1983) noted, “drawing and talking are parallel ways of designing, and together make up…the language of designing” (p. 80). Although computers play a significant role in contemporary design processes Ching (2003) cautions that, “despite rapid advances in digital imaging technology, drawing with a free hand holding a pen or pencil remains the most intuitive
means we have for graphically recording observations, thoughts and experiences” (p. 184).

Recent advances in digital pen tablet technology now make it possible to sketch directly on the surface of the computer screen with a level of sophistication and sensitivity that is quite similar to sketching on paper (see figure 1). As such, digital sketching technology appears to have significant potential for improving on-screen design critiques between faculty and student.

Figure 1: Student Drawing on a Digital Sketch Tablet
This presentation details a project that integrated digital pen tablets into an upper division studio course to improve the dialogue of on-screen critiques among interior design faculty and students. While some preliminary investigations have explored the use of digital sketching in design education, such as Meneely and Danko (2007) who examined the role of digital sketching in supporting creative ideation and artistic expression, little to no work has explored the use of digital sketching during the critique process.

**Process**

The current author integrated a total of three digital sketch tablets into an upper division studio course of 30 undergraduate students. Due to a college computer requirement each student was already using a personal laptop to support their studio work. Two digital sketch tablets were permanently stationed in studio where students could individually dock their laptops to the tablets and begin drawing on screen. The third digital sketch tablet was configured as a mobile teaching cart that permitted on-screen critique to extend into other venues (lecture halls, faculty training, etc.). A screen capturing system was utilized so that on-screen freehand drawing could be used to critique student work from any software application. The following procedures summarize the process of using digital sketch tablets for on-screen critique:

1) A student would either dock their laptop to a digital sketch tablet or save their file to a USB drive so it could be opened on the mobile digital sketching cart.
2) The file is opened in whichever computer application the student is currently working in (AutoCAD, Photoshop, VIZ, PowerPoint, Word, etc). The computer application is then zoomed in to the area for discussion.

3) With a click of a single button, a screen capturing application automatically takes a digital snapshot of the current screen display and simultaneously opens a sketching application that permits freehand drawing to occur directly on top of the captured screen image.

4) If needed, additional drawing layers can be added to facilitate the onscreen critique.

5) All drawings created during the on-screen critique can be saved as digital images so that both faculty and student can retain a digital copy of the critique.

Presentation

The poster presents qualitative insights from faculty and students collected during the project. Benefits, challenges, and future directions for onscreen critique will be discussed using Nardi and O’Day’s (1999) framework for employing technology with heart. Finally, this presentation will provide IDEC conference participants a hands-on opportunity to experience digital sketching technology and onscreen critique processes for themselves.
References


Big Idea, Tiny House: 
An Integrated Approach to Teaching the Design Process using CAD, 
Architectural Graphics and Presentation Skills 

DeAnn Olsen, Steven Mansfield, Susan Tibbits and Darrin Brooks 
Utah State University

Abstract

The mission of the Tiny House project is to design a 500-foot personal dream home. This challenge is given to second-year studio students and is conducted as a collaborative effort between instructors of the students’ first CAD and architectural graphics classes. It is a comprehensive venture that initiates the student to the complete design process by requiring a multitude of tasks, skills, and methods to be learned and incorporated during the course of completing the project.

The Tiny House must be no larger than 500 square feet on the main level (and cannot exceed two levels, plus a basement), must incorporate stairs, and must be built in a theoretical location that has a winter season, thus incorporating a foundation. The project is ongoing during an entire semester, and consists of three distinct components: 1) presentation drawings that include floor plans, site plan, elevations, interior and exterior axonometric, and an orthographic projection, 2) a white model that must have a removable roof to reveal the interior, and 3) a set of construction documents.

This is a “hands-on” project that requires various skills from sketching to three-dimensional visualization to computer technology, all of which force the student to engage in a number of different learning styles.
Students are enthused at the prospect of designing a personal space. They must quickly synthesize the design process by engaging in schematic design and development. They learn essential residential codes and are introduced to fundamental space planning principles. The assignment forces the students to learn presentation skills, from basic printing and cutting of foam core to speaking about and displaying their projects in front of peers, professors, and colleagues. For most students this is their first introduction to CAD, and the sheer magnitude of the assignment compels them to practice the basic proficiencies learned at the beginning of the semester in order to become capable users of design technology by the end of the project.

Although the project is time intensive, feedback from students participating in the Tiny House project has been positive, and the skills learned at a second-year level have provided a solid foundation on which to build their interior design education and future practice.
Purpose

Providing students with a meaningful and realistic project that meets the required standards for CIDA accreditation, provides an motivating opportunity for learning the design process and CAD technology and produces a relevant portfolio piece is an immense challenge for interior design educators (CIDA, 2006). At Utah State University, the interior design faculty has developed a comprehensive and collaborative second-year student project, the Tiny House.

The purpose of this poster is to present the Tiny House project. Inspiration for the endeavor came in the form of a small publication, *The Tiny Book of Tiny Houses*, written by architect Lester Walker wherein he explains his interest in petite homes that might more easily be designed and detailed. He began challenging his architecture students to design a tiny house of their own that included schematic plans showing how they could be constructed. (Walker, 1993). Building on Walker's idea, the faculty devised an expanded version of the assignment. The objectives of the Utah State Tiny House project are to 1) give the students a strong foundation in CAD, 2) teach the design process, 3) reinforce hand-drafting skills 4) master orthographic projections and axonometric views, 5) teach model building, 6) commence discussions about space
planning, 7) introduce students to residential design, 8) learn residential building codes, 9) provide an understanding of residential construction, 10) introduce shadowing techniques, 11) prepare construction documents, and 12) develop creativity.

Implementing each of these objectives into the curriculum proves challenging. Research has shown that due to continual advances in design technology an emphasis tends to be placed on learning complex software rather than development of design concepts (Brandon, 2001). The Tiny House project integrates both traditional design development skills and the time and practice needed to become adept users of CAD technology, while still providing the opportunity to use creativity in developing design concepts.

Methodology

During the first four weeks of the fall semester, second-year students enrolled in both CAD 1 (3 credits) and Architectural Graphics 1 (4 credits) are given lectures and assignments that provide the foundational proficiencies to complete the multitude of tasks required to complete the Tiny House project.

In CAD 1 the students complete seven introductory CAD assignments that teach them the fundamental concepts of CAD. In Graphics 1 students begin learning the primary skills hand-drafting, orthographic, axonometric and shadow projections. During this time period students have lectures on residential design, the principles and elements of design applied to housing, stair calculations, residential building codes, and
residential construction methods. At the conclusion of these preparatory discussions and assignments the students are given the Tiny House project.

The students are challenged to design a house for themselves that has no more than 500 square feet per floor. The house must have at least 2 levels -- to guarantee that the students all get to design code-compliant staircases. The students are then guided through the design process by completing programming, and schematic design. Although the students are relatively new CAD users, the excitement of designing their own dream home provides a more positive attitude toward learning the new technology. Previous research indicates that with this positive approach students are more fluent in their exploration of design ideas (Eshelman & Villegas, 1990). The formal instruction is given in shorter periods of time and students are able to quickly attempt to apply their knowledge to the project. The instructor is readily available to respond to spontaneous questions as the students learn by doing. (Clemons & McLain-Kark, 1991) Students have responded positively to this format of learning CAD.

The next few weeks are then used for refining house designs and practicing and perfecting the skills necessary to take an idea conceived in a students’ mind to a coherent, complete design presentation. The project consists of four major assignments 1) preliminary study model, 2) presentation drawings, 3) presentation white model and 4) construction documents.

The preliminary model is instrumental for the student to begin to comprehend and visualize how their “flat” floorplan will work in 3-dimensions. It is also vital to the students’ understanding of basic model construction techniques, from the proper methods of cutting foam core and chipboard to the appropriate glue to use for a clean
and professional final model. The presentation drawings consist of floorplans, four elevations, two with shadow projections, site plan, and an interior and exterior axonometric drawing. These are displayed on consistent sizes of foam core. When the presentation drawings along with the final white model are complete students have the opportunity to display their projects in the student center. We have found that displaying the presentation drawings and models in a public area compels the students' to take ownership of the craftsmanship and creativity in the design of their Tiny House and has generated a lot of enthusiasm and dispelled some misconceptions of interior design as an easy and non-technical discipline.

During the remainder of the semester the students focus their energy creating the construction documents that would be required to build their houses. These construction documents consist of a title page, site plan, dimensioned floor plans and elevations, window and door schedules, building sections, wall sections, stair sections, and mechanical/electrical plans. Students are given extra credit if they desire to complete footing/foundation and structural plans.

Summary

The Tiny House project assists the students’ development into capable designers. They are invested in the project because they are designing a structure for themselves as the client. The area may be small, but the output is large. Many students equate value with square footage, and during the course of completing the assignment they change the way they have been taught to think about houses and value and the
impact that thoughtful design has on the built environment (Susanka, 2000). They learn that quantity does not always equal good design and that quality demands attention to detail no matter how large the scope of the project. Students are exposed to several different learning methods or theories. They are thrust into communities of practice as a designer, client, technician, and project manager (Driscoll, 2005).

More research can be done that match the project objectives and instruction to the learning styles of the students, and how the use of technology affects their creativity and approach to the whole design process. Observations and evaluations from students who become fully engaged in their Tiny House do indicate that they are accomplishing the objectives of the project and are developing a design solution with design merit. The instructors of interior design at Utah State feel that this foundation project helps propel students into their third-year with strong technical and presentation skills. In addition, feedback from internship supervisors and employers have indicated that they are impressed with the results of this project.
Example of Presentation Drawings
Example of Construction Document Floorplan
References
(Chicago Manual of Style)


Abstract

Background

A survey of historic buildings in the eastern part of the United States provides an excellent overview of sustainable design practices that were once in use. This poster will look at one plan type, the single-pile, center-hall plan, as used in the 18th and 19th centuries in the eastern United States. Building examples show that local craftsmen and builders followed vernacular practices that led to cooling in the summer, heating in the winter and the use of locally available materials which were plentiful. Multiple examples from across the rural landscape demonstrate self-supporting and self-contained complexes that maximized location specific features.

The call for sustainable practices within the design fields today—including the construction of homes—often focuses on the use of new technologies to solve the problems we have created with regard to our natural resources. An excellent article which describes several of the different theoretical frameworks for thinking about sustainability is “Reinterpreting Sustainable Architecture: The Place of Technology” by Simon Guy and Graham Farmer. In the article, Guy and Farmer provide six different frameworks they have identified as to how people approach sustainable building design. The six typologies are as follows: eco-technic, eco-centric, eco-aesthetic, eco-cultural,
eco-medical and eco-social. Each type considers one area emphasis to be of predominant concern.

Integrated technology and a scientific approach to design and building characterize the Eco-technic approach to sustainable architecture. An Eco-centric approach emphasizes harmony with nature and its systems. The Eco-aesthetic paradigm calls for a new understanding of ecological knowledge and an expanded consciousness about nature. Vernacular local traditions highlight the Eco-cultural method of architecture. Eco-medical stresses a nontoxic emphasis focused on health and well-being while Eco-social involved community participation to achieve an organic, decentralized and democratic architecture.¹ This poster looks to eco-cultural, vernacular day-lighting and ventilation strategies, plan organization, porch placement and other technologies as a readily available solution to current material and construction deficits in the construction of new homes.

Method

This poster was inspired by years of survey work conducted in Virginia as a consultant to the Department of Historic Resources. The author surveyed over a thousand historic buildings—both alone on some occasions and with other consultants in others—in the following locales: Cumberland County, Falls Church, the City of Norfolk, the City of Virginia Beach, Williamsburg, and Roanoke County. The knowledge acquired as a surveyor was later put to use when learning about and applying sustainable design practices.
Summary

That there is an overlap between Historic Preservation and Sustainable Design has been acknowledged over the past five years. Most of the focus has been on building reuse. While the materials use and retention of an existing building are considered sustainable strategies within the design world, little study of historic building forms for additional lessons has been conducted and incorporated into everyday practice of residential construction in the U.S.

Sources

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Narrative

A survey of historic buildings in the eastern part of the United States provides an excellent overview of environmental design practices that were once in use. This paper will look at one plan type, the single-pile, center-hall plan, as used in the 18th and 19th centuries in Virginia. Building examples show that local craftsmen and builders followed vernacular practices that led to cooling in the summer, heating in the winter and the use of locally available materials which were plentiful. Multiple examples from across the rural landscape demonstrate self-supporting and self-contained complexes that maximized location specific features.

The call for sustainable practices within the design fields today—including the construction of new homes—often focuses on the use of new technologies, or an “eco-technic” approach, to solve the problems we have created with regard to our natural resources.

This paper looks to eco-cultural solutions such as vernacular day-lighting and ventilation strategies, plan organization, porch placement and other technologies as a readily available solution to current material and construction deficits in the construction of new homes. Using the LEED for new homes and other sustainable house building
guidelines for the design of new homes, this research will demonstrate how traditional, vernacular practices can meet current needs. Shortcomings of some sustainable guidelines with relationship to site specific building will also be addressed in this paper. 18th and 19th century houses provide a possible source for meaningful methods of solving location specific problems inherent in home design and construction.

Background

This paper was inspired by years of survey work conducted in Virginia as a consultant to the Department of Historic Resources. The author surveyed over a thousand historic buildings—both alone on some occasions and with other consultants in others—in the following locales: Cumberland County, Falls Church, the City of Norfolk, the City of Virginia Beach, Williamsburg, and Roanoke County. The knowledge acquired as a surveyor was later put to use when learning about and applying sustainable design practices.

That there is an overlap between Historic Preservation and Sustainable Design has been acknowledged over the past five years. Articles have appeared in the Journal of Interior Design, the APT Bulletin and other venues. Most of the focus has been on building reuse. While the materials use and retention of an existing building are considered sustainable strategies within the design world, little study of historic building forms as a source for additional sustainable lessons has been conducted and incorporated into everyday practice of residential construction in the U.S.
This research takes a single form, the single-pile, center hall plan house form, and examines the way in which it was traditionally built across rural Virginia to respond to the specific climatic needs of the region. The “I” house at it has come to be known is a predominant form of vernacular domestic architecture throughout Virginia. Henry Glassie’s classic study, *Folk Housing in Middle Virginia*, chronicled the plan types he found in Middle Virginia. Of the 164 houses he surveyed in this region of the country, Glassie found house Type 14 to be in the majority with 33% of the dwellings falling into this category. House 14 (2/3) was a variation on type 14 and accounted for an additional 10% of the houses surveyed. The two room and four room house forms comprised 93% of the house designs. The two room house consisted of two rooms on the first floor while the four room had two rooms above on the second floor as well. Glassie’s research demonstrates the frequency of the single pile, hall-parlor plan “I” house in middle Virginia. The survey research mentioned above reiterates the frequency of this plan type.

**Traditional Environmental Features**

There are several traditionally derived environmental features inherent in this particular plan type. The single-pile arrangement allows for windows to be located across from one another in all rooms thus promoting cross ventilation. The central doors at both front and back also allow for cross ventilation. In the two-story version of the house, this central stair hall also acts as a ventilation shaft during the summer.
drawing heat from the first floor. End chimneys, associated with this plan type in
Virginia, provided heat and thermal mass to hold the heat generated by the fires within.
Composed of brick or stone, these large masonry masses extended to the roof and
provided an excellent source of insulation to the interior of the home as well as a way of
holding heat during the winter.

Prior to the standardization of dimensional lumber, builders used local wood in
variable lengths. Heavy timber frames houses and later balloon framed houses
featured high ceilings. High ceilings provided a place for heat to rise in the summer and
allowed for the use of interior and exterior door transoms. The interior and exterior
transoms facilitated air movement within the home during the summer months. During
the winter months, beds often featured curtains designed to encapsulate the heat
around the homeowners.

By necessity, the majority of houses constructed in the 18th and 19th centuries in
Virginia were made of locally available materials. While there are some notable high-
style exceptions, this applies to most homes. Local materials included stone quarried
near the site, trees felled on the property, and hand made bricks manufactured from the
Virginia red clay which was abundant. Local sand and oyster shells were used within
the mortar. Sand also provided the resource for hand blown glass windows.
Oftentimes, faux painting was used to simulate marble and exotic woods on the interior.
Natural pigments provided the standard palette of colors. Builders mixed plaster on site
using locally available lime and horse hair.
A feature common to many 18th and 19th century houses built in Virginia is a south-facing front door. This placement allowed for sun in the winter to warm the front door which could also be shaded through the use of deciduous trees in the summer. A small portico or entry porch would often provide additional protection from the elements. By necessity, houses were placed in close proximity to water sources. Some included cisterns to capture rain water as well. Homeowners placed kitchen gardens to the rear of the house along with summer kitchens for cooking. This arrangement resulted in reduced heat build up during the summer as well as a reduced danger of fire. Other appertenances on the building site often included ice houses, spring houses, smoke houses, corn cribs and out houses. The entire complex was designed to be self-sustaining for long stretches of time.

To date little empirical research has been conducted to quantify ecological features of extant historic buildings. In a 1998 article, “Energy Simulation of Historic Buildings: St. Louis Catholic Church, Castroville, Texas,” Anat Geva used a computer program to simulate the historic conditions of a church in Texas against possible mechanical interventions. Using a program ENERG-WIN to run simulations, Geva identified energy conservation strategies. “The case study of St. Louis Catholic Church indicated that major improvements in thermal comfort can be accomplished through natural ventilation. Reopening of the windows eased the discomfort of summer heat and humidity and decreased energy consumption.” Although several authors have pointed to this type of approach and provided normative research to indicate that historic buildings often provide efficient and sustainable solutions to specific locals, little
empirical research exists, making Geva’s study an important beginning. Geva and
others have also conducted similar computer simulations for vernacular single-family
houses, house museums, Greek Revival Houses and other buildings in various climatic
conditions.

Sustainable Design Framework for Historic Buildings

Several authors have written about sustainable design, sustainable architecture,
green design and related topics. A few have tried to sort through what these terms
mean, and they clearly mean different things to different people. Guy and Farmer’s
article mentioned above provides a useful framework for contending with the large body
of resources on the subject in an attempt to provide clarity to the many differing
positions towards sustainability as it relates to buildings.

When mapping these frameworks onto Sustainable-Preservation work, three
emerge as the most relevant: ecotechnic, eco-centric, and eco-cultural. The
combination of these three underlying logics provides a holistic approach to this form of
practice. It also parallels, albeit informally, the logic underlying vernacular house forms.
These forms are subject to building codes and other legislation, they are reflective of
our personal belief and passions about how we want to live, and they reflect the
indigenous culture of a locale.

By and large, the most prevalent approach to sustainable design among
practitioners is eco-technic. This approach relies heavily on governmental policy and is
founded in a scientific approach to problem solving. Environmental management by existing institutions are considered sufficient to solve any problem with the world environment. The LEED Rating system and other sustainable design rating systems tend to follow this model. Points are assigned, energy is measured, and materials are weighed. Energy reduction, material recycling, and water conservation all take place within an existing system of design and construction without any radical rethinking of how we do things.

This can be contrasted with the eco-centric approach which asks us to consider our core values with relationship to the planet. The current state of the world is thought to be far beyond science’s ability to fix things. According to Guy and Farmer “This rhetoric generates a viewpoint in which nature becomes viewed as fragile and where natural equilibrium is easily disrupted.” The logic underlying this approach to sustainable design aligns closely with the original foundations of historic preservation in the United States and still represents the viewpoint of some preservationists: it is morally correct and our duty to “save” historic buildings. This is in direct contrast to the echo-technic logic mentioned above where one might align the secretary’s standards, section 106 work, and historic tax credit legislation.

Eco-cultural logic invokes phenomenology and the need to belong to a specific time and place. Local traditions, vernacular architecture and local climate inspire this bioregionalism. I would suggest that this underscores a major component missing from many green building rating systems. Local climates, local materials and local labor are
all realities of construction. Traditional local practices, as argued in this paper, provide answers for how to contend with a specific locale and its people.

Eco-cultural features of the single pile, central hall plan house include all of the sustainable design features mentioned above. Local materials, high ceilings, cross-ventilation, and careful siting with regard to water, prevailing winds and sunlight all exemplify an adaptation of the house form to a specific location.

For the most part, current green rating systems such as LEED for New Homes have been slow to integrate eco-cultural concerns into their frameworks. The goal of a single rating system for all has tended to look to a more scientific solution to sustainable solutions instead of a site specific, case-by-case solution.

Summary

Clearly, historic homes provide a legacy of environment appropriate strategies developed overtime in specific locations from which green building rating systems might benefit. These regional practices illustrate the accumulated knowledge of local solutions which stand the tests of time. Additional empirical research studies, such as that conducted by Geva, would make normative historic design practices quantifiable and easier to integrate into a point-based system such as LEED. The sustainability movement in its current iteration stresses the need to save the planet. One very
important element in this mission is to learn from those who have long interacted with
the local ecology, climate, and materials.

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Human-Computer Interface Design in Eyes of an Escherist

Jun Zou
Louisiana State University

Abstract

This study attempted to gain a better understanding of human-computer interface (HCI) by positioning it in a larger context, through which characteristics of HCI are identified, and design guidelines are recommended.

The defining idea driving the study is the notion of comprehensible space. The comprehensible space, being defined as a compound of many physical worlds together with various levels of abstraction, provides the context for understanding HCI and its relationship with physical and cyber spaces. A set of seven characteristics of HCI are derived from this context.

- polymorphism -- multiple forms or structures coexists on HCI
- multi-dimensionality -- considering the cyberspace as a database needing a proper data visualization mechanism through HCI, one should not confine HCI by the two dimensions of a computer screen
- dynamics -- HCI represent human users’ experience which is both spatial and temporal
- interaction -- one major form of HCI dynamics is through human-computer interactions
transformation -- it refers to various kinds of operations that create or modify the geometric characteristics of environments or objects on HCI

multi-metrics – HCI integrates multiple cyber and physical spaces, and various forms of interactions between them, which lead to multiple ways to measure or quantify them; and

“ill structure” -- the overall structure of HCI is complex, which may even be impossible in physical space.

The understanding of these characteristics further motivates us to propose four design guidelines of human-computer interface.

1. Design of symbolic and geometric objects: symbolic and geometric objects should all be carefully designed and utilized as basic building blocks

2. Design of intelligence: the intelligence of HCI is represented by the functionality of the interface, which is more than the simple sum of functions carried by individual objects on HCI.

3. Design of performance: designers should match HCI with the capacity of its underlying infrastructure so as to achieve optimal performance.

4. Design of virtuality: the space in the virtual environment is different from the space in the real world. It is important for designers to identify the various usability-enhancing characteristics and take full advantage of them to build an environment that is more suitable than its real world counterpart.

Escher’s graphical works have served as a visualization and metaphor tool to illustrate the involved concepts, and in several cases have inspired the proposal of these
concepts. It is anticipated that through further comparison and contrast study between
graphic design and interface design theories and practice, more findings can be
resulted. In this process, Escher and his timeless works will continue to great
inspiration. As a logical consequence, it is clear that by considering modes of
representation beyond the conventional two-dimensional interface, it is possible to
argument HCI with the so-call “virtuality” as well as rich spatial properties specific to
three-dimensional media. In this role interior designers and architects will also possess
an understanding and capability to make their contributions in human-computer
interface design.

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Human-Computer Interface Design in Eyes of an Escherist

Jun Zou

Louisiana State University

Narrative

Introduction

Diverse computer-based applications such as online games, chatting, shopping, and touring have been entering in our daily life at an accelerated pace, and cyber society has become an important part of our society. While the co-existence of physical and cyber worlds is well recognized and increasingly meditated, the interface that “glues” these two worlds together has been paid less attention.

Figure 1. Three Worlds by M.C. Escher
A print by M.C. Escher – *The Three Worlds* as shown in Figure 1 (see e.g. Escher (1989)) could serve as a starting point to digest the rather vague concept of interface. In this print, floating leaves, a wondering fish and the reflection of three trees are observed. By viewing the water surface as the interface between under-water and above-water worlds, a set of characteristics of the interface essential to formation of the three worlds are recognized -- the water surface is reflective so that the three trees are visible; it floats the leaves so that the leaves are visible; water is transparent so that the underwater fish is visible; and more fundamentally, water accommodates the fish.

The standard definition of “Interface” has much in common with the above description of the water surface. According to *Webster’ Dictionary* (Merrian-Webster 1996), interface is defined as:

1. The surface forming a common boundary of two bodies, spaces or phases;
2. The place at which independent and often unrelated systems meet and act on or communicate with each other.

The first definition emphasizes the geometric properties of the interface, and the second emphasizes the functional properties of the interface. Both types of properties are found in the water surface analogy.

The analogy with Escher’s *Three World* is not accidental. In Mullet and Sano (1995) it is pointed out that visual design disciplines, such as graphic design, industrial design and interior design are especially well-suited to the problems of graphic user interface design. In this study, a re-examination of the concept of interface from an Escherist’s
perspective is conducted. Escher’s graphic works have inspired the initiation of this study on interface design by offering a rich source of analogies and metaphors. It is expected that a more visualized understanding of interface and its design principles can be achieved through absorbing and reframing some of the innovative ideas exhibited in Escher’s masterpieces.

**Characteristics of Human-Computer Interface**

This paper focuses on human-computer interface (HCI), which by Shneiderman (1986) refers to the way a person experiences the computer, its application programs, hardware components, output devices and functionality, and includes all aspects of the human's experience from the obvious ones of screen layout and selection options as well as input and output devices, reliability and accessibility.

In Zou (2001), a notion of *comprehensible space* was introduced. Being defined as the compound of many physical worlds together with various levels of abstraction, comprehensible space provides the context for understanding the HCI and its relationships with physical and cyber space. Escher’s genius helps us to envision the profound complexity of HCI in relation with other spaces. In Figure 2, an exotic environment is created, where a print hung on the wall becomes also a city containing the gallery and the visitor himself.
A set of characteristics of HCI can be derived from the aforementioned complexity, which includes polymorphism, multi-dimensionality, dynamics, interactions, transformations, multi-metrics, and ill-structure.

a) Polymorphism
With the advances in communications technologies, multiple worlds separated by space and time can now be easily integrated at a common interface, where the interactions among the multiple worlds through the interface could have the “ripple” effects on each other, which are nicely illustrated in Figure 3 by Escher.

**b) Multi-Dimensionality**

The interface has to present complex information in the cyberspace. By abstracting the cyberspace as a database which can be easily of hundreds of dimensions, a reinterpretation is that the interface as a tool of data visualization, which by no means has to be restricted in the two dimensions of a computer screen. In Figure 4, the ants are smart enough to piece together their locally 2D experience to generate the 3D sense of a Mobius strip.

![Figure 4. Mobius Strip II by M.C. Escher](image)
c) Dynamics

HCI is not only spatial, but also temporal, and the human users’ experience is realized by the dynamic processes that join the temporal and spatial dimensions together. Figure 5 illustrates the evolution from rigid geometric pattern to flying birds, indicating significance of the temporal dimension.

![Figure 5. Liberation by M.C. Escher](image)


d) Interactions

One major component of HCI dynamics is realized through human-computer interactions, in which both the human users and the computer systems actively shape
and reshape each other in a recursive manner. Such a recursive relationship was explored in Escher’s work in various exotic ways. Figure 6 gives one of the most famous examples.

![Figure 6. Drawing Hands by M.C. Escher](image)

**e) Transformations**

![Figure 7. Smaller and Smaller, and Square Limit by M.C. Escher](image)
“Transformation” refers to various kinds of operations that create or modify the geometric characteristics of spaces or objects. In this way, various geometric forms can be generated and utilized for HCI enhancement. For example, self-similarity forms can be obtained through simple nonlinear transformations. Figure 7 shows two self-similar patterns created by Escher.

f) Multi-Metrics

Human-Computer Interface, by its very definition, accommodates multiple cyber- and physical worlds, which requires multiple metrics for measurement or quantification. For instance, bytes is used to measure information, spatial distance is used to measure size of an image on screen, time is used to measure responsiveness to a click, or at a more abstract level, price, security.

Figure 8. Balcony by M.C. Escher
privileges, social and cultural associations and language preferences are used to measure accessibility. In Figure 8, Escher illustrated how the perception of world can be deformed by simply modifying the underlying distance metric.

g) Ill-Structure
The overall structure of HCI is complex, and it does not always present the common experience in the physical world. Those HCI objects that are impossible in the physical world are referring as “ill-structures”. In Figure 9, Escher depicts an impossible building in the physical world, which can be understood as an ill-structured reality in the HCI sense.

![Figure 9. Balcony by M.C. Escher](image)
Design Guidelines

The seven characteristics described in the previous section provide a foundation for the recommendation of four design guidelines of HCI design: design of symbolic and geometric objects, design of intelligence, design of performance, and design of virtuality.

a) Design of symbolic and geometric objects

The building blocks of HCI include 3D objects and environments, 2D images, sound, and symbolic objects such as buttons, texts, and hyperlinks. They are further integrated in a logically way so as to jointly represent the multi-dimensional interface, and to equip human users the “wheel” to navigate through the cyberspace efficiently. Escher’s Curl-up shown in Figure 10 illustrated his desire of wheel in the nature, which conceptually corresponds to the desire of efficient navigation system on HCI.

![Figure 10. Curl-up by M.C. Escher](image)

b) Design of intelligence
The intelligence gives rise to the functionality of the interface. Ultimately, the HCI is more about experience than about an object, thus HCI design corresponds to the design of a process, in which the intelligence of HCI becomes the “brain” to direct its dynamics. Figure 11 by Escher illustrates how intelligence (the image of human being) can emerge from properly structured simple building blocks (the rind).

Figure 11. Rind by M.C. Escher

c) Design of performance

HCI design has to take into account the available resources offered by its infrastructures such as communications and computing capability. Performance enhancement is often achieved through the efforts on minimizing resource consumption. The work shown in Figure 12 by Escher shares much of the essence in the way that the whole 2D plane can be generated by basically just one pair of horse & man.
d) Design of virtuality

HCI designers are automatically granted opportunities to break the laws of physics as well as other limitations encountered in the physical world. To actively search for and make use of various ill-structured constructions should be considered as a regular routine in HCI design. Figure 13 shows an ill-structured building by Escher in which the meaning of “up” and “down” loses absoluteness.
Concluding Remarks

This study attempted to gain a better understanding of the human-computer interface by positioning HCI in the context of *comprehensible space*, through which a set of seven characteristics are identified, and four design guidelines are recommended. Escher’s graphical works have served as a visualization and metaphor tool to illustrate the involved concepts, and in several cases have inspired the proposal of these concepts. It is anticipated that through further comparison and contrast study between graphic design and interface design theories and practice, more findings can be resulted. In this
process, Escher and his timeless works will continue to great inspiration. As a logical consequence, it is clear that by considering modes of representation beyond the conventional two-dimensional interface, it is possible to argument HCI with the so-call “virtuality” as well as rich spatial properties specific to three-dimensional media. In this role interior designers and architects will also possess an understanding and capability to make their contributions in human-computer interface design.

Reference List


A Comparative Study of American and Chinese Interior Design Education

Jun Zou, Louisiana State University
Feihu Chen, Hunan University (China)
Yang Zou, Hunan University (China)

Abstract
Interior design is a sprung up career in the past 70 years. As a major in university, interior design program started around 1940’s in U.S.A., and in 1956 in China. While the programs in different universities vary by time, by academic/ administrative settings, by educational philosophy and corresponding approaches, and even by their names, both commonalities and differences have been observed. With education background and teaching experience in design programs across China, Canada and the U.S.A. the author recognizes that the differences run deeper than variations between individual programs. In fact, the systematic differences between the two education systems (the American and the Chinese systems) dominate those within the two.

This research is set forth to study the differences between the two systems. The objective is to encourage more communications between them, which would consequently benefit both systems by enabling better mutual understanding, by learning from each other, and by incorporating a globalized perspective in interior design education.
By examining two typical interior design programs in the American and Chinese systems, respectively, through the analysis of their history, current curricula, and implementation of the curricula, some observations are made.

In the U.S.A., interior design education has been evolving from having lots of arts education characteristics to incorporating many engineering components. In particular, the interior design program has the following characteristics:

- Establishment of a collaborative, multi-disciplinary learning community
- Focusing on system/process – oriented training. One distinct feature is the emphasis on the whole design process and its associated documentation, presentation, review and critics
- Inclusion of new technology and notions, such as computer technology, green design, sustainability
- Promoting self-study ability, fostering students study initiative
- Using internship as a mean that helps students to gain practice experience from professional design company

In China, early interior design programs mostly reside in arts schools or departments, and have just started to spin off from architecture design or industrial design since late 80’s. Decoration remains a very influential perspective in interior design programs, which reflects its artistic origination. In particular, the following characteristics are observed:

- Emphasizing foundation trainings: freehand drawing and spatial imagination skills have been given tremendous emphasis
• Attention to diverse regional, national and cultural styles
• Emphasizing learning with an outcome-based performance evaluation.
• Emphasizing practicality and the customer-driven approach

Overall, the American and Chinese interior design programs maintain some unique characteristics. While these two systems are not at the same maturity level, some of their characteristics can complement and have the potential to benefit each other. Considering interior design education is currently undergoing a major expansion and enhancement in both countries, a larger scope of surveys and comparative studies of these two systems could potentially offers more insights on the future development of interior design education in both systems.

Reference List


A Comparative Study of American and Chinese Interior Design Education

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Narrative

Statement of Purpose

This research is set forth to study the differences between American and Chinese interior design programs in higher education by examining their distinct characteristics. The objective is to encourage more communications between the two education systems, which would consequently benefit both systems by enabling better mutual understanding, by learning from each other, and by incorporating a globalized perspective in interior design education.

Context

Interior design is a sprung up career in the past 70 years. As a major in higher education, interior design program started around 1940’s in the U.S., and in 1956 in China. The interior design programs at different universities may vary from each other by academic/administrative affiliation, by teaching philosophy and corresponding approaches, and even by their names, and are subjected to constant improvement in time. With education background and teaching experience in design programs in China, Canada and in the U.S. the authors recognize that some of the differences run deeper
than the variations between individual programs. In fact, systematic differences between
the western and eastern education systems outweigh the differences within the two.

Findings

The observations to be presented in this study are made by examining two typical
interior design programs in the American and the Chinese higher education systems
through the analysis of their respective history, current curriculum and methodologies
behind the curriculum. The two chosen programs are the interior design programs at
Louisiana State University, USA and at Hunan University, China, respectively; and the
choice enables the authors to offer their first-hand experience.

In the USA, most of the interior design programs were originated from arts oriented
programs, such as fine arts, which have evolved to a rigid program with a unique
combination arts, design and engineering components. At Louisiana State University,
the Interior Design program was initiated in 1969 within the Department of Fine Arts in
the School of Environmental Design, then moved to the Dept of Architecture in 1973,
and later became the Department Interior Design in 1990. Since 2002, the Department
Interior Design has resided in the College of Art and Design.

The following characteristics are observed:

- Establishment of a collaborative, multi-disciplinary learning community

  The affiliation of the interior design program within the Collage of Arts and Design
  allows the interior design program to share the teaching pedagogy across the
multi-disciplines of Architecture, Landscape-architecture, and Fine art, which provides interior design students with a across multi-discipline learning environment.

Specialists from multi-disciplines, such as code specialists and architects actively participate to the interior design curriculum, presenting a variety of points of view and perspectives on design problems. The program provides students with interaction opportunities to practicing professionals in the roles of guest lecturers and mentors.

Team projects are very important to foster capability of collaboration and team spirit. Through many different team projects arranged through all four years program, students gain experiences of collaborative working with many other team members, understanding spirit of team first, individual second.

- Focus on system /process – oriented training. One distinct feature is the emphasis on the whole design process and its associated documentation, presentation, review and critics

Core design studio sequence is the heart of the interior design curriculum. These are six consecutive core design studios. Linked to the design studio sequence are a series of three hour focus or support studios. In the focus/support sequence, the students learn the knowledge and skills necessary to support the design process, such as graphics, color and illumination, construction
documents, component design, computer visualization, field studies and special studies. After students progress through the design studio sequence, the senior projects allow the students to not only apply their acquired knowledge, but to analyze, synthesize and evaluate as they proceed with their independent designs.

- Inclusion of new technology and new concepts, such as computer technology, green design, and sustainability

  Computer visualization is taught and heavily used in focus/support sequence for students to gain latest knowledge of computer technology for interior design process.

  Students are also challenged to a deeper comprehension of the latest issues such as sustainability, green design and LEED practice in courses like “interior materials, finishes, and furnishings”. Sustainability is very often chosen as student capstone project’s focus, and LEED checklist is used as guideline for the design.

- Promoting self-study ability, fostering students study initiative

  Senior capstone project provides students a final opportunity to independently develop the program utilizing the experience from prior courses in learning programming skills. Students are required to define the problem, examine precedents, provide clients information, identify user groups, analyze the needs
and concerns of the clients and users, analyze physical requirements, and
develop the final program under the tutelage of their faculty advisor and
professional mentor. This is a year long process.

- Using internship as a mean that helps students to gain practice experience from
  professional design company

Each student is required to complete the 320 hour internship supervised by a
licensed interior designer or architect. Students apply the knowledge and skills
learned in the academic curriculum to actual practice in a professional setting.
Students must interact with a variety of practicing professional, interface with
client needs and demands, and in terms of materials and finishes and their
installation details, be cognizant of the constraints of budget, schedule and
project administration issues. They must practice time management, professional
composure, conduct and responsibility. The evaluations of internship supervisors
reflect the strengths and weakness of the interns.

In China, early interior design programs mostly reside in arts schools or departments,
and the newer ones are more likely to be spun off from architecture design or industrial
design programs starting from late 80's. As a discipline, interior design in China is
currently undergoing the early-stage growth and it is facing huge demands. Most
programs follow the so-called “art-design” education methodology which emphasizes on
trainings of free-hand representation capabilities and on practicality. Decoration remains
a very influential perspective in interior design, reflecting its artistic origination.
Hunan University initiated its first industrial design and fine arts program in 1982, which was expanded to the College of Environmental Design and started offering the interior design program in 2002. The following characteristics are observed:

- Emphasizing foundation trainings: freehand drawing and spatial imagination skills have been given tremendous emphasis. These skills have always been believed not only as the most important skills for their own sake, but also as an effective tool to support the development of their overall design skills. Significant weight is placed on this aspect throughout the curriculum in the forms of regular courses and practice programs. For example, two mandatory drawing practice programs are scheduled during the junior year, one focusing on sketching, and the other on coloring. These are intense programs, in which students stay in a carefully selected site that is of architectural/historical significance, and spend two to three weeks of time to practice their sketching and coloring skills under the hand-by-hand guidance from veteran art specialists.

- Attention to diverse regional, national and cultural styles. Courses like “folk arts” and “Hunan traditional houses and architectural styles” are given equal number of credit hours as design studio courses. This emphasis directs students to pay attention to culture diversity and its impacts on architecture and interior design theory and practice, and to learn how to actively incorporate the culture elements in their design projects.
• Emphasizing learning with an outcome-based performance evaluation

It has been a very much oriental tradition to place emphasis on learning ahead of innovation at the undergraduate level, which is in accordance with the emphasis on foundation trainings (innovation is more heavily weighted in post-graduate programs). Final design solution, viewed as the outcome of the learning process, is emphasized, where two dimensional and three dimensional representations of the design are given serious considerations in performance evaluation.

• Emphasizing practicality and the customer-driven approach

Most of studios are based on real projects, which give students great opportunities to gain practical experience. During the senior year, there is a 12-week long concentration period, called "production practice", in which students work directly with professional designers and engineers in a real-world work environment.

With the emphasis on practicality, attention to the customers’ real needs becomes an important component of the design. It is become necessary for the students to establish sufficient research, communications and analytical and project management skills in order to learn the popular styles and latest trend on the market, to collect customers’ requirements and desires, to process the information, to incorporate it in the final design, and eventually to deliver the design solution.
Summary

Overall, the American and Chinese interior design programs maintain some unique characteristics. While these two systems are not at the same maturity level, some of their characteristics can be complementary and have the potential to benefit each other. Considering interior design education is currently undergoing a major expansion and enhancement in both countries, a larger scope of surveys and comparative studies of these two systems could potentially offer more insights on the future development of interior design education in both systems.

Reference List


R-AISON D’ETRE
reason for being

CREATIVE SCHOLARSHIP

ABSTRACTS AND IMAGES
Design

Eco-Efficiency with Maximum Mobility

The purpose of this creative project was to design a multifunctional and sustainable lighting fixture. Diverse possibilities of adaptable and portable lighting fixtures were explored, while sustainable light sources and energy-efficient flow for the lighting fixture were investigated. Light-Emitting Diodes (LEDs) were also examined as a sustainable lighting solution. This technology was first developed in the 1960s, but it was used only in indicator applications until recently. LEDs reduce electrical energy consumption and carbon-related pollution, and they improve the overall human visual experience. As an integral part of the creative process that promotes problem solving, sketches and three-dimensional computer modeling were utilized. The design image was extended through representational sketches of alternative expressions and evaluated for desirable performance. The project was consolidated and elaborated through the design process by making decisions on details, and the final lighting fixture was named Eco-Light.

Eco-Light is a functional, adaptable, portable, and sustainable lighting system that can be used as mood lighting, with its memory dimmer, or for task lighting. Eco-Light’s built-in battery can be recharged from solar energy, from an electrical outlet, or from a source that powers USB devices. Eco-Light is then an interchangeable energy source for other USB devices such as iPods, cell phones, and MP3 players. Eco-Light illuminates indoors and outdoors with warm white LEDs that produce efficient illumination without the use of the pollutant mercury and with minimum generation of CO₂. Along with its energy efficiency, the Eco-Light offers the maximum in flexibility and mobility with its portable size.
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A movie clip will be started momentarily.
Plan Views and Dimensions

Non Scale

Side View

Front View

Top View
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Design Process
Design Solution

Solar Energy
- Renewable Solar Energy
- Interchangeable Energy Sources

Electrical Outlet

USB Device
- New Energy Source
  - Input
  - Output

Power LEDs
- Luminous efficiency: 80 ml/W
- Warm White: 3000K

Light Pollution Reduction
- Reduced Mercury
- Reduced CO2

USB Device
- Built-in rechargeable battery with different types of energy source (solar energy, USB, outlet)

Aluminum heat sink

Light switch with memory dimmer

USB input/output (5V)

Battery status indicator
Design Solution

- Renewable Solar Energy
- Interchangeable Energy Sources

Power LEDs
- Luminous efficiency: 80 ml/W
- Warm White: 3000K

Light Pollution Reduction
- Reduced Mercury
- Reduced CO2

USB Device
- New Energy Source

Solar Energy

Electrical Outlet

USB Device

5 LEDs (400lm/5w), 3000k WARM WHITE

USB INPUT/OUTPUT (5V)

POWER PLUG FOR ELECTRONIC OUTLET
Design Applications

Indoor Mood Light
Indoor Task Light
Night Light
Travel and Recreational Applications

VARYING COLORED ALUMINUM HOUSING FOR MAXIMUM HEAT CONTROL OF LEDs

MOOD LIGHTING WITH MEMORY DIMMER AND TASK LIGHTING POWERED BY ELECTRONIC OUTLET
As an architectural and interior designer, I became intrigued by the parallels between quilts and building walls. Both have two outer layers with interior insulation; the “front” is assembled as a complex composition of geometric shapes which investigate pattern, color, and materiality; and both have long traditions which are being reexamined through modern techniques and strategies.

My artistic work is an exploration of traditional textile craft, reinterpreted through imagination and investigation to create modern art compositions. In contrast to traditional quilt techniques that rely on strong pattern and compositional symmetry to achieve balance, the work shown investigates ‘structured randomness,’ where random elements are controlled by a larger order; or where seemingly random compositional aspects reveal themselves to be highly structured at alternate scales.

For Sunflower Horizons, the individual block appears to be assembled of random lines; but each line actually connects specific, proportionally-spaced points along the block’s edge. The selection of differing sets of points creates variety between the blocks, while preserving an overall impression of repetitive pattern. A more subtle orthogonal system of broken horizontals in the background piecing prevents the strong verticals from slipping away from each other. The actual block is used as both a foreground (dark) and background (light) unit, to create to reinforce the underlying repetitive order.

For A Quantum Theory of Gravity, randomness is injected directly into the creative process. A completely ordered grid of blocks was first created. Then, blocks were removed, cut, and new strips inserted into the scars. Through a continuous repetition of this process, concentrations of color and density began to emerge. This process was repeated at the next scale, with wide strips of a ‘random’ repeating block inserted into and displaced by the overall orthogonal framework. The final quilting extends both layers of linework into each other, binding the composition together at a tactile scale more felt than seen.

For both pieces, the dynamism created by the perceived randomness activates the larger balanced framework, and when coupled with the strong value contrasts, a pictorial quality more akin to painting than to quilts is communicated. These investigations establish a methodology which can be applied to interior and exterior wall surfaces, with a resulting dynamism of built form and spatial experience.
SUNFLOWER HORIZONS
35” x 40”
A QUANTUM THEORY OF GRAVITY

44” x 53”
This is a project to renovate the main conference room of the National Assembly of South Korea in Seoul. The main concept of this project can be described as “creating a unique space where the new technology and traditional aesthetics meet.”

The request from the Korean Assembly was to make a conference room with up-to-date equipment that would show simultaneously Korea’s advanced information technology and the country’s traditional sense of beauty. Therefore, the most significant issue for the designer was to interpret and express traditional aesthetics harmonized with technology. At the same time, it was also important to symbolize the essential meaning of the Korean Assembly through a physical environment. The design solution was approached to symbolize the space as a venue for making national decisions and to create a form inspired by one of the strongest traditional inventions of their predecessors: the first Korean sundial (Ang-bu-il-gu, 1434, by Young-sil Jang), the first exactly measured Korean map (Dae-dong-yeo-ji-do, 1861, by Jeong-ho Kim), and the first Korean map of the stars (Cheon-sang-yeol-chun-bun-ya-ji-do, 1395, by Kun Kwen). The first Korean sundial was chosen as an inspiration for symbolizing the space.

The first sundial (Ang-bu-il-gu), which informs people of the time and the date, is interpreted as coinciding with the Korean Assembly in terms of showing the direction of its present and its future. Moreover, it also manifests the succeeding spirits of scientific challenge and inventions, from the sundial to Korea’s top information technology industry. The sundial is represented in the ceiling with the decoration of the Korean native characters (Hun-min-jung-em) in frosted glass and light metal.

The traditional atmosphere also is expressed in the use of color and pattern. The traditional five colors are yellow, blue, white, red, and black, and each one has its own meaning: yellow (center of the universe), blue (power of the whole creation), white (truth), red (passion), and black (wisdom). Beyond these meanings, the five colors represent the coexistence of the whole creation in one space as well as express the spirit of harmony of the diversity. The five basic colors were used in the fabric panels of the main walls, which are good for absorbing noise.

Korean paper was designed to be used on the front wall because it is durable and retains warmth; it is still popular for use in modern houses in Korea instead of glass windows. Also, the inlaid wood decoration on the front wall has traditional lattice patterns that function as a cover for speakers and lighting fixtures. Furniture design focused on flexibility for both computer use and diverse discussion, and it was designed to be able to raise and lower the computer monitor on the desk.

Even though all the ideas could not be realized, and due to the duration of the construction period and the budget, only the furniture was built, this project has a valuable meaning that reminds us of the importance of harmonizing the traditional aesthetics of Korea with modern digital technology. If this project is accepted for presentation, the modern interpretation of the unique aesthetics of Korean architecture can be well illustrated and explained.
Project Summary

Client: Korean National Assembly
Program: conference room renovation
Location: Seoul, Korea
My Assignment: interior concept design, design development and presentation

This is a renovation project of a main conference room of the National Assembly of South Korea in Seoul. The main concept of this project can be described as ‘creating a unique space where the new technology and tradition aesthetics meet’.

The requirement from the Korean assembly was to make a conference room with up-to-date equipment which can show Korea’s advanced information technology and the traditional beauty simultaneously. Therefore, the most significant issue for the designer was how to interpret and express the traditional aesthetics harmonized with technology. At the same time, it was also important to symbolize the essential meaning of the Korean assembly through a physical environment. The design solution was approached as symbolizing the space as a venue of making national decisions, so created a form inspired by one of the strongest traditional inventions of their predecessors.

The first sundial (Ang-bu-il-bu), which informs people of the time and the date, is interpreted as coinciding with the national assembly in terms of showing the direction of its present and its future. Moreover, it also can manifest the succeeded spirits of scientific challenge and inventions, such as from the sundial to the top IT industry of Korea. The sundial is represented in the ceiling with decoration of the Korean native characters (Hun-min-jung-ern) in the materials of frosted glass and light metal.

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The Sundial “Ang-bu-il-gu”
the first Korean sundial made in 1434 by Young-sil Jang

"Dae-dong-yeo-ji-do" map
texactley measured Korean map made in 1861 by Jeong-ho Kim

"Cheon-sang-yol-cha-bun-ya-ji-do" map
the first Korean map of the stars made in 1395 by Kun Kwen
GLOECKLER, Tad

Visual Arts
Title: A-Division
Medium: sculpture/product
Materials: maple, maple veneer plywood, pine w/stain, padauk wood, stainless steel, brass

A-Division is a compact fishing unit that features a preparation center that will precisely slice an apple into distinct dimensional fragments. Each unique apple fragment is then united with a corresponding adjustable, tension assembly to realize a complete fishing lure. This project is an expression of my deep respect for nature, materials, and design; and a dedicated struggle to communicate relationships between natural systems and contemporary life. I hope to encourage viewers to reexamine their surroundings, develop interest in other earth life forms and processes, and reflect upon their own personal values.

A-Division has three drawers at the front, each holding a four lure set, and a single drawer at the back containing operation instructions for the Preparation Center and Lures. Also in the back drawer, located in a separate compartment underneath the instructions, is a complex assortment of spare parts.

A-Division is easily transported to lake or streamside locations. Likewise, the viewer is transported (through imagination) from an exhibition space to a quiet setting in nature. The lures are A-Division’s focal point. They represent a curiosity of underwater life, with a primary goal of communication rather than extraction. The lures are inventive, precisely designed, and highly crafted... to illustrate absolute respect and amazement for nature and wildlife. The lure assembly must recognize and respond to material qualities of the apple. An apple is soft enough to be easily pierced by a blade, yet the fruit matrix is sturdy enough to prevent twisting of that blade once it has penetrated the apple. The apple fragments are secured to the lure employing this insight. Stainless steel plates pierce an apple fragment at strategic points while a stainless steel spring (or springs in one assembly) will hold the entire structure in tension. The springs also imitate fish fins.

Food is one of the grand essentials of life, supplied to us by nature and the practice of agriculture (which is essentially the careful stewardship of nature). The A-Division Preparation Center celebrates the spirit of sustenance by regarding the apple with great care and respect. The Preparation Center acknowledges form, density, scale, and structure of the apple, with a mechanism to position, secure, and precisely section the fruit. The apple rests on an end-grain maple turntable that accurately rotates 90 degrees and locks in position for the next cut. The preparation center is fully adjustable for graceful operation.

Each of the three front drawers identifies a set of four lures at a unique development stage. Showing lure dynamics at three stages of evolution allows a viewer to understand and experience the functional operation of each lure without a real-time demonstration. It is a significant design challenge that each lure appears whole and beautiful at every stage of the development process. One drawer exhibits a four-lure set with the appropriate apple fragment united with corresponding tension assembly (the completed lure). A second drawer shows lure assemblies without apple fragments, highlighting the lure void, and the piercing steel plates that will eventually secure the apple slice. Each lure must have adjustment capabilities that make it possible to load and unload apple slices, and allow for size and shape variations of apple fragments. The remaining front drawer presents the lure assemblies unfastened and opened-up to illustrate the loading and adjustment process.

The apple fragments and corresponding lures are bilaterally symmetrical with one exception. The first cut of the apple creates a dimensional center portion with a dome-like fragment on either side. The domed fragment is curved on one side and flat on the other. The lure assembly designed for this asymmetrical fragment features a front and back with unique functional components.

The creation of A-Division involved rigorous pre-planning and design, yet significant spontaneity occurred in fabrication and assembly procedures. Designing and drawing this project included constant back and forth movement from hand to computer. Stainless steel pieces were designed in CAD and laser-cut. Everything else was fabricated by standard woodworking machinery. Concept development, design, fabrication, staging of construction and assembly, and determining project completion, are all part of an amazing process of learning and experimentation. I rigorously document these discoveries and attempt to communicate them in gallery settings and oral presentations. The final photo identifies the potential for process images to substantially increase the understanding and appreciation of a complex project. (The final image identifies the procedure I used for drawer slide attachment).
GLOECKLER, Tad

Design
Title: Property at Stake
Medium: design product/sculpture
Materials: plywood, paint

"I'll design any building from a cathedral to a chicken coop."
H. H. Richardson

This project had a real client with specific functional and emotional needs, a detailed program that developed through research, a strong relationship to site, and a scale appropriate to the user. The client was a bird. The project was a house.

Property at Stake is a birdhouse that raises questions of property ownership, how we use or abuse our land, and the potential for direct relationships between human development and habitat destruction.

The stake and ribbon (or survey stake) is the first blatant visual suggestion that new development is about to occur. It clearly identifies the location of new construction and begins to diagram the size and limits of development. The survey stake has always had a profound emotional impact on people and seemed a simple, powerful, and appropriate concept for this project. Dramatically increasing the scale of a standard survey stake adds influence to the statement. Development can be viewed as positive or negative, and this birdhouse does not stand as a symbol of right or wrong, but presents itself as the conscience of avian life forms that speak beautifully, but not in a language that factors into decision-making.

The stake portion of the birdhouse stands eight feet tall and is five inches thick. The red survey ribbon extends five feet across. Located near the top of the stake is a cavity that measures five inches in all dimensions. The volume of this space is excellent for several species of cavity nesting birds. The red ribbon portion of the house can be removed for cleaning and maintenance of the nesting cavity.

The mounting system for Property at Stake is site-specific. The images you see are for documentation, and do not represent the final destination of the piece.

This project was created as a public service. I was one of fifty artists invited to create a birdhouse for a Habitat for Humanity Fundraising Auction. The auction took place on one grand evening, and raised 30,000 dollars for our local Habitat for Humanity.
DESCRIPTION
This is a work in progress. The project began on Memorial Day 2007. The names of International Coalition forces, who have died in Iraq, are drawn on public sidewalks in chalk. The list is a continuous thread, I begin each day where I left off the previous day. Only the last names are listed, chronologically by the date of death. It is a memorial, a demonstration of loss, and a personal cleansing. It is a creative act to honor sacrifice and to recognize our interdependence as a nation.

INSPIRATION
I was enrolled in a Drawing Seminar in the spring of 2007. My work had evolved to be very self-absorbed while many students in the class were creating works involving political and social themes. Memorial Day was approaching, and Brian Bell and Maya Lin were whispering over my shoulder. I understand the power of names and dates and decided to embark on this multi-year, potentially never ending project.

CONCEPTS
Sacrifice:
My life, and the lives of virtually every American citizen, is unchanged by the war in Iraq. There are a handful of service families who are sacrificing again and again. This project allows me to participate in, and take responsibility for this tragedy. The most valuable thing I have to give is my time. It also brings a visualization of the loss to our community.

Public Quality:
The project is a vehicle to engage people in discussion. It allows me to enter a neighborhood and talk to an African American teenager about the army. The intention is that the project be 100% neutral. I want it to bridge our ideological divisions.

Simplicity:
The concept is so simple it has been explained by a five-year old. The act is so simple it has been shared by girl scouts, eighty-year old women, students, friends, neighbors, passersby, draft-age boys, victims of Nazi Germany, veterans, anyone. Over 120 people have knelt down with me on the sidewalk to share in this experience. Some people chalk in one name. Some people come back week after week.

Impermanence:
The medium is symbolic of the fragility of life. When it rains the chalk melts - it is gone just like the individuals represented.

Scale:
The project is monumental. It is powerful and it moves people.

Diligence:
I work on the project every day (with few exceptions for illness, travel, and rain) - one hour before I go to work during the week, six hours each Saturday and Sunday. This commitment is a token gesture to the sacrifice of the few in our nation who carry this burden.

Craft & Aesthetics:
The project’s beauty brings people to it. It is inviting and inclusive. Each name is drawn with care, craft, and respect.

The most common response is, “Thank you.”
1 = project start point May 28, 2007.  2 = project location as of October 1, 2007
the iraq names project

Sheehan
Category of Submission: Art

Encounters: an installation exploring the element of time

Site-specific mixed media installation with video imagery, lighting and sound

My art is perceived as a synthesis of many different attitudes, cultures and beliefs – where boundaries are blurred to create a narrative which expresses the dichotomy that exists between eastern values and western notions within the context of contemporary global environment of shared humanity and cultural differences. Using the four archetypal elements common to all: earth, water, air and fire I seek to explore the processes of change that is evident in all living things. In my work, I am always looking for the balance between the physical and the spiritual aspect of space, of the materials used and the feelings evoked, as well as its relationship to the environment. I particularly want to explore the impact of Islamic art and design in contemporary settings that bring into play all our senses through the use of water as an element in courtyards; geometric design and arabesque pattern as expressions for surface decoration within the context of layering/hidden art through varied materials and techniques. The notion that somehow these experiences can be synthesized into an encounter using universal concepts such as time and space in a constant state of flux and negotiation is what my work is all about.

The audio-visual theatre at the Georgia Museum of Art with fixed seating was altered to create an installation using stock materials such as aluminum, acrylic and ice imbued with traditional geometric motif transformed through the use of computer technology using laser cutting and water jets echoing the hybrid nature of contemporary settings where historical concepts are given new meanings. As part of the overall experience a video of fire in the most basic state juxtaposed against the sound of water in its most elemental form altered heavily through the computer was created that evoke primal experiences as if in a sanctuary. The installation transforms not only because of the ice melting, and the water seeping into the crushed granite, against the backdrop of fire video but also because of the multitude of ways in which the viewers can engage and interact within the space. The elements fuse and unite and undergo a metamorphosis that is both time-bound and timeless. The experience is primordial yet filled with complexity and symbolism that is to be discovered on a very personal level.
This composition of rug and quilt were inspired by the work of Charles Rennie Mackintosh (Glasgow, Scotland). Designed for a 1914 arts and crafts residence located in the largest existing historic district in the United States, the combination of the two artifacts pay tribute to an architect, interior designer, and artist who is world renown. Utilizing the combination of two mediums, quilt making and hand-tufting, the quilt and rug were inspired by the works of CRM affectionately known as Toshie. Additionally, an art nouveau fabric indicative of the period was discovered by one of the artists in Edinburgh, Scotland. The motif within the fabric, blended with the distinctive designs of Toshie inspired by both the quilter and the rug maker to create the two pieces presented in this competition.

Three designers collaborated on the project in order to 1) create a tribute to Mackintosh, 2) create two pieces that complement each other for the client’s master bedroom, and 3) merge the distinctive motifs, colors, and simplistic approach to design to create an atmosphere appropriate to an arts and crafts residence.

The three artists through travel and/or education maintain that Charles Rennie Mackintosh was one of the greatest designers of all time—committing his life to defining a distinctive style and a strong belief that through the built environment, we as interior designers can improve quality of life.

Two mediums of quilt and rug merge traditional modes of textiles (quiltmaking and hand tufting) to create a tribute to Toshie. All materials utilized in the creation of the two pieces were of natural origin—cotton and wool including the thread, filling and yarn. The first piece, the quilt, was designed based upon Mackintosh’s Glasgow Rose and his later work in Chelsea. The blocks are hand pieced and embroidered and highlighted with the center panel consisting of the Glasgow female figure holding the Glasgow Rose. The hand method of trapunto, that is, additional layers of filling cut away from the background, result in distinctive elements being highlighted. Dense machine quilting all completed by hand controlled mechanisms distinguish the elements of the quilt.

Based upon the colors and motifs of the quilt, conversations between quilter and rug maker were held. The rug maker utilized the quilt, fabric discovered in Edinburgh, and her knowledge of Toshie to design the rug. Design and color studies were conducted to achieve the final design. Drawings were analyzed, and upon the final decision, a hand-drawn representation of the area rug was drafted. The drawing served as a guide in the tufting process. Utilizing a hand tufting gun, the rug, row by row, was carefully created. Precise cutting and shaving of the wool yarns result in a rich and detailed layer of motifs creating a pile ½” to 1” above the ground surface.

The composition of the quilt and area rug pays tribute to arguably one of the most important designers and architects of the turn of the 20\textsuperscript{th} century. The collaboration between the artists creates colorful, textural, and hand-crafted artifacts that result in a Homage to Toshie.
Art is the flower. Life is the green leaf. Let every artist strive to make his flower a beautiful living thing.

[Picture of a person]
Art is the flower.
Life is the green leaf.
Let every artist
strive
to make
his flower
a beautiful
living thing.

Charles Rennie Mackintosh, 1901
Category of Submission: Design
Split Level, 2300 square feet, residential design

The renovation of a 1968 split level house in a southwestern U.S. city references the ethos of the community. Citizens value progressive ideas and healthy indoor/outdoor living. The interior and landscape designers worked closely to thread linear elements, changes of levels and color schemes throughout the project.

Visual, physical, and aural connectivity drives the design. The interior renovation focused on removing walls and creating openings between spaces. Natural light flows from the north to the south exposures, as well as, upstairs to downstairs.

An earthy palette of creams, tans, and browns forms the basis of the interior and exterior envelope. Key architectural elements are accentuated in analogous colors of lime green, turquoise and cobalt blue. Decorative elements, lightweight furniture, and feature plantings add yellow, orange, red and pink.

As self proclaimed “cheap bastards” the owners kept construction prices low by using salvaged ceramic tile, slate, and native limestone in bathrooms, entry, and patios. Vintage garage sale light fixtures augment architecturally integrated lighting on motion sensors and photoelectric controls. The existing concrete slab was scraped and painted. Environmentally friendly cork floors were used throughout the remainder of the house. Total renovation cost was less than $10,000.

The owner’s blend of serious purpose and unexpected delight is reflected in the collection of classic modern furniture and a formal rose garden juxtaposed with Salvation Army finds. Their humor is expressed in the two-story feature wall connecting the upstairs to downstairs with a painted pattern named “drunken harlequin.”
Schematic Sketch
Second 2 Levels
Category of Submission: Design
Breezecatcher House; 1,000 square foot house addition + 600 square foot renovation

Context: Expanding My Parents' Summer Cottage

Each May my parents bundled three dogs, a cat, my siblings and me into the family station wagon and drove 10 hours from our home in the low mountains of Pennsylvania to the gently rolling, wide-open landscape of Michigan. We lived there every summer, on an inland lake, in a modest 600 square foot cottage. In the evenings, my father read to us on the screened porch he built, with a background chorus of crickets and croaking bullfrogs, the occasional wet slap of a hungry fish carrying across the still water.

The opportunity to design (and soon, to build) an addition to their cottage, after all these years, invites reflection on a wealth of visceral impressions.

Project Description:

Immediately to the east of the renovated cottage—which houses enlarged bedrooms, a new utility room and a full bathroom—the addition contains a new kitchen & pantry, dining room, half-bath, living room, and screened porch. In contrast to the conventionally framed existing house, an open structural frame defines the addition, with large expanses of glass infill providing views of the water.

The addition's openness and its sloping, articulated roof form take advantage of the prevailing southwesterly breeze, generated by cool air over Lake Michigan 15 miles to the west. Moving air flows through the house to varying degrees by opening sets of windows and doors. The roof form enhances natural ventilation, operating a bit like an airplane wing, its low upward tilt creating a pocket of low pressure that helps draw air out through the north facade.

Conceptual Parameters:

Several ideas and goals for the project tailor the design uniquely to its site. First is an interest in responding straightforwardly to the north-facing lake exposure and prevailing southwesterly breeze, as mentioned above. Additionally, to provide a sense of rootedness and shelter, a series of protective, concentric, surrounding elements anchor and frame the main living spaces. Book shelves line the interior with color and texture, providing the promise of knowledge and thoughtful escape—a comfortable, protected place to spend the afternoon curled up with a book. The dining room table, made from the same wood as the book shelving, transitions smoothly into a built-in couch at the edge of the living room and again into casework along the low north edge.

The roof form, with its gently tilted inflections to the north and east, admits morning light above the kitchen, opens to views down the lake on the northeast corner above the porch, and gathers sunset-tinted light from the western sky late in the day.

The addition is clad with custom, press-formed metal shingles, modular in nature, nailed to furring strips on sixteen inch centers. The shingles not only subtly recall the roof geometry, they lap to create a complex geometric surface reminiscent of fish scales, wind-driven waves, the patterns cast by sunlight passing through shallow water, and the surrounding wind-swept, undulating landscape.
Located on a small inland lake in rural West Michigan, the Breezecatcher House, as its name implies, takes advantage of its lakefront site's prevailing southwesterly breeze. Its roof form and living spaces reinforce views north across the water. Custom shingles, their multi-faceted surfaces tipped to the light, subtly recall intricately layered fish scales, the lake's windswept surface, or even the dancing light patterns cast by the sunlight as it passes through the water's surface.
Site Imagery + Inspiration:

a. view through interior toward lake
b. lake at sunset
c. big michigan sky
d. lake at twilight
e. typical surrounding agricultural landscape
breeze catcher house

site plan
Form Studies + Inspiration:

a. shingle study models
b. shingle study press form
c. plaster castings
d. roof form study
e. salmon scales
f. sunlight patterns on lake bottom
g. windblown wheat field
MITCHELL, Annick

Category of Submission: Art

Ode to the Porcelain Gods

15'x 18' installation with toilets light and mist in pool approximately 85' wide

With its roots in Duchamp’s 1917 *Fountain*, this short-term conceptual installation in a public art festival examines our relationships with art, objects and their consumption. Even an object as utilitarian and private as a toilet, is now glamorised and subject to public approval. Ultimately the toilet is transformed into a design fetish worthy of “star” designer attention or scrutinized for its environmental suitability. Where once we purchased a toilet looking foremost at the price tag, we now try to afford a Phillippe Starck designed toilet. Working from the city’s list of “approved” low flush toilets, twelve new white toilets were arranged in a 15’x 18’ phalanx just below the water level in a large pool in a downtown city park. Much as Venus rises out of the water in Botticelli’s *Birth of Venus*, the toilets rise out of the black surface of the water. Surrounded by tall buildings, the toilets are dwarfed by their surroundings yet hold their own en masse.

The incongruity of finding toilets in a public water feature was heightened by a nocturnal setting, and so, carefully lit to make porcelain glisten and form predominate, the overall visual effect was further enhanced by continually shifting mist at water level. Mist was created by water under high pressure coming through 35 nozzles at the base of the toilets with the surreal effect aided by the periodic change in the wind currents around the pool.

The approximately 5500 viewers invariably started to smile when they came across the piece in their travels. Interaction with the public was varied: most stopped to photograph, trying their hand at capturing the ethereal qualities of constantly changing contrasts of light, dark, mist and form. Others interacted with the tongue-in-cheek poke at the city’s “official” toilets (buying any toilet on the list garners the purchaser a $65.00 rebate) in their own way by participating in the installation. Throwing off their shoes, they jumped into the water and became part of the piece.

The toilets (donated by the manufacturers) were attached in place to a wood platform painted black in such as way as to make the supporting structure disappear. The supports for the hoses and nozzles were barely visible. The arrangement of the toilets was done with an eye to size and form with the more obviously sculptural toilets given pride of place in the front. With a minimal 6 hour time period allowed for installation and considering the considerable weight of the toilets, student help was enlisted in installing and uninstalling the piece. The lighting was a highly successful collaboration between the artist and a colleague in the Theatre School.
The Site Context
Ode to the Porcelain Gods 1
Afternoon Set up:
Testing the Mist 1

Afternoon Set up:
Testing the Mist 2

Afternoon Set up:
Battens and Hose Lines

Ode to the Porcelain Gods 2
To each his own: Public Interaction

Nightfall

Ode to the Porcelain Gods 3
Nacht und Nebel:
Shifting views and moods
Ode to the Porcelain Gods 4
Details and Atmosphere
Ode to the Porcelain Gods 5
Ode to the Porcelain Gods

Light Up the Night

Invitation

Ode to the Porcelain Gods 6
Edificial Piercing and Tattoo

Piercings and tattoos in the US were once the province of sailors and convicts, but have currently become an integrated part of American body modification culture. People modify their bodies in numerous ways, from ubiquitous braces and contact lenses at the one end, to implants and reductions at the moderately common middle, and to piercings and tattoos at the less traveled end. The underlying feeling that underlies all these modifications is that we do not need to be content with what nature gave us. At the same time, Americans are surrounded by buildings that they have no control over, whether they like them or not. Edificial Piercing and Tattoo is an art installation and performance that asks the question, “What if we could modify architecture the way we modify our bodies?”

Goods and Services

Edificial Piercing and Tattoo was installed as part of a street art festival adjacent to the Wisconsin state capital building. It took the form of a commercial booth selling goods and services, which included building scale tattoos and piercings, subscriptions to a magazine devoted to building scale modifications and architectural accessories for the home and office. Additionally, after dark, eight foot tall animated tattoos were projected on the adjacent exterior of the Wisconsin Historical Museum. The artist manned the booth, answering inquiries from customers and describing the types of services available. Passers by took home business cards and bumper stickers promoting the Edificial experience. Of course, in reality it was not really a business but an installation and a performance.

Items for “Sale”

One of the popular items was Door Knockers (His/Hers). The title is replete with double meanings. A doorknocker is a traditional architectural accessory, but “knocker” is also a slang term for a woman’s breasts. Two door knockers are in the shape of nipples; if they are female nipples, they could imply breasts, but if they are male nipples, they would not fit the standard slang usage of “knockers.” In the second part of the title, (His/Hers), it is unclear whether the words refer to a gender assignment for the user, with one door knocker for her and another for him, or whether the same door knocker can be used by either him or her. The doorknockers could themselves be gendered, with some being male and others being female. (Or are the nippled knockers to be used only by one gender and is the brass knocker to be used only by the other gender?) Is the door itself being identified as a unisex entrance, usable by either him or her? The piece functions on many levels, including that of a functional designed item.

Edificial Piercing and Tattoo: The Magazine of Architectural Enhancement is in the format of a tattoo magazine that can be found on most newsstands, complete with UPC symbol. As part of the installation, it blurs the line between art and reality, and most people thought that it was a real magazine that they had just never seen before. The implication is that if there are enough people doing architectural enhancement to have a magazine devoted to it, then architectural enhancement is a reality.

Performance Interactions

The performance aspect was a more intangible aspect of the installation. Many people initially thought that services were actually being offered, and asked questions about availability. The free bumper stickers and business cards were popular, and it was not always clear whether people knew that they were just part of the installation; selling has become so much a part of the art world that people assume that everything is done for a profit. Several interesting conversations ensued with people who talked about this commodification of art, and they expressed appreciation that artists would perform with no profit motive. One of the more gratifying experiences was watching the heavily pierced skateboarder enjoying the tattoo projections, perhaps seeing architecture in a new light.
Booth for Edificial Piercing & Tattoo
Door Knockers (His/Hers)
NELSON, Mark

Category of Submission: Art
White Collar Woods
3 Pieces, +/- 4'x4'x8'
Cotton Duck Cloth, Thread, Grommets, Commercial Carpet,
Steel Bar Stock, Bolts, Wood, Rope, Living Tree

The Installation

Driving down the narrow road that winds through the American Legion State Forest in northern Wisconsin at night, around every curve one must be careful to keep an eye out for deer, which have a habit of jumping into the middle of the road and then freezing in a car’s headlights. Sometimes the first glimpse of a deer is the gleam of light reflecting off of its glassy eye. With White Collar Woods, where one would expect to see a deer, one unexpectedly comes across a large French cuff, frozen in a car’s headlights. The first glimpse is the gleam of light reflecting off its glassy cuff link. Part Dada, part Pop Art, the huge French cuffs appear to have invaded the woodland setting, where normal attire is traditionally a camouflaged hunting jacket. Those who are native to the area may find themselves shuddering a bit at the hint of dangerous invaders in formal attire, while those visiting the area may find themselves reassured that powerful formalwear has control of this part of the woods.

The Concept

The installation is near the town of Minocqua, where the vacation population is many times the local resident population. In recent years, a distinguishing feature of Minocqua’s visitors has become that they often have an extremely high income level, driving six hours from Chicago to spend time conspicuously consuming nature in a relatively remote area. The tree-scaled French cuffs and cufflinks of White Collar Woods comment on this gentrification of the north woods, where formality, wealth and class stratification are increasingly being grafted onto an older cultural system. The cuffs find themselves dislocated from their usual context; they are human formal wear for trees, and the shirt that usually accompanies cuffs with cufflinks is nowhere to be seen. In addition to having a distorted physical scale, the cuffs have a distorted social scale as well; while land ownership and use by people of all cultures and socioeconomic classes has long been an American tradition, an increasing demand for recreational land in northern Wisconsin could lead to a day when people whose families have lived in a community for generations might not be able to afford to own land of their own.

The French cuffs symbolize an invasive species which can be destructive but can also bring jobs and livelihood through tourism. An invasive species ceases to be destructive in the face of a natural balance, however. Could it be that absurdity provides that natural balance? In that case, making a trip to the woods similar to a trip to the opera could be seen as being as absurd as the cuffs of this installation, losing its purpose in translation.

The Fabrication

The cuffs are meant to approach a scaled duplication of normal sized French cuffs. After making initial concept sketches in ink, the next step was to make digital study models and renderings in order to examine scale and proportions. Next, a pattern was developed in AutoCAD, based on a standard shirt pattern, modified to allow the “interfacing” to be inserted later. The pattern pieces, one of which was over fifteen feet long, were printed out and pinned to the fabric just as if it were a normal sized piece of clothing. 33 yards of fabric and many yards of heavy duty thread later, three cuffs had been sewn and were ready to be installed. With the help of assistants, the under structure of the cuffs, designed to make the cloth hang naturally, was engineered and constructed from commercial carpet and steel bar stock, like some type of updated whalebone corset. In order to keep from harming the trees, a wooden framework was lashed to each tree. The fabric cuff was slipped over the steel and carpet interfacing, and bolted to the wooden framework. The last step was to use domed mirror cufflinks to pull the cuffs closed, and the bottom part of each massive placket was hand stitched to complete the installation.
A French Cuff in the Headlights

1401
A Newcomer to the Forest
Communing with Nature
Sentries
Process: Concept and Engineering
Process: Fabrication
Process: Fabrication
Keeping an Eye on the Woods
SCHAFFER, Maura

**Category of Submission:** Art  
**Title:** Corporate Climbers  
**Dimensions:** 24" w x 48" d x 144" h  
**Medium:** Fabric, Wire

For the past few years I have been working on a series of life-sized sculptures focusing on tables, chairs, beds, dressers, and other furniture as a vehicle for expression. They are constructed with a wire structure which is braze welded using a gas torch and then painted. The fabric is stretched around the wire armature and then is cut and hand-stitched. The wire structure and translucent white fabric gives them a ghost-like presence and a purity that forces you to investigate the action the furniture is involved in. These anthropomorphic pieces of furniture are caught in the act of fighting, dancing, dining, love-making, and dreaming. The chairs allude to the human actions without the presence of the human figures. Within this idea is the relationship that takes place during meals, while in bed, or on the dance floor and what that says about us. For instance the ladder-back chairs in Corporate Climbers are placed back-to-back and if you imagine yourself seated in the chair symbolizes personal struggle. But if you imagine yourself climbing the ladder you would be facing the other person which symbolizes the race in an endless competition to the top. I imagine the climbers to be moving up the ladder but at the same time trying to cause the other climber to fall or trying to stab them in the back on the way up, slipping or dangling from the rungs in the process. As they get closer to the top the ladders sway back and forth making the climb more precarious.

Corporate Climbers
SCHAEFFER, Maura

Category of Submission: Art
Title: *Pachira Aquatica*
Dimensions: 1st Floor: 60’ w x 9’-4” h x 2’ d  
                   2nd Floor: 60’ w x 8’ h x 2’ d  
                   3rd Floor: 60’ w x 8’ h x 2’ d
Medium: Multi-Media

This submission details the conceptual design and 3D Max prototypes of a permanent installation that combines a wooden framework and multi-media to create an abstract wall relief which is inspired by the Money Tree or *Pachira Aquatica*. This submission blurs the line between art and design in that the artistic idea and supporting visual conceptualization was developed in consultation with an architect and client. The sculpture, which is yet to be built, is to be located on three floors of a corporate office for a financial institution. The artwork for each floor would be viewed individually from inside the building and as a whole from outside of the building through windows adjacent to the main entrance of the building.

I worked with the architect of the newly constructed office building and my gallery representative who were working together to develop an art program for the client. The overall concept of the corporate art collection for the building was based on the idea of “Abstract Landscape”. Several ideas were discussed in the initial meeting with the architect and gallery rep. Because the piece would be viewed from the exterior of the building they envisioned the piece cascading down the walls. Other ideas were to have the sculpture come off the wall in abstract and colorful tent-like structures. The architect referred to the artist Ellsworth Kelly who created colorful abstract paintings and sculptures derived from windows and cast shadows. The things that I thought were most important to the piece were that it should fit within the context of the space, have some reference to finance, and that the pieces on each floor should work together but also have their own identity. When I first started to think about how to approach the project, I started with the idea of growth. Rather than have something coming down the wall I wanted the piece to grow upward. I felt the idea of growth was a more positive connotation for a financial institution and so I started to think in terms of organic forms, plants growing, and the idea of a tree. The Money Tree or Pachira Aquatica is marketed as a Bonsai good luck tree but in the wild they grow quite large and have thick buttresses to support themselves. They are also sustainable: they have nuts and seeds that are edible, bark which is used for medicinal purposes, beautiful flowers, and are easily propagated. At the same time I was inspired by images of tents, aerial views of roadways and neighborhoods, and architectural site plans of building groupings.

The floors were divided into the roots, trunk, and branches each with its own visual identity and color and materials. The roots symbolized depth, the trunk strength and the branches, leaves and flowers the rewards. The seed on the first floor represents propagation of new trees and on the second floor a gold band is incorporated in the trunk which symbolizes wealth but also creates stability both visually and metaphorically.

The piece is designed to be constructed using interlocking wood panels creating the main box-like structures. Each individual wood piece was created and then arranged on a 4 x 8 sheet in AutoCAD. In the manufacturing process drawings are converted to a cutting program and then machine cut. After the pieces are assembled, the open front of the box structures are covered with different materials including copper foil representing coinage, printed paper representing bills, gold mesh, wire, rubber, and fabric.
Pachira Aquatica

Second Floor

Exterior View
Concept sketch showing elevations of 1st, 2nd, and 3rd Floors
Sketches showing assembly of structure
1st Floor – Roots and Seed
2nd Floor – Trunk and Gold Band
Stuffy’s Sandwich Shop

Stuffy’s sandwich shop is a pro-bono project that was commissioned in conjunction with my fall 2006 senior studio class for a local sandwich shop. The primary objective of the project was to create code compliant ADA access to Edo’s restaurant located on the second floor above Stuffy’s and to update the design of our favorite faculty hangout. Since the pace of the class needed a push, I decided to have a little creative fun and actually try to solve the problem on a professional level with a schematic design and budget. I was also interested in conveying the power of hand sketches for design development and process and demonstrating the freedom one has when designing out of the Autocad environment.

The entire class presented their design on site to the building and business owners along with this proposal and has helped the owners proceed with a realistic timeline and budget.
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sluffy's sub shop
1. Office
2. Men’s room
3. Women’s room
4. Storage
5. Stair to basement
6. Cold storage
7. Faculty lounge
8. Pizza oven
9. Prep area
10. Dinning area
11. Order station
12. Stuffy’s entrance
13. Edo’s entrance
14. Elevator