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**2015 IDEC CREATIVE SCHOLARSHIP AWARDS**

Best in Show  
Igor Siddiqui – The University of Texas at Austin  
*Protoplastic*

Best in Category, Design as Art  
Igor Siddiqui – The University of Texas at Austin  
*Protoplastic*

Best in Category, Design as Interior  
Kimberley Furlong and Krista Whitson – University of Arkansas  
*An Interior at Home in its Site: Learning from Precedents*

Best in Category, Design as Idea  
Lois Weinthal, Jordan Evans, Evan Jerry, and Ryla Jakelski – Ryerson University  
*Hanging Matters*

**2015 IDEC AWARDS OF EXCELLENCE**

Best Presentation, Scholarship of Teaching and Learning  
Roberto Ventura – Virginia Commonwealth University & Susie Tibbitts, Utah State University  
*Graphic Language in the Classroom: Integrating Graphic Design with Interior Design Studio and Graphics Coursework*

Best Presentation, Scholarship of Design Research  
Erin Schambureck – Texas Tech University  
*Design for Sight: Typologies Inhibiting Low Vision Access to Interior Spaces*

Best Poster  
Ryadi Adityavarman – Kansas State University  
*Teaching Freehand Analytical Drawing: Strategy and Pedagogy based on Polanyian Philosophy of Knowledge for Millennia Design Students*

Members Choice  
Roberto Ventura – Virginia Commonwealth University & Susie Tibbitts, Utah State University  
*Graphic Language in the Classroom: Integrating Graphic Design with Interior Design Studio and Graphics Coursework*
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CREATIVE SCHOLARSHIP
Wandering Wardrobe

Nerea Feliz
The University of Texas at Austin

ABSTRACT

Textiles, in the form of curtains, rugs, upholstery or clothes, surround, cover and dress both our bodies and the spaces we inhabit. WANDERING WARDROBE examines the envelope function that textiles play to cover the human body and architecture. Is there a garment that buildings and people can share? What kind of cross-scalar size suit would this be? We cover our bodies with clothes to embellish them and protect us from the elements. Buildings can be seen as a form of garment that gives shelter to our activities. When we look through this particular lens, clothes, curtains and buildings become overlapping envelopes that surround us. What kind of tissue can connect these different layers?

WANDERING WARDROBE playfully tries to do so. We propose a flexible membrane system that dresses building and people. This proposal consists of fourteen curtains with clothes embedded in them. WANDERING WARDROBE invites all occupants to wear the embedded clothes which range in format and scale. The curtains (45 x12 or 25x12 feet) are mounted on a series of parallel rail tracks that allow for multiple curtain configurations as building occupants wear the curtains and move around the space. The proposed site for the project is the Atrium at The Blanton museum of Art, University of Texas. It’s double height space provides an opportunity for users to activate the installation at two levels. The generous proportions of the space allow for spectators to fully contemplate the performative aspect of the proposal and the wide variety of spaces that derive from the various curtain positions.
Finally, we felt that the proposal's ever-changing ephemeral nature was ideally suited to the context of Stacked Waters, the extremely captivating work of Teresita Fernández which captures water motion in an static media. The pattern of the curtain plays a key role in enhancing the perception of the manipulation of the surfaces by the users. Two alternative patterns were studied, a "pleated" version and a "stretched version" (see appendix). Evoking the daily circulation of clothes within our closets, WANDERING WARDROBE is perpetually reorganizing itself. It becomes a bond that physically links our bodies to the space and the architecture we occupy, while empowering the public to transform the space around them. It prioritizes the human body as an active performer, and a generator of space as it manipulates a light, mobile architecture.
Wandering Wardrobe: pleated pattern

Disconnected envelopes that surround us

Wandering wardrobe's connecting tissue

Human body as activator of space
Wandering Wardrobe: pleated pattern
Wandering Wardrobe: pleated pattern structure.
Wandering Wardrobe: site

SITE: Blanton’s Rapeport Artium at the Blanton museum of Art, University of Texas.
Wandering
Wardrobe: stretched pattern
Wandering Wardrobe: stretched pattern

FULL SCALE MOCK UP

material used: recycled vinyl advertisement, material proposed: Felt

PROPOSED MATERIAL PALETTE

- colours: Felt, wool, felt
- silhouettes in different shades of grey
- stitch patches to fabric: very colorful
PROPOSED STRETCHED PATTERN STUDIES:

DOUBLE HEIGHT CURTAINS: 45 feet x 12 feet

SINGLE HEIGHT CURTAINS: 25 feet x 12 feet

CLOTHES-CURTAIN

untl red stitch to fabric side A side B

cut out in fabric
ROOM - Drawer #D2 PKDT - FR-G.S.

Tad Gloeckler
University of Georgia

ABSTRACT

Title: ROOM - Drawer #D2 PKDT - FR-G.S.
Materials: wood (solid maple, solid cherry, cherry-veneer plywood, birch-veneer plywood), stain/paint (multiple colors), steel
Dimensions: Drawer #D2 (closed) - 4” high, 12” wide, 16” deep Drawer #D2 (full open) – 20” high, 12” wide, 30” deep
Completed: 2014

Drawer #D2 is a fragment of a larger project. The entire project, titled “ROOM”, is an operation and assembly performance that culminates in a sculpture exhibition. The performance begins with a cleanly crafted, chest high piece of wood furniture with seven drawers – a dresser. Viewers intuitively understand the utility of this object, but the revealed content of this dresser is completely unexpected. Drawers are removed from the dresser at specific intervals and carefully manipulated into abstract forms. The result is an exhibition space filled with the chaos of seven outrageously complex assemblages.

The transformation from common furniture to room-filled pandemonium implies our fragile existence. The dresser is symbol to private life and home. The transformed drawers have a dissected organic aesthetic that makes reference to imbalance. Our comfortable existence has consequences. The entire project is very comprehensive and cannot be adequately communicated in ten images/pages. However, each of the seven drawers transforms into a stand-alone object/sculpture, so the project is presented in pieces – one drawer at a time. When “Drawer #D2” is removed from the dresser a textile pattern is first apparent.
(a reference back to dresser utility). Polka-Dot is the featured pattern for this drawer. The drawer contents/components are guided through a series of mechanical manipulations and transform into a sculptural fragment of an earth life-form (an ocean animal). The completed transformation is not obvious or representational. Instead, the goal is to create an intuitive reaction to what appears dissected and organic. The suffix, PKDT – FR-G.S. (see title) to Drawer #D2 suggests a classification system, and is intended to reinforce the experience of a biological specimen.

The drawer features three distinct layers: a skin layer (textile layer), skeletal or structural layer, and flesh layer serving as receptacle. Storage compartments/receptacles are uniquely integrated within the animal fragment, but space is compromised by the manipulations and resulting transformation of the drawer. Each drawer features the display of an “Instructions Manual” that communicates deployment procedures. Instructions provide a necessary context for sculptural projects that are viewed in static exhibition format. The elaborate instructions allow viewers to intellectually piece together a process that enabled the transformation of drawer into sculpture. The visual transformation from a simple drawer in an unassuming dresser; to a complex, dissected, organic assemblage, is intended to stimulate viewers to reconsider their lifestyle and possessions.
This diagram provides an orientation for the location of Drawer #D2 in the context of the seven-drawer dresser.
Drawer #D2 is removed from dresser – then placed on stand and pedestal.
The top surface of the drawer suggests a textile pattern (a reference back to dresser utility). This drawer features a Polka-Dot pattern.
The next set of images suggest the mechanical manipulations that enable final sculptural form.
Dissected layers of the organic fragment suggested by Drawer #D2

- **Skin layer (textile layer)**
- **Skeleton, or Structural layer**
- **Flesh layer - serving as storage receptacle**
Drawer #D2 in final form – with instructions displayed.

The elaborate set of instructions will allow viewers to intellectually piece together a process that enabled the transformation of an unassuming dresser drawer into an elaborate sculptural assemblage.
Productions: Exploring Effects of Space, Light, and Sound

Clay Odom & Sean O’Neill
The University of Texas at Austin

ABSTRACT

In contemporary Interior Design, how might active, diagrammatic organization (patterning) be used to create effects that generate new, evolving situations? How might these complex configurations be understood as both generators and generated? Speculating on the role of emergent spatial-experiential phenomena created using a rigorous, systematized, yet open-ended mode of production, two iterations of the project, Tesseract 4.0 are developed from on-going research realized through interdisciplinary collaboration.

This exploration focuses on how production of effects may be generated through patterning - a systemized, diagrammatic collaboration- of material, form, light, and sound activated locally by engagement with situations stemming from constraints of time, budget, existing building conditions and ultimately through a range of engagements with people. The conceptual framework, in coordination with the theme of Situation will further develop logics of patterning explored as diagrammatic interactions between tactical, operational deployment methods and material-technical systems. This method allows for the exploitation of feedback loops, noise, and generative accidents to occur between inherent material qualities and localized points of attachment and control.

The basic goal is the subsuming of existing spatial and building form (as object) into an immersive series of situations generated by emergence of spatially resonant sound and light and effects both experienced and triggered by visitors. The basic
material-technical system is composed of silver mylar sheets that have been rigged to explore how space may formed as both a relationship to existing building condition and to generate new interior spaces. The mylar captures, manipulates and reflects these projections into space while generating potential for emerging, caustic effects. This effect is produced by reflection/refraction of light off the reflective and formed surface and is similar to the effect produced by water surfaces. To build on this system, the set-up (via collaboration with sound / visual artist) generates a live sound-scape through the use of digital cameras that capture movement of light and reproduce this information as sound via a computational program. In his seminal work ‘Atmosphere as the Fundamental Concept of a New Aesthetics’, Gernot Bohme states that “Atmosphere can only become a concept, however, if we succeed in accounting for the particular intermediary status of atmospheres between subject and object.”

This ongoing research facilitates exploring the implications of both design processes and design products that are subjective and atmospheric. Facilitating interactive, productive situations for the viewer -whether simply as spatial sequence, proximity to effects, touch or motion manipulation via sensors - become modes of production allowing components and effects to merge into a coherent ecology of space and experience. As a diagrammatic organization of materials, operations and interactions that generate both pre-figured and emergent situations, these by-products are not referential to preconceptions or metaphor. They are considered as essential to the totality of the system. Finally, systems leveraging generative patterning yield new effects, new contexts and evolving situations that cannot be pre-figured. Once created, they can be optimized, tailored, repurposed, and developed. They may be re-patterned, but the resulting situations will only share qualities and traits. They will never be identical.
Above: caustic lighting effects generated by material/formal system. Below: analysis diagrams

In optics, a caustic or caustic network is the envelope of light rays reflected or refracted by a curved surface or object, or the projection of that envelope of rays on another surface. The caustic is a curve or surface to which each of the light rays is tangent, defining a boundary of an envelope of rays as a curve of concentrated light.
Above: basic diagrams exploring implications of material with draping qualities and reflective qualities

Above: models studying formal/rigging concepts.

Above: diagrammatic model studying rigging concept relating to lighting vectors.
Above: installation views. Exterior formal object. Below: object generating interior spatial conditions and effects.
above left: object installed to generate interior spatial conditions relative to existing building. Above mid: interior space. Above left: interior showing rigging condition, exterior surface change and interior spatial condition and surface. Above right: temporal installation
Above: person interacting with interior without entering space. Below mid: panorama of interior space. Bottom: color projection at interior
Above: using the design process to generate logos below: logo tests. Below mid/right: logos begin to exhibit caustic effects.
Above: caustic pattern surface using effects generated. Below: actual caustic effects generated and used to create pattern.
above: caustic pattern laser cut in mylar surface generating new lighting effects. And surface exhibiting more textile qualities.

Below: additional lighting effects generated by collaboration between laser cut surface and projection system.
Aboveleft: people engaging resulting spaces in addition to exploring producing new effects using camera lights and flashes.

Aboveright: object installation with interior qualities. Generating new spatial conditions as a resultant effect

Below: generic beginning diagram showing collaboration between form, space, People, and effects.
Protoplastic

Igor Siddiqui
The University of Texas at Austin

ABSTRACT

Protoplastic, an installation in a prominent Memphis gallery, stages simultaneous encounters between high and low technologies, renewable and non-renewable resources, as well as between permanence and disposability. The exhibition consists of a sculptural installation cast from biodegradable plastic and the acrylic formwork that was used to construct it. The author frequently uses advanced digital technologies to design and fabricate their work.

In this project the intricately patterned form is conceived digitally and inscribed into the acrylic surfaces using computer-controlled machinery. The resulting cuts produce highly detailed reliefs that function as both drawings and molds. These reliefs are then filled with liquid plastic in order to cast the translucent surfaces tailored to aggregate into a larger sculpture. The plastic is made from scratch in his studio from nontoxic, compostable ingredients in a manner that reflects trial-and-error experimentation and open-ended research.

With the sensibility of both a designer and an experienced home cook, the author has come across many opportunities to adjust the material’s properties to suit his needs, but has also been challenged by its organic nature. The cast plastic sculpture is the evidence of this ongoing learning process as well as a prompt for considering material lifecycles. We may, for example, be repulsed by the moldy surface of the bioplastic as it slowly degrades even if it is entirely non-toxic and can safely return to our food supply system. On the other hand, the shiny, crisp and clean sheets of acrylic formwork may be perceived as attractive, but could easily end up in a landfill. In this way the material properties in Protoplastic
prompt further questions about consumption, waste, time as well as the broader ecologies within which design production is inevitably situated. What would it mean, for example, to assume permanent ownership of every piece of petro-plastic that we consume rather than releasing it for disposal? How might we continue to reposition the issue of waste as a part of the design process? What if food supply and construction material industries were integrated into an interdependent system?

The six acrylic pieces were displayed on custom-made concrete and wool felt bases, while the bioplastic sculpture was suspended from the ceiling on tensioned stainless steel cables. The material palette of white acrylic and rough concrete references the dominant finishes in the gallery, a former coal storage room in an industrial building. Following the month-long exhibition, the bioplastic sculpture was composted at an organic farm in Arkansas, while the acrylic panels were acquired by a private art collector for their permanent collection.
Creative Scholarship
Gallery installation
Detail of bioplastic sculpture
Assorted views of bioplastic sculpture
Protoplastic sculpture
Acrylic formwork on display
Detail of typical concrete and wool felt base for acrylic panels
Made-from-scratch bioplastic formed into translucent sheets
Digital drawings used for formwork fabrication
Bioplastic composted at an organic farm after the exhibition
for lucy and yard sale

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ABSTRACT

We dismiss edges because they exist unnamed. Unlabeled, places and people recede from consciousness. This installation celebrates these edges, teeming with life, value and passion.

Project statement

The collaborators, a poet and a designer, participated in a gallery show featuring works conceived by four pairs of artists and writers. The resulting installation, “for lucy and yard sale,” explores the edge between place and placelessness.

Memory and landscape factor largely in our work. Both notions embody complex systems of visible and invisible factors, influences and echoes. In "Illustrating the Construction of Railroads," the poet considers the edge, the undefined areas linking what we recognize as places: ...Call it a collective, a stir, the animate heart severed away and the life it assembles riding along the potato rows. The gallery is situated on the campus of a small college located in a quaint and picturesque railroad town. The town draws its identity from the trains that run multiple times daily down the center of its Main Street.

The collaborators began working to link this poem and the charming town, but soon a local news story jarred the process. A romance between an unlikely pair of freight-train-hopping adventurers, Lucy and Yard Sale, ended tragically in an immense but largely unseen rail yard in a nearby city. The tragedy of their love affair, existing outside established society, articulated the essence of the project: the beauty of the edge. The installation celebrates the ambiguity, contradiction, and beauty found in and on the edge. We dismiss the edge because it exists unnamed. Without labels, places and people recede from consciousness. However,
the spaces between places teem with life. These stories and landscapes contribute value and passion to our community despite their lack of definition.

The collaborators developed a mixed-media collage across a 4’x8’ sheet of plywood. Using photocopy toner, watercolors, diluted latex, colored pencils, graphite, and trace paper color prints, they merged text and imagery recalling flight, freedom, life, love and death in ambiguous and undefined ways, inviting the viewer to independently connect the signs and symbols and encouraging multiple readings. Next, fabricators used CNC routing to mill the poem onto the collage before slicing it into rails of predetermined thicknesses. The rails were composed across a surface of the gallery. Violating its original 4’x8’ boundaries, the piece transformed from an object into a field, extending its edge and blurring its definition. Drawn deliberately and noticeably on the gallery surface, markings and guides add a layer of texture behind the rails. Six lightboxes served as compositional counterweights, creating places within the undefined field through contrast of color, material, form and light. The viewer reconstructed the elements in individual and malleable ways. The prominence of the edge trumps the definition of the object.

Finally, the collaborators sold the installation not as a whole but piecemeal. To make the artwork accessible to many, the team priced individual elements between $15 to $75, and donated 100% of the sales to a local charity serving the homeless. Installation pieces found homes spanning across the Mid-Atlantic to the Mountain West, as do the railroads that inspired the work.
site study a place defined by railroads, transport & transience
Homeless man’s companion grapples with his slaying
By Bill McKelway | November 23, 2010

Robert Edwards Dyck, 37, and Lucille Obarzanek, a 28-year-old University of Vermont graduate, were hopping freight trains south from Pennsylvania to New Orleans when Dyck turned up missing and then dead, the victim of blunt-force injuries to his head and chest.

“We were going to try to make a go of it. To get to Louisiana and find work and raise a family,” Obarzanek said yesterday.

“But everyone around me is dying,” she added....

Dyck and Obarzanek had been in the area for about three weeks, she said, living in a shantytown near the Acca Yard that the train-jumpers call Valhalla....

Now, as the holidays approach, Obarzanek has never been more alone.

“I really have no family except an aunt in Queens. I was living there when my father died in June,” she said. Dyck was so obsessed with Obarzanek that he camped out in front of the aunt’s house, she said.

“I would take him food and money.”

Several weeks ago, he persuaded her to ride the rails with him, and they headed...to hop a freight train south....

“I sort of feel like I am losing touch with myself,” she said. “It is getting harder to think about who I am. Sometimes I just want to die.”....

Illustrating the construction of railroads
By Bill McKelway | November 23, 2010

At the edges of all fields, there is a space
for disorder. Blackberry through the gowns
of black locust, doveweed, and spurge,
the hardened vine of ailment digging in,
burrowed to the clay, to the railroad mound
where the ties lay unabridged, unraveled.

These margins exist. They are not meant
to contain us. From the train they are
an influenza, blood on a monogrammed handkerchief.

There is agreeable sound here, under the thistle
the winds raise, a calm verse, deliberate,
the bees building good honey, quail
choosing seed. It is always late in the afternoon,
the sun beating up the wreck of a hay-shed roof,
even the dust abandoned, ditch water clear
as silt. Call it a collective, a stir,
the animate heart severed away and the life
it assembles riding along the potato rows.

concept articulating the unseen beauty of the edge, undefined, and therefore invisible & placeless
collage images & text connoting flight, freedom, life & death combine in ambiguous, undefined ways
un-doing the poem routed atop the composition, which is then sliced into rails & re-assembled
layout each rail occupies an unique position within a mathematical system
light boxes  geometric, formal & color complement to rails
group exhibit  four collaborations between artists and writers activated the gallery
for lucy and yard sale

details  the object becomes a field & the edge assumes a new prominence despite being formally disintegrated
relief rails & lightboxes develop a surface texture across the gallery wall
diaspora the installation, distributed across the country through sales, exists in separate fragments, extending its edge
Sukkanoe. A Hybrid Spiritual Vessel for Toronto

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ABSTRACT

The sukkah is a temporary structure and symbolic place of gathering that is deeply rooted in the history and tradition of the Jewish people. Bringing together family and friends, this temporal structure is assembled to provide space for communities to connect with each other and the natural environment. This proposal for Sukkaville envisions the sukkah as a site-specific and site-relevant construct responding to a Canadian context in Toronto. It assumes that the sukkah can act as an ‘agent’ that brings diverse people together for a communal act, and thus, establishes a hybrid identity for itself.

Sukkanoe blends the ancient tradition of the sukkah with a building tradition specific to Canada. Builders of the sukkah participate in a journey that reflects upon the experiences of the Jewish, First Nations, and Canadian people. Hybridizing First Nations, Jewish, & Canadian traditions, this proposal, Sukkanoe (sukkah + canoe), provides a shelter-vessel designed for Mel Lastman Square in North York, Ontario, Canada. It offers a ‘hybrid’ sukkah design that draws from and combines Jewish, First Nations, and Canadian traditions, both past and present. Sukkanoe transforms the iconic birch-bark canoe. The shape and materials used for this concept are meant to recall the innovation and self-reliance of First Nations peoples, the challenges of European voyageur explorations, and the transience of the Sukkot holiday and Jewish migration to Canada.

Sukkanoe revisits ancient building techniques. A frugal and ‘sustainable’ tool for human-powered travel, the handcrafted birch-bark canoe was historically made from organic materials and designed to float. This vessel helped First Nations
inhabitants, as well as European voyageurs, navigate and populate the waterways and landscapes of the Canadian wilderness. During portage, canoes served as temporary dwellings for users, providing a light-weight shelter from the elements.

Sukkanoe appropriates construction principles of the traditional Canadian canoe, including its ‘skeleton’ (springer and ribs) and ‘skin’ (cladding), in order to create an open yet intimate sukkah. By introducing birch-bark cladding and maintaining exposed structural transparency, this proposal attempts to provide an open yet protected environment for the context of Mel Lastman Square. Sukkanoe rethinks the meaning of the ‘sukkah’ as a temporal vessel-space for Toronto. Sukkanoe responds as a temporary structure associated with the festival of Sukkot. A sukkah symbolizes protection and perseverance, and so, Sukkanoe seeks to evoke a similar mobility, yet temporal ‘permanence’. By transforming the prototypical canoe placed firmly on the ground, it recalls both the journey of Jewish immigrants to the New World, as well as the identity of subsequent generations who were born in Canada. Sukkanoe reflects this new, hybrid Canadian identity.

Sukkanoe negotiates three different traditions: Jewish, First Nations, and Canadian. Thus, the conceptual and material qualities of its design are meant to remind adult and children visitors of the challenges that faith and identity pose to our shared journey of coexistence. As a temporal structure embedded with significant spiritual meaning, the sukkah can bridge cultures by offering a common ground to reflect upon space, place, tradition, and spirituality.
sukkanei Visualizing a Hybrid Spiritual Vessel in Toronto

The sukka is a temporary structure and symbolic place of gathering that is deeply rooted in the history and traditions of the Jewish people. Bringing together settlers and settlers, this temporary structure is, according to the Bible, a means for the community to come together and the environment to express itself. The sukka is a sacred space for the community, a place where people can gather, reflect, and connect with each other.

In the context of First Nations, the sukka is a symbol of connection and unity, representing a cultural and spiritual tradition. It is a place where people can come together, share stories, and celebrate their shared heritage. In this context, the sukka is a symbol of the deep bond between the Jewish and First Nations communities, and a reminder of the importance of respecting and valuing each other's traditions.

In Toronto, the sukka is a symbol of the city's commitment to cultural diversity and inclusion. By bringing together the Jewish and First Nations communities, the sukka serves as a reminder of the importance of respecting and valuing each other's traditions, and of the importance of creating a welcoming and inclusive community for all.

1. Birch bark
2. Voyageur
3. Wood + canvas
4. Dugout

Canadian tradition of ‘making’.

First Nations inspirations blended with the Jewish Sukkah.
Millefleur

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ABSTRACT

Millefleur – a French term for ‘a thousand flowers’ – refers to stylized surfaces crafted from densely arranged floral patterns, commonly seen in medieval European decorative artworks. Exemplary works produced in the millefleur style combine a high resolution of detail at the scale of the individual motif with intricate patterns of arrangement across the whole field, accentuating the beauty, intensity, and painstaking nature of pre-industrial craftsmanship. This project, named after the style in question, recalls this tradition and explores its potential within the context of contemporary design.

The Millefleur installation focuses on the emergence of floral geometries through digitally driven design processes, while addressing the impact of human agency and group participation throughout fabrication and assembly. The aim is to explore the disconnects between the digital and the physical as productive sites for the articulation of robust design strategies, while forging new connections between decoration’s historical legacy and its innovative potential today. While the project aesthetically references the canonical work of contemporary figures such as Tord Boontje and Sheila Hicks, it is nonetheless conceptually grounded primarily by the desire to bring together technological innovation and participatory practice in a new and meaningful way. Constructed from silver Tyvek fabric and multi-color cotton thread, the curtain-like installation features over 300 uniquely shaped floral forms, generated through a digital script and hand-cut.

The fabrication of the curtain was conducted through a workshop with nearly two dozen participants who shaped its final design resolution through group decision-
making, person-to-person negotiation and improvisation. Each floral form within
the overall pattern is visible as both a cutout in the textile and as an applique
stitched onto the silver surface with colored thread. The array of 22 colors of
thread references the individuals that fabricated the installation.

The resulting floor-to-ceiling fringe – cascading across the textile's surface - is a
colorful representation of the community that participated in the making of the
piece. The multilayered installation produces visual, textural and spatial effects
that contribute to the overall atmosphere of the gallery. Moreover, the project
serves as a critical case study in decorative practice – one in which digital tools are
used to stimulate, rather than suppress, the social aspects of fabrication processes
that often go unnoticed.
Creative Scholarship: ‘Design as Idea’
Installation: *View at the gallery entrance.*
Installation: *Two-sided curtain provides distinct, but interrelated experiences.*
Precedents: Sheila Hicks, Oracle from Constantinople (2008-10) and Tord Boontje, Fallen Flowers (2005).
Process: Digital design generates a differentiated series of floral profiles based on a simple rule-based script.
Process: Digital fabrication of cutting templates.

millefleur
Process: *Floral perforations are cut by a group of workshop participants, giving the overall pattern a socially dependent dimension.*
Process: Stitching reveals authorship through an array of colors that index workshop participants.
Installation: *The resulting curtain is thin, but not flat - layered effects are concealed or revealed depending on one’s distance from the surface.*
Installation: *Up close, seemingly abstract marks become profoundly tactile.*
Hanging Matters

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Ryerson University

ABSTRACT

Our everyday environment is comprised of a series of interconnected narratives through space and people, which interact to form a web of complex yet intriguing relationships. Although the physical is somewhat preconceived through design, it is not static, existing both in time and in relation to people. Design could be considered as an idea or set of characteristics animated through human use, producing wear over time. It is experienced subjectively, with the user acting as protagonist within the space, whose narrative becomes intertwined with that of their environment and others occupying it. The above concept established the direction for the design project, Hanging Matters – a full-scale installation included in an annual design festival in a North American city.

A landmark historical hotel in this city invites proposals from designers and artists to transform rooms and spaces throughout the hotel as part of the festival events. This design team submitted a successful proposal and was given a second floor hallway of the hotel to transform, which was located adjacent to the event’s annual party space. Historically, the event receives up to a thousand visitors through the hotel as one of multiple sites around the city that are engaged in the festival. Knowing the history of the number of visitors, along with the hotel’s ‘opening night’, the design team worked within these parameters to inform our design solution. The opening party meant that the hallway could be filled with little room for people to move because of the number of viewers. To consider an installation that people engaged at ground level would only be an obstacle, and instead, we looked upward to the ceiling as the site. Upon completion of our site analysis, it was important that the installation accomplish the following tasks: draw the
viewers gaze upward, contribute to a celebratory atmosphere, and engage viewers so that they become participants. As a result, the design of the installation was built upon the intent to register participant use in space over time.

The installation intended to capture people’s attention through the creation of a dynamic and layered ceiling plane using light, color and cone shaped piñatas as the ceiling fabric, compelling people to dwell within this in-between space. Playful yet provocative, the abstracted piñatas revealed their contents upon release, creating a moment of wonder and surprise. Through three orchestrated timings, participants were invited to pull a tag at the end of a ribbon on each cone to release party favors while simultaneously transforming the ceiling. Over the course of an evening, the piñata cones were transformed into a second design as the lower portion of the cone dropped away. We sought to have this work explore the dialogue between people and physical space. It was not only important to design with the intent of materializing expression of light and color, but first and foremost, it was integral for the project to connect with people. Through the change of ceiling units, the physical space mirrored the activity below, registering time and becoming a catalogued topography of party happenings.

The submitter of this project was one member of a four-member team. The team members were divided into two roles – the submitter of this project is an experienced designer with knowledge of full-scale installations, and the additional three team members were undertaking a significant installation project of this scope as a new endeavor in their careers.
Hanging Matters

Introduction to the project

Light, color, time and participation are the variables that contributed to a full-scale installation as part of a North American city Design Week event.

Through a competition process, the four member team received a highly visible site – a main hotel hallway with a history of design interventions – as the site for this project titled Hanging Matters.
The Site:

A second floor hallway of a landmark historical hotel that opens up at one end to a lobby. During a weekend festival, the hotel’s second floor lobby transforms into a room where a DJ spins music and drinks are served at a bar.
Material studies with light and color led to the final design for a ceiling that recall multiple piñatas that open up to drop party favors. The translucent quality of mylar allowed for the iridescent quality of color and light to shine through and reveal hints of party favors on the inside.

Hanging Matters
Non-traditional materials were used for the installation. Mylar cones were constructed in two parts with the end point of the cone released with a pull from a red ribbon attached to a life saver (acting as an anchor) on the inside of the cone. Traditional technical details were swept aside for alternatives.
Installation in-progress.

Hanging Matters
Views looking up to the ceiling.

The ceiling plane was designed to allow for the experience of color to change as viewers moved through the hallway. At one end, color started with red and moved through a range of colors until reaching the other end in blue.

**Hanging Matters**
Tags were organized for three ‘pulls’ over the course of the evening, each began with a countdown:

*ten, nine, eight, seven, six, five, four, three, two, one... “

at:  
9:00pm
9:30pm
10:00pm

The tags ensured multiple opportunities for engagement where viewers turned into participants.

*Top right: getting ready for the first pull*

*Bottom right: last pull of the evening and the ceiling cones get truncated.*
View from the lobby as participants get ready for the second pull.

Hanging Matters
The ceiling changed shape and color over the course of the evening as the remaining confetti and party favors were released from the cones.
As the ceiling continued to change over the course of the evening, only hints of color remained. Visitors made comments that the ceiling looked like the inside of a pomegranate or stalagmite rock formation, both recalling natural forms.

Hanging Matters
Booma Table Lamps

Jiangmei Wu
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ABSTRACT

The goal of the Booma project is to create novel lighting products that are ecological and user-friendly. The light shade is produced by a technique that is similar to that used in paper folding, while the aluminum base is bent using press break and then spot welded. In comparison to other fabrication techniques, folding or bending allows for complex and innovative structures formed with simple and low cost fixtures at the point of assembly. From flat sheet material, Booma can be easily deployed into a three-dimensional volume and then can be collapsed back to a two-dimensional flat shape that is much smaller, for ease of shipping and storage. In addition, the three dimensional volume is flexible, allowing it to be shaped to different heights, and in one of the designs in different curvatures, making it customizable and user friendly. For the light shades, a durable spunbonded olefin sheet is chosen for its durability, cost-effectiveness and recyclability. It is made of a very fine and continuous High Density Polyethylene (HDPE) fiber that is first spun and then bonded together by heat and pressure, without additional chemicals and additives. Because of this, olefin sheet is one hundred percent recyclable. It is super lightweight (lighter than paper), flexible, and resistant to water, abrasion, chemicals, and aging. Because of its polymer content, olefin has a great ability to diffuse light, while its thin fiber under lighting conditions provides additional visual interest, thus making it an ideal material for being a light shade.

There are three steps in the design process: exploration of geometric folding principles, small scale paper modeling, and full-scale prototype development. Typically, geometric crease patterns are focused when generating folded
structures. In the Booma project, only the crease patterns that are able to create flat-foldable and rigid foldable structures are focused. One of the ways to understand rigid-foldability is that the folded forms are not locked and they can be rigidly folded into their final form by bending the material just at the crease lines. While a folded structure is rigidly foldable, it is not necessary flat foldable. In order for a crease pattern to be flat foldable locally then a necessary and sufficient condition, called Kawasaki’s Theorem, must be satisfied. For an entire folded structure to be flat folded, the Kawasaki condition must be able to be applied to all the inner vertices of a crease pattern globally, and there will be no collision of the parts of the folded structure during assembly. The design of Booma sheds is based on the rearrangement of four known flat-foldable and rigid foldable patterns, such as the Miura pattern, the Waterbomb pattern, the helical triangle pattern, and the Yoshimura pattern. The goal is to create a self-enclosed volume to host a spherical light source. Several paper models are folded and studied based on the alternations and combinations of the afore-mentioned patterns.

The design of Booma bases is based on the multi-functional idea that the bases, in addition to be luminary hardware to host a light bulb, can also serves as a container for the light sheds. They are laser cut first and then shaped using simple tools such as press brakes, with only small amounts of spot welding. Several iterations of designs are studied. One of the bases is slightly altered so that the light source can sit at a slight angle to accommodate the slight tilting and bending of the flexible light shed. For assemblage, the light sheds are connected to the aluminum bases on the bottom and top. The light shed is then propped up by thin metal rods. The bottoms and tops of the rods are connected to their plates by simple mechanical design, thus allowing the shed to be detached and collapsed easily for storage. The lengths of the rods are adjustable, in order to produce various heights, which is another user-friendly design feature.
Booma Table Lamps

Bomma Square
Booma Table Lamps

Bomma Star
Booma Table Lamps

Bomma Hexigon
Booma Table Lamps

details of spunbonded olefin sheet
Booma Table Lamps

Waterbomb pattern
Miura pattern
Yoshimura pattern
helical triangle pattern

Exploration of the four known rigid-foldable and flat-foldable patterns
Kawasaki’s Theorem
1. The number of lines connecting to a single inner vertex (the points where crease lines meet) is even
2. The sums of alternating angles are 180 degrees.
Booma Table Lamps

Further exploration of four known rigid-foldable and flat-foldable patterns by using geometric principles.
Booma Table Lamps

details of top plate, Booma Star
Booma Table Lamps

flat packaging idea, Booma Hexigon and Booma Star
Booma Table Lamps

Nets of the folded Bomma Star base
Ruga Interior Skin (RIS): Concept, Topology, Making, and Material

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ABSTRACT

In architectural design, skin is a familiar metaphor for building envelopes that provide flexible layers of protection and are often dependent upon rigid structure supports. In contrast, an interior skin can refer to all interior surfaces, from walls, ceilings, and floors to upholstery and curtains. The interior skin, possessing both visual and tactile qualities, is a statement of expression of how we live, shop, work, and pray. A wide range of materials can be appropriate for an interior skin, from rigid ones such as wood, glass, and metal, to flexible ones, such as wool, leather and paper. With the advance of material design and sustainable development, interior skins are forever changing, creating new topological forms, providing new visual and tactile experiences, and becoming the conceptual bridge between our body and our environment. Could a new interior skin have visual and tactile qualities of soft wool and yet be inherently rigid? How could a new approach to interior skins contribute to our ongoing search for sustainable materials and making techniques?

“Ruga” is a Latin word for making wrinkles, creases, and folds, and the word has been recently used by material scientists to describe the various physical qualities of these various folded states. RIS is inspired by the use of folding to create complex topological forms from flat thin sheet material with simple and low cost tools. The RIS project seeks to create deployable three dimensional interior skin that comes from a single piece of two dimensional material and can be collapsed into, again, smaller compressed forms. Rigid and flexible, Ruga Skins can be
applied in either horizontal or vertical applications in interiors, such as ceiling clouds, standalone partitions, paneling systems, etc. Focusing specifically on one of the most fundamental folding patterns, the Yoshimura pattern, the RIS project explores its potential for being an interior fabric for temporary use, or for an ephemeral interior structure. One of the most important features of the Yoshimura pattern is its ability to allow the form to reduce the dimensions in all directions when compressed or folded, facilitating easy transportation and storage. A regular deployment of the pattern produces an approximated arc form that has great structural stability. Instead of a regular deployment of the Yoshimura pattern, the RIS project focuses on the irregular deployment. The goal is to generate a variety of topologies to increase their versatility for working with a variety of interior functions.

Four methods are used in RIS project: parametric design, small scale physical models, computer simulations, and 1:1 scale physical models. Parametric design tools such as Grasshopper and Lunch Box are used to generate a variety of Yoshimura crease patterns. These crease patterns are then sent to a digital cutter for perforation and cutting so that small physical models can be generated quickly. These physical models shed insights into the structural stability of topologies and their global kinetic properties. Since folding is real physics, Kangaroo, a live physics engine for simulation, optimization and form finding is used to study the kinetic features as well as the final folded mesh topologies. These meshes are then unrolled and output for fabricating the 1:1 scale model. Corrugated cardboard has been chosen for the 1:1 scale model due to its economic, light weight, and environmental qualities. However, a variety of materials can be appropriate for RIS. One such material is polyester felt, made of recycled plastic bottles by using needle punch non-woven techniques. This felt has superior acoustic quality and currently has been used in interior carpets and wall panels. While it is non-rigid, folding adds rigidity to the material. Other potential materials include HDPE, paper, stiffen leather, etc. Further studies will need to be conducted in order to test the feasibility of these different sheet materials.
Ruga Interior Skin (RIS): concept
Ruga Interior Skin (RIS): Yoshimura Pattern

Yoshimura pattern allows the form to reduce the dimensions in all directions when compressed or folded.
Ruga Interior Skin (RIS): Yoshimura Pattern and Topology

Regular

Irregular
Ruga Interior Skin (RIS) : digital simulation

varied Yoshimura pattern and its simulation

sheared Yoshimura pattern and its simulation

distorted Yoshimura pattern and its simulation
Ruga Interior Skin (RIS): Metamorphosis

Similar to Fashion as a flexible layer of protection, RIS intends to bridge the conceptual connection between human body and the environment.
Ruga Interior Skin (RIS): visualization
Ruga Interior Skin (RIS) : visualization
Ruga Interior Skin (RIS) : making
Ruga Interior Skin (RIS): making
Ruga Interior Skin (RIS): material

- High density polyethylene
- Paper mache
- Stiffened leather

Recycled non-woven Polyester Felt
Urban Loft on the Prairie

Kay Miller Boehr

Park University

ABSTRACT

Urban Loft on the Prairie - Converting a former one room school to a weekend retreat

This building is part of the story of the rural one-room schools in America and their eventual demise. It represents the architecture of the Great Depression and the work of the WPA, as well as the early work of a locally significant architect. The building itself is nearly indestructible. Built in 1939 with 18-inch thick limestone walls and concrete interior structure, it has survived the indignity of insensitive remodeling, first as a single family dwelling and finally as an upstairs/downstairs duplex. It sits on its allotted acre, next to a scenic rural road in a creek valley of pasture land and crops, surrounded by flat topped prairie hills.

After years as rental property, the schoolhouse was in a dismal state when its owner declared bankruptcy, and the building was listed for sale by auction. My husband and I had discussed either purchasing a weekend retreat in the country or converting an urban industrial building into living space. When we discovered this building, we were attracted by the potential of opening up the space, similar to an urban loft, yet having a place in the country. I had recently begun teaching after 20 years as a designer in an architecture firm. While focusing on life as an academic, I had less time for clients. Instead, I found creative joy in planning and designing the renovation of this building. The process has been guided by my philosophy of historic building renovation: Identify the elements that give a space its character. Keep or restore those elements and use them to guide your design choices. In the case of the schoolhouse, these elements include plaster applied directly to the stone walls, twelve foot high ceilings, and a few remaining pieces of heart pine.
trim. The most inspiring feature was one that was missing: the nine-foot tall double hung windows that had originally filled twenty-eight feet of the east wall, but had been replaced by a wood stud wall, small windows and an eight-foot ceiling.

Our first task after demolition of the two bedrooms, bath and living room that had been constructed in the former 700 square foot classroom was to reconstruct the window wall, transforming the space with sunlight and views. Since there were no remaining vestiges of the classroom, our only design reference to “schoolhouse,” was a return to the original floor plan. The former classroom became an open living space, with the raw aesthetic of loft spaces, including exposed wood rafters, sealed concrete floors, and exposed ductwork. The space itself echoes the schoolroom. The design aesthetic was also influenced by the IKEA Värde cabinets that we selected for the kitchen wall. The cabinets inspired the use of warm colors: pine and birch wood, yellow glazed plaster walls, and creamy white paint; offset by blue-gray on gypsum board walls, gray toned concrete floors, and painted gray or pewter-toned metal. Furnishings are a mix of older pieces with inexpensive new pieces from IKEA and CB2.

Although we hire professionals for difficult or specialized work, we “relax” by working on the schoolhouse. I design and document our decisions so they can be built. I also work stripping, and finishing or painting furniture and woodwork; and painting or glazing walls. Our 2013/2014 project, shelving and steps to the deck, completed the “one room” living space. The work continues, and the next phase includes the stairwell renovation and the construction of a bathroom in the original cloakroom. We are planning to use the basement (also a former apartment) for a studio and space for guests.
Urban Loft on the Prairie

After area schools were consolidated in 1960, this 1939 WPA-built limestone schoolhouse became a single family home, and then a duplex. When we purchased the building, the original 9 x 28 foot window opening had been filled in with wood framing and small windows (right). The opening is now filled with a series of windows and doors that flood the former classroom with natural light and allow access to the new deck.
According to school records, the roof always leaked. In an attempt to solve the problem, a low-pitched roof had been added (visible in the “before” photo, right). We removed the pitched roof, replaced the original flat roof, and added a new front entry door. The front exterior is still a work in progress. The rendering below shows the future appearance of the building.
Floor Plans

The first floor plan (above) is from the 1939 construction drawings. The 2002 plan (right) shows the layout of the apartment that divided the classroom into two bedrooms, bathroom, and living room. The vestibule walls had been removed to create a kitchen/dining room. In the current configuration (opposite), the vestibule walls are rebuilt, creating a sleeping alcove in the original library space and a bathroom, closet, and furnace room in the original cloak room.
The Kitchen

A bedroom in the northeast corner occupied the area that is now the kitchen (right, top). The bottom right photo shows the space after demolition. The new kitchen (above and opposite) includes IKEA cabinets and a repurposed work bench.
Living and Dining

The south end of the room is the living area (opposite top). Plaster had fallen off the wall, revealing the limestone, which was left exposed (detail opposite). Photos of the living room before and after demolition can be seen to the right. Two ceilings were removed, one at eight feet and the other sloping from 12 to 10 feet.

The photo below looks toward the east wall of windows from the dining area. The steps leading to the deck were finished in early 2014 and complete the renovation of the living space.
Sleeping Alcove

The original library is now a sleeping alcove, furnished with an IKEA bed and separated from the living area by a curtain.
The “before” photo above shows the front door opening into the kitchen/dining area with the original vestibule walls removed.

We have replaced the walls (left and below), creating a vestibule and sleeping alcove.
Residence in Cambridge

Myoung Joo Chun
Endicott College

ABSTRACT

The Users and Needs
Husband and Wife in late 40s and teenage son and daughter. Husband is a surgeon and wife is a house wife. Their son and daughter play ice hockey. They just bought the house and contacted architectural designers. They wanted to finish the design and construction of the house ASAP as they were renting a property while construction. Husband wanted to have a functional house. Wife wanted to have a house that is open with full of natural lights. Wife liked modern and wanted to hide most of household stuff but she didn't want to look too 'cold'. She wanted to have a good laundry room as they do laundry several times every day. They want to have a quiet room for the family where they can read and study together. The couple both like to have a house different from the colonial style neighborhood. Son wanted have a room where he and his friends can hang out with playing video games and watching sport games. Daughter wanted a room that has a hide-away space. They wanted to have a ice hockey practice rink.

The Building Condition
The house needed a total renovation in and out or a new construction after the demolition of the current one. The house had been built in 1926. Rear side of the house was added and the existing was renovated to have maximum number of rooms in 1980s. Some rooms got accessed through bathroom. Most part of the house was dark even in the daytime. On second and third floor, orientation got easily lost due to the disconnection of outside views.
New Design
The existing footprint was kept and the house was renovated inside and out. Dark grey brick and cedar wood were chosen for the exterior design to appreciate the natural materiality and low maintenance. White oak, poplar, glass, concrete were used for main interior finishes for the same reason. Strategic locations of windows and solid and void interior walls brought natural light and ventilation into every space of the house from top floor to bottom floor and they also provided the privacy where needed. New floor plans extended interior toward outside, which creates the sense of place through the relationship with outside sceneries. Minimum energy cost strategies were planned through maximum insulation and energy efficient lightings and plumbing fixtures. As the designer is a educator, the project was used as an open classroom for students. Students visited the project site to learn structure, building systems and building materials through the phases of construction. Students also could learn interior design details and finishes through the actual applications. The clients liked the students visits as they took it as designer's investments based on the pride of the project. Landscape design was suggested to compliment the house from outside and inside. The house renovation did employ interior designer's maximum potential from exterior design proposal to landscape design suggestion as well as interior design to achieve cohesive design as a whole.
Residence in Cambridge, MA  |  2013

Street view of House after renovation

Previous Condition
1ST Floor
Basement and 3rd Floor
Project as a live classroom for students:
An Interior at Home in its Site: Learning from Precedents

Kimberley Furlong & Krista Whitson
University of Arkansas

ABSTRACT

The 2,900sf home was built for a retiring couple in search of a carefree modern retreat sympathetic with its natural surroundings in the hill country southwest of Austin Texas. Historically significant Modern precedents and regional case studies inform the building form, materials and patterns of inhabitation. Additional values included an appreciation for local building and material traditions, as well as sustainable design practices.

The limestone clad house stretches along the remote site’s rock ledges while three bays push beyond the simple volume to offer both intimate and distant panoramic views of the hills beyond. A series of ganged windows and doors connect the structure to the landscape. The low-slung roof, with generous overhangs, offers shaded and framed views from the interior while collecting rain-water and supplying all household water needs. Inside, partitions stay well below the ceiling, and extensive free-standing white oak veneer cabinets separate areas, allowing the locally sourced cypress ceiling boards to continue uninterrupted.

An interior glass clerestory affords the Master Bedroom acoustical privacy while connecting it visually to the remainder of the house. A wood clad skylight chimney gathers light for the Guest Bath while concealing supply and return HVAC. Anchoring its core, the home’s thick board-formed concrete mass provides both an interior and an exterior fireplace. A custom glass and steel Master Bath shower enclosure surrounding a teak deck, and a cantilevered bathtub bay window allows
continuous visual connection between interior spaces and the outdoors. Twelve-foot cypress doors on the dogtrot screened Porch enhance the sense of scale and height in the space. The Porch captures the prevailing breezes and the sounds of nature, creating seamless indoor-out-door connections when desired.
GLASS HOUSE
Phillip Johnson
Uninterrupted Ceiling Plane
Framed Views of Natural World
Massive ‘Hearth’ Grounds House

LIMESTONE
German Immigrant
Building Tradition
Local Materials

FARNSWORTH HOUSE
Mies van der Rohe
Open Floor Plan
Uninterrupted Ceiling Plane
Framed Views to Natural World
‘Floating’ Cabinet Partitions
DOGTROT

Increasing Air Velocity
Vernacular Response to Climate
Social Gathering
Sleeping ‘porch’
LIVING + DINING AREA WITH SCREENED ENTRY PORCH BEYOND + board-formed concrete double fireplace stack
KITCHEN + OPEN HALL
with continuous concrete floor + cypress board ceiling planes,
+ custom white oak veneer cabinetry
MASTER BATHROOM
with custom mirrors, shower enclosure +
white oak veneer cabinetry
BATHROOM CYPRESS BOARD-LINED SKYLIGHT CHIMNEY with supply + return air ventilation
LongAcres

Carl Matthews & Scott Biehle
University of Arkansas

ABSTRACT

“Eventually everything connects – people, ideas, objects. The quality of connections is the key to quality.” Charles Eames

Upon first view of a 22 acre property in the Ozark Mountains the designers/owners were struck by the beauty, power and serenity of the view. A gut reaction to the ideal location to build a new house was unavoidable. However, being trained to be more analytical about such decisions, they undertook a cohesive process to properly study the sun, wind, and water flow patterns of the site. After the study was complete they found their initial instinct was correct. Friends on Facebook were curious to know what the new house would be. Not being in the mood to field comments and criticism from their largely interior design, landscape architect, and architect friend-base, they posted an image with the caption “For those who keep asking what our new house will look like, imagine if the Farnsworth House went slumming and mated with a chicken house. The mongrel offspring would be our designer hillbilly house.” The reference to the chicken house hearkened to the interior designer’s first impression of flying over the state. It is a region dominated by the chicken industry and long low metal barns dot the landscape.

The house incorporates vernacular materials, simple and passive solar construction techniques, and spatial/compositional arrangements to capitalize on views. The concept focused on connections; physical and visual connections to the outdoors; connections from one functional interior space to another; aural connections from one end of the house to the other; and color connections to
dissolve the boundary between interior and exterior. Rather than standard windows, 12 out of 13 openings in the exterior wall are 8’ high sliding glass doors. Rather than standard partitions, all interior divisions of space are birch plywood storage units with sliding barn doors that both conceal storage and provide visual privacy in sleeping and bathing spaces.

The home is designed for aging in place. Exterior access paths are at the same level as the interior concrete slab floor. There is no curb at the shower. Ample circulation space is provided in the advent of future needs for assistive devices. Low maintenance, low cost, and material longevity were the drivers of design decisions. Most importantly, the home is designed to connect the owners to their passions; horses and gardening. The home is designed to connect them to the earth.

Responsibilities
The submitter of the entry was responsible for interior and architectural design; house plan, section, and perspective sketches; and all photography. The co-author of the submission is a landscape architect and was responsible for landscape design and site section. They collaborated to produce the exploded axonometric drawing.
Farnsworth House + Chicken House  =  Our Designer Hillbilly House
Metal Roof
Wood Joists
Birch Plywood Ceiling
Birch Plywood Storage Units
Lacquer & Quartz Island
Metal Siding
Wood Columns & Beams
Concrete Slab & Gravel Walks

600’ to Valley Below
Schematic Sketch
Sun Angle Diagram
A Poetic Pairing

Angela McKillip
South Dakota State University

ABSTRACT

Since 1961, Raven Industries has occupied a trio of buildings in the heart of historic downtown Sioux Falls. Founded as a manufacturer of high-altitude research balloons for the American space program to aid in the race of space exploration, Raven has since grown into a conglomerate of related high-quality, high-value products in the areas of national security, agriculture, energy independence and resource preservation.

A poetic pairing, Raven’s diverse programming aligns with the distinctive clustering of historic structures. A clear commitment to preserving their history while maintaining industry leadership provided the grounds for a clean modern architectural expression that respects the context of the historic structures. Over the 50 years of business development, many renovations accommodated growth but also created a warren of spaces within the open plan, an important relationship to the adjacent river was ignored, and many existing openings were reduced or boarded as windows were broken and unrepaired. The original warehouse now serves as the Raven lobby, museum and event floor. A new main entrance, adorns the 1890’s quartzite warehouse where freight was once delivered.

A cantilevered glass box opposite the entrance overlooks the Big Sioux River. Interior spaces throughout the buildings were stripped to the original structure and reassembled with a central service core, interior glass-front offices, with systems furniture and circulation at the perimeter. A diagonal slice through the first floor aligns with the river’s movement through the site and connects the street entrance and main public entrance from parking. Detailing of the front
reception desk and informational kiosk and bench give the illusion of floating elements, reminding the companies heritage in aeronautics. Exterior faces were repaired after EIFS and paint were removed. Original window openings were restored and 98% of the shell was kept intact.

The full renovation project spanned three years and five phases of construction while business operations continued. Raven Industries is committed to addressing environmental issues on a global scale. Leadership in Energy and Environmental Design (LEED) provided a framework for incorporating sustainable strategies to demonstrate their vision to staff and visitors. Energy use has been reduced by 40%. Potable water use is 41% below code and water collected from the elevator pits is routed to holding takes to irrigate the landscape instead of draining into the storm sewer. Portions of the site have been planted as restored prairie and a green roof surrounds the fourth floor terrace. The project has been submitted for Gold Certification. Glass fronted conference rooms line the first floor public corridor, while support spaces reside behind a basket weave wall recalling the baskets of parade balloons manufactured by Raven. Fifth floor winter gardens contribute to 10% of total usable floor space dedicated to supporting Raven’s innovative work style. The original Manchester Biscuit Company fifth floor ovens were converted to an executive library, offices and a kitchenette. This corporate entity respects heritage while thriving in modern markets through a clear commitment to employee satisfaction and environmental stewardship.
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North Elevation.

East Elevation.

South Elevation.

West Elevation.
Meadow House

Matthew Melcher
Washington State University

ABSTRACT

The Meadow House is a 2,200 square foot newly-constructed single family residence located in Eastern Washington, USA. The author was responsible for all architectural, interior and landscape design. The clients took liberty with some design elements – as is common – and have added select built-in features in collaboration with the author.

Client Profile
The Meadow House clients (Andrei and Kristy) are a professional couple with a young daughter (Lyra) and middle-aged dog (Sascha). Andrei and Kristy are both environmentally conscious, creative and physically active. In her spare time, Kristy creates found-object art while Andrei enjoys biking and working with wood and metal. Having lived for several years in a three story craftsman style home, they came to the author wanting to build a smaller home that was more efficient and strongly connected to the landscape – spatially and through material use. They purchased a two acre lot outside of the Spokane, WA city limits in a PUD formed by a group of eco-conscious homeowners looking for alternatives to urban living. The native grass covered site slopes to the south (slide 1) offering a meadow view to an evergreen wooded plateau beyond. With few trees to provide shelter from the elements, the site is subject to high winds and high sun exposure. The region is subject to a true four-season climate with hot, dry summers and cold winters.

Program
The program called for a compact two bedroom, two and a half bath home equipped with an office, craft/guest room and a two car garage. With a modest
Design as Interior • Creative Scholarship

budget, Andrei and Kristy assisted in the construction and finishing of the home which included building the cabinetry, custom furniture pieces, hand-made window treatments and extensive landscape improvements. The house serves as a gallery for Kristy’s artwork (slide 2) and a canvas for Andrei to add custom-built elements (slide 4) to over time.

Design Goals
The author designed the home to achieve three primary goals: organize the home and select materials and finishes which connect the clients with the landscape; create an interior which serves as both gallery and canvas; and design/engineer the home to minimize energy use and maximize comfort.

Design Solution
The site is organized using a series of board-formed concrete site walls to define the outdoor court areas, retain the sloping earth and satisfy the structural needs. The interior of the home consists of two narrow intersecting forms; one containing the more public functions and the other housing the private areas. The resulting cruciform plan defines three outdoor living areas between the interior space and the exterior site walls. As a result, nearly every interior room is framed on both sides by exterior courtyard spaces. Interior finish materials reflect the palate of the landscape. Circulation spaces take the form of gallery halls which open onto the public spaces. These gallery hall spaces display Kristie’s growing collection of found-object art. The house was designed to be improved over time – as Andrei’s canvas. All cabinetry and many other built-in and finish features were built or installed by the clients and they continue to add features regularly in consultation with the author. The house is built using highly insulated SIPS panels (walls and roof), in-floor radiant heating, deep southerly overhangs, and incorporates ample day-lighting in each room with cross ventilation for cooling. The home was designed to be cooled naturally and is not air conditioned at the request of the owners. The clients report very low energy bills for a home of this size and comfort through the year.
Sacha guards the master bedroom door - built from slavaged boards used in the concrete forming
west and south elevation
north and east elevation
Changing the Course of History: Revising the Design History/Theory Sequence

Patrick Lee Lucas, Sophie Good, Jessica Funke, Eunyoung Kim, Sabrina Mason, Anne Prather & Helen Turner

University of Kentucky

ABSTRACT

This panel, comprised of faculty and a teaching assistant, revised the two-semester history/theory of design course. Our work reflects concerns in the academy about the efficacy of history courses, typically taught as a linear sequence chronicling the history of interior environments from the dawn of time to the modern. In 2009, the Journal of Design History devoted an entire issue (22:4) to multiple authors who reconsidered the design survey to meet needs and goals of future designers. Editors Hazel Clark and David Brody called for relevancy for students in the survey, a move away from the outmoded instructional pedagogies and, most of all, new strategies and approaches for teaching and learning relevant to twenty-first century students.

Responding to concerns about the effectiveness of the sequence as taught for the last several years, the aforementioned team collaboratively taught the courses around topical units (principles + elements, scale, materials, light, technology, experience, furnishings, finishes, representation, theory) to enable student access ten times to the chronology of buildings, spaces, and furnishings rather than the customary arc of a single chronology stretching over two semesters. With team delivery, students encountered multiple voices and viewpoints through connections to studio projects and through multi-modal instruction as an
alternative to the “sage on the stage” history/theory lecture. As revised, the sequence provided benefit not only to the students but also the instructors. Student assessment occurred across both semesters, generating lively discussion of data gathered by the teaching team, allowing them to formulate and construct real time feedback and to put new opportunities in place as the new sequence unfolded.

With the multimodal approach at its core, the sequence provided fertile ground for students to sense a transparency in instructional delivery often left quite opaque in the traditional classroom. Through active engagement, students became invested in the course material and felt a sense of commitment to the work necessary for completing the class successfully. Resulting in a stronger connection to the material, this level of engagement bore directly on student retention and to positive trans-disciplinary thinking. The re-orientation also permitted instructors a vehicle to introduce the program’s curriculum (basic approaches to design, scale, materials, light, technology, experience, furnishings, finishes, representation, theory) as part of the learning process with an opportunity to focus on personal or research interests within their pedagogy.

The teaching team of five will share their collective experience of the course revisions and outcomes in a panel session to encourage dialogue around alternative pathways to history/theory instruction of benefit to students, all the while meeting CIDA requirements. Rather than iterate through a traditional presentation, each panelist will conduct a teaching moment – pecha kucha style – to guide the audience through the approach. Through this “informance,” we introduce the schematic for the pair of courses and speak to data gathered to measure student comprehension and application of course materials.

REFERENCES (APA)

SCHEMATIC FOR 161 + 162 (HISTORY/THEORY OF DESIGN)

SEMESTER 1

UNIT 01: principles + elements of design
exploring basic ideas of space and the built environment
introduces design vocabulary and approaches and provides ways of seeing, recording, sharing
links in the program: all studios/philosophical approach, connects to 101, 121
core: written, oral, and digital expression of design
online: P+E readings, gothic cathedrals, blog responses, online communities?
active: P+E twister
in the field: campus visits

UNIT 02: scale
placing interiors in the context of objects, spaces, buildings, places
connects the practice of interiors to other disciplines
recognizes interconnections among the various expressions of design
links in the program: all studios/college connection, connects to 101 and 121
core: interconnected nature of design as a product of culture
online: powers of 10 video, source material at columbia.edu, modernismathome.net
active: scale figures for 3D object based on studio work, non-majors?
in the field: n/a

UNIT 03: materials
understanding the material dimensions of design
considers the physical realities of making
links in the program: 275 (interior construction), 365 (materials)
core: political and social dimensions of material use
online: the material connexion interface
active: construction competition
in the field: rubbings

UNIT 04: light
studying the influence of light on interiors
explores the ways natural light and human-shaped light impact space
links in the program: 366 (lighting)
core: design as a fundamental aspect of human experience
online: William Whyte video
active: light flip book
in the field: sites of light throughout Lexington

UNIT 05: technology
investigating the presence of technology in design + design process
HVAC, printing press, magazines, tv/internet, speed of information,
computer-aided design and modeling
links in the program: 364 (environmental control systems) and 263 (digital design)
core: design as a means of communication
online: greatbuildings.com
active: quickcast or jing videos
in the field: campus visits to see technology in action

SEMESTER 2

UNIT 06: experience
interpreting the interior as a vessel for human habitation
students bring human experience to design understanding
links in the program: all studios, 234 (environmental theory)
core: design as a fundamental aspect of human experience
online: GoogleEarth
active: Quickcast or Jing videos
in the field: campus places

UNIT 07: furnishings
examining furniture and decorative arts in the interior
links in the program: all studios
core: political and social dimensions of material use
online: magazine module/home furnishings through time
active: chair cards (chaircards.wordpress.com)
in the field: drawing of chair classics in college offices

UNIT 08: finishes
considering surface treatment in the interior
links in the program: 365 (materials)
core: political and social dimensions of material use
online: Pinterest
active: making finishes in studio
in the field: artisan/craftspeople field trips

UNIT 09: representation
recognizing the ways in which communication happens about the interior
links in the program: 263 (digital design) and 264 (color theory)
core: written, oral, and digital expression of design
online: design dreams module (based on Thomas Cole’s The Architect’s Dream)
active: draw and render section of Baths of Caracalla, build/print model
in the field: sketchbook exercises

UNIT 10: theories
investigating ways of understanding the interior
links in the program: 234 (environmental theory)
core: design as a means of communication
online: the four theories module
active: applications in studio projects (222) and general education
in the field: observational research
Lead or Be Left Behind: Innovation in Interior Design Programs to Meet Paradigm Shifts in Higher Education

Katherine S. Setser & Robin J. Wagner
Miami University

ABSTRACT

Americans feel a college degree affords greater financial and job security in their future (Lumina Foundation and Gallup, 2013). Yet, an overwhelming majority of Americans believes that college is becoming out of reach for the middle class. Based on an Association of College Trustees and Alumni (ACTA) commissioned study, nearly three quarters of the public do not believe students get their money’s worth from their college investment (GFK, 2014). Throughout the 1980s, higher education institutions struggled to balance the need to create a wide variety of degree programs as a means to promote access to a wider populace with the need to control the dramatically rising prices associated with such an expansion. The result is an unsustainable holding pattern and even greater pressure for significant change, this time from federal and state governments as well as parents and students (Zemesky, 2013).

Significant change, largely in the form of governmental oversight, is already beginning to impact the structure of higher education and its programs. Interior Design education is no exception. In fact, its professional and nationally accredited programs may very well be situated at the center of the debate. Professional programs – those programs often viewed by legislative bodies and the public as highly industry- and employment-focused will perhaps face the earliest of challenges. Increased government involvement in some of the decision making that historically has been left to the accreditation process may eclipse or even
conflict with traditional collegial values and practices, affecting both the scope of programs and the attention to details of the profession (Eaton, 2012).

According to Judith S. Eaton (2012), president of the Council for Higher Education Accreditation (CHEA), a number of factors are implicated in the move toward greater governmental oversight authority: 1) Increased federal investment. Management and tracking the significant federal funding to colleges and universities alone is the government’s justification for substantial oversight. 2) Increased tuition. A continued and significant rise in the price of tuition to the point of outpacing the increased costs of healthcare. The 2007-2009 recession served to intensify the already existent issue of affordability. 3) Accountability. As society has grown to expect universal access to higher education, there is a call for increased public accountability and transparency in the form of improved evidence of student achievement and institutional performance. Previously, society valued open access to education as a prized opportunity; however, today’s more consumer-based approach to college access emphases a value-added dimension where degrees are valued only to the extent to they result in higher paying jobs. 4) Nationalization of public policy. With greater frequency, policy determinations are being made at a federal or national level. 5) Introduction of electronic technology. “Technology has created the expectation of instant information, hastening the eclipse of personal and institutional privacy and rendering all judgments equal – whether from informed professionals or newcomers to an area of inquiry (p. 10).” Other influences from within academia are driving changes to the fundamental institutional structure and the students they serve. Shifts in faculty makeup, governance, curriculum, even the role that institutions play in their communities and society effect this change (Zussman, n.d.).

This panel will include interior design program educators and administrators from both public and private institutions to discuss the impact of recent and coming changes to higher education on their own interior design programs, as well as their attempts to proactively “lead the change.” Representatives from higher education accreditation agencies will also share their insights with respect to the additional burden of regulatory oversight.


**Omniframe KP June 06, 2014**

**College Governance**

Q.3 How good a job are leaders of colleges and universities, including Boards of Trustees, doing to make sure that higher education is worth the investment of time and money by students?

**Table 3**

**Base**: Total Respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Income</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(B)</td>
<td>(C)</td>
</tr>
<tr>
<td>Total Unweighted</td>
<td>1011</td>
<td>528</td>
<td>483</td>
</tr>
<tr>
<td>Total Weighted</td>
<td>1000</td>
<td>487</td>
<td>513</td>
</tr>
<tr>
<td>Excellent/Good (Net)</td>
<td>357</td>
<td>153</td>
<td>204</td>
</tr>
<tr>
<td>Excellent</td>
<td>357</td>
<td>153</td>
<td>204</td>
</tr>
<tr>
<td>Good</td>
<td>357</td>
<td>153</td>
<td>204</td>
</tr>
<tr>
<td>Fair/Poor (Net)</td>
<td>624</td>
<td>326</td>
<td>298</td>
</tr>
<tr>
<td>Fair</td>
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</tr>
<tr>
<td>Refused</td>
<td>19</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>


**Proportions/Means: Columns Tested (5%, 10% risk level) - B/C - D/E/F/G/H/I - J/K/L/M - N/O - P/Q/R/S**

Overlap formula used.

**UPPER CASE LETTERS DENOTE SIGNIFICANCE AT 95% CONFIDENCE LEVEL**

**LOWER CASE LETTERS DENOTE SIGNIFICANCE AT 90% CONFIDENCE LEVEL**
HIGHER EDUCATION REDESIGN

Americans are convinced that degree attainment is important for financial security. Still, many lack a degree or certificate beyond high school. Some of these Americans are eager to return to school in the near future. Yet barriers exist for those who seek to map a pathway to completion and attainment.

This study shows there is strong public support for redesigning pathways to higher education, to re-enroll in degree and certificate programs, and to attain a postsecondary credential or degree.

When asked whether they think students should be able to receive college credit for knowledge and skills acquired outside the classroom, nearly 9 in 10 Americans (87%) say yes. This suggests that higher education institutions could initiate community collaborations/partnerships to help facilitate certificate or degree completion for some working Americans.

<table>
<thead>
<tr>
<th>Do you think students should be able to receive college credit for knowledge and skills acquired outside the classroom?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

Additionally, three-quarters of Americans (75%) indicate that they would be more likely to enroll in a higher education program if they could be evaluated and receive credit for what they already know.

<table>
<thead>
<tr>
<th>If you could be evaluated and receive credits for what you already know, would you be more likely to enroll in a higher education program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

Americans also favor redesigning ways that college credit is awarded, saying credits should be given based on mastery of content rather than time spent in the classroom. Seven in 10 (70%) say if students demonstrate mastery of the material in less time, they should be able to get credit for the course without completing the full session, typically 16 weeks.

<table>
<thead>
<tr>
<th>An average college course takes 16 weeks to complete. If a student demonstrates they have mastered the material in less time, should they be able to get credit for the course without completing the 16-week session?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

Despite the growth of online colleges and universities, there is a persistent perception that they do not offer the level of quality that traditional colleges and universities have. Similar to 2011 findings, about 1 in 10 (11%) strongly agree that online institutions offer high-quality education. Another 22% agree. More people (54%) agree or strongly agree that community colleges offer high-quality education.

<table>
<thead>
<tr>
<th>Statement</th>
<th>%1 Strongly Disagree</th>
<th>%2</th>
<th>%3</th>
<th>%4</th>
<th>%5 Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional colleges and universities offer high-quality education</td>
<td>1%</td>
<td>3%</td>
<td>20%</td>
<td>47%</td>
<td>29%</td>
</tr>
<tr>
<td>Community colleges offer high-quality education</td>
<td>2%</td>
<td>8%</td>
<td>36%</td>
<td>35%</td>
<td>19%</td>
</tr>
<tr>
<td>Online colleges and universities offer high-quality education</td>
<td>7%</td>
<td>18%</td>
<td>39%</td>
<td>22%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Only about 1 in 4 Americans (26%) think that higher education is affordable for everyone who needs it. The majority (74%) think that higher education is not affordable for all.

<table>
<thead>
<tr>
<th>Statement</th>
<th>%1</th>
<th>%2</th>
<th>%3</th>
<th>%4</th>
<th>%5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think higher education is affordable for everyone who needs it?</td>
<td>Yes</td>
<td>26%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>74%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

However, Americans still do not think that cost is the biggest barrier to re-enrollment that adults face when pursuing higher education. More respondents (36%) say that family responsibilities are the biggest barrier to adult re-enrollment, among the options presented. More than 1 in 4 (28%) cite cost as the biggest barrier, and others say that job responsibilities (15%) and the time it takes to complete (11%) are the biggest impediments. Few Americans say that the lack of information (4%) or social support (3%) is the biggest barrier.

<table>
<thead>
<tr>
<th>Statement</th>
<th>%1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many adults in the workforce do not have a post high school credential or degree but are interested in returning to school to complete one. In your opinion, which ONE of the following is the biggest barrier to re-enrollment that such adults face when pursuing higher education?</td>
<td></td>
</tr>
<tr>
<td>Family responsibilities</td>
<td>36%</td>
</tr>
<tr>
<td>The cost of higher education</td>
<td>28%</td>
</tr>
<tr>
<td>Job responsibilities</td>
<td>15%</td>
</tr>
<tr>
<td>The time it takes to complete</td>
<td>11%</td>
</tr>
<tr>
<td>Lack of information</td>
<td>4%</td>
</tr>
<tr>
<td>Lack of social support</td>
<td>3%</td>
</tr>
</tbody>
</table>
COST AND QUALITY

While Americans are confident that postsecondary degree attainment is important, and many of those who do not yet have a degree or certificate say they intend to pursue education beyond high school, most Americans have some concern about the cost and quality of higher education in this country.

Respondents were asked their opinion of the quality of higher education in this country relative to other countries. Less than half (46%) say that the quality of higher education is better than it is in other countries. As many respondents (46%) say that the quality is the same as or worse than it is in other countries.

<table>
<thead>
<tr>
<th>In your opinion, is the quality of higher education better than it is in other countries, about the same, or is the quality of higher education worse than it is in other countries?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better than other countries</td>
</tr>
<tr>
<td>Same as other countries</td>
</tr>
<tr>
<td>Worse than other countries</td>
</tr>
<tr>
<td>Don’t know/Refused</td>
</tr>
</tbody>
</table>

More than half of Americans (58%) say the quality of higher education in this country is the same as or worse than it has been in the past. More than 1 in 4 (27%) say quality is worse. Nearly 4 in 10 (38%) say quality is better than it has been in the past.

<table>
<thead>
<tr>
<th>In your opinion, is the quality of higher education better than it has been in the past, about the same, or is the quality of higher education worse than it has been in the past?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better than the past</td>
</tr>
<tr>
<td>Same as the past</td>
</tr>
<tr>
<td>Worse than the past</td>
</tr>
</tbody>
</table>

Respondents were asked to reflect on the quality of online colleges and universities, community colleges, and traditional institutions. Similar to findings from the 2011 Lumina Foundation national poll on higher education, people are most confident in the quality of traditional colleges and universities, with 29% strongly agreeing that traditional colleges and universities offer high-quality education. Another 47% agree with this statement.

Q.1 How good a job are colleges and universities, including Boards of Trustees, doing to ensure that students graduate with the skills and knowledge they need for citizenship and career?

Base: Total Respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Income</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(B)</td>
<td>(C)</td>
</tr>
<tr>
<td>Total Unweighted</td>
<td>1011</td>
<td>528</td>
<td>483</td>
</tr>
<tr>
<td>Total Weighted</td>
<td>1000</td>
<td>487</td>
<td>513</td>
</tr>
<tr>
<td>Excellent/Good (Net)</td>
<td>546</td>
<td>51.2</td>
<td>57.9</td>
</tr>
<tr>
<td>Excellent</td>
<td>48</td>
<td>15</td>
<td>32</td>
</tr>
<tr>
<td>Good</td>
<td>499</td>
<td>48.0</td>
<td>51.6</td>
</tr>
<tr>
<td>Fair/Poor (Net)</td>
<td>436</td>
<td>46.6</td>
<td>40.8</td>
</tr>
<tr>
<td>Fair</td>
<td>359</td>
<td>180</td>
<td>179</td>
</tr>
<tr>
<td>Poor</td>
<td>77</td>
<td>47</td>
<td>30</td>
</tr>
<tr>
<td>Refused</td>
<td>18</td>
<td>11</td>
<td>7</td>
</tr>
</tbody>
</table>

The T-word: How are Interior Design programs tackling technology today?

Amy Huber, Lisa Waxman, Connie Dyar, Kristin Maki & Douglas Seidler
Florida State University

ABSTRACT

Love it or hate it, technology has made a big impact on design. The design and delivery of interior design projects is increasingly reliant on advanced technological applications. Design projects are more complex, and clients have higher expectations regarding how they can see and test a design prior to its fabrication and construction. Today’s entry level designers are often expected to leverage a full range of building information modeling (BIM) capabilities and quickly produce photorealistic renderings; managing many software programs in doing so. Technology is so ubiquitous, it can now be used for rapid prototyping and applications can be carried in the palm of a designer’s hand; providing even greater opportunities for productivity and connectivity.

The ties between design and technology are so great, that in her incoming 2014 IDEC presidential address Katherine Ankerson mentioned the word technology seven times (K. Ankerson, personal communication, March 29, 2014). Technological advances can be both exciting and overwhelming for those charged with teaching technology programs. While available resources are vast, including web training (e.g. Lynda.com), books, and how-to videos; the time commitment to stay current is intense. To compound the issue, there are many technology teaching pedagogies (Rose, 2013; Siedler, 2014; Waxman & Zhang, 1995), and varying paradigms regarding when and how to introduce technology to students. This discussion brings together technology educators from five CIDA accredited programs in hopes of answering the following questions: What software are you
incorporating into your curriculum? When in the course sequence do students receive exposure to the software? What are some of the biggest obstacles you are encountering? What unique approaches are you taking in terms of technology? What are you hearing from advisory boards, internship providers, etc. regarding the future of technology? How are your faculty being trained and remaining current?

This panel is designed for educators ranging from those who are deeply immersed in the exploration of emergent technologies, to those who are feeling overwhelmed by technological advances. The goal is to provide an understanding of when the represented programs are introducing software to their students (see Table 1), when the students are expected to become proficient (e.g. using the software on their own), as well as provide potential strategies for how to train and maintain software proficiency for faculty members.

REFERENCES (APA)


The *T-word*: How are Interior Design programs tackling technology today?

**Table 1**

*Software introduction*

<table>
<thead>
<tr>
<th>Institution</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
<th>Grad</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution A</td>
<td>C, I, ID, Sk, P, R</td>
<td>R, M</td>
<td></td>
<td></td>
<td>Rh, Pr, A</td>
<td></td>
</tr>
<tr>
<td>Institution B</td>
<td>C, Sk, ID</td>
<td>R, ID, P</td>
<td>R</td>
<td></td>
<td>M* offered as elective</td>
<td></td>
</tr>
<tr>
<td>Institution C</td>
<td>C, I, ID, Sk P, R</td>
<td>R, M</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institution D</td>
<td>P</td>
<td>C, Sk, I, P, ID, RH</td>
<td>R, Rh, Agi32, M</td>
<td></td>
<td>*Graduate students learn and work on software programs of their choice as they relate to their thesis/studio/research project</td>
<td></td>
</tr>
<tr>
<td>Institution E</td>
<td>Sk, Rh, I, P, ID</td>
<td>C, R</td>
<td></td>
<td></td>
<td>No specific software taught*</td>
<td></td>
</tr>
</tbody>
</table>

*Graduate students learn and work on software programs of their choice as they relate to their thesis/studio/research project.

**Key**

A=After Effects  
C=CAD,  
M=3Ds Max,  
P=Photoshop,  
R=Revit,  
Rh=Rhino,  
I=Illustrator,  
ID=InDesign,  
Agi32=lighting design

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POSTERS
Workforce, Workplace, Work Modes: The Evolving Office Environment

Lindsey Baker & Marlo Ransdell
Florida State University

ABSTRACT

Today, with three generations – Baby Boomers, Generation X, and Millennials – working side by side within the workforce, differences, miscommunications, and every day annoyances take place (Glass, 2007). These three generations, each shaped by different life experiences and defining moments in history, share an office environment and bring different expectations as well as distinct approaches to work and communication (Lee Hecht Harrison, 2007). This study considers the impact of the built environment on different generations, the effectiveness of employees’ interactions, and communications.

As the oldest generation in the workplace, Baby Boomers expect to work at least part time in their retirement years. Their eventual retirement will inflict the largest brain drain ever experienced by corporate America (Lee Hecht Harrison, 2007). This brain drain, also called the human capital flight, will result in corporations losing valuable technical skills and knowledge. The next generations are smaller in size, have limited professional experience, and organizational knowledge and transferring the knowledge that will be needed for future business success must be a priority (Gordon, 2007). Researching each generation and today’s office environment provides a framework for discussing the current workforce and evolving workplace as well as pursuing practices that will leverage both collective and personal knowledge within the organization as well as the best qualities of each generation.
This study will present a prototype office design for the multigenerational workforce that may aid in intergenerational knowledge transfer. The principal investigator conducted behavioral mapping through visual observations in a local professional services office. Behavioral mapping “seeks to identify the uses of space as a factor in ongoing behavior” by recording the activity that is taking place and the location of the activity (Ittelson et al., 1974, p. 232). These observations focused on the interactions between members of different generations. The activities observed were categorized into observational groups reflecting the demonstrated behaviors. The categories are based on Gensler’s four work modes – focus, collaborate, learn, and socialize. Focus group interviews of each generation followed the observations to uncover common themes within each work mode. Work mode locations and responses to the built environment were compared to assess the qualitative aspects of the workforce’s behaviors, interactions, and utilization of workspace among employees.

The results of this data underscore the importance of intergenerational knowledge transfer and the integration of the multigenerational workforce’s needs and preferences when formulating criteria for designing an office space. This research study disseminates the collected qualitative data through applied design options and solutions for each of the four work modes. This study applied information from a review of the literature, the application of observational studies, and valuable insight from focus group interviews to develop a prototype workplace design that placed the need for transferring knowledge between employees as ideal. With the emphasis of this study about the members of the multigenerational workforce and the workplace, it is essential to understand the needs of the generations and implementing a workplace design that aids in intergenerational relationships, communication, and collaboration.

REFERENCES (APA)


Storytellers of Life: Insights Older Adults Can Provide on Empowerment and Their Well-Being

Mary Katherine Crouch & Jill Pable
Florida State University

ABSTRACT

Background
Given the value of stories in revealing hopes, dreams and perceptions, some suggest that narrative inquiry is a valuable technique for gathering data in studies of the elderly. There is an advantage of seniors presenting their views on life: researchers can gain a better grasp of the needs of any individual by accessing his or her personal accounts of the aging experience (Harrigan & Raiser, 1998). Not only do stories provide rich qualitative data, they can provide healing effects for the storyteller. He or she can reconnect to an identity which may have been altered because of current social pressures. This reconnection to the true self can have impact on a positive sense of well-being for the older storyteller (Wilinski & Anbacken, 2013). Kenyon (2003) claims that “people's life stories are possibly their most intimate possession” (p.32) and that the exchange of these personal stories create a “wisdom environment” that is beneficial to both the young and old. The storyteller plays one role in the narrative exchange but the story listener is an essential component as well (Kenyon, 2003). People engage in this back and forth process as a personal expression of their identity. These stories shows what is meaningful to both parties in relation to each other but also the perception of their place in the world. In particular, this last quality of stories make this data gathering method an appropriate choice for this study, given the study's goals of understanding older adults’ perceptions of empowerment through physical environment.
Methodology
This poster will discuss the review of literature and initial data findings for a study that explores the built environment’s role in perceived empowerment by skilled nursing residents. Literature suggests that a sense of control, choice, and autonomy are factors that can determine if an older resident is satisfied with their living conditions which, in turn, may facilitate empowerment and overall well-being. This concept is the foundation for the study’s primary research question: What role do empowering elements in the built environment play in supporting quality of life for skilled nursing residents? The Person-Environment (P-E) Fit Theory by Kahana, Lovegreen, Kahana, & Kahana shaped the study’s approach (2003), which evaluates the interaction of personal preferences and environmental characteristics along the following four physical and two social domains: Physical Domains + Physical Amenities/Aesthetics + Resource Amenities + Safety + Stimulation/Peacefulness Social Domains + Homogeneity/Heterogeneity + Interaction/Solitude As the name suggests, the goal is to have a positive “fit” of the preferences and characteristics that leads to resident satisfaction and psychological well-being (Kahana et al., 2003). The research study was comprised of two phases. The first phase involved interviewing skilled nursing residents which allowed them to share stories with the researcher of their lived experience in their long-term care facilities. They were asked about their perceptions of the spaces in the facilities which they determined to be empowering. Based on the responses from the residents regarding the areas they enjoyed the most and/or perceived as empowering, the second phase took the form of observation mapping in which the researcher tracked the movement and activities of the general population of residents in the focus areas. The researcher anticipates that the observations will confirm the interview responses about aspects of the areas in the facility that the residents perceived as beneficial and empowering.

Data Analysis Outcomes
Preliminary findings from both phases will be shared with conference attendees. However, the data collected will be used to inform design guidelines for skilled nursing facilities that identify and recommend empowering elements in the built environment. The intent is that these guidelines will benefit skilled nursing facility administrators, staff, and other design professionals who seek to empower and improve quality of life for elders.
REFERENCES (APA)


Lighting for the Generations: Bright Light; Right Light

Jessica Griesemer, Amanda Sloup & Vibhavari Jani
Kansas State University

ABSTRACT

With multiple generations working together within the work place today, it is important to understand the different lighting needs of each of the individual occupants. Smith, (2000), notes that "it is generally accepted that poor lighting means that the human visual system will not operate at its optimum efficiency. There will be associated ramifications if an individual is subjected to poor lighting conditions." (p. 151). According to McShane, (1997), “finding the right balance between task and ambient lighting will avoid sharp contrasts that force the eye to have to focus and re-focus." (p. 24).

The authors wanted to understand how the amount of the ambient and task lighting can help or strain the eyes of different age groups within a work environment. The authors adapted quantitative research method and surveyed different generations of workers within the same cubical work environment to determine which types of lighting they find comfortable to efficiently do their work. The authors took average light readings from each cubical space and then surveyed the workers within those cubicles on their generation description, what use of task lighting do they utilize and issues such as headaches due to glare.

The authors compared the results of their study and combined with literature reviews and found evidence showing that Baby Boomers need higher levels of task lighting to perform at a more efficient level, whereas the Generation X and Y workers were content with a lower output of ambient and task lighting within the workspace. In this paper the authors will discuss their research methods, data
collection process and findings of their experiments and conclude that appropriate
light levels will maximize the efficiency of workers in the office cubical setting.

REFERENCES (APA)


To Make or Fabricate: The New K-12 Classroom

Wendy Hynes, Cassondra Terlep & Chen Zheng
Purdue University

ABSTRACT

In 2011, the National Research Council (NRC) published the Framework for K-12 Science Education with new science standards rich in content and project-based learning (NGSS, 2013). However, based on this new framework, traditional classroom design no longer meets the needs of STEM education. The purpose of this project is to determine fundamental classroom design features necessary to support new K-12 STEM (Science, Technology, Engineering, Math) project-based learning activities.

The term “makerspace” originated with Dale Dougherty, CEO of Maker Media, Inc. and creator of Maker Faire, and started as a community workspace for people interested in science, technology and digital art to collaborate, tinker and invent (Cavalcanti, 2013). Around the same time, Fab Lab (short for fabrication laboratory) was founded at the Massachusetts Institute of Technology (MIT) in a course that mainly focused on researching technologies for personal fabrication (Cavalcanti, 2013). Schools have been very interested in the buzz around these types of spaces for their inherent educational, collaborative, innovative, project-based environment. For these reasons fabrication labs are now a norm in new middle/high school facilities. Although both Fab Lab and Maker Faire have design recommendations for their spaces both organizations are community based. They appeal to a certain population that attend and use the spaces voluntarily and unstructured. They are not designed as classrooms nor do their design guidelines necessarily take younger users into account.
Because there is little research about how to design a fabrication lab for a K-12 curriculum further investigation is needed. In order to begin to understand how students learn and interact in such spaces, a partnership was formed between the interior design research team (consisting of faculty and graduate students) and the School of Engineering Education at a major research university. The engineering educators are in the early process of constructing a new fabrication lab classroom to be used for K-12 STEM curriculum simulations and research. The interior design team will design the fabrication lab and make recommendations to the School of Engineering Education for implementation. In order to produce practical and realistic results, the design team will utilize Fab Lab’s “ideal lab layout” guidelines along with the program requirements (allotted square footage, number of students, equipment and other technology requirements) for an actual fabrication lab classroom in a public middle school in Massachusetts. The School of Engineering Education not only serves as the client, but as a consultant on how students learn and engage in the engineering design process.

This study aims to develop essential design guidelines and considerations supportive of new K-12 STEM learning environments, particularly fabrication labs. We have learned that there is little known about these spaces which encourages our team to find a solution for schools who want to increase STEM curriculum and project-based learning in fabrication lab classrooms today. The poster will incorporate graphics depicting the design solution for a K-12 school-based fabrication lab including programming notes, schematic design, design development and FF&E specification. Research notes from interviews with the Engineering Educators and a literature review will also be included.

**REFERENCES (APA)**


ART in Today's Work Environment

Denise McAllister Wilder & Wendy Hynes
Purdue University

ABSTRACT

The purpose of this poster presentation is to revisit the Attention Restoration Theory and consider how changes in the work force and the work environment can benefit from recent findings. This graphic demonstration summarizes contemporary outcomes and explores different variables which can be incorporated in the contemporary workspace to create a restorative experience and allow a worker to return to the task at hand with renewed vigor. Twenty five years after Rachel and Stephen Kaplan first introduced the Attention Restoration Theory (ART) in their book, “The experience of nature: A psychological perspective”, (Rachel Kaplan, 1989) significant changes in the work environment are creating renewed interest in how designers can support attention restoration. ART explores the cognitive benefits nature provides to renew attention after exerting mental energy. (Kaplan, 2001) Corporate wellness programs of all shapes and sizes are being adopted in hopes of improving the wellbeing of employees. Enhancing employee retention, satisfaction, and productivity are just a few of the benefits sought. Environmental conditions such as noise, lighting, and air quality are also becoming an increasing component of a healthy workplace and are thought to affect a workers ability to focus on a given task.

This proposed presentation responds to several new developments while respecting the validity of the original research released by the Kaplans in 1989. The poster will provide a graphic literature review of recent studies and present a potential workspace layout designed to support the evolution reinforcing individual workers efforts to maximize their attention restoration. Behavior and technical support not previously available is now prevalent; we will demonstrate
how a work space can be effectively designed to support such endeavors. Notably, changes in the work environment support individuality and personal accountability in ways the traditional work space did not. By structuring a contemporary work space to maximize a worker’s ability to take responsibility for his or her own attention restoration, focus can be achieved without having to retreat from the workplace, either physically or mentally. (Charlotte Fritz, 2011)

Research in environmental psychology clearly indicates people’s longings for interaction with elements of nature assists in psychological restoration. (Berto, 2005) However, this interaction does not have to be in the form of physically departing from work and wandering around outside. (Charlotte Fritz, 2011) While many repetitive tasks can certainly be depleting, it is also possible to structure activities in the contemporary work place to become restorative instead. (Kathryn H. Dekas, 2013) Each individual worker can take an active role in the recovery of their personal directed attention capacity by tailoring restorative activity to their needs and preferences without physically escaping their work space. The planned space will enhance the effect of restorative opportunities while empowering the individual worker.

REFERENCES (APA)


Aging in place in a net zero energy, 1920’s bungalow

Zoohee Choi, Denise McAllister Wilder & Lisa VanZee
Purdue University

ABSTRACT

The purpose of this poster presentation is to introduce a multi-disciplinary design project currently under way. The interior design program is teaming up with other programs to renovate a 1920’s Arts and Crafts bungalow into a net-zero energy building which will eventually provide a template for those desiring to adapt other residential buildings to support the desire of the aging population to stay in their homes. The resulting home will have energy and water saving features and will be equipped with solar panels that produce both electricity and hot water.

Universal design features will be incorporated to create a fully accessible home. Engineers from a major manufacturer are playing a significant part in the project and looking for information to enable them in the design of appliances by leveraging the world class resources at the university with their current research and development efforts to accelerate the development of the next generation of appliances. As interior design graduate students, our intention is to provide an interior solution to include a furniture plan, a lighting plan, and kitchen and bathroom renovation details as well as all fixtures and finishes. The project will be ongoing with up to four graduate students living in the home while many others will be working there conducting research. Our solution will respond to the needs of the various users and the global scope of the research project being conducted. (Moore, 2013) Additionally, we are working on the interior space plan with the intention of designing a fully accessible home with
relatively compact kitchens and bathrooms to respect the historical integrity of the home. (Lehning, 2012) This particular home contains three stories but our design could be easily adapted for a single floor home to accommodate the needs of an aging user who has mobility issues. Our design solution will incorporate modern components with the intention of making an adaptive reuse solution that can be easily duplicated in the huge number of existing homes in the United States and elsewhere. (Andrew Scharlach, 2012) Much of the net-zero energy dialogue focuses on new buildings, this project addresses the fact that most homes being occupied by the aging population are existing structures.

This proposed presentation responds to the fact that the United States currently has more than 130 million existing housing units, most of which have been in existence since the 1970s. (Paul Emrath, 2012) Our design will support the short term needs of the current research project while demonstrating how aging seniors can make energy adaptations in their existing homes or perhaps in a newly purchased home in a walkable neighborhood as they move in from the suburbs to be closer to the amenities they need and desire.

REFERENCES (APA)


The (un)Dead: Adaptive Reuse and the American Shopping Mall - Activating History, Theory, and Design-Research to Mobilize Interior Futures

Gregory Marinic & Ziad Qureshi
University of Houston

ABSTRACT

'The (un)Dead' is a research-based interior design studio which is currently analyzing and documenting the historical, cultural, demographic, and contextual conditions of dead/dying malls in the mid-continental United States in the I-35/I-45 interstate corridors. With an eye toward the potential for their adaptation and reuse, students of interior design are examining these underpotentialized places to leverage the social, spatial, functional, and organizational opportunities offered by an existing infrastructure—the shopping mall—as a socio-economically diverse community nucleus. Framed from a trans-continental approach to context, the project engages the I-35/I-45 corridors to map existing opportunities.

Working in teams for this initial contextual exercise, students investigated the history of mall development and mall culture in North America and then focused on discerning the contextual forces operating within an existing building condition. The intention is to establish a foundation for interior design interventions, engaging the impact of interiority at an urban scale. Beginning in Laredo at the international border on I-35, dead malls reveal an on-going transformation in production and consumption—a retail landscape built for 1970s suburban homogeneity that has become increasingly multicultural and hybridized. This topical fourth-year studio uses existing, underperforming malls in the mid-continental United States as sites for adaptive intervention and innovation. Students of interior design are exploring the social, cultural, and ecological
parameters of adaptive re-use to reconsider obsolete infrastructures. This studio has been structured in a phased sequence which organizes schematic development into a scalar process from ‘original intent-to-appropriation-to-opportunity’, ultimately resulting in the adaptation and redevelopment of a dead or dying mall in the I-35/I-45 Interstate corridors. Students will accommodate user-groups with multiple needs, seeking to maintain existing support systems, while introducing new opportunities. Taking cues from various histories, this project will engage the full extent of interior design, including interventions to the existing building façade, interiors, and outdoor spaces. Interior concepts will inform the recalibration of ‘formal’ qualities on the building exterior. Students will investigate renewal of an existing dead or dying mall through the lens of preservation, intervention, and transformation of utilitarian ‘everyday’ structures—considering the various histories of an existing structure as a living organism.

As a large scale infrastructure, reimagining the American shopping mall will offer the opportunity to serve multiple user groups of various abilities, desires, generations, and socio-economic backgrounds. Accordingly, students will implement a thorough site documentation and analysis of dead and dying malls in the I-35/I-45 corridor—from Laredo, TX to Duluth, MN—a mid-continental ‘interior’ site context for this studio. Working in groups of two, students began the semester by developing a broad-based survey of mall culture to identify sites for intervention. Projects must address blended programs which blur the boundaries between users to create a socially, economically, and culturally diverse new community offering long-term resilience.

It is our intent to disseminate this research in a broad and interdisciplinary manner beyond the interiors community. This design-research has begun to receive national recognition well beyond the studio in scholarly forums including an on-campus undergraduate research exhibition, a national research symposium, a national peer-reviewed conference, and an art-design-research exhibition in Philadelphia. In addition, the faculty leaders are mobilizing this design-research toward future peer-reviewed publications in the United States and internationally.
REFERENCES (MLA)


TRANSCONTINENTAL CONSUMERISM
GROWTH AND DEVELOPMENT OF INDOOR MALLS WITHIN MAJOR AMERICAN CITIES
1940-2010
MID-CONTINENTAL RETAIL TYPOLOGIES
MAPPING THROUGH THE I-35/I-45 NAFTA CORRIDOR

Shopping malls in mid-continental North America often engender a sense of community. Over time, however, many retail environments lost the patronage of the communities they once served. The intent of our research is to examine current and past conditions in historic retail typologies, with particular emphasis on enclosed infrastructures.

In investigating the surroundings of mid-continental metropolitan areas allows for the analysis of contributing factors in the development of retail typologies. Our research data reveals unseem connections between cities and their retail environments. By utilizing mapping techniques to visualize our compiled data, we aggregated and created a holistic understanding of “place.” Using analytical visual mapping of urban boundaries and retail typologies, this visualization demonstrates the radial distance of adjacencies to enclosed retail nodes.

Many post-war indoor retail environments in mid-continental North America were developed with the sole purpose of consumption—conveying items to consumers while enriching major national retailers. Additionally, malls created a placeholder for at least where people could mingle, play, and congregate. Over time, the DNA of many communities has evolved from its origin. Thus, to better serve their communities, the present purpose of malls must be re-informed within a shopping context. Fundamentally, by mobilizing our synthesized analysis, we plan to re-evaluate, re-adapt, and reintroduce new opportunities—to extend the lives of these indoor communal spaces with particular emphasis on their respective places.
The (un)Dead
Adaptive Reuse and the American Shopping Mall

Activating History, Theory, and Design-Research to Mobilize Interior Futures...

The (un)Dead is a research-based interior design studio which is currently analyzing and documenting the historical, cultural, demographic, and contextual conditions of dead/dying malls in the mid-continental United States in the 195-45 interstate corridor. With an eye toward the potential for their adaptation and reuse, students of interior design are examining these underutilized places to leverage the social, spatial, functional, and organizational opportunities offered by an existing infrastructure—the shopping mall—as a socio-economically diverse community nucleus. Framed from a trans-continental approach to context, the project engages the I-355-45 corridors to map existing opportunities. Working in teams for this initial contextual exercise, students investigated the history of mall development and mall culture in North America and then focused on deconstructing the contextual forces operating within an existing building condition.

(concept)
Beginning in Laredo at the international border on I-35, dead malls reveal an on-going transformation in production and consumption—a real landscape built for 1960s suburban homogeneity that has become increasingly multicultural and hybridized. This topological fourth-year studio uses existing, underperforming malls in the mid-continental United States as sites for adaptive intervention and innovation. Students of interior design are exploring the social, cultural, and ecological parameters of adaptive re-use to re-imagine obsolete infrastructure. With this project, students are engaging the impact of interior design at an urban scale.

This studio has been structured in a phased sequence which organizes schematic development into a scalar process from original idea to proposal to opportunity, ultimately resulting in the adaptation and re-development of a dead or dying mall in the I-355-45 Interstate corridor. Multiple field trips are planned for this studio. Students will accommodate case-studies with multiple needs, seeking to make mall existing support systems, while introducing new opportunities. Taking cues from various histories, this project will engage the full extent of interior design, including interventions to the existing building façades, interiors, and outdoor spaces. Interior concepts will inform the re-establishment of "formal" qualities on the building exterior. Students will investigate renewal or an existing dead or dying mall through the lens of preservation, intervention, and transformation of utilization, everyday structures—considering the various histories of an existing structure as a living organism. This project will require interventions that range in scale from the human body to the city, and in intent from subtlety-to-boldness.

(process)
As a large-scale infrastructure, reimagining the American shopping mall will offer the opportunity to serve multiple user groups of various abilities, desires, generations, and socio-economic backgrounds. Accordingly, students will implement a thorough site documentation and analysis of dead and dying malls in the I-355-45 corridor—Laredo, TX; Duluth, MN—a mid-continental "interior" site context for this studio.

Working in groups of two, students began the semester by developing a broad-based survey of mall culture to identify sites for intervention. Projects must address blended program which blur the boundaries between users to create a socially, economically, and culturally diverse new community offering long-term resilience. The upper four panels focus on historical research of dead or dying malls to establish broad-based contextual knowledge and were researched by teams of two students. The lower four panels focus on a specific existing mall site and were authored by an individual student from the same research team.

(impact)
It is our intent to disseminate our research to a broad and interdisciplinary manner beyond the interiors community. This design research has begun to receive national recognition well beyond the studio in scholarly forums, including on campus undergraduate research exhibitions, a national research symposium, a national peer-reviewed conference, and an art-design research exhibition in Philadelphia. In addition, the faculty are mobilizing this design research toward future peer-reviewed publications in the United States and internationally.
Consumer culture in North America has significantly evolved from the early twentieth century. In the mid-1950s, consumption in suburbia led to the establishment of the enclosed shopping mall. These product-centered structures were built as a reflection of emerging consumptive habits and perceptions. The shopping mall allowed suburban families to meet all of their needs in one location. As the years progressed, new technology gave the consumer access to a greater variety of products de-emphasizing the need to travel to the mall. The relative abandonment of the mall was replaced by the use of the internet and social media. Currently, through websites such as Amazon or EBay, the customer may access the newest products anytime of the day from anywhere. The significance of these forces has led to the need to repurpose malls and determine alternative futures.
MALL MANIA
AN EXPLORATION OF AMERICAN SHOPPING MALLS PEAK 1960–1990

During the 1970s and ’80s, America was in a full-throttle shopping mall building boom, with new retail square footage peaking in 1985. However, between 1990 and 1995, shopping center construction started dropped by seventy percent. By the late 1990s, the notorious "mall malaise" syndrome began to emerge. These phenomena were among several explanations for this phenomenon, where once-vibrant retail malls became virtually deserted ghost towns devoid of tenants and shoppers. One of the most obvious reasons for the proliferation of "airport malls" in the United States could be attributed to the advent of televise home shopping channels, in 1982 which introduced non-building based retailing. However, some of the damage was muted by the so-called Dot Com Boom, in the year 2000. Another cause is that sometimes sparked for the dead mall syndrome is so-called changes in neighborhood demographics.

Our premise is to showcase visually what we believe is the primary reason for many of the dead, dying, or reinvigorated malls which is simply that there were too many built in the United States during the 1970s and ’80s. This shopping mall malaise, a hangover from the nation’s overbuilding binge, has been reported in over “dead” cities and towns from coast to coast, over the past two decades. Along with overbuilding, there had been a precipitous drop in American buying power since the 1980s. The end result was that the typical American did not have as much disposable income as they had during the early years of the nation’s suburbanization and shopping mall development. With less discretionary income, the typical family could no longer afford to shop at the mall as often, where prices for merchandise were higher due to "commute area fees" levied on all tenants. These surcharges paid for mall maintenance, heating, and cooling. In the 1970s, 1980s, and early "70s, electric power was plentiful and cheap, however, in the mid-1970s, power bills began to escalate with the O1 Crisis. This inevitably raised the prices for mall brought merchandise to the tie, while at the same time, the purchasing power of the general public was shrinking. In essence, the underpinnings of the dead mall syndrome were being established by the late 1980s, although they would not manifest themselves entirely, for several years.

The Sixties

The Seventies

The Eighties

The Nineties

BILLBOARD MAGAZINE is the nation’s largest retail and entertainment magazine. 40,000,000 readers tied MS to home in more than 55 countries with 42 million global readers. This publication is the leading voice for the retail and entertainment industry. The magazine is read by retail and entertainment professionals, industry experts, and influential individuals who shape the retail and entertainment landscape. The publication focuses on provide insight into trends, innovations, and opportunities in the retail and entertainment industry. The magazine is produced by a dedicated team of editors, writers, and designers who work together to create compelling content that is relevant and engaging for our audience.

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LEED version 4: Alignments with the Profession of Interior Design

Amber Ortleib & Amanda Gale
Auburn University

ABSTRACT

The Leadership for Energy and Environmental Design (LEED) rating system is globally recognized as being committed to the sustainable built environment with over 70,000 sustainable projects worldwide (USGBC, 2013b). Since its establishment by the U.S. Green Building Council (USGBC) in 2001, the LEED rating systems has undergone several iterations. In November 2013, the fifth version, v4, of the LEED rating system was launched and marketed with a stronger focus towards human health and clean materials. Enhancing occupants’ quality of life in the interior environment through the support of health, safety, and wellbeing criteria is the fundamental responsibility for interior designers (Guerin & Kwon, 2010). Therefore, it is crucial for interior designers and educators in general to be aware of the changes in the latest version of the LEED rating system.

Interior designers can play a critical role in sustainable design by actively engaging in the integrated design process to ensure their defined responsibilities support the sustainable project goals. In addition, interior designers communicate design intent and strategies to occupants to change their behavior in support of sustainable operations (Sorrento, 2012). However, out of the 88,767 LEED Accredited Professionals (APs) and Green Associates (GAs), throughout North America less than 5,000 (~5.37%) identify themselves as practicing in the area of interior design (USGBC, 2013b). Interior designers need to take a prominent lead in advocating for the occupant (Sorrento, 2012; Theodorson, 2014). The low number
of LEED credentialed interior designers and the significance of interior designers’ role in sustainable design will be discussed in the poster presentation. Therefore, the purpose of this study was to outline the evolution of the LEED rating system, describe the focus of the new version, and identify ways the new version relates to interior designers. Content analysis of secondary data was assessed in four themes 1) history of LEED certification, 2) variations of the five versions of the LEED rating system, 3) comparison of LEED rating system to other sustainable crediting bodies, and 4) relating LEED v4 to the interior design profession. From the initial review, subdomains were identified and assessed. Lastly, a discussion of trends was examined and conclusions were drawn. Within the various iterations of the LEED rating system, the credits have become more complex with alternate paths to achieving points. Increased modeling tools have been integrated into the latest versions with additional testing and monitoring required for indoor air quality and acoustics. While Energy and Atmosphere remains the heaviest weighted credit categories, Indoor Environmental Quality and Materials and Resources have seen the most significant modifications in LEED v4. The focus has shifted from energy efficiency and money savings to occupant health with more credits addressing materiality and transparency. Life cycle analysis, environmental product declarations, and healthy product declarations have become critical areas within the role of interior designers.

This poster will illustrate the evolution of the LEED rating system, the goals of v4, and the indispensable role of the interior designer in the integrated design process required during LEED certification. For educators, this means emerging professionals require sustainable education to fully engage in an integrated design team. As a result, sustainability is an emergent area of interior design practice, especially with the emphasis on human factors of the built environment (Theodorson, 2014).

REFERENCES (APA)


Building a Case for Residential Aquaponic Integration: An Environmentally Conscious Interior Design Perspective

Christopher Cooper & Haroon Sattar
University of Central Missouri

ABSTRACT

Aquaponics- a bio-integrated system of food production burgeoning in urban use, aquaponics is an aquaculture/hydroponic hybrid featuring indefinite yields of edible, healthy fish and vegetation. With this system, “nutrient wastes from fish tanks are used to fertilize hydroponic beds via irrigation water. In turn, the hydroponic beds function as a bio-filter so the water can then be recirculated back into the fish tank” (Diver, 2000). This integrated recirculating system is chemical free and water conservative. It also is relatively low-maintenance. Available urban models lack best practice potential due to architectural non-integration. Potential benefits are examined from the perspective of the environmentally conscious interior designer (ECID) since this practitioner is concerned both with the health, safety, and welfare (HSW) of residents and the HSW of the environment. High-yield grow spaces such as out-of-doors greenhouses consume precious real-estate in areas of dense population and force users to waive shelter for system access, permitting environmental safety hazards and accessibility issues. A possible solution to these barriers to universal appeal is the architectural process of integrated design. With this method, essential system benefits could be preserved without compromising HSW for residents. Therefore, this study serves as an early stage of inquiry, showcasing some of the potential benefits of aquaponic integration in a residential context.
To build a case for architectural integration of residential aquaponic systems, research of authoritative sources relevant to discovering the direct benefits integrative aquaponics could have on residential experience and environmental impact were examined according to the principles and practices of the ECID. The ECID additionally embraces green design, which focuses on the HSW of people, and sustainable design, which focuses on the HSW of the planet (Jones, 2008). The areas of residually integrative aquaponic benefits that were examined were qualified on prerequisite terms of greenness and sustainability. These areas are universal appropriateness and accessibility, air quality, water consumption, waste management, and psychological impact, respectively. The five areas of potential benefits that have been examined are: universal appropriateness and accessibility, air quality, water consumption, waste management, and psychological impact.

Modeling after the biological principle of mutualism, this method engages sequential and collaborative design phases for building systems specialists and relevant authorities to establish synergistic relationships between every building systems component. Consistently achieving best results, it is “the main method used by green builders to design high-performance buildings on conventional budgets” (Yudelson, 2007). In practice, “government officials, urban planners, developers, building owners, architects, engineers, interior designers, construction managers, code officials, contractors, tradespeople, landscape architects, facility managers, and the people who live, work, and play in the buildings [MUST] all be engaged” (Jones, 2008). While this initial stage of inquiry is from the perspective of the ECID, further inquiry by these constituents would be needed to establish additional benefits, challenges, and solutions to residential aquaponic integration.
REFERENCES (APA)


Teaching Freehand Analytical Drawing: Strategy and Pedagogy based on Polanyian Philosophy of Knowledge for Millennia Design Students

Ryadi Adityavarman
Kansas State University

ABSTRACT

“The real voyage of discovery consists not in seeking new landscapes, but in having new eyes.” Marcel Proust

Problem
The importance of freehand drawing, including analytical drawing, by its celebration of eye and hand coordination, has been widely accepted in the interior design education. Yet it has been increasingly difficult challenge to teaching the subject properly for the current millennia generation of design students, which have developed greater familiarity with digital technology. Freehand drawing ability among current interior design students is declining partly due to the over dependence on digital visualization. This rapid loss of freehand drawing ability is quite alarming. Despite impressive advancement in digital technology, freehand drawing remains a valid indispensable design tool especially during the conceptual development and initial design process. Investigating underlying relevant theoretical principles for freehand analytical drawing would enable better understanding about its inherent essential educational value. This understanding would then subsequently enable proper development of suitable teaching pedagogy to accommodate the learning characteristics and needs from design students of the present millennia generation.
Strategy
Teaching pedagogy of the course is based on Michael Polanyi’s philosophical system that emphasizes indivisible connection between body and mind in the knowledge acquisition process. The central idea of his philosophy celebrates the dynamic balance between conceptual and tacit knowledge by proposing integral interaction between awareness, activity, and cognitive dimensions. By revealing the power of hidden dimension of sensory experience, Polanyi opens new potential of enlightened views on other aspects of learning mode. He proposes the importance of concept of embodiment in which human body acts in subsidiary role and yet serves as a central axis in the process of learning and knowing. Based on the concept of holistic knowledge acquisition, all of dimensions of Knowledge (awareness, activity, cognitive) are interpenetrating and influencing each other through combination of explicit and tacit mode of learning. The subsequent implementation on studio teaching pedagogy is based on reciprocal connection between conceptual and bodily activity through “authorship-connoisseurship” and “learning by doing” strategies.

Pedagogy
Polanyi’s concept of embodiment is translated to the course by incorporating the bodily experience as part of the drawing strategy. Polanyi’s central idea of supervenience that focus on the notion of higher level of understanding is being discerned in and through simpler individual parts (mediational character). This principle is being applied to the class exercise through arrangement of projects from simple to complex of objects and drawing techniques. The overall goal is to develop higher aesthetic sensibility and refined visual creativity while providing gradual confidence and drawing ability for the students.

Outcome
The result from the course showed significant improvement on the students’ freehand drawing skill and confidence. Freehand drawing cultivates holistic connectivity between mind, body, and feeling. Beyond ability to create refined drawings, the most important benefit of freehand drawing is arguably to enhance aesthetic sensibility of the students that will serve as foundation for their subsequent design learning.
REFERENCES (APA)


First Things First

John Linn, Kathryn Brandt & Elizabeth Dull
High Point University

ABSTRACT

To inspire beginning students to see beyond the obvious, to create solutions having coherence and an understanding of the spatial envelope, yet that have a fundamental unity and logic, is frequently one of the greatest challenges of any foundations design program. Add to this, the challenge and opportunity of reshaping an entire design curriculum with a wholeness and logic that animates the summation of the individual parts. In addressing these issues faculty chose to reexamine the premises on which the department’s course structure had been developed and to seek a platform for development that united both theory and pedagogy. This was deemed especially critical for the creation of foundational courses in the freshman and sophomores years. Through a series of faculty facilitated meeting, a variety of possibilities for organizing the new curriculum were considered. Continuing with facilitated discussion, faculty were introduced to and investigated the work of Friedrich Froebel, an educational source solidly grounded in both theory and pedagogy; a source that has provided inspiration for generations of students, and ultimately fueled major developments in twentieth century architecture, painting and design, but which has been largely ignored for the past fifty years.

Froebel's system of education has provided, and continues to provide, for anyone working with the "Gifts", a methodology for understanding the universe and its components as having a fundamental unity. According to Brosterman, the "...theoretical and practical underpinnings" of Froebel's ideas were based on the concepts of harmony, unity, and reconciliation of opposites (p. 16), concepts that are fundamental to successful design. Accepting this premise faculty moved
forward with the planning of the new curriculum. As part of the new premise, faculty also agreed to follow one of Froebel's fundamental pedagogies and introduce 3-dimensional design problems first in the freshman year and to introduce 2-dimensional design problems as abstractions of the 3-dimensional forms, in the sophomore year.

A qualitative study utilizing case study methodology targeting two new studio courses, one freshman and one sophomore, was used to examine the initial results of the new curriculum. In the freshman studio Froebel Gifts 5 and 6 were specifically chosen for the relationships of the shapes and their containers. Problems using Gifts 5 and 6 were developed to explore the concepts of unity, harmony and wholeness. An extension of the explorations with Gifts 5 and 6 led to the patterning of named spatial relationships. Lecture materials, vocabulary, and exercises in a corollary non-studio course were designed to reinforce work in the studio course. Sophomore year studies began with “bridge exercises” where students extracted 2-dimensional "abstracted" orthogonal projections from 3-dimensional models students had created in their freshman year. In the following fall semester, sophomores embraced Froebel Gift 7, flat tiles or parquets, where further exploration with the concepts of unity, harmony and wholeness included the abstraction of 2-dimensional geometry and the creation of a series of pattern forms. Progressing through the sophomore course, students moved from 3-D to 2-D and back to 3-D for their final project, again reinforcing the concepts of unity, harmony, and wholeness. The summary project of the sophomore semester reintroduced Froebel Gifts 5 and 6 as tools as students developed their final design solutions. Students worked in teams, designing with blocks, translating these basic shapes to perspective sketches on marker boards, and into SketchUp for their final presentations.

Comparisons of student work from these new courses with student work at these levels from the previous curriculum provide findings that validate Froebel's concepts as an important vehicle for teaching introductory design students and justify the faculty's decision to introduce concepts of space and form first. With the continued implementation of the new curriculum further studies will follow as these students move into the upper level courses. Through photographs the poster
seeks to provide visual documentation of the effectiveness of this new curriculum approach.

REFERENCES (APA)


The city has been thinking about a plan for revitalizing parts of the downtown area. Residents are concerned about empty storefronts in the downtown area and would like to make this area a shopping and tourist destination which will serve local residents and visitors. Your designs can help bring this idea to fruition. Plans and information from the city will be available as resources as you develop your ideas.

For this project you will begin by documenting a specified existing location in the city and designing a site plan and a small temporary retail complex that will fit this space. As you will learn from your background research, the use of temporary retail spaces is being proposed in a variety of locations around the city as a means of stimulating activity. Planners are proposing that once retail activity has been established, stores/companies can be moved into permanent locations reestablishing economic activity throughout the city. The temporary retail spaces will be located in “sea cans” or shipping containers and will consist of a group of 7 containers, linked visually in the space. This group of containers will focus on handcrafted products by local artists and artisans, providing unique options for visitors and residents alike.

PARAMETERS FOR PROJECT:
- Size of container 8’ x 20’
- Modification of containers – mobility of one: walls, doors, windows
- 7 containers on site + auxiliary structures such as restrooms
- Each group designs site – group of 3 or 4 as assigned
- Each group member designs interior of one container

ELEMENTS:
- site
- anchor – points – moments
- lines – navigation – circulation – horizontal and vertical
- planes – walls of containers
- 3-D manipulation of walls (interior) – containers in space (site)

PHASE I
- site research and development
- site visit: pics, size, and location, boundaries
- container layout diagrams – movement between and around
- quick scale models of seacans (Froebel Gifts 5 and 6) and arrangement

PHASE II
- retail research and development: craft – regional
- translate site inspirations into product inspiration
- preliminary concepts
- concepts
- "Stake in the Ground" final design
### Interior Form and Space

#### STUDIO I 3D EXPLORATIONS

**FROEBEL BLOCKS : PATTERNS | MODELS | ADDITIVE FORMS | ORDERING SYSTEMS**

**HAND DRAWN SKETCHES : 3D IMAGES**

#### PROJECT ASSIGNMENT 1-A

**Media:**
- Hand Produced Solid Patterns and Models using Froebel Blocks
- Hand Drawn Sketches in Sketchbook of Patterns and Models

**Learning Objectives:**

1. evidence of how your mind’s eye assesses solid patterns, forms and ordering systems
2. your ability to synthesize information and generate multiple solutions
3. creative thinking and originality through a variety of ideas, approaches and concepts
4. your ability to use sketches as a design communication tool
5. your ability to integrate oral and visual material to present ideas clearly
6. your ability to evaluate and communicate theories or concepts of interior spatial definition and organization

**Reading Assignment:**
- List, Reading Assignments
- Ch 1: Architecture, Form Space and Order: pages 195-237
- 58 | other

**Assignment:**

Using your natural senses of curiosity, explore three-dimensional solid block modeling and perspective views of multiple patterns and models using Froebel Blocks. As the patterns and models respond to a given list of 6 ordering systems.

Unfold multiple 3D block patterns and models using Froebel blocks.

Assume Froebel block patterns to be no more than one block “fall”. Assume Froebel block models to have at least one location with more than two blocks “fall”. All patterns and models to have a minimum of nine blocks in each.

Individual blocks can be oriented in any direction.

Document each of your block patterns and models with hand drawn sketches in your sketchbook. Include a volumetric (3D) profile of at least one human figure in each sketch.

Name each sketch with its ordering system and pattern or model designation in your sketchbook.

Find two EXAMPLES of each of the six ordering systems:
- one from nature, and one that is man-made (cannot be from assigned reading or class presentations)

Document and name each of the ordering systems with photos or digital copies, and attach copies of each in your Sketchbook.

Include reference information for each (name, location, date, designer, etc.) and record in your sketchbook.

### Interior Form and Space

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### Ordering Systems | Spatial Organizations:

- Open
- Centralized
- Grid
- Linear
- Clustered
- Radial

### Ordering Systems | Spatial Organizations:

- Open
- Centralized
- Grid
- Linear
- Clustered
- Radial
Building Relationships through Collaboration

Mia Kile, Ken Robson & Hans Butzer
University of Oklahoma

ABSTRACT

At the freshman level, Cultures of Collaborating, Creating, and Constructing is a large lecture class consisting of Architecture, Interior Design, Construction Science and Architectural Engineering students. In its third year, this course is team taught by Division Directors from Architecture, Interior Design, and Construction Science. The core of lectures, guest presentations, and projects are focused on collaboration as a critical force that helps leverage the skills of many individual professions to the benefit of the stakeholders.

Statement of the Problem
The challenge for this course is the engagement of students in a meaningful way that reinforces the course objectives while facilitating the focus of collaboration by building relationships within the class. Research involving undergraduate students found informal involvement among peers is shown to heighten academic engagement and social assimilation and increases persistence in their studies (Ethington, 2000; Tinto, 1997). Evidence indicates that when relationships are educationally connected rather than solely social, they enable enhanced learning outcomes for students (Lundberg, 2003). Two studies found that people are influenced in their choice of friends by proximity; that is, they made friends with those proximate to them (Schutte & Light, 1978; Sias & Cahill, 1997). Furthermore, studies also indicate that peer friendships cultivated when complications at work were experienced (Odden & Sias, 1997; Sias Cahill, 1997; Sias & Jablin, 1995). With this in mind, the course is structured to afford students four different team projects that foster collaboration.
Method
This longitudinal study, focuses on one project adapted from a physics class and addresses issues faced by Architecture, Engineering and Construction (AEC) in the real world – designing, estimating, scheduling and constructing a project. Each team is challenged to construct a “cost-effective” skyscraper that can support a designated load, in this case a standard brick. Students work in assigned teams with each discipline represented. Teams are required to submit drawings, an estimate, schedule, and test model using the designated materials and method of construction. The skyscrapers are tested and evaluated for design, structural support, quality of construction, and cost.

Outcomes
This project has allowed the students the opportunity to work together to solve a somewhat complex problem. The students overall response to the assignment are positive. While some teams worked well together, others had to overcome minor obstacles such as accountability. Students realized that communication, distribution of effort, respect for others opinions, and listening skills are all very important factors for effective collaboration. Furthermore, students were found working together on projects and assignments in other courses because of this experience.

Future Implications
This class is the first of three courses that students enrolled in undergraduate programs will experience in our college. Next year a survey will be conducted with senior students who as freshmen had this course. The objective is to measure the impact of this course on the proceeding collaborative experiences and relationships. The aim is to provide students with skills that will help them successfully navigate collaborative experiences that are experienced through many professions in the built environment.

REFERENCES (APA)


Skyscraper Challenge

In this project, you will deal with the same problems faced by Architecture, Engineering and Construction (AEC) in the real world – designing, estimating, scheduling and constructing a project. This project challenges each team to construct a “cost-effective” skyscraper that can support a designated load, in this case a standard brick. The specific design parameters are outlined below.

Materials allowed:
Materials include 4 x 6 index cards, staples, and a stapler. A standard brick will be used to test the skyscraper. The brick’s dimensions are 7.5” x 3.5” x 2.25”. The brick weighs approximately 4.5 pounds (we will provide the brick).

Design Parameters:
- The skyscraper must be at least 15 inches tall.
- The skyscraper must be capable of supporting a brick for at least 15 seconds.
- The skyscraper must be one unit that can be picked up and placed on the testing table.
- All folds must be some form of an angle (no index cards rolled into tubes allowed).
- Index cards must be folded, no curves or bends allowed.
- Index cards cannot be stacked flat to successfully complete this project.
- A separate count of staples, cards and folds used during construction must be kept. This includes cards that were folded and discarded, staples removed, etc.
- No initial testing of the tower with the brick is allowed.
- Every index card, every staple, and every fold used during the construction process costs $1,000,000. Damaged cards and malfunctioned staples you remove cost $500,000 each.
- The top of the skyscraper must be able to support a standard brick lying flat on its widest surface.
- You can have no more than one index card thickness at any point except where there is a connection for staples. At this point the connection can overlap ½”.
- Your total project budget is $80 million.

Project Guidelines:
1. Each team will consist of the same team members as the planning project.
2. Each team is to design their project on graph paper.
3. Team’s drawings should be to scale.
4. All dimensions should be shown on the drawings.
5. Drawings should consist of a minimum of an elevation, and a floor plan.
6. Each team’s estimate should be broken down into the following categories: Materials (4 x 6 index cards), labor (each staple and each
fold), and Profit and Overhead (somewhere between 5 and 20%) The
estimate should be on a separate sheet of paper with the schedule.
7. Each schedule should tell me how many minutes to erect the skyscraper by
each floor (a notecard either horizontal or vertical represents one floor as
you achieve the required height) and should be on the same sheet of paper
as the estimate.
8. Drawings, estimate and schedule should have one cover page with the
group member’s names, date, assignment and prize category.

Due Dates:

1) Project Assigned: November 28, 2012
2) Project Packet Due: No later than 11:59pm on December 2, 2012 (21%)
3) Built Project Due: Beginning of class December 5, 2012
   Class on Dec. 3rd can be used to build. There is no
   storage of built projects (Built project & testing
   9%).
4) Projects Tested: During Class December 5, 2012
Evaluating the projects:
Cultures of Collaboration Class Makeup

Student Count Total: 179

- ARCH
- CNS
- ID
- BSED Gen.
- ARCH ENG
- ID Minor
- Unknown

Bar chart showing:
- 76 ARCH
- 27 CNS
- 45 ID
- 1 BSED Gen.
- 28 ARCH ENG
- 1 ID Minor
- 4 Unknown
Testing the Projects
An Analysis of the Acceptable Terminal Degree in Interior Design

Beth R. Miller & Lyndsey L. Miller
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ABSTRACT

The acceptable terminal degree requirement for teaching interior design at the university or college level was not clearly established in interior design’s beginning educational development. As recent as the Interior Design Educators Council (IDEC 2014) Annual Conference, a panel discussion addressed areas such as the terminology for master’s degrees in interior design, rationalization for the panels suggested modifications, and plans for adoption of these modifications (Harwood, Weigand, & Dohr, 2014).

Over the past ten years, educators within IDEC have written journal articles, presented at conferences, written chapters in books, and participated in town hall discussions at regional and national meetings concerning the problems that exist with the current state of graduate degrees currently offered in interior design graduate education. Existing graduate programs in interior design and programs that are developing a graduate program need to know the graduate degree that interior design chairs across the United States desire in a candidate applying for an educational position. From data provided by interior design chairs, a preferred degree preference can be identified and the significance of NCIDQ certification can be determined. As many universities move toward online master’s degrees, data can also be obtained that would record the acceptance level of an online master’s in interior design as a credential for obtaining a faculty position. Online master’s programs appeal to professionals practicing interior design who would like to pursue a graduate degree without leaving their career. This study can aid
graduate programs in their graduate degree program development and has the potential to assist in alleviating the current shortage of qualified interior design faculty.

The purpose of this study is to determine whether program chairs in interior design have a preferred degree credential for candidates seeking a full-time tenure track position or a full-time position at their institution and to determine if there is a correlation between this preference and the program chair’s university demographics, their own credentials, as well as their acceptance of an online terminal degree. The results will provide informational data to program chairs as well as candidates seeking employment and undergraduates considering master’s programs. A pilot study is being conducted prior to the collection of research data for the main evaluation. For this pilot study, a population of interior design program chairs, who have retired or stepped down from their chair position, comprise the pilot study of approximately 25 participants. These participants are assessing the validation of the survey instrument and are providing suggestions and modifications.

The poster will exhibit a graphic representation of data and information on a major issue that is facing interior design education. The poster will list the key issues resulting in the need for the study. Research questions will be presented which guided the survey instrument development. Numerous charts will exhibit data collected that has implications to the study. Conclusions will be derived from the data and shown on the poster. The poster on display will open a dialog of discussion among educators from across the United States and Canada.

REFERENCES (APA)

Survey Instrument

1. Your academic rank
   a. Instructor
   b. Assistant Professor
   c. Associate Professor
   d. Full Professor
   e. Other

2. Your age
   a. Under 25
   b. 25-34
   c. 35-44
   d. 45-54
   e. 55-64
   f. 65-over

3. Your gender
   a. Female
   b. Male

4. Your Race/Ethnicity
   a. American Indian or Alaskan Native
   b. Asian
   c. Black/African-American
   d. Hispanic or Latino
   e. Native Hawaiian or other Pacific Islander
   f. White

5. Your years in academia
   a. 0-4
   b. 5-9
   c. 10-14
   d. 15-19
   e. 20 or more

6. Your membership in professional organizations (Please check all that apply)
   a. Interior Design Educators Council (IDEC)
   b. American Society of Interior Designers (ASID)
   c. International Interior Designers Association (IIDA)
   d. American Institute of Architects (AIA)
   e. U. S. Green Building Council (USGBC)
   f. American Academy of Healthcare Interior Designers (AAHID)
   g. American Association of Family and Consumer Science (AAFCS)

7. Your certification achieved (Please check all that apply)
   a. National Council for Interior Design Qualification (NCIDQ)
   b. Architect Registration Examination (ARE)
   c. Leadership in Energy and Environmental Design Accredited Professional (LEED AP)
   d. Leadership in Energy and Environmental Design Green Associate (LEED GA)
e. American Academy of Healthcare Interior Designers (AAHID)
f. Certified Aging-in-Place Specialist (CAPS)
g. National Kitchen and Bath Certification (NKBA)

8. Your highest level of education.
   a. Bachelor of Science (BS)
   b. Bachelor of Art (BA)
   c. Bachelor of Fine Art (BFA)
   d. Master of Science (MS)
   e. Master of Art (MA)
   f. Master of/in Interior Design (MID)
   g. Doctor of Philosophy (Ph. D.)
   h. other

9. Size of your institution (number of students).
   a. Fewer than 1,000
   b. 1,000-2,999
   c. 3,000-4,999
   d. 5,000-6,999
   e. 7,000-9,999
   f. 10,000-14,999
   g. 15,000-19,999
   h. 20,000-24,999
   i. 25,000-29,999
   j. 35,000-39,999
   k. 40,000-44,999
   l. 45,000 and above

10. Size of your Interior Design Program (undergraduate).
    a. Fewer than 25 students
    b. 25-29
    c. 30-49
    d. 50-79
    e. 80-99
    f. 100-119
    g. 120-139
    h. 140-159
    i. 160-179
    j. 180-199
    k. 200 and more

11. Location in the college/university of your Interior Design Program.
    a. Human Science/Ecology
    b. Human Environmental Sciences
    c. Department of Family and Consumer Sciences
    d. Interior Design
    e. Department of Art
    f. Architecture and Design
    g. Architecture, Art, and Design
    h. Interior Architecture and Design
i. Interior Architecture  
   j. Department of Design and Merchandising  
   k. Design, Art and Design  
   l. Visual Arts  
   m. Engineering and Technology  
   n. Other

12. Your institution type 
   a. Public  
   b. Private  
   c. Religious  
   d. Proprietary

13. If you answered public institution in #12, are you a land grant university? 
   a. Yes  
   b. No

14. Regional location of your institution 
   a. Pacific West  
   b. Midwest  
   c. East  
   d. South  
   e. Southwest

15. Educational levels offered in your Interior Design Program.(Check all that apply.) 
   a. Bachelor degree professional  
   b. Master’s level  
   c. Ph. D.

16. Your Interior Design Program is a _____ program. 
   a. 2-year  
   b. 3-year  
   c. 4-year  
   d. 5-year

17. Your Interior Design Program is accredited by _________.(Check all that apply) 
   a. Council for Interior Design Accreditation (CIDA)  
   b. National Association of Schools of Art and Design (NASAD)  
   c. National Kitchen and Bath Association(NKBA)  
   d. American Association of Family and Consumer Science (AAFCS)  
   e. Other (Please specify: ______________________)

18. How many faculty positions in the following categories do you have in your Interior Design Programs? 
   a. Full-time tenure track faculty ______  
   b. Full-time clinical tenure track faculty ______  
   c. Full-time faculty ________  
   d. Instructor full-time faculty ________  
   e. Lecturer full-time faculty _______

19. Adjunct/part-time faculty ____________

   Minimum degree required by your institution for Full-Time Tenure Track Faculty Positions employed in your Interior Design Program. 
   a. BS
b. BA
c. BFA
d. MS
e. MA
f. MID
g. MFA
h. M Arch
i. Ph. D.
j. N/A my institution does not hire tenure-earning faculty.

20. Minimum degree required by your institution for **Full-Time Faculty Positions** employed in your Interior Design Program.
   a. BS
   b. BA
   c. BFA
d. MS
e. MA
f. MID
g. MFA
h. M Arch
i. Ph. D.

21. Preferred terminal degree for **Full-time Faculty Positions** employed in your Interior Design Program.
   a. BS
   b. BA
c. BFA
d. MS
e. MA
f. MID
g. MFA
h. M Arch
i. Ph. D.

22. Number of open faculty positions at the present time in your Interior Design Program.
   a. Full-time tenure track faculty _____
   b. Full-time clinical tenure track faculty _____
   c. Full-time faculty _________?
   d. Instructor full-time faculty _________
   e. Lecturer full-time faculty _________
   f. Adjunct/part-time faculty ___________

23. How long have these open faculty positions been available? ____ years

Remaining questions will use the Likert scale below:
- [ ] Strongly agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly disagree
24. When conducting a faculty search, only those applicants who have satisfied the educational qualifications obtained through traditional education (less than 30% of course content taken via Internet/web) are considered for employment.

- [ ] Strongly agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly disagree

25. When conducting a Full-time Faculty search, an applicant who has an online terminal degree granted by an accredited institution is accepted on the same basis as a traditional degree when evaluating a prospective applicant’s educational background.

- [ ] Strongly agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly disagree

26. When conducting a Full-time Faculty search, an applicant who has an online terminal degree granted by an online university is accepted on the same basis as a traditional degree when evaluating a prospective applicant’s educational background.

- [ ] Strongly agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly disagree

27. When conducting a Full-time Faculty search, our Interior Design Program have determined that online degree programs are too informal and tend to destroy the credibility of a college degree.

- [ ] Strongly agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly disagree

28. When conducting a Full-time Faculty search an applicant may substitute work experience for academic credentials to satisfy minimum educational standards outlined in the job description.

- [ ] Strongly agree
- [ ] Agree
- [ ] Disagree
- [ ] Strongly disagree
Latitudes : Light : Retreat

Judy Theodorson
Washington State University

ABSTRACT

Context
This short project is developed as an introduction to a third-year studio grounded in theories of place. Students are concurrently taking an ECS course with a major emphasis on lighting and a minor emphasis on climate informed design. The objectives of the project include understanding of light, color materiality and place; development of knowledge around cultures and climates with emphasis on light and place response; and the ability to conduct creative research and consider theoretical foundations. The project begins with an inquiry into light and place; these outcomes are leveraged to provide inspiration for a small retreat space for introverts in an open office environment.

Teaching Pedagogy
The underlying pedagogical foundation is Spiro’s Cognitive Flexibility Theory. This framework builds on constructivist learning, recognizing that increasingly complex knowledge domains require “the ability to adaptively re-assemble diverse elements of knowledge to fit the particular needs of a given understanding or problem-solving situation” (1992, p. 169). As design students grapple with ill-structured problems, they will benefit from multiple and varied opportunities that will help them develop original constructions and applications of the material. This studio project, grounded in constructivist activities, intentionally intersects with the learning environment of the lecture course which primarily consists of foundational knowledge that is well structured and objective. Secondly, this project recognizes that light and lighting in the interior environment has multiple dimensions beyond functional provision for visual tasks. These “other dimensions”
include the aesthetic (compositional, color, texture) and the psychological (memory, mood, experience, culture). This project takes the position that light has a specific aesthetic circumstance and resulting human experience related to place: students are challenged to consider this idea through conceptual and experimental investigation.

Method
The project is unveiled in two parts. In Part 1, students are introduced to the idea of light and place and directed to theoretical readings (Millet, 2012; Tanizaki, 1977). Subsequently, they are assigned a geographic location proximate to a latitude line at 15 degree intervals and asked to uncover materials (literary writings, visual arts) that yield a palette of light of place and human / cultural responses. Next, they build an object (5"x5"x5" cube) that creatively communicates these findings. Finally, they build and photograph abstract light models that probe conditions of light in response to the aforementioned place findings. Part 2 is presented as a one-week design charrette that builds off Part 1. It is a small retreat space for introverts in an open office. Again, students are directed to research and theory as a point of departure (Cain, 2012; Steelcase).

Outcomes
The pedagogical intent of this project is to promote an understanding of human experience and place through perspectives of the luminous environment. Through a fast paced project, student have multiple and varied constructivist experiences in creative research around light and place. This knowledge is applied to a problem where success is dependent on the quality of the luminous atmosphere. The process supports a process that builds skills (light photography, modeling) and broad conceptual understanding (theory, literary readings) that is necessary to grapple with design issues that range from the functional to the aesthetic to the experiential.

REFERENCES (APA)


PROJECT 1: Light: Latitudes: Retreat

“I compose with light” Le Corbusier, architect

“Through light, the physical world is able to undergo a heightening of existence, its lifeless chunks turned into ravishing and incandescent fabrics.”
Henry Plummer, writer

Objectives
This project will focus on:

- Techniques of modeling and photography that facilitate understanding of the interactions of light, color, materiality and space
- Development of knowledge around a variety of cultures, climates, and regions with an emphasis on light and place response.
- Appreciation of how literary narrative develops understanding of place-based experiences.
- Spatial development for human needs relative to environmental ambiances and ergonomics.
- Ability to conduct creative research and to consider theoretical foundations in design thinking.

Readings

In Praise of Shadows by J. Tanizaki (1977)

Part 1: Light: Latitudes
Students will select a location proximate to a latitude line: 0, 15N/S, 30N/S, 45 N/S, 60 N/S, 75 N/S. They will then research this region through literary writings (fiction, poetry, travel literature, etc) and visual imagery (photos, art, etc) in order to develop an understanding of the inherent qualities of light + place. The investigation is expected to yield a palette of light, color, texture, and materiality and may also reveal climatic variability, cultural responses, luminous events, human rituals and responses, etc.

Given this data, each student will design and build a 5”x5”x5” cube that creatively communicates their findings: due start of class Wednesday, September 3. The cube must identify the region/latitude and include language related to qualities of light.

Additionally, students will experiment with materials, color, light sources, and photography to develop abstracted light models that probe, explore, and respond to the research findings: a 10”x10” montage (model photos and possibly text) is due Monday, September 8 at start of class.
Part 2: Retreats

The design assignment is small retreat space for introverts in an open office environment. The point of departure in developing spatial ambiance is the understanding of light + place uncovered in Part 1. The following links provide additional information specific to the needs of introverts.

http://www.ted.com/talks/susan_cain_the_power_of_introverts


Programmatic requirements:

1. the volume of the retreat space may not exceed 600 cubic feet
2. the space must accommodate the environmental and ergonomic needs of introverts in an open office environment

Design Challenges (select one or more):

1. Challenge the idea of wall
2. Consider space as an excavation of mass
3. Consider the theoretical idea of “prospect-refuge” (Jay Appleton)
4. Reject traditional work-space furnishings
5. Create opportunity for user customization
6. Other (with approval of faculty)

Step 1: Monday

1. One hour charrette to develop (3) ideas/ options in sketch form (with annotations)
2. Sell your ideas to your peers — they will select (2) as options for further development

Step 2: Wednesday

1. start of class: bring partial spatial model or section model for light photography (model should be around 1’=1’-0” or 1.5”=1’-0”

Final critiques on Monday, September 15 and Wednesday, September 17

Deliverables

1. (3) ideas/ options (Step 1)
2. Scaled model (Step 2)
3. Creative research: process photos of models
4. A single image that conveys the idea / atmosphere of the space (can be light model photography and manipulated in photoshop) — you can include additional images if helpful
5. Drafted (hand or computer) plan, section, interior elevation(s) at 1/4”=1’-0” with a subtle indication of light, color, material
part 1 [light & latitudes] explorations of place: cultures, material, color, light

Yucatan, Mexico, 14N

Provence, France 45N
part 1 [light & latitudes] studio pinup of exploratory work with light+material
In this small office retreat, the elements of circularity, warmth, and repetition were explored. The cylindrical space creates a haptic sensation of security and calmness. A 3-foot perimeter of backlit 3Form with extracted circles illuminates the space and creates a glow similar to thousands of paper lanterns. This space is a comfortable spot where one can escape from the chaos of the day, and recharge in the warmth of this lantern-like haven.
PRESENTATIONS
Use of Neuroscience in Interior Design: Impact of Lighting Color Temperature on Attention Deficit Hyperactivity Disorder (ADHD) Subjects

Cherif Amor, Michael O'Boyle, Debajyoti Pati & Hou Jiancheng Duy Pham
Virginia Commonwealth University, Qatar

ABSTRACT

Neuroscience research shows that environmental-related activity such as wayfinding, perception, cognition, and their behavioral consequences—anxiety, stress, and happiness—are both reflected in our brains’ neural structures and electro-chemical processes (Eberhard, 2007; Mallgrave, 2011; Swanson, 2011; Zeisel, 2006). While there is a growing body of debatable environment-behavior literature relative to the impact of fluorescent lighting on cognitive and behavioral outcomes (Rashid & Zimiring, 2008), little is known about the correlation between neural activity and fluorescent lighting. The purpose of this research is to explore and compare the behavioral and neural responses of twenty ADHD subjects, when exposed to 3 types of fluorescent lighting: a) Warm White WW with a 2700 CCT, b) Cool White CW with a 4100 CCT, and c) Daylight DX with 5500 CCT (see figures 1, 2, and 3) while each category is represented in three types of applications—commercial, educational, and healthcare.

Methodology/Procedure

A purposive sampling was used to generate twenty subjects; taking into account gender, age, ethnicity, brain lateralization, as well as the exclusion of color blindness. The participants underwent 1) an anatomical scan and 2) a functional scan, using Functional Magnetic Resonance Imaging fMRI technology, while a
random sequence of three types of illustrations from the aforementioned categories were projected by a computer controlled visual presentation system. Each image category included 6 images for a total of 18 images that every participant evaluates. Concomitantly, the participants were asked to respond to each image by fiber optic button devise, rating each image on a seven-point Likert satisfaction scale of 1=very dissatisfied and 7=very satisfied. Behavioral data was analyzed using t-test factor analysis and one-way analysis of variance, while the neural data maps were analyzed using FSL Neuroimaging Software.

Findings/Outcomes
Findings suggest that contrary to precedents (seeing color activates the ventral occipital and fusiform); the Warm White color temperature (2800K) did not show activation of the occipital cortex. This may indicate disinterest or dissatisfaction with the warm spectrum. Important to note that, under the Cool White spectrum (4100K) the activation of the Superior Temporal Gyrus implicated in critical structure of social interaction; the Middle Frontal Gyrus implicated in semantic and analytical tasks; and the activation of the Angular Gyrus implicated in memory retrieval, areas associated with brain cognitive functions, have been activated. Furthermore, under the daylight color spectrum, the cerebellum—emerging neuroscience indicates that is involved in cognitive brain processes—has been activated. These neural findings, in support of behavioral findings, suggest a higher satisfaction with cool white and daylight full spectrum than with the warm spectrum.

REFERENCES (APA)


Figure 1:
Examples of Commercial Interior Environment used in this study
Figure 2:
Examples of Education Interior Environment used in this study
Figure 3: Examples of Healthcare Interior Environment used in this study
Understanding the Influence of Environmental Design on Physical and Psychological Safety of Psychiatric Patients

Sara Bayramzadeh
University of Florida

ABSTRACT

Arguably, patients with mental disorders are some of the most vulnerable patients in the healthcare system (Borckardt, 2007). As psychiatric patients admitted to the psychiatric units with a risk of hurting themselves or others (NAPHS, 2013), implementing measures to improve the patient safety becomes essential. There is evidence that healthcare facilities can incorporate design strategies to promote safety attributes (Hunt, 2011). Such design strategies include but are not limited to eliminating hazardous components, increasing visual access, and appropriate furniture (Huffcut, 2010). Moreover, some studies emphasize on the significance of the psychological safety, which is defined as how safe the patients feel (Delaney & Johnson, 2008). Despite the emphasis of existing literature on psychiatric units design, there is little research on the evaluation of design strategies. Therefore, the current study aims to explore the environmental design implications that influence safety of psychiatric patients from both physical and psychological standpoints.

This mixed method study is based on qualitative interviews and a quantitative web-based survey. First, 20 staff members in a psychiatric unit of a Southeastern hospital were interviewed about patient safety and the built environment. The results of the interviews were used in developing a 41-question Likert scale questionnaire, which contains close-ended and open-ended questions. Later, more than 75 participants completed the web-based survey. The open-ended questions
allowed for further exploration of the role of environmental design in patient safety. To eliminate bias in research the participants of the interviews and the web-based survey were recruited from 2 different facilities.

The results revealed a consensus of perception among staff regarding the influence of the design strategies on physical and psychological safety. For example, on a scale of 1 to 5, with 5 as the highest level of agreement, a mean of 4.18 indicated that inpatients feel vulnerable because they don’t know other patients and their conditions. This result can inform designers on the importance of considering appropriate personal space among patients to maximize their psychological safety. Another example, which relates to the physical safety, is a mean of 4.01 agreement that providing visual access from the nursing station to the dayroom (activity room) will reduce violent incidents. The results of several t-tests and ANOVA test showed no statistically significant difference between the responses from different age groups, positions, or years of experience; however, some factors were found to be statistically different between male and female respondents. Finally, several design recommendations, such as wall color consideration, were collected through open-ended questions.

The results merged with the existing literature, support the influence of the environmental design on physical and psychological safety of patients. In addition, they specify the effectiveness level of the environmental factors. The findings underscore a holistic design approach to the psychiatric safety issues, which encompasses physical and psychological considerations. This research will help to inform safe healthcare design practices in psychiatric units, in addition to serving as a base for further research in identifying the influential environmental elements in design of the safer psychiatric units.

REFERENCES (APA)


Collaboration and Design Outcome: Direct and Indirect Perceptions of Creativity

Ji Young Cho & Brie Constantino
Kent State University

ABSTRACT
The ability for mutual collaboration is essential in the interior design process. In a technologically driven and fast-paced society, interior designers must turn to collaboration to address the necessity of cross-discipline design development as well as accelerated project deadlines. Furthermore, the proliferation of global communication conduits fosters a demand for international projects and design teams (Stasser & Birchmeier, 2003). Thus, opportunities for diverse collaboration in the academic experience are important for preparing students’ competencies in real practice. However, collaboration holds a negative connotation for creativity in light of the social hierarchies that infiltrate collections of people. Individuals tend to feel pressure to focus on reaching consensus rather than exchanging and evolving ideas through interaction (Paulus & Nijstad, 2003). In addition, the activity of collaboration is often avoided due to the assumption that authorship of the design process is lost and subsequently, the representation of one’s creativity is limited. Designers question whether the outcome of a collaboration can embody the equivalent level of creativity found in individually produced outcomes. Contrary to this enduring negative identity, recent research on creativity and the design process imply the opportunity for innovation through collaboration.

This paper is a discussion of the relationship between collaboration and creativity in design outcomes of an interior design process through a direct and indirect measurement of creativity. A study was conducted to identify how students perceive the degree of their creativity as expressed in a collaborative design project.
compared to an individual project (which refers to the direct measurement), and how reviewers perceive the degree of the creativity in the outcome (which refers to the indirect measurement). A total of 27 junior interior design students participated in the study. After finishing each collaborative design and individual design project, students completed a survey on their perception of creativity in their design project. The survey instruments were developed based on the Creative self-efficacy scale (Houghton & DiLiello, 2010), Team creative confidence scale (Baer, Oldham, Jacobsohn, & Hollingshead, 2008), and personality creativity mode. A group of reviewers also assessed the creative level of each design project. Additionally, journal entries during the design process and post-outcome interviews were conducted to assess the discernment of direct and indirect perceptions of creativity.

The resultant comparison highlights the opportunity for optimized creativity as a result of successful collaborative effort. With an understanding of the principles that delineate creativity as well as the associated characterization of an individual or group, design education and practice can implement appropriate strategies for improving the success of design outcomes and the collaborative experience. Personality-type, past experiences, and the motivations of an individual in design is found to significantly impact the development process of the idea and the realization of the outcome. The notion of collaboration is rarely considered a competitive strategy to optimize the creativity of a design outcome. The results from this study may help design educators to better understand the relation between collaboration and creativity, and how to enhance students’ positive experience in collaboration as it leads to creative outcomes.

REFERENCES (APA)


The Design, Building, and Testing of a Portable Homeless Shelter

Joan Dickinson, Kelsea Stafford, Krissy Klingenerberger, Chasity Hanchey & Megan Dreyer
Radford University

ABSTRACT

It is 5 degrees, 1:00 a.m. in the nation’s capital. A homeless man under a blanket is found frozen to death. In the richest country on earth, this is not uncommon as the United States has one of the highest homeless rates among developed nations (Henry, Cortes, & Morris, 2013). While some designers have experimented with basic-shelter needs for the homeless; few have been empirically tested (Zhang, Balikian, Venkataramanan, & Morales, 2014). The purpose of this research study was to build and test a portable homeless shelter designed by interior design undergraduates.

Six homeless men were identified by two rescue missions located in different regions of the state. These six individuals had no apparent addiction behaviors, mental illness, or cognitive impairment and were over the age of 18. The participants completed a baseline interview and slept in the shelter for two nights (see Images 1, 2, 3, and 4). After each subject had used the shelter, the research team interviewed the men again to determine the effectiveness of the design. Several themes emerged: privacy, control, dignity, and survival. Many (n = 3) of the men liked the privacy the shelter provided, but wanted an increase in control. One end of the shelter was open, and three men commented on the possibility of animals entering. Allowing the ends of the shelter to be closed or open was discussed as a way to control cross ventilation during cold or hot weather. The pocket inside the shelter was seen as a benefit along with the width (36” W). The
pocket was used to store cell phones or snacks and the width allowed for the storage of personal belongings which could prevent theft.

These elements provided a sense of control which has been identified as an important feature in homeless shelters (Hoffman & Coffey, 2008; Pable, 2012). The size and portability of the shelter was problematic. Most of the men we interviewed (n = 5), carried a back-pack during the day and carrying the shelter on their backs was not an option. Furthermore, the size of the shelter served as an advertisement that one was homeless and did not preserve a sense of dignity or pride (Hoffman & Coffey, 2008; Pable, 2012). In fact, one of the six men refused to sleep in the shelter due to this feature. As noted by one participant, “When you sleep on the streets, you will do whatever it takes to survive.” This theme of survival was noted by several men. While the research team did not give the men sleeping bags or blankets, two men used blankets in the shelter and felt warm despite a temperature of 40 degrees. “Even if I was living on the streets, I would find a blanket or sleeping bag.”

There were several limitations and the most difficult aspect was finding the right population to test. Most of the men we interviewed stayed at the rescue missions. Eventually we want to test the shelter on the homeless who live on the streets and have no access or refuse to use ES. Despite these limitations, the study gave the researchers a more intimate understanding of life for the homeless through more democratic and inclusive testing (Bose & Horrigan, 2014). Encouraging homeless participation was critical as the opinion of this often ignored group allowed the researchers to gain a deeper understanding of the problems faced by those who live on the streets (Bose & Horrigan, 2014).

REFERENCES (APA)

Bose, M., & Horrigan, P. (2014). Why community matters. In M. Bose, P. Horrigan, C. Doble,

Henry, M., Cortes, A., & Morris, S. (2013). The 2013 annual homeless assessment report to

Pable, J. (2012). The homeless shelter family experience: Examining the influence of physical

Image 1. Original concept board created by the four undergraduate students for their design of the homeless shelter. The homeless shelter went through several reiterations prior to testing (see Images 2, 3, and 4). Students slept in the shelter for 2 nights and kept a reflective journal. Issues of concern included: (a) shelter was too big and heavy; (b) portability was a problem due to size and weight, (c) too hot and not enough ventilation, and (d) not enough privacy. The students redesigned the shelter with these factors in mind (see Images 2, 3, and 4).
Image 2. Shelter used for testing on the six men. Shelter is smaller in size and utilizes light weight material. Straps have been added so that individuals can carry the shelter similar to a backpack. Netting was added to the front and back of the shelter to provide natural ventilation and increased privacy. A small pocket provides storage for personal items.
Image 3. Another view of the shelter used for testing. This view illustrates the opening to the shelter. The inside of the shelter was lined with orange and red material to increase warmth. The principal investigator tested the shelter for one night and found the shelter to be comfortable and warm.
The shelter used for testing was lighter in weight and could be carried on your back for ease in portability.
A Qualitative Inquiry of the Impact of Hospital Lobby Design on Wayfinding Performance

Suining Ding
Indiana University Purdue University Fort Wayne

ABSTRACT

Arthur and Passini’s study shows that good wayfinding promotes healing; reduce stress and frustration for the visitor. Good wayfinding also promotes functional efficiency and improve visitors’ safety and empowerment as well as improve cognitive skills in spatial understanding (Arthur & Passini, 1992). Huelat indicates in a position paper published by The Center of Health Design that wayfinding was not an afterthought, but should be carefully designed into the project. This allows elements such as curved bulkheads and lighting to be built-in, allowing wayfinding to intuitively lead to source of information (B. Huelat, 2007). This paper presents a study that examines how physical environment design impacts the wayfinding performance in hospital lobbies through comparative studies.

The methods for this study are behavioral observations and interviews that have been conducted in four hospital lobbies in Parkview Regional Medical Center (PRMC) complex in the United States. Theses lobbies are Parkview Regional Medical Center (PRMC) lobby; Parkview Heart Institute; Parkview (PHI) lobby; Parkview Women and Children’s Hospital (PWCH) lobby and Parkview Outpatient Center (POC) lobby. Visitors and patients’ behavior (n=142) and the frequency of using information desk and using touch screen map or printed map in four different lobbies in PRMC complex were observed and analyzed. Structured interviews with the receptionists (n=4) were also carried out in four hospital lobbies. Whether the four hospital lobbies were designed with intuitive wayfinding system, such as landmarks, the signage, the information desk, art works, maps,
lightings and distinct colors were observed and compared. After behavioral observations data collection in four lobbies, a histogram that shows the frequency of using information desk vs. touch screen map or map was generated in Figure 1.

In general, if visitors used touch screen map, they tend to use the touch screen map first before they stopped at information desk. In PRMC lobby, 31 visitors stopped at information desk. 54.8% of male visitors and 45.1% of female visitors using information desk (Figure 2). Only 12.9% of visitors are over 60s (4 visitors are over 60s) (Figure 3). In Heart Institute lobby, 14 visitors stopped at information desk. 64.3% of visitors are male and 35.7% of visitors are female who stopped at information desk (Figure 2). 38.4% of visitors are over 60s (5 visitors) stopped at information desk (Figure 3). In OutpatientCenter lobby, 13 visitors stopped at information desk. 38.4% of visitors are male and 61.6% of visitors are female who stopped at the information desk (Figure 2). 23% of visitors are over 60s (3 visitors) who stopped at information desk (Figure 3). In Women and Children's Hospital lobby, two visitors stopped at the information desk. Both are 40s. They are one male and one female visitor. This can be explained because of the information desk is a free standing desk in the lobby. The behavioral observation recording sheets are provided in the Appendix (Figure 4-Figure 7).

Based on the data collected from behavioral observations and interviews, the conclusions are that visitors almost totally rely on the information desk when intuitive wayfinding system is not provided in the forms of building typology and visual cues as defined by Marquardt (2011). The visitors or patients need face to face interactions in a hospital setting. Map users tend to use the touch screen map or a printed map or a directory before they stop at information desk. Data does not show high percentage of older visitors (over 60s) using information desk. Data also does not show significant high percentage of women using information desk. Therefore, there is no difference between male visitors’ preference of using information desk vs. female visitors’ preference of using information desk. Similarly, there is no difference between older visitors preference of using information desk vs. young visitors’ preference of using information desk in hospital lobbies. Based on the research findings, it is recommended to integrating information desk and intuitive wayfinding system to guide and enhance wayfinding performance in hospital lobby design.
REFERENCES (APA)


Figure 1: Histogram of Frequency of using Information Desk vs. Touch Screen Map/Map in Four Different Lobbies

Figure 2: Histogram of Gender Difference in Using Information Desk in Four Different Lobbies

Figure 3: Histogram of Age Difference in Using Information Desk in Four Different Lobbies
Figure 4: Observational Data in Parkview Regional Medical Center Lobby

(Total 44 visitors were observed)
Figure 5: Observational Data in Parkview Heart Institute Lobby
(Total 33 visitors were observed)
Figure 6: Observational Data in Parkview Women and Children’s Hospital Lobby

(Total 27 visitors were observed)
Figure 7: Observational Data in Parkview Outpatient Center Lobby

(Total 38 visitors were observed)
How are Practitioners Leveraging Technology in the Design Process? Implications for Design Education

Connie Dyar & Amy Huber
Illinois State University

ABSTRACT

Introduction
Technology is increasingly central to interior design. Entry level designers are often expected to harness the full capabilities of Building Information Modeling (BIM), create photorealistic and often moving visualizations, and navigate up to 10 software packages in the process (Waxman and Tarver, 2013). As one practitioner stated “new softwares every year....can't keep up with it.” The speed at which software is changed, adapted, and discarded can be overwhelming for a design educator (Rose, 2013). This study sought to better understand what software technology coordinators at large and small firms are currently using, what level of technology readiness is expected of recent graduates, how technology decisions are made and what trends firms identify as important for the future.

Theoretical Framework
Using the underpinning of Expectancy-value Theory constructs (Eccles, 1983, 2002) a survey was developed and sent to participants delimited to members of a professional interior design organization from four states representing the North, South, West and Midwest regions of the United States. Based on the EVT’s premise, achievement related choices of software will be accepted and viewed as useful by educators and students in higher education if it is viewed as valuable by design firm employers.

Methodology
Using a mixed method model, data collected were both quantitative and qualitative. The questionnaire was administered via Qualtrics, an online survey program and addressed the following research questions: Section 1 Current Technology Uses RQ1: Which software packages are firms currently using in various phases of the design process? RQ2: What technological processes do firms use in the design process (rapid prototyping; 3D printing, laser cutting, CNC)? RQ3: How do firms make the decision to adopt or abandon a software program? Section 2: Emerging trends RQ4: What developments have firms identified as upcoming technology trends in the industry? RQ5: What software/technological applications should be REQUIRED of an entry-level interior designer? RQ6: What software/technological applications would be DESIRABLE for an entry-level interior designer? Responses to close-ended questions were analyzed using descriptive statistics in the form of frequencies and percentages. Responses to open-ended questions were inductively coded seeking similar phrases or keywords and analyzed for themes.

Sample
The demographics reveal that the majority of respondents ranged from 5 to 20 years of experience however the largest group to respond to the survey were owners and principals with over 20 years of experience in the field. In addition the respondents who completed the survey were from small to large design firms with the majority being from larger firms with over 250 designers. The firms engaged in practice that ranged across a spectrum of specialties in design including corporate, education, healthcare/wellness, hospitality, retail and residential (Table 1).

Summary of Results
Results indicate that BIM has not completely taken over the design software choices. AutoCAD and Sketchup are still slightly ahead with indications that Revit is “so demanding that it’s almost impossible to design in” (participant comment). However, both quantitative and qualitative results point to high demand of 3-D capabilities no matter what software programs are used and the Adobe Creative Suites series beyond PhotoShop is being utilized more extensively in the design process (Figure 1). As can be seen in Figure 1 there are numerous other software programs that are being utilized as well. The type and size of firm may determine what is most useful and cost effective for them to meet the demands of their
clients. As for design professionals opinions on what software students should be trained in, practitioners indicated that training should be similar to what is happening in industry (Figure 2 and 3). However if the challenges and cost of changing software is difficult for profit-making firms (as indicated in results) it is even more difficult for state funded and not-for-profit higher education institutions with declining budgets (Elmualim and Gilder, 2014). This study will be presented to start a dialogue on how to effectively keep up with the demands of the professional design community based on future trends including the importance of technology that aids in integrated project delivery (Table 2).

REFERENCES (APA)


Table 1. Participant characteristics

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<thead>
<tr>
<th>Location</th>
<th>Frequency</th>
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<tr>
<td>California (Northern)</td>
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<tr>
<td>California (Southern)</td>
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<td>Florida (Central)</td>
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<tr>
<td>Florida (North)</td>
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<td>12%</td>
</tr>
<tr>
<td>Florida (South)</td>
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<td>3%</td>
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<tr>
<td>Illinois (Chicago Metropolitan Area)</td>
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<td>18%</td>
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<tr>
<td>Illinois (Southern)</td>
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<td>New York (New York City)</td>
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</tr>
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<td>New York (Upstate)</td>
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<th>Position</th>
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<td>Junior Designer</td>
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<tr>
<td>Interior Designer</td>
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<td>Senior Designer</td>
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<tr>
<td>Design Director</td>
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<td>8%</td>
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<td>Project Manager</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>Principal/Owner</td>
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<td>28%</td>
</tr>
<tr>
<td>Other</td>
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Other: Associate Principal, Principal not owner, Designer/Project Manager, VP of Interior Design, Interior Design/CAD Drafter, Interiors Coordinator, Sr. Project Manager, Workplace Strategist, Associate Principal, Studio Director, Sales Associate, Sales / Design

<table>
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<th>Years of Experience</th>
<th>Frequency</th>
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<td>1-5</td>
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<td>6-10</td>
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<td>11-20</td>
<td>26</td>
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<tr>
<td>Over 20</td>
<td>38</td>
<td>38%</td>
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<tr>
<th>Size of Firm</th>
<th>Frequency</th>
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<td>2-5 Designers</td>
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<td>6-20 Designers</td>
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<td>50-100 Designers</td>
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<td>Over 250 Designers</td>
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<th>Market sectors of firm (multiple selections allowed)</th>
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<td>Corporate</td>
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<td>85%</td>
</tr>
<tr>
<td>Education</td>
<td>56</td>
<td>58%</td>
</tr>
<tr>
<td>Government (Local, State or Federal)</td>
<td>42</td>
<td>43%</td>
</tr>
<tr>
<td>Healthcare, Wellness, or Senior Living</td>
<td>61</td>
<td>63%</td>
</tr>
<tr>
<td>Hospitality or Restaurant</td>
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<td>44%</td>
</tr>
<tr>
<td>Institutional</td>
<td>31</td>
<td>32%</td>
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<td>Residential</td>
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<td>26%</td>
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<tr>
<td>Retail</td>
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<tr>
<td>Tenant Development</td>
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<td>48%</td>
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<td>Facilities Management</td>
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<td>21%</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>7%</td>
</tr>
</tbody>
</table>

Other: Industrial, Media & Entertainment, Multi-family living, Sustainability, Aviation & Transportation, High Tech
Figure 1. Software relative to design process phases.
Figure 2. Practitioner attitudes toward the teaching of specific software packages.

Figure 3. Practitioner attitudes toward teaching technological applications.
Table 2.
Upcoming trends participant’s firms have identified for the future
Emerging themes from 51 open-ended responses (note some responses were categorized into multiple themes).

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subtheme</th>
<th>Example Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integrated Project Delivery (23)</strong></td>
<td>(19) BIM/Revit</td>
<td>“Increasing presence of design options in our project (Revit driven) to propose multiple solutions to clients in minimal time”</td>
</tr>
<tr>
<td></td>
<td>(4) Communication between software or between consultants</td>
<td>“Integrated Project Delivery, Coordination of Software Plug-ins across multiple platforms”</td>
</tr>
<tr>
<td><strong>Visualization (17)</strong></td>
<td>(9) High client demands i.e. walkthroughs, photorealism</td>
<td>“More realistic and detail oriented renderings. Clients want EVERYTHING perfect... down to the angle of the &quot;out the window&quot; photo, and titles of books on shelves.”</td>
</tr>
<tr>
<td></td>
<td>(3) Early &amp; Rapid Rendering</td>
<td>“early visioning demands from clients precede traditional design methods”</td>
</tr>
<tr>
<td></td>
<td>(2) Augmented reality/”Gamification”</td>
<td>“use of google glass, augmented reality technologies”</td>
</tr>
<tr>
<td></td>
<td>(2) Use of Video &amp; Video Storytelling</td>
<td>“increased use of video”</td>
</tr>
<tr>
<td></td>
<td>(1) High Quality Diagrams</td>
<td>“Graphically pleasing diagrams as well as quick in-house renders are increasingly desirable”</td>
</tr>
<tr>
<td><strong>Virtual Work (10)</strong></td>
<td>(5) Increased use of mobile devices</td>
<td>“Virtual firms....there is no longer a need for traveling to and sitting in one location....that just wastes personal resources, uses time and offers little advantage. Employees need to have their own equipment and CAD licenses and be ready to work virtually in their own space, and have the self-discipline to do so.”</td>
</tr>
<tr>
<td></td>
<td>(3) Virtual Firms</td>
<td>“The design firms our corporate employees are increasingly doing their renderings offshore. Few designers in the local office are producing renderings.”</td>
</tr>
<tr>
<td><strong>Prototyping (8)</strong></td>
<td>(8) 3D printing, Laser cutting, Prototyping</td>
<td>“3-d modeling/BIM continues to be a big push but 3-d printing is beginning to show more strength and demand.”</td>
</tr>
<tr>
<td><strong>Other (3)</strong></td>
<td>(3) More Intuitive Software</td>
<td>“Although we have moved beyond Autocad, beyond Archicadd, to Revit, Revit is so demanding that it’s almost impossible to design in (all are difficult to &quot;sketch&quot; in) ... need to be able to quickly draw different ideas for evaluation and software has overtaken hand sketching and physical models.”</td>
</tr>
<tr>
<td></td>
<td>(1) Library Database</td>
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Making the Most of the Outcomes: Meaningful Methods for Translating POE Data

Lindsey Fay & Allison Carll-White
University of Kentucky

ABSTRACT

While practitioners continue to embrace the use of evidence-based design (EBD) as a vehicle for informed decision-making, they are often unclear on how to translate research findings into practical applications (Hamilton, 2007). As Haq and Pati (2010) suggest, “The interaction between [the designer] and the evidence is a crucial component of EBD that has not attracted much attention” (p. 77). The evidence-based design process identifies the use of post-occupancy evaluations (POEs) as a significant methodology for testing the applicability of research findings to the built environment. Yet too often literature describing POEs simply ends with the reporting of findings rather than suggesting how this knowledge feeds forward. This raises the question: how can we re-envision the translation of evidence to better incorporate it into design practice?

This presentation will illustrate a collaborative, full cycle post-occupancy evaluation conducted in an academic emergency department to demonstrate methods of planning a POE, capturing meaningful data, and applying outcomes through the use of a design charrette to address issues uncovered by the research. A specific objective for the design charrette was to utilize evidence to reconceive one area of the emergency department through a series of exercises that developed a deeper understanding of the needs of staff, patients, and visitors. Evidence from the POE was gathered using a conceptual framework that assessed the interrelationship between the built environment, user experiences, and operational outcomes of the emergency department. Data collection and analysis
utilized objective and subjective measures yielding both qualitative and quantitative data. Research findings from behavioral mapping, physical measurements, questionnaires, and focus groups yielded significant insights that framed the scope and focus of the design charrette. To better illustrate how research findings can be more actively integrated into design practice, the researchers shared an abbreviated report with the emergency department design team that outlined major research findings and charrette objectives and deliverables. On the day of the charrette, research results were presented that served to stimulate discussion. Teams of researchers and practitioners completed charrette exercises structured around a human-centered design approach that included an activity analysis, the development of user profiles, user flow charts, and proposed revisions to the space. Each team shared their outcomes by identifying what attributes of the design responded to the research and the healthcare provider’s guiding principles, and those that contributed to creating a positive user experience within the facility.

The full cycle of this POE process demonstrates systematically conducting, analyzing, and integrating research into the design process. The significance of the data collected in POE research is not apparent without the application of research findings. The use of a design charrette to apply findings from the POE research presented an opportunity for designers to rethink an existing design and develop familiarity with the POE framework and methodologies, thus demonstrating the importance of evidence-based design. It was determined that the use of a design charrette was instrumental for the integration and application of research findings and helped bridge the gap between designers, researchers, and most importantly, users of the built environment.

REFERENCES (APA)


Business Not as Usual: Attracting and Retaining Internship Providers

Kenan Fishburne
Florida State University

ABSTRACT

The economy is slowly rebounding after the 2008 economic downturn in the housing and construction industries (Monthly Labor Review, 2010). Interior designers and architects were among the hardest hit, resulting in a loss of valuable internship locations (U.S. Bureau of Labor Statistics, 2012). With 80% of the design firms in the United States employing less than five employees (Winchip, 2013), there are fewer providers available for mentoring young designers through internships. Proactively, both NCARB and CIDQ (formerly NCIDQ) have revised timetables to allow students to count certain early internship experience toward work requirements for eligibility to take the professional exam. These changes in the business climate must also be addressed by higher education interior design programs so internship programs remain viable.

Methodology
This study sought to answer the question: What changes should academic institutions be making to internship programs that will result in internship provider retention? Both a general literature review and a best practices review of industry and university internship programs were conducted to identify current internship issues. A 23-question survey was then designed to collect both qualitative and quantitative data through national distribution to 600 practicing designers who are members of ASID and IIDA, yielding 119 responses.
Findings
Survey results have been divided into three sections: The first focused on demographics and experience of providers; the second on status of current internship offerings and provider motivation; and the third on provider perception of internship curricula including suggestions to make internship programs stronger. Responses indicated that 68% of 115 respondents were young designers who have practiced less than five years, with 77 percent of total respondents indicating they were not NCIDQ certified. Fifty-seven percent of the respondents had mentored an intern in the last five years, but 46 percent had reduced internship offerings or stopped offering internships due to lack of work. Over 82% of mentors reported being conflicted in their motivation for offering internships. They want students to add value to their firm, but also feel a duty to be altruistic and responsible to the profession for mentoring the next generation. When asked about paid versus unpaid internships, mentors were evenly divided with 50% offering paid internships. When asked what they look for when selecting an intern, they indicated that soft skills such as work attitude, punctuality, good attitude, and proper attire were essential. They also indicated a desire for interns to have stronger business skills. Over 85% said they would hire or help their interns look for work.

Conclusion
With a new economy, increasing job accountability metrics, and a faster track to professional certification, internships are essential. Programs may need to look beyond their current providers to retain and expand internship locations. Asking internship providers for feedback on student preparedness may also provide “buy-in” and help close perceived gaps in student readiness. Survey results highlighted the need to bring together academic institutions, students, and internship providers to make sure all benefit from the internship process.

REFERENCES (APA)

Should We Call A Lawyer? Legal Complexities of Student Internships

Kenan Fishburne
Florida State University

ABSTRACT
As internships become increasingly important to students, so do concerns about related legal issues. This paper addresses several legal issues surrounding university internships and offers advice for interior design programs to help them legally protect their students and internship providers. Methodology: This research began with a literature review of internship definitions and practices from educational sources and a review of standards produced by the U.S. Department of Labor. This was followed by interviews with practicing attorneys to determine the risks associated with internships and what programs can due to mediate those risks.

Findings
Two common legal issues affecting internships include labor laws that define internships as unpaid work and student liability issues (NSEE, 2014). Literature revealed that a national debate is ongoing regarding what is and what is not considered an internship. Litigations such as the Black Swan and Charlie Rose cases utilized the Fair Labor Standards Act (Becker, 2013) under the U.S. Department of Labor, which provides a legitimacy “test” for legal unpaid internship using these criteria: the internship is not a job but an educational experience which provides value to the student but not the employer; the intern cannot displace regular workers; and both parties understand there is no entitlement for payment or a future job (U. S. Department of Labor, 2010). The National Society for Experiential Education (NSEE) states that internship
programs favoring unpaid internships are outdated and actually discriminate against low-income students. They further state: “credit is for what students learn; pay is for what they provide to the field sponsor. The two are neither mutually exclusive nor conflicting” (NSEE, 2014).

The National Association of Colleges and Employers (NACE) has provided a similar definition of internship, emphasizing payment for internships (NACE, 2014). It is apparent that university programs must carefully craft internship definitions based on the type of internships they offer. Internship liability issues were also revealed as a concern. The term “liability” covers not only harm to a student but also harm the student may do to their provider. Educational institutions generally are not liable for student interns as they are not employees. While many students are covered under family liability insurance policies and many employers carry liability and errors/omissions insurance, programs must clarify who is responsible for liability. Insurance companies provide inexpensive policies that either party can obtain as needed. Paperwork signed prior to internship should require evidence of insurance and who is providing it. It can also exclude parties from liability. An “affiliation/internship” agreement is commonly used to address liability issues up front. This can be formal or informal as long it clearly states the policies of the internship program and is signed by both parties as binding.

Conclusion
Multiple definitions of internship put the burden on academic programs to clearly define internships as to whether credit and/or payment are to be received. Programs are strongly advised to produce legally binding paperwork appropriate to their internship to protect both intern and employer should liability issues arise.

REFERENCES (APA)


Designing for Diversity: A Comparative Study of the US and UK.

Kristi S. Gaines & Angela Bourne
Texas Tech University

ABSTRACT

The transition to adulthood is challenging for all individuals, but even more difficult for individuals with Autism Spectrum Disorders (ASD). Entitlement to public education ends and choices must be made regarding education or vocational training, employment, housing, and social involvement. In the U.S., a projected 500,000 children with ASD are expected to reach adulthood within the next 15 years. Currently, there is a limited amount of appropriate housing to fill this need (Ahrentzen, 2009). Additionally, aging parents are concerned with how their children with ASD will function in society when they are no longer living (Weeks, 2009).

The design of the physical environment is increasingly recognized as an important element in the development and comfort of people with ASD. Sensory integration theory provided the theoretical framework for the study. Site visits to living communities for individuals with ASD in the US and and UK were conducted by the researchers to examine the connections between how people with ASD see and approach the environments in which they live. Ten sites (five in each country) were visited for data collection.

The results from this research project identified design features that promote independence, safety, and improve the quality of life for neurodiverse individuals. Common themes and characteristics in homes were observed as well as disparities in the types of accommodations available between the US and UK. Practical and
relevant design recommendations were developed. The outcomes support the needs and the numbers reported in the “Valuing People” study (2001) which states that due to the number of children being diagnosed with autism, adult services must be established quickly or the demand for such services will result in a crisis.

The aim of this project was to formulate best practices for the design of living and learning spaces for individuals with autism throughout the lifecycle. Practical and relevant findings resulting in physical environment considerations will aid designers, parents, teachers, therapists, and all who work and live with children and adults with ASD.

REFERENCES (APA)


INTENTIONAL COMMUNITY
TYPE 3 campus/semi independent style

- Independent shared living with support on property as needed
  with education and training focus- literacy and numerously
- No organized daily supervision or no live in staff; residents are
  trained in skills of daily living to live independently with peers
- Resident work in an outside larger community (NT) or on campus
  with support and supervision
- Social opportunities
- Structured recreations opportunities- i.e., special Olympics

United Kingdom Multiple Group Homes on one property
Kitchen

- Only keep food for one day in refrigerator
- Shut-off button for water
- Cabinets can be locked with switches
- Appliance safety with switches
Visual Environmental Attributes Contributing to Wayfinding in Unfamiliar Environments

Hessam Ghamari & Debajyoti Pati
Appalachian State University

ABSTRACT

This study focused on the eye-fixation during wayfinding in unfamiliar environments. While earlier studies have examined this question using subjective methodologies (Pati et al., 2014), triangulation using objective methods was absent in published literature. Moreover, not many studies focused on the interior environment (Anderson et al., 2012, and Livingstone-Lee et al. 2011), and fewer studies focused on specific elements which are targeted by professional interior designers (Otterbring et al., 2014). Research was needed to identify elements in the environment that attract the attention and gaze of the users while navigating to their destinations.

There are currently few published research that have used objective methods to investigate the role of different wayfinding strategies (including signage) within unfamiliar environments. This study identified elements of the designed environment that attract eye fixation during wayfinding, by objectively tracking eye movements and fixation as healthy subjects navigate through a complex unfamiliar setting. EyeGuide® - Mobile Tracking Technology was used to capture data on gaze-fixation. The research setting of this study was a college building in a large research university. Eighteen adult subjects in different age groups (young, middle age, and elderly) and different genders were asked to navigate five different routes. Since this study involves eye-tracking technology, testing of the instrument was one of the crucial steps of the research. The researcher conducted several pilot tests of the instrument and different aspects of the eye-tracking technology. The
eye-fixations on different visual environmental attributes were recorded and measured by Eye-Guide Analyze software. The time durations of each navigation tasks were also measured. The recorded times of navigations for subject and for each route were inserted in Excel worksheets and prepared for quantitative analyses. Data analyses were conducted by using different descriptive and inferential statistical tools such as T-test, ANOVA, and Friedman test.

The results of this study suggested that identifying signs, architectural features, informational signs, maps, and directional signs constitute the main environmental attributes that attract the attention of users. In total, signs constitute the major environmental information source among all classes of environmental cues, covering 47% of the time subjects sought information from the ambient environment. The results of the study also showed that architectural features (14.2%) and maps (8.4%) were the two other major environmental attributes that attracted gaze fixation. Other design elements (7.9%), interior elements pairing (5.3%), functional clusters (3.4%), and furniture (2.6%) covered the rest of the total time of eye-fixations. Additionally, the results showed that there is a significant difference between males and females on the time of navigation. Males were faster than females in navigation. The results also showed that young age group had the fastest navigation performance among the age groups. The findings of this investigation would be beneficial for interior design practitioners and researchers to help design navigation-friendly environments.

REFERENCES (APA)


Small Business Off-Campus Start-Up: Developing an Interior Design Research Center for Community Engagement

Travis Hicks
University of North Carolina at Greensboro

ABSTRACT

Introduction
In a public land grant university an interiors department with a CIDA-accredited BFA program has developed a center for community-engaged design research and practice. The author, director of this research center, will share the process of developing this research center and will compare this center with various models of professional practices in interior design. Students engaged in this center, nominally “Student Fellows,” receive hands-on practical experiences that go well beyond the typical experiences from studio courses, lecture courses, and even professional practice courses.

Background
Following decades of community-engaged design projects, ranging from custom residential design/build to commercial fit-ups, an existing research center has been transformed into a community design center. In a land grant university, where the mantra is “do more with less” by consolidating shared functions and eliminating research centers, the interiors department has been successful in maintaining an existing research center and convincing upper administration to approve changes to, and provide additional support for, this center. Normally the transformation process would take several years; in this case the changes took less than one year. The author will offer insights into the visioning sessions,
community meetings, campus conversations, and broader support that contributed to this expedited transformation.

Professional Practices
The connections between this research center and Professional Practices pedagogy are two-fold. First, the author has utilized years of practice experience and knowledge to plan and execute a research and design center that, on the surface, operates much like a small design firm. Secondly, students who work in this center contribute to “real world” projects in this firm-like environment, going beyond the learning that typically occurs in the department’s Professional Practices course. The author has taught the Professional Practices course in recent years, and there are pedagogical techniques, such as active learning and project-based instruction, that have made these lecture-based courses successful. None of these teaching and learning techniques, however, hold a candle to the process of engaging students in what is the equivalent of a small business “start-up.” Students developed professional practice skills in the center, which occupies a 1,500 s.f. off-campus commercial storefront. Student interns took the space from an empty shell to a finished space over the summer, and current Student Fellows continue to enhance the design of the space through additional detailing and accessories. In doing these projects, students have gained practical experiences of designing and building out a commercial interior, such as documenting, designing, budgeting, procuring furnishings and fixtures, and executing the plan. In addition, students have contributed to the planning, marketing, and communications for this research center and have worked on a handful of community-based projects.

Outcomes
This center has engaged in over a dozen community-based research and design projects, has engaged over 125 students from various disciplines, has engaged over 100 community members and volunteers, and has generated over 2,000 person hours of community engagement in a city where there is a clear void this center fills.

REFERENCES (APA)


Encouraging the extra-ordinary

Nicole Koltick & Diana Nicholas
Drexel University

ABSTRACT

“In my understanding, to design is to intentionally apply to ordinary objects, phenomena and communication the essence of these innumerable ways of thinking and perceiving.” K. Hara

Problem
As the first graduate level studio in our core curriculum, this studio introduces students to a variety of methods to approach and focus on the design of interior spatial volumes. One problem we have identified is that beginning students have preconceived ideas about interior space and spatial elements comprising such spaces. Our goal in the studio is to introduce students to new ways of thinking about interior space and spatial elements which, while universal and quite ordinary, can be explored and developed in any number of ways. We deliberately avoid walls, floors and ceilings in initial projects introducing them only in the final project and then they are required to be conceived and developed as part of a cohesive spatial solution. The approach here is to encourage students to consider the three dimensional interior spatial volume from the outset rather than developing ideas in plan and elevation initially.

Methods
The strategy we have employed is intended to introduce students to a wider range of spatial possibilities through a carefully constructed set of projects and techniques. We have developed a progression of assignments which increase in spatial complexity and programmatic requirements. In this introductory studio there are three primary investigations in the course, Portal, Procession and
Repository. Portal was an opportunity to explore spatial concepts, the nature of opening and preliminary ideas of the relationship of an interior space to its exterior. Procession introduces students to concepts of circulation and encourages a departure from conventional stair or ramping strategies to contemplate alternative approaches to the movement through space. Repository requires students to synthesize prior techniques to develop an interior space for the display of a small group, or collection of curated objects. Students are asked to consider issues of entry, circulation, and display. Participants are introduced to an iterative design exploration procedure which emphasizes the use of drawings, physical and digital modelling and diagramming as complementary approaches to exploring potential design solutions. Students progress from a series of initial spatial exercises which are then extensively iterated, evaluated and redeveloped. The course encourages extensive self-reflection and critique of designs in progress. Running alongside a complementary seminar, which emphasizes systematic approaches to design, both courses gave students the opportunity to explore a design operation expressed through components as an approach to their ideas about the development of interior constructs.

Analysis
In the first two projects students develop a set of exploratory drawings which emphasize analysis of the spatial implications of their design in relation to light, shading, and relationships in plan, section, elevation and three dimensions. In the final project, students transition into a more regularized set of drawings in plan and section in addition to generating more realistic three dimensional renderings. In contrasting the more experimental conceptual drawing process with the conventional representation, the students were given an opportunity to explore how the processes lead to a new understanding of the interior. The emphasis on non-traditional drawings in the first projects yielded more integrated and innovative space planning concepts in the final project. The final outcome produced projects which embody a diverse variety of spatial solutions. The strategy here was to avoid convention in the form of doors, ordinary walls or typical display strategies. By employing a non-traditional approach and emphasizing a reassessment of ordinary elements, the goal was to allow students to clearly consider spatial volume, context and interiority.
REFERENCES (MLA)

PROCESSION

Opportunity 2: Introduction
This problem will utilize the knowledge gained from the previous problem and will begin with the exploration of procession and progression through space. How humans circulate through experiences and space is at issue here. A stair is a vertical circulating system which connects both vertically and horizontally. A Spatial progression provides an order whereby human activity can take place (circulation through space).

Objective:
1. To investigate the ways that human move through space
2. To utilize the knowledge gained from the investigations into the portal/rite of passage and view them as spatial events that could happen along the path of the procession.
3. To investigate the "idea" of vertical circulation as a determinant of space
4. To investigate the spatial relationships that occur both vertically and horizontally, which allow for visual orientation as one moves through space.

Requirements:

Models:
Overall procession: 48'x48' @ 1/4" = 1'-0" Basswood and Chipboard. To include vertical circulation. Detail model 18'x18' are @ 1/2"=1'-0"
Drawing:
Hand drawn Analytique. The 2-ply Strathmore Bristol Board drawing shall read spatially as one composition that models the three dimensional-qualities of your project. Primary colors shall be black - graphite draughting pencil as in previous exercise.
Space + Pedagogy: The Reggio Approach

Angela McKillip
South Dakota State University

ABSTRACT

Problem Statement
Many educational facilities extend the latest theories and pedagogical strategies. Too often, these works parallel the needs of teachers, while accommodating the children’s educational and social development. Unique in the present educational climate are the pre-schools of Emilia Romagna, Italy. An early year’s system has evolved illustrating a clear philosophical commitment to the physical environment and its role in the learning process. Reggio recognizes that learning does not take place in a simplistic linear way, but rather in a complex and rich network of interconnecting influences. But really, how does space matter? Can a building perpetuate pedagogy? What does a successful partnership between the educational approach, architecture, and user look like? Using the Reggio Emilia Approach as a vehicle of study, this investigation provides answers to these questions.

Framework
What makes the Reggio Approach unique is the coupling of several areas of study: the dynamic and changing role of users, curriculum, civic and social identity, and the documentation and display of work; all emphasizing an innate relationship between context, space and users. The underlying assumption is that space matters enormously. It reflects the vision of those who inhabit it; and shapes those visions. Educators in Reggio Emilia speak of space that favors social interaction, exploration and learning; a space that has integrated educational content and is charged with stimuli toward interactive experience and constructive learning. Spaces are welcoming, telling of the projects, activities and daily routines that take place within the school.
Dynamic Users
In this approach, children are co-constructors within the learning process, equals within society having the right to learn and be active agents within the process. The consideration of students’ needs and rhythms shape the arrangement of space and the physical environment.

Curriculum
An inquiry based learning process incorporates projects requiring thought, planning, preparation, and execution, the four pieces of any project in life. Children are encouraged to explore their environment and express their understanding through many modes of expression or "languages," including verbal communication, movement, drawing, painting, sculpture, shadow play, collage, and music.

Civic and Social Identity
Inherent within this system of learning is a focus on civic life, or learning through participating. The social skills developed are just as important as their cognitive counterparts. Through shared activity, communication, cooperation, and sometimes conflict, children co-construct the knowledge of their world. The emphasis is not only placed on the child, but on each child in relation to the other.

Documentation and Display of Work
Reggio uses visual expression as a means to communicate learning. In young children, writing and speaking are not as developed, so it can be difficult for children to portray their thoughts. Work is viewed as material to use with the children to reflect, further analyze and develop a learning process. It is also seen as a way to inform the public of the learning occurring within the school.

Space that Matters
Case studies will be examined to reveal a developing spatial language, critical to this inquiry-based, co-learning pedagogy. Through these spaces, children are drawn to a closer inspection of and appreciation for their physical world, and the environments support these investigations.
Conclusions
Can exceptional educational programs, such as the Reggio Approach, exist in spaces not meant to support them? Yes. Can amazing spaces be underutilized or un-complimented by a curriculum? Yes. The argument brought forth by this hypothesis is that space does matter. When the architecture, community and curriculum are coupled, the results are powerful. In essence, the architecture becomes a three-dimensional curriculum plan.

REFERENCES (APA)


DEVELOPING LANGUAGE

SAN FELICE NURSERY AND PRESCHOOL, REGGIO EMILIA, ITALY

Across Europe and the USA there is an ongoing exploration for many educational systems and the environments which support them. The San Felice Nursery and Preschool exemplifies a situation in which it was a goal for the architecture to follow these experiments in education rather than the other way around, education conforming to the architecture.  
Specifically, this architecture speaks to curriculum goals of civic identity, body awareness and group learning.

The social and civic initiative begins with the kindergartens, which extend their activities into the community to become a focus of that community. Parents are given some responsibility and encouraged to organize events within the kindergarten building on the weekends, even engaging those who do not have young children themselves. For instance, parent classes and pre-natal groups meet in the kindergarten.

14 Dudek, Mark. Schools and Kindergartens, p 64.
15 Dudek, Mark. Schools and Kindergartens, p 65.
The environments themselves also reveal messages about the Reggio Approach and the way a child is educated. With the examination of this case study, several spatial lessons were apparent.
This Reggio project is an experiment in creating a children’s space which incorporates the pedagogic system as a reflection of harmonious interior architecture. This is achieved within the context of a clear form treating the architecture as background to the children and their activities. It is spacious, elegant, and decorated in a restrained manner so that the architectural simplicity is never overwhelmed by the artwork or activities that take place within.\(^1\) It is a fascinating environment for children providing a balance between social and private spaces. The architecture is a teacher.

\(^1\) Dudek, Mark. *Schools and Kindergartens*, p 67.
Another distinctive feature of the Reggio schools are the ‘homebase’ areas. These inner activity areas are discrete, but always visible from the communal areas. There is a sense of freedom of movement between the different areas of the building, yet at the same time the same children have a sense of territory, the feeling of a family apartment.

Within each homebase room, there is clear articulation of several areas meant for small group interaction. Each space contains an activity corner, physical climbing area, soft corner, art area and a general play and activity zone. Also included is a bright and spacious children’s toilet. The double story spaces each have an internal staircase leading up to the mezzanine sleeping area. This provides the feeling of an area small enough to feel cozy and safe for even the youngest children. Each homebase area also contains a small kitchenette for the preparation of mid-day snacks. Each day, some of the children are encouraged to participate in the preparation process. 17

Each of the ‘homebase’ areas are directly connected to a small exterior courtyard space. This provides an interior/exterior learning environment, as well as direct daylight into each of the spaces.

17 Dudek, Mark. Schools and Kindergartens, p 66.
The plans of this building are arranged to resemble relationships and spaces found within Italian Villages. Immediately, a connection is made between the rhythms of life inside and outside the school.

A central square, piazza, is placed at the heart of each childcare center, a deliberate reminder of the urban spaces whose primary purpose is to encourage social interaction. As such, the central core encourages teachers, parents, and children to make contact with each other, thus fulfilling one of the primary functions of kindergarten life.

In addition, there is a central dining area with an attached kitchen where food is prepared fresh each day. This process is exposed to young children through windows from the square. The important role eating has within Italian society is continually underlined when children join their older and younger friends around the dining tables.  

Similarly, there are larger music and art rooms, suitable for the children, but open to visitors and the community. This instills the notion that art and creativity are the center of school life.

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Material Air: Expansive Variety in a Downtown Library

Kevin Moore
Auburn University

ABSTRACT

Increasingly, adaptive reuse has become an innovative practice, meeting new challenges with economically feasible and inherently sustainable solutions. By embracing our existing building stock as a valuable resource, Interior Architecture and Design are now leading design disciplines. Entirely new experiential potentials lie in maximizing effects with a minimum of resources. Curious to the interior, and especially renovations, the selection and manipulation of materials can result in drastic changes that show few traces in typical drawings. This sensibility assumes less formal invention and more careful consideration of small but profound environmental effects.

Commissioned in the late 1960’s but not completed until 1980, the Atlanta Central Library is the final building by celebrated modern architect Marcel Breuer (1902-1981). The bold exterior of the library looms mysteriously at the edge of Margaret Mitchell Square. It is unmistakably accomplished, but the building is not universally lovable (Bafna, 56-59). Likewise, the interior is simultaneously open and dark, expansive and constricted, noble and meager. With a large floorplate, the library is expansive. Carpet and ceiling tile make this public openness possible, but a uniform floor and ceiling leaves little variety. To fully embrace new technologies and fluid work habits, the library must now accommodate a growing range of activities.
In this context, a 10-week studio proposed a renovation to anticipate a diversity of activities including quiet study, group tutoring, video production, language classes and public lectures. Students proposed an appropriate but expansive range of luminous, acoustic and thermal qualities for the downtown library. Here, air is proposed as an aesthetic and performative material. Filled with air-scattered light, vibrating sound and buoyant heat, air is an immersive medium (Gibson, 14).

Through the design of an integrated interior, air can be given quality. With a skylit central stair and sparse windows, the Atlanta Central Library is defined by bright pockets of reflected light set against a field of linear downlights. This uniform fluorescent lighting suppresses the uniqueness of the large windows. As a result, many students developed proposals to re-organize light in the library. In many cases, natural light now penetrates or reflects material texture and color as a noticeable effect. A combination of ambient light and discrete fixtures also enhances the sense of lush light-filled air. Many students also developed proposals to re-organize sound in the library. With changing work habits and expanding choices of media, libraries are active places to engage with ideas through collaborative work and debate (Mattern, 286). Noise is now productive, but silence remains its own luxury. In this case, absorptive, reflective and resonant surfaces can orchestrated a variety of acoustic places—from quiet refuges to boisterous hangouts. Students were also challenged to propose a variety of microclimates as an alternative to uniformly conditioned space (Yoos). The raised plaza and rooftop terrace, for example, are tantalizing as exterior public spaces; students expanded their visual, acoustic and thermal impact to the interior.

In 1950, Marcel Breuer claimed: “Somebody said ‘architecture is frozen music.’ This is true, though I have my reservations about the word ‘frozen.’ How about opening the doors, sliding open the windows or walls, going in and out, moving the chairs? How about the curtains, the changing light, color, and atmosphere...you not only see or photograph architecture, you live in it. It should be alive, not ‘frozen.’” (Breuer, 256) This definition of space is mutable but also more generous. This generosity is necessary in a contemporary public library. In this case, the selection and manipulation of materials structure an experiential mass of material air into an expansive and meaningful variety.
REFERENCES (Chicago)


MATERIAL AIR:  
Expansive Variety in a Downtown Library

ACOUSTIC VARIETY  
STUDENT: TRENT TEPOOL

Sound is propagated as vibrating air. As a result, the growing range of activities in a contemporary public library requires different qualities of air. In this project, large programmatic boxes are inserted into the library to create acoustic places: quiet reading rooms, computer classrooms, a gallery and a small lecture hall. The original wood trim is expanded into a palette of perforated and corrugated acoustic panels and a variety of screen walls. The boxes also restructure circulation bring the public close to the new activities and the existing windows.

THERMAL VARIETY  
STUDENT: SAMANTHA O'LEARY

As an alternative to uniform air-conditioning, space can be defined as a variety of microclimates. In this project, two lines of operable doors transform the daring cantilever over the entry into a generous porch. This excess adds options to connect the ground floor with the plaza in every season. The project also collects the existing multi-story windows into visual, acoustic and thermal connections to the street and plaza below. The hermetic exterior now concentrates informal activities at the mysterious windows.

LUMINOUS VARIETY  
STUDENT: DAMIAN BOLDEN

In the interior, sunlight is almost entirely reflected from adjacent surfaces or scattered by air into an ambient luminescence. In this project, the large but sparse windows are collected into multi-story events similar to the existing skylight. A ceiling of rotated metal tile reflects light bubbling in from high windows. Natural light also penetrates through translucent colored graphics to transform illumination into a material effect. End grain wood and carpet provide appropriate acoustic absorption.
DIVERSE ACOUSTICS
STUDENT: JEFFREY BAK

Libraries once had a distinct sound; they were reverberant chambers for quiet study. With changing work habits and expanding choices of media, however, there is no single sound of reading today (Mattern 286). This project proposes a meaningful diversity of luminous and acoustic zones. While the central circulation zone is open and slightly dim, activity-specific nodes are wrapped in a bright wooden flooring and a perforated bamboo ceiling to amplify natural light from the windows. The scale and pattern of the perforations in the bamboo ceiling vary depending on desired acoustic effects. In designated quiet areas, the space is live space so that patrons, hearing the rustle of papers or bits of a conversation, are mindful to keep noise down. These places have a higher reverberation time. In collaborative work areas, larger perforations in the ceiling maximum sound absorption. The utilization of varied ceiling and floor treatments, results in radically different micro-interior environments throughout the expansive interior.

EXPANDED PERFORMANCES
STUDENT: THOMAS WALES

This project proposes new connections between interior and exterior, library and city. By consolidating some printed volumes into collapsible storage, a large amount of floor space is opened for new program. This newly opened space houses technology for audio, film and other digital entertainment to build on Atlanta’s thriving cinema, music and gaming industries. The plaza is opened to the ground floor, and the existing public sequence now terminates in an expanded public terrace for interior and exterior events. A new theatre surrounding this terrace features translucent and reflective materials including curtains, screens and a remodeled skylight. The effect is an ephemeral curtain of light acting as a pulsing billboard to the city through the single mysterious opening in the existing facade.
Designing and Assessing Interior Environment for Individuals with Autism Spectrum Disorders: A Case Study of a Daycare Program Center

Nam-Kyu Park, Kijeong Jeon & Mina Bevan
University of Florida

ABSTRACT

Autism spectrum disorders (ASD) known as a neural development disorder are characterized by impaired social interaction and communication, and by restricted and repetitive behavior. Another common characteristic of individuals with ASD is the difference in perceptual sensory processing, such as sight, sound, touch, taste, and smell (NIMH, 2014). The number of people diagnosed with ASD has increased significantly in the last decade, and one in every 68 births has an ASD in the U.S (Autism Society, 2014). However, clearly defined medical treatments and therapeutic facilities are not keeping pace.

One promising development for people with ASD or developmental disabilities is Multi-Sensory Environment (MSE) created to soothe and stimulate senses using lighting, colors, sounds, music, scents, and textures (Stephenson, 2002). MSE offers a passive therapeutic intervention designed to give a sense of serenity and calmness rather than using pharmaceutical drugs to affect human behavior. The MSE concept is relatively new to North America although it has been widely adopted in Europe. On the premise that MSE passive therapy should be more widely available in the U.S., an interior designer, one of presenters of this project, designed the COVE (Community Opportunity for Vocational Experience) in Paradise, California as a daycare program center by providing a variety of sensory stations to serve for autistic clients. About seven months after its occupancy, we conducted a case study to investigate the impact of the sensory environment on
autistic behaviors. To establish better understanding of the study outcomes by enhancing the reliability and validity of the research, we used multiple data collection strategies including in-depth structured interviews with 14 caregivers, architectural documentation, sensory profile assessment of 15 autistic clients, and participatory observations of the Cove and ASD clients for two months. General data for environmental conditions including room temperature, relative humidity, sound, and illumination levels were also collected.

Overall, individual results varied due to the different sensory issues among the ASD clients and each space affects the clients differently in the Cove center. However, the findings of this study showed some reduction in stereotypical behaviors, less aggression, self-injury in the stimulus environment that featured visual, auditory, and textile equipment in the three primary spaces: main hall, computer room, and quiet room. The quiet room painted in pink/violet with bubble patterns on the walls and equipped with bubble tubes, vibro-music beanbag chairs, and sensory weighted blankets was the most favorite space of the clients with hypo-visual and hypo-tactile sensory issues. While the open space of the main hall was affecting the ASD clients in negative way, a linear arrangement of workstation in the computer room supported the autistic clients’ behaviors positively. Also, the textured walls in the main hall made the clients pay more attention to the movies. Based on the results of this study, design recommendations for both individuals with ASD and caregivers for autistic clients are discussed. In this presentation, we will also share our collaborative working experience as a designer and a researcher involving in designing and accessing the effectiveness of the COVE.

REFERENCES (APA)


Design process for special populations: Color and pattern considerations for children with autism spectrum disorder

Nicole Peterson
Iowa State University

ABSTRACT

Autism spectrum disorder (ASD) has become increasingly common among children across our nation. As our society begins to comprehend the importance of supporting these children, there has been a push for increasing awareness of ASD and treatment for these children (Myler, Fantacome & Merritt, 2003). One such community program strives to improve the quality of services to children with autism by providing programs, education, and training for children in their home, community and clinic. The program presently serves 33 children and their families, a dramatic increase from its inception just one year ago.

The Autism Center is housed in an existing building that was built as a residence for persons with disabilities over 30 years ago. Basic provisions, such as adjustments in furniture and added training equipment, had been installed prior to renovations. However, the interior of the building remained largely untouched. The coordinator of the project envisioned a lively space to accommodate children with autism from the ages of 2-18. Due to limited funding, budget constraints and usability of the existing layout, the plan remained intact with a focus on interior finishes and furniture selection. Because color and pattern have a major impact on how children with ASD adapt to a space, these factors were identified as having a major impact on the success of the final design. Studies were more widely available on the architecture and spatial layout of spaces built to support an atmosphere of learning for children affected by ASD rather than on interior color and pattern.
In the interior environment, warm muted pink tones have been shown to be a favorable color for people with learning disabilities (Paron-Wildes, 2005). However, research shows that boys are nearly three times more likely to be affected by the disorder (Williams & Vouchilas, 2013). To best serve the children that currently attend the center, a survey was developed to help inform color and pattern selections for the design of the interior spaces. Research questions included: • Do parents of children with ASD believe that their children respond best to a warm, cool, or neutral color palette in an interior setting? • Are there regional differences that can be identified in color and pattern preferences among children with ASD?

Methodology
This outreach project used an online survey for parents of children with ASD to assess color and pattern selection for the Autism Center. The survey was developed to address regional differences in color and pattern preference among children with ASD as well as individual differences within those served by the Autism Center. The parents were asked to set aside their preferences when answering the questions and respond with answers that best fit their child’s views.

Results
All survey respondents selected a cool color scheme containing shades of blue and green, over a warm or neutral color scheme. Bright red palettes, as well as pinks and purples were among the colors parents noticed their children did not respond well to in an interior space. Regarding pattern selections for carpet and fabrics, parents indicated to avoid small, busy patterns and dark colors. The color preferences selected vary from prior research indicating that there are individual differences that must be considered in the design for this special population. As autism research becomes more prevalent, a focus on regional dissimilarities among individuals affected by ASD must be more widely considered during the design process. The study indicates that color preferences for the sample differed greatly from previous research studies. Autism affects each child differently. An individual suffering from sensory issues may have an adverse reaction to ordinary sensory stimuli such as color or pattern, which may not be known to the designer without a customized survey or focus group during the design process.
REFERENCES (APA)


The Physiological Effects of Window Decals on Pediatric Patients

Michelle Pinson, Kristi Gaines, Debajyoti Pati, Malinda Colwell, Nicole Adams & Lesley Motheral
Texas Tech University

ABSTRACT

Because the built environment has been shown to impact its' users, both positively and negatively, a greater emphasis has been placed on understanding the consequences relating to the design choices for the built environment (Dijkstra, Pieterse, & Pruyn, 2006; Ulrich & Zimring, 2004) When hospitals are well designed, it can have a positive impact on patient outcome and has the potential to promote healing (Varni et al, 2004). Research relating to pediatric patients has shown that the built environment of the hospital can directly impact healing processes by either preventing or facilitating stress. When a pediatric patient perceives the hospital environment negatively, he or she may experience a number of negative physiological and psychological effects. Alternatively, when a patient perceives the hospital environment as supportive, the potential for healing is heightened.

This study built on Ulrich’s Theory of Supportive Design (1991), which focuses on the relationship between stress and ways that the built environment can influence general wellness through access to positive distractions and their relationship to stress reduction. Research has shown that views of nature from the patient room and access to positive distractions have been linked to a number of positive health-related impacts, including lowered blood pressures and heart rate. Hospitals, however, cannot guarantee that every patient room will come equipped with a window view filled with nature. The lack of view may be due to geographic location, the architecture of the building, etc. With the understanding that nature
filled views have been linked to a reduction in stress, oversized window decals were designed based on preferences for art of pediatric patients. The decals featured two scenes: an aquatic scene and a tree scene. The objective of this study was to understand the impact of the view from the window on pediatric patients, and whether the installation of the window decals affected the individuals within a pediatric patient room during their stay at the hospital in a physiological manner. In addition, the researcher sought to determine if developmental stages of the patient was correlated to the physiological outcomes. The medical data of individuals (n=90) who stayed in the rooms with the window decals was compared with medical data of individuals who stayed in rooms without the decals.

Findings supported the idea that patient stress is heightened at the time of admission. Patients in the rooms with decals were found to have slight improvements in blood pressure, systolic heart rate and diastolic blood pressure in comparison to patients in control rooms. Overall, there were not any significant physiological differences between patients in regards to the subject matter of the decals. Finally, age and cognitive understanding appeared to play a small role in health-related outcomes. This study should increase understanding in the design of pediatric hospitals and ways that designers can provide nature-filled window views when they do not naturally occur. In turn, findings may be used to expand future research on ways that windows can be enhanced in alternative settings (i.e. classrooms, offices, etc.). The value in impacting the physiological processes in a positive manner holds tremendous value for future patients, designers, and healthcare administrators alike.

REFERENCES (APA)


The Definition of Interior Design: Is it Time for a Change?

Melissa Santana
Northern Arizona University

ABSTRACT

The definition of the interior design profession can vary from person to person and from one field to another. Merriam-Webster, the Bureau of Labor Statistic, and the National Council for Interior Design Qualification (NCIDQ) define it differently. Some categorize it as an art or craft, others a trade, and some as a profession. With such differing opinions, as well as different legislation, it is understandable why the public might be confused about the work conducted by a designer. The definition that is commonly accepted and promoted by the profession is that of NCIDQ where they state a professional design practitioner is someone who is “qualified by means of education, experience and examination, to protect and enhance the health, life safety and welfare of the public”.

However, the underlying question of this presentation is whether or not that definition fully encompasses the practice of interior design, relates to common industry terms, and is understandable to the public. Although there is no denying that health, life safety and welfare are important to interior designers, additional terminology would help clarify the tasks conducted by a designer (Moody & Petty, 2014). Anderson, Honey, and Dudek (2007) explored the ideas of the social compact for the interior design profession. They state that the primary social value of the interior design profession is to design physiological and sociological supportive interiors that enhance quality of life. Similarly, Berman (2009) asserts that designers have an essential social responsibility because design is at the core of the world’s largest challenges and solutions. Many organizations like ASID,
IIDA, and NCIDQ support the enhancement of quality of life and believe, in part, that it can be achieved through environmental responsibility. While the profession of interior design continues to grow more emphasis is placed on the responsibility designers have in providing spaces that create a positive impact on people, the environment, and the economy (Ford, Bateman, Chandler, & Duncan, 2014), which in accordance to the Brundtland Commission, are the three pillars of sustainable development. In a study conducted by Othman (2009) he demonstrated how numerous firms are adapting a Corporate Social Responsibility (CSR) model for their business, which includes social, economic, and environmental sustainability/responsibility, in order to achieve sustainable development. Since the Brundtland Commission has coined the term, making it more understandable internationally and if more design firms are following this model, then it makes sense to investigate whether or not the interior design profession truly follows suit.

This presentation proposes that the phrase “through sustainable development methods” should be added to the end of the NCIDQ definition, thus encompassing the social, economic and environmental responsibilities and methods associated with the practice of design and consequently denoting the current cultural climate of the industry. An extensive review of the literature was conducted to bring context to each facet of sustainability (social, environmental, and economic) within the framework of interior design. Once redefined definitions were achieved, a methodology of cross-referring those definitions with their relationship to the design profession demonstrated that the majority of tasks conducted by designers relate to the three elements of sustainability, therefore should be included in the definition of the profession.

REFERENCES (APA)


Design for Sight: Typologies inhibiting low vision access to interior spaces.

Erin Schambureck
Texas Tech University

ABSTRACT

Introduction
To determine how to improve perception of the interior environment for low vision users, it is important to understand the design factors that limit accessibility. By defining the primary design problems in the low vision user’s environment, designers will be better equipped to avoid these negative typologies and counteract their effects in existing spaces.

Background
6.9% of people over age 65 have a vision disability, roughly equating to 2.5 million people over 65 with low vision (United States Census 2010). Census data also shows that by 2030 the over 65 population will outnumber the under 17 age group. As this group ages, yet strives to maintain an active lifestyle, universal design and wayfinding practices may need to expand their scope to accommodate these users in work spaces and other public settings. Universal design resources have identified low vision design solutions for residential spaces but do not call out the underlying problems that led to those solutions or how they could be adapted to commercial building types (IES, 2007). Surprisingly, the ADA Accessibility Guidelines only minimally address low vision design needs. Wayfinding is an important part of accessibility but not typically addressed by the ADAAG or universal design. It is described as a cognitive mapping experience where we assimilate information from our senses and identify paths, landmarks, zones and edges (Passini, 1992). While wayfinding addresses the concerns of a fully-sighted
public, little consideration is made for the perceptual limitations of the visually impaired trying to create these cognitive maps. This research was developed to identify the underlying design problems for the visually impaired so that the findings could be applied to a variety of spaces to improve wayfinding and accessibility for all.

Methodology
First, personal accounts were collected from visually impaired users describing the difficulties they face navigating public spaces. Then, a review of the literature identified what low vision design recommendations are currently available. This research was analyzed using a coding system to identify the primary design factors impacting visual perception and the individual typologies in those categories. A space evaluation method was developed to look for these primary factors in an existing eye services clinic to verify the findings of this study. This evaluation utilized photographic, luminance mapping methods and coding analysis of user statements.

Results
Fourteen individual design typologies were identified by the research as impacting how a visually impaired user perceives interior space. These fourteen design “problems” were able to be categorized into four groups: luminance contrast, value contrast, object placement, and luminance placement. Typologies in the luminance contrast group relate to the types of glare created by a bright source or task relative to its background. Value contrast was found to be most pervasive, encompassing six typologies related to the light reflectance value of interior materials. The object and luminance placement categories highlight problems related to unpredictable placement of furnishings, signage, and fixtures. It is also likely that there are more typologies than were defined here, however there was insufficient evidence to formally identify those categories.

Conclusion
The four primary factors identified in this study, and their typologies, define the major components of the interior environment that can significantly impact accessibility for the visually impaired user. By providing a better understanding of
these typologies, this research may improve a designer’s ability to facilitate access to interior spaces for the growing number of low vision users.

REFERENCES (Chicago)

IES. 2007. ANSI/IES RP-28-07 Lighting and the Visual Environment for Senior Living. IES.


Typologies of Low Vision Design
Erin Schambureck, NCIDQ, LEED AP

Description:
Visual and tactile changes can signal the user to be aware of a change in the environment they are trying to navigate. Shadows denote steps, texture can signal a ramp, color and lighting changes might suggest depth. Use material color and texture carefully to signal changes in the environment such as at ramps, handrails, stairs, signage and controls.

Lack of detectable warning makes a user work harder to find the visual cues they need to move around safely. Spaces with low light or monochromatic colors make it harder to find these cues. Without warnings stairs, ramps, rugs, furniture, and free-standing signs become invisible hazards.

Analysis:
- Handrails with low contrast from walls are difficult to see.
- Patterned materials on stairs can hide edges and reduce contrast cues.

Solutions:
- Improve edge detection by increasing contrast. Stair edge should be 2" wide to make each step highly visible.
- Increase visibility by providing even, ambient lighting with good color rendering to distinguish colors more easily.
- Enhance Wayfinding by varying finishes between floors.
- Prevent Injury by preventing access to spaces under stairs below 2 meters.
Description:

How do you read a sign you can’t find? Many wayfinding signs, maps, directories, and room signs are placed where people with vision problems can’t get close enough to see. A very small percentage of the visually impaired can read braille so signs need to have enough contrast and raised lettering to accommodate a variety of vision needs.

Overhead wayfinding is too far away for the visually impaired to see or read. There is no way to get close to it! Specular reflections can create veiling luminance, reducing contrast ratios between letters and backgrounds. Small font size and low contrast colors further inhibit legibility. Poor and fluctuating lighting conditions can place signage in areas without enough light.

Analysis:

This wayfinding is too low contrast and is not repeated at eye level.

This screen extends too far into the path of travel.

Solutions:

White letters on dark backgrounds reduces veiling luminance and increases legibility. Sans serif fonts are easiest to read.

Repeat wayfinding where a user can get close to read it.

Building maps and signage should be close to the entry.

Illuminate signs and graphics at all hours.
**Checkerboard**

**Description:**

*Shadows* from window mullions change throughout the day causing unpredictable patterns. Shadows are a visual cue for those with limited eyesight. They are generally predictable and suggest change in elevation or some other obstacle is nearby. When strong shadows occur in circulation areas, navigation can be precarious and uncomfortable.

*Strong shadows* cast on flooring and in circulation areas can be confusing. Regular shadows, such as those cast by window mullions can mimic steps and be treacherous in unfamiliar spaces. Shadows from exterior windows are often unpredictable and change as the sun moves throughout the day and year.

**Analysis:**

Complicated patterns and strong sunlight on textured floors make this path visually confusing.

**Solutions:**

*Increase ambient light* levels to reduce luminance contrast.

Use *multi-directional* light to balance shadows and control daylight with light shelves and shades.

*Good shadows* can help identify changes in elevation and other obstacles. Illuminance patterns should correspond with the architecture. Avoid random patterns!
Description:
A large area source like a window makes it difficult to distinguish shaded objects in front of it like furniture or people. The human eye has trouble adjusting to excessive luminance contrast. If the ambient light level is increased or the large source is shielded the luminance contrast will be reduced. Outdoors views are important for occupant well-being and wayfinding, but the variability of exterior light and the extreme contrast between outdoor light and shaded interiors is often not well considered or designed. Not enough light on task surfaces adjacent to the area source further reduces visibility.

Analysis:
Our eye adapts to the brightest source in the visual field. Making the darker surroundings invisible to someone walking here.

Solutions:
Reduce luminance contrast by increasing ambient light levels and shading the source through architectural or applied shading features. Design transition spaces so the eyes have time to adjust from dim interiors to brightly lit lobbies and exteriors. Arrange Seating so occupants can choose their view to suit their vision needs.
Comparison of Employees’ Satisfaction with Indoor Environmental Quality: Post-Occupancy Evaluation 2011 and 2014

Maureen Soules, Denise Guerin & Theresa Bauer
University of Minnesota

ABSTRACT
Overview
Connections between sustainable design criteria used in a Midwestern university classroom/office building and employees’ satisfaction with their work environment were examined. The building used a set of state-mandated sustainable design guidelines and met LEED New Construction Version 2.2 Gold Certification. It was completed for occupancy Fall 2010. The Sustainable Post-Occupancy Evaluation Survey (SPOES) was developed to assess human outcomes in classroom and workplace settings in compliance with the project tracking requirements. This presentation compares occupants’ responses at one year (2011) and four years (2014) post-occupancy.

Method
SPOES is a self-administered, Internet-based questionnaire submitted to and completed by occupants/employees. It has been tested for validity and reliability in studies involving similar facilities and employees. Employees rate their level of satisfaction on a Likert-type scale from 1 (very dissatisfied) to 7 (very satisfied) with indoor environmental quality (IEQ) of the facility (site, building, and interior) and their primary workspaces. They also rate the influence of their physical environment on their perception of their work performance and health on a scale from 1 (hinders) to 7 (enhances). This presentation provides a statistical comparison of employees’ satisfaction with their primary workspaces and IEQ
Score between the two occupancy periods. Factor analysis was used to calculate the IEQ Score for primary workspaces.

Sample Description
Built in 2010, the five-story, 118,000 square-feet building houses instructional classrooms and administrative offices that service the university’s students, faculty, and staff. There was a response rate of 75% (N=79) in 2011 and 53% (N=51) in 2014.

Findings and discussion
Employees responded to questions concerning their satisfaction with the facility (site, building, and interior); their primary workspaces; and perceptions of their work performance and health in relation to the facility. Table 1 (see Appendix A) shows a summary comparison and interpretation of their responses. Employees rated their satisfaction with the physical environment for 14 IEQ criteria including: acoustic conditions, appearance, cleaning and maintenance, daylighting conditions, electric light conditions, function, furnishings, indoor air quality, personal adjustability conditions, privacy, technology, thermal conditions, vibration and movement, and view conditions, related to their primary workspace. Table 2 shows a summary comparison and interpretation of their responses. Table 3 shows the F-test for variance of the IEQ scores between 2011 and 2014 and the variances are not equal. Using these data, a t-test on the means was performed and is shown in Table 4. The paired t-test for two-sample means indicates a significant decrease in overall satisfaction with a P score less than 0.05. An IEQ satisfaction score was determined by using factor analysis to develop weighted factors for all criteria. A factor analysis provides a single IEQ score that combines and weights all the criteria; it also calculates the relative importance of each criteria to the whole IEQ score. In 2011, the IEQ score was 5.07 and in 2014 the score was 5.00, again indicating a decrease in satisfaction.

Conclusion
The satisfaction scores between the two studies are mixed and more than half the criteria are moving in a negative direction, however, improvement may be possible. Attention should be given to criteria where scores declined from 2011 to 2014. This study investigated employees’ satisfaction with the facility and primary workspaces. The results can be used as a diagnostic tool to aid in improving IEQ.
conditions for employees and to set the benchmarks from which improvement can be measured in the future.

REFERENCES (APA)
Appendix A

Table 1. Comparison of employees’ satisfaction, work performance, and health related to the facility, 2011 and 2014

<table>
<thead>
<tr>
<th>Facility (Site, building, and interior)</th>
<th>Mean (1-7)</th>
<th>Standard Deviation</th>
<th>N</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction</td>
<td>5.24 (2011) 5.06 (2014)</td>
<td>1.17 (2011) 1.58 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>Satisfied</td>
</tr>
<tr>
<td>Overall health</td>
<td>5.15 (2011) 5.03 (2014)</td>
<td>1.22 (2011) 1.21 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>Enhances</td>
</tr>
</tbody>
</table>

Table 2. Employees’ satisfaction related to IEQ criteria

<table>
<thead>
<tr>
<th>Primary workspace</th>
<th>Mean (1-7)</th>
<th>Standard Deviation</th>
<th>N</th>
<th>Interpretation +/- from 2011 to 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor air quality</td>
<td>5.83 (2011) 5.08 (2014)</td>
<td>1.43 (2011) 1.08 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>Less Satisfied</td>
</tr>
<tr>
<td>Furnishings</td>
<td>5.67 (2011) 5.78 (2014)</td>
<td>1.16 (2011) 1.21 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>More Satisfied</td>
</tr>
<tr>
<td>Electric light conditions</td>
<td>5.52 (2011) 4.30 (2014)</td>
<td>1.30 (2011) 1.36 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>Less Satisfied</td>
</tr>
<tr>
<td>Vibration and movement</td>
<td>5.37 (2011) 5.35 (2014)</td>
<td>1.46 (2011) 1.87 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>Satisfied</td>
</tr>
<tr>
<td>Technology</td>
<td>5.27 (2011) 5.76 (2014)</td>
<td>1.43 (2011) 1.60 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>More Satisfied</td>
</tr>
<tr>
<td>Thermal conditions</td>
<td>4.53 (2011) 3.76 (2014)</td>
<td>1.65 (2011) 2.03 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>Less Satisfied</td>
</tr>
<tr>
<td>Personal adjustability</td>
<td>4.35 (2011) 2.94 (2014)</td>
<td>1.64 (2011) 1.69 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>Less Satisfied</td>
</tr>
<tr>
<td>Cleaning and maintenance</td>
<td>4.34 (2011) 4.89 (2014)</td>
<td>1.75 (2011) 2.00 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>More Satisfied</td>
</tr>
<tr>
<td>Privacy conditions</td>
<td>4.29 (2011) 4.27 (2014)</td>
<td>1.75 (2011) 1.67 (2014)</td>
<td>75% (79) 53% (51)</td>
<td>Neither S/D</td>
</tr>
</tbody>
</table>
### Table 3. F-Test: Two-Sample for Variances

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (1-7)</td>
<td>4.68</td>
<td>5.05</td>
</tr>
<tr>
<td>Variance</td>
<td>0.83</td>
<td>0.29</td>
</tr>
<tr>
<td>Observed Criterion</td>
<td>14.00</td>
<td>14.00</td>
</tr>
<tr>
<td>df</td>
<td>13.00</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>2.86</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;= t) one tail</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>F Critical one tail</td>
<td>2.58</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4. t-Test: Paired Two-Sample for Means

<table>
<thead>
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<th></th>
<th>2011</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (1-7)</td>
<td>5.05</td>
<td>4.68</td>
</tr>
<tr>
<td>Variance</td>
<td>0.29</td>
<td>0.83</td>
</tr>
<tr>
<td>Observed Criterion</td>
<td>14.00</td>
<td>14.00</td>
</tr>
<tr>
<td>Pearson’s Correlation</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>13.00</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;= t) one tail</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>t Critical one tail</td>
<td>1.77</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;= t) two tail</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>t Critical two tail</td>
<td>2.16</td>
<td></td>
</tr>
</tbody>
</table>
Influence of Building Design and Construction on Occupant Health

Suchismita Bhattacharjee
University of Oklahoma

ABSTRACT
Built environment has significant impact on occupants’ health. The design and construction of the buildings define the Indoor Environmental Quality (IEQ) to a great extent which influences occupant health. Poor IEQ leads to various health symptoms of the occupants such as inflammation of eyes and respiratory system, headaches and tiredness, inability to concentrate, nausea etc.

The goal of the study is to find association of building design and construction parameter such as carpet, wall covering, etc. with occupant health and how that relates to indoor environmental parameters. The researchers used data from the 1994–1998 US Environmental Protection Agency’s (EPA) Building Assessment and Survey Evaluation, a cross-sectional study of workers employed in 100 public office buildings across 25 states. The study used a self-administered questionnaire to assess health condition and prevalence of existing health conditions. The questionnaire also addressed the building condition parameters of the employees work environment. Multivariate logistic regression analyses were employed for the purpose of assessing the association between building design and construction parameters, health conditions and IEP. Of the 4326 participants, 66% were females and 60% were between 30 and 49 years.

The primary building parameters which were found to have significant impact on the different health conditions are carpet condition, type of wall paint or coverings, age of the furniture, water damage history of the building, operability of
windows, and location of windows. The building design and construction parameters were found to have direct correlation with some of the IEP which influenced the occupant health. This study will shed more light on the influence of building materials on occupant health. The collected data will act as performance feedback of materials and components of buildings to the designers and contractors and how it influences the quality of a building and its occupant’s health.

REFERENCES (Chicago)


Synosia Towards the Medici Effect: Synthetic Thinking Approach To Generating the Medici Effect in Interior Design Projects

Joori Suh
Iowa State University

ABSTRACT

What does creativity mean to interior design students in an age of visual overload? What would be useful ground for an interior design educator to set in motion the dynamic movement of the Medici effect to promote a sense of confidence in students as they generate creative ideas? How can interior design educators encourage students to get away from overwhelming images of so-called precedent study and jump into the pleasurable mental status of imaginative courage?

In this presentation, I initiate a dialogue about synosia, a synthetic thinking approach that triggers a variety of interaction points in creating the Medici effect, and present a course designed based on the idea of synosia as an example case. Many theorist and scholars argue that creativity is not a single flash moment but a connected network (Johansson, 2004; Johnson, 2010; Root-Bernstein, 2013). According to Steven Johnson (2010), a good idea is “a new network of neurons firing in sync with each other inside our brain. It is a new configuration that has never formed before.” Johansson (2004) introduced the idea of intersection among unfamiliar territories as the best chance to create the Medici effect of innovate new ideas. Root-Bernstein (2013) also claims the importance of synosia, the union of different forms of knowledge.

To experiment on the usefulness of the synthetic thinking approach in interior design education, an elective seminar + studio course called Interior Design in
Urban Settings was designed to provide students with multiple “points” for generating “intersections.” In order to set the initial points, various design-related topics and theories from different disciplines were introduced in the seminar. The introduced design-related topics and theories include some diverse perspectives unfamiliar to interior design students, mostly from cognitive psychology, architectural philosophy, urban design, and economics, for example, enmesh, motion parallax, phenomenal zones, ornament and pattern, optical illusion, imageability, affordances, place-centered design, sense of place, pattern language, museum archetypes, density dynamic, and semiotic diagramming. A field trip activity included identifying the points employed in real-world settings. To create intersections among these points, students were asked to choose one design project with unique problems out of four choices and apply more than two design topics and theories introduced in the course. During the design process, students were challenged to emerge from their comfort zone: No interior designer’s finished projects could be used as inspirational images, but for their in-depth analysis based on design theories; students were continually asked to sketch to show how theories can be combined to generate something unique to solve problems for their project.

Synosia, the synthetic thinking approach, encourages students to develop critical eyes in evaluating current design and fosters expanding their design thinking to break comfortable boundaries. In the informal survey at the end of the semester, students showed positive response to the synthetic thinking approach in helping them to be creative in generating design ideas to solve problems for their projects. In the presentation some of topics and design theories used as points for intersections as well as a few student projects will be introduced to initiate discussion among design educators.

REFERENCES (APA)


The Hexagon is a mathematically solid shape found in nature, primarily in honey bee hives. It is a very laborious task to make honey, taking over 20,000 bees to make one jar. The result of this labor is simply one of a kind and cannot be replicated - just like the handcrafted pieces made at DeLaneau.

Student work sample #1 (Thick wall + Patterning + Meandering Path)
The International Contemporary Furniture Fair houses over 500 exhibitors. The ICFF 2014 is located in the Jacob K. Javits Convention Center in New York City, New York. Javits is a large open exhibition space that has wayfinding issues. When many booths are stacked into the space, it is difficult to tell where you are in the monotonous street-like system of the exhibition halls.

**Current Issues:**
- Wayfinding and Navigation
- Large overall space
- Monotonous street system

**Programatic Priorities:**
- Client needs: 3200 exhibition booths, interior landmarks for navigation
- Appropriate materials for changing exhibits, Assembly and Disassembly

**Research:**
- Precedent Study 1
- Precedent Study 2

**Design Theory:**
- Phenomenology
- Enmesh

**Phenomenology** is a philosophical theory regarding the study of structures as experienced in the first person point of view. The central structure of an experience is its intentionality. It is being directed toward something, as it is an experience of or about some object. The use of intentional proposed materials, and their sensory properties, create a phenomenal experience that engages one with the space. Use of projected colored lighting will be used to create a phenomenal zone and to assist in wayfinding.

**Enmeshing** is the layering and merging of objects and architecture to create a complete experience. The use of light and shadow onto displays will enmesh to create a phenomenal zone.

**NUD Lighting**

NUD Lighting is a lighting company that is based on the foundation that good design lies in the details. The idea is to make beauty from plain objects, as inspired by Mies van der Rohe. The NUD collection takes a simple light bulb and makes it extraordinary through experimentation and exploration. The collection features an array of colored cords and different lamps with different shapes and materials. You can customize the products by mixing and matching the lamps with the cords and base.

**Schematic Design**

**Exterior Walls**

**Display Pedestals**

**Floor Pattern**

**Circulation Path**

**Floor Plan**

**Inspiration**

Patience in nature reveals organic and spontaneous motifs. Dry, cracked dirt shows the extreme need for human awareness of our environment and responsibilities and the toll our decisions may take on earth.

**Student work sample #2 (Phenomenal Zone + Enmesh + Meandering Path)**

The exhibition booth creates a phenomenal experience that engages one with the space. Use of projected colored lighting will be used to create a phenomenal zone and to assist in wayfinding.
An Investigation of Furniture Use by College Students in a University Library Quiet Zone

Shannin Williams, Sally Ann Swearingen, Mitzi Perritt, Ray Darville & Lynda Martin
Stephen F. Austin State University

ABSTRACT
University libraries should accommodate the study habits of contemporary users if maximum space usage is justified. Understanding user preferences is key to informing university furniture acquisitions. This quantitative study examined furniture usage by individuals in a university library quiet zone. Library administration requested guidance in future furniture purchases for the quiet zone and desired to measure the popularity of new lounge chairs with tablet arms. The study area contained 4 square tables, 10 rectangular tables, 2 round tables, 12 study carrels, 4 computer workstations for library computers, 20 lounge chairs with tablets attaches on the arms and 72 chairs to accommodate the tables and study carrels. Existing furniture used in the study included all tables and study carrels and 36 chairs with arms. New furniture included 36 chairs with arms and 20 lounge chairs with table-arms.

The researcher conducted observations through an unobtrusive, non-participant method to collect data on individuals using the furniture. A pilot test revealed the need to label the availability of electrical access below each study carrel. Researchers surveyed the quiet zone once a week for five weeks during the early afternoon peak usage time based on past library entry gate counts. Researchers recorded furniture placement, furniture occupancy, user possessions, and user activities/behaviors. The data collection form consisted of a coded furniture floor plan on which occupied furniture was highlighted. Chairs were outfitted with
activities/behaviors. The data collection form consisted of a coded furniture floor plan on which occupied furniture was highlighted. Chairs were outfitted with hidden labeling to allow the tracking of furniture moved by users. Researchers recorded measures and field notes on the individuals’ location within the quiet zone, personal possessions, and user activities. Variables collected included whether or not individuals had books or other printed material, laptop computers, or food and drinks with them as well as the activities they performed such as reading, writing, using cell phones, talking, or sleeping.

Data collection yielded a total of 41 users, 15 males and 26 females, who participated in the five observation periods. With 92 chairs involved in the floor plan and five observation periods, researchers documented 460 total possible observations. Most individuals (18%) occupied study carrels out of 60 total possible observations. Of this 18%, females (15%) occupied study carrels more than males (3%). Lounge seating yielded a total occupancy rate of (14%) out of 100 total possible observations. Females (8%) occupied lounge chairs more than males (6%). Tables and chairs had a total occupancy rate of (5%) out of 300 total possible observations. Females (3%) occupied tables and chairs more than males (2%).

According to the total possible observations more individuals preferred study carrels with chairs to lounge chairs and tables with chairs. Secondly, lounge seating was used more than tables with chairs. As for possessions, most users brought books to the quiet zone and engaged frequently in both reading and writing. Females used the library quiet zone area more than males.

This data informs future furniture purchases should include different types of furniture—lounge furniture, collaborative furniture, comfortable seating, and furniture for private study—are recommended in study areas to accommodate the various needs of all individuals and to maintain the library as a vital place to study.

REFERENCES (APA)


Appendix 1

Floor Plan
Appendix 2

Furniture Types by Furniture Occupancy and Gender

<table>
<thead>
<tr>
<th>Furniture Types and Gender</th>
<th>Total Individuals Observed (5 observations)</th>
<th>Total Possible Observations (5 observations x # of chairs at furniture type)</th>
<th>Total % Occupancy Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tables with Chairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>7 (17.0%)</td>
<td></td>
<td>2.33%</td>
</tr>
<tr>
<td>Females</td>
<td>9 (21.9%)</td>
<td></td>
<td>3.00%</td>
</tr>
<tr>
<td>Total</td>
<td>16 (39.0%)</td>
<td>300</td>
<td>5.33%</td>
</tr>
<tr>
<td>Study Carrels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with Chairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>2 (4.8%)</td>
<td></td>
<td>3.33%</td>
</tr>
<tr>
<td>Females</td>
<td>9 (21.9%)</td>
<td></td>
<td>15.00%</td>
</tr>
<tr>
<td>Total</td>
<td>11 (26.8%)</td>
<td>60</td>
<td>18.33%</td>
</tr>
<tr>
<td>Lounge Seating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with Tablet Arm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>6 (14.6%)</td>
<td></td>
<td>6.00%</td>
</tr>
<tr>
<td>Females</td>
<td>8 (19.5%)</td>
<td></td>
<td>8.00%</td>
</tr>
<tr>
<td>Total</td>
<td>14 (34.1%)</td>
<td>100</td>
<td>14.00%</td>
</tr>
<tr>
<td>Total</td>
<td>41 (100%)</td>
<td>460</td>
<td>8.91%</td>
</tr>
</tbody>
</table>

Note. Total possible observations (460) equals the total amount of observations (5) multiplied by total amount of chairs located at each type of furniture including 60 chairs located at tables (300), 12 chairs located at study carrels (60), and 20 lounge seats with tablet arm chairs (100).
Appendix 3

Furniture Selections

Existing furniture

Existing round table and chairs.

Existing rectangle table and chairs.

New furniture

Keoki series chair by Integra Seating.

Rendezvous series chair by Integra seating.
Transforming the Visitor Center for Tourism in the Smartphone Era: Case study using a persona-based user-experience design approach

So-Yeon Yoon & Nam Choon Park
Cornell University

ABSTRACT

The widespread use of mobile devices in addition to the boom of Internet review sites is rapidly changing the ways people use today’s service environments. Specifically, traditional travel agencies and visitor centers are facing critical challenges as increasing numbers of travelers plan their trips and get tourist information online. Smartphones have accelerated the trend, with instant information available on the go, thus causing a rapid drop in the number of tourists at physical visitor centers (Lyu & Lee, 2014). By incorporating a persona-based user-experience design technique (Idoughi et al., 2012) into the space design process, this case study explores an innovative way of redesigning a visitor center, focusing on the changing nature of the user experience in information-service spaces (Hosono et al., 2009).

A 10-week design project in an upper-level interior design studio was initiated to help the local visitor center at Stewart Park in Ithaca-Tompkins County, New York. Although the client’s initial request was to redesign the visitor center space, the team started from user research and context analysis by developing personas, because the origin of challenges must be considered when tackling a design problem. Personas have been used as an extension of market segmentation and user profiling in marketing and consumer behavior research. Alan Cooper (1999) first introduced personas as a tool to model the user experience; the concept then grew to become a powerful interactive design technique with considerable
potential for user-experience design and service-product development. Cooper defined personas as fictitious characters, based on composite archetypes and encapsulating behavioral data gathered from ethnography and empirical analysis of actual users. Instead of considering only “average” users, personas take into account specific classes of users with special and often hidden needs.

Fifteen students enrolled in the studio course were grouped into four design teams. Each team developed four to five personas to extract relevant behavioral attributes, aptitudes, and preferences of users planning and making trips to Ithaca. Personas were captured to represent visitor categories based on the visitor profile data provided by the client (i.e., Internet survey responses from 102 participants who have visited or plan to visit Ithaca in the near future). Follow-up interviews were conducted to understand hidden needs that did not emerge from the data. With the personas, we developed a framework for incorporating personas throughout the service-space design with the following six phases: 1) potential functions and attractions the physical space can offer, 2) programming, 3) design concepts by space, 4) space planning, layouts, and furniture/fixture selections, 5) design development, and 6) synergistic strategy with online and on-site services.

The process and outcome of the persona-based user experience design approach effectively portray user-experience information to tackle the multifaceted problem from a systems view. This case study will contribute to providing important knowledge bases and design frameworks for interior designers and design decision makers of diverse service spaces with ever-changing user experiences, needs, and expectations not only to survive but also to rebrand their identities by smart design toward successful transformation into the eras of smartphones and magical computing in the future.

REFERENCES (APA)


Appendix

Project outline

This upper level interior design studio focuses on designing innovative service space environments in the 21st century. This course intends to engage students in interior design as well as user experience design processes of socially relevant innovation. In fall 2014, two projects throughout the semester will immerse students into different types of user experience design as design-problem solving. It is organized around the design process broken into four phases: research/ideation, prototyping, design evaluation, and design documentation/presentation. Effective use of technology will be emphasized throughout the design process. First Design challenge (first 10 weeks) is to redesign the Ithaca visitor’s bureau for the smartphone era. Working as members of a design team, your challenge is 1) to critically analyze and propose a new direction for the website (and mobile app) using UX design strategies, 2) to redesign an innovative physical environment to meet the changing needs of visitors, and 3) to propose a strategy to link the online interfaces to the visitors center for synergistic effects. The official website http://www.visitithaca.com/ will be reviewed on user experience design principles and user research via interview and survey will be conducted to understand users’ needs for both online and offline services. The class will visit Ithaca visitors’ center and meet the director and staff to better understand the client’s challenges, business, operational and functional requirements.
Framework

Student presentation boards – Mid-term presentation
User research and context analysis + general design concept

Visit Ithaca.com

Roger the Retired Traveler

“How can I stay healthy on my trip?”

Maggie the Move-In Mom

“What activities will my whole family enjoy?”

Bridget the Bestie

“Where can I have the most fun for the least amount of money?”

Vicky with a Visor

“What activities will my mom from Japan enjoy?”

Werner the Wanderer

“How can I experience Ithaca like a local?”

THE NEED

“How does this website provide me with the tools to efficiently fulfill my needs while showing me what Ithaca has to offer?”

FIRST IMPRESSIONS

LIKES
1. Rich with information
2. Easily accessible physical locations
3. Easy to find search bar
4. Interactive pictures
5. Contact us window in future features

“Looks better than other town’s websites.”

DISLIKES
1. Overwhelming amount of choices
2. Text heavy and too small
3. Difficult to navigate
4. No obvious mention of Visitors Center
5. Many good ideas
Contact Us, Trip Planner, but they need to be more obvious

THE GOALS

To Make the Website:
1. Welcoming
2. Clear
3. Unique
4. Active

AN INVITATION
An effective website must make an impactful first impression while having an ease of use. By capturing the essence of an invitation the website will evoke a sense of welcoming and inclusivity. Invitations are given for special occasions and are a reason to travel. They are also highly personalized while presenting information clearly. All of these aspects of an invitation will ultimately make using the website a unique Ithaca experience rather than a means to plan.
Cultural Expression in Design: A Comparative Study of African-American and Nigerian Designers

Abimbola Asojo
University of Minnesota

ABSTRACT

In 2010, the United States Census Bureau estimated that ethnic minorities make up 36.3% of US population. The United States is a multicultural society, with more than one in three Americans belonging to a minority group. A report titled Building Community: A New Future for Architecture and Practice sponsored by the Carnegie Foundation for the Advancement of Teaching, and written by Boyer and Mitgang (1996) notes “the need for inclusiveness is more urgent than ever we were told by practitioners and educators that much of the future of the profession lies beyond U.S. borders, in developing nations and in non-Western cultures” (p. 96). Although the implications of the increasing cultural diversity of our society have been recognized in the design field, there are still significant challenges in terms of design scholarship on minority and non-Western cultures.

The accreditation boards for interior design and architectural education both recognize the importance of integrating culture, diversity and global issues in design education. For example, the 2011 Council for Interior Design Accreditation (CIDA) professional standard 2 requires “entry-level interior designers have a global view and weigh design decisions within the parameters of ecological, socio-economic, and cultural contexts” (p. 12). Similarly, the 2009 National Architectural Accrediting Board (NAAB) standard 2.A.10 recommends students understand “the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity on the societal roles and responsibilities of architects” (p. 22). All the
aforementioned authors and accreditation requirements suggest the increasing need to engage design students in the diverse and global design discourse. In order to effectively design in today’s world, design students have to understand the cultural, social, economic, and political circumstances of many cultures. This study explored how African-American and Africans designers, represented this time by Nigerians deploy cultural expressions in their designs.

The study employed qualitative research methods in obtaining information from fifty black architects and interior designers in the US and Nigeria to see how they integrate black cultural expressions in their designs. The questionnaire was based on a cultural framework which incorporates the following five constructs: social dynamics, juxtaposition of traditional and contemporary culture, elements and principles of design, visual and performance arts, and sustainability (-----, 2011). Our findings show that African-American and Nigerian designers derive inspiration and concepts from indigenous African cultures. Our presentation will illustrate and demonstrate how designers incorporate cultural expressions in their work. Our goal is to contribute to the body of knowledge on how cultural expressions inform design.

REFERENCES (APA)


Agents of Change: Exploring Diversity and Creating Meaningful Learning Experiences Through A Culturally Immersive Studio Project

Angela Boersma
South Dakota State University

ABSTRACT

Problem
In an increasingly globally minded and diverse market, students of design must become experts at addressing issues of diversity, whether cultural, socio-economic, age, gender, language, physical or intellectual capabilities, etc. The Council for Interior Design Accreditation (CIDA) also requires that accredited programs provide evidence of student learning in this regard (CIDA, 2014). In order to address the complexities of these issues in a way that was immediately relevant to their context and everyday interactions, a comprehensive studio project including multiple reservation communities was introduced at the senior level. Students were asked to engage in extensive research, reflection, narrative exploration, and an immersive week of study on the reservation that culminated in a design project focused on a public memorial and museum building needing to address an incredibly diverse global audience.

Strategies
L. Dee Fink’s Taxonomy of Significant Learning (Fink, 2003) was employed to structure the course learning activities and later study the effects of different components of the students’ experiences on their learning. Surveys and student reflections were analyzed using qualitative content analysis to discover what portions of the course had the most significant impact on personal values and learning. The course was designed and carried out as a comprehensive studio in
five distinct parts/phases: Predeparture Research, Immersive Experiential Research, Schematic Design Process, Design Development Process (including systems integration and detailing), Final construction documents and specifications. At each phase of the process, students were asked to reflect on the learning experiences and note their personal thoughts and feelings regarding their observations and analyses. These written student reflections were further analyzed to investigate the ways that students process and internalize issues of diversity (culture, gender, age, physical capabilities, etc.) and prioritize those elements in the design process.

Outcomes
Qualitative analysis of student surveys revealed that the most meaningful learning experiences for students were most often in one of three categories: First-hand Experience, Speaker+Tour, or Self-directed reflection. Of these, those experiences that connected to a speaker’s personal story or held some spiritual significance accounted for the “most meaningful part of the experience” for nearly 2/3 of students’ surveyed. Based on Fink’s Taxonomy of Significant Learning, the majority of students connected with and learned from experiences that directly related to the Human Dimension or Caring categories of learning. Furthermore, more than half of students involved in the immersive experiences on the reservation commented on wishing they could “do more to help” while there, and one cohort presented a proposal to university administration to allow them an additional week on the reservation to give back and serve in some way.

Analysis of the past three years of student projects showed that the dimension of diversity that most students have the least difficulty in addressing issues was that of wheelchair accessibility and physical barriers. The greatest challenge for most was cross-cultural communication and the use of symbolism or language. Students identified the need for greater exposure to culturally diverse populations throughout the program curriculum and “more real-life projects” to help address insecurities with cross-cultural communication and fear of offense. The final outcomes revealed which aspects of diversity students most connected with, internalize, and prioritize in their final design projects, as well as the means by which they learned to do so. Results from this study will inform the way issues of diversity are presented in order to craft opportunities for meaningful exploration.
of the dimensions of diversity for young design professionals practicing in a global context.

REFERENCES (APA)


FIGURE 1:
L. Dee Fink’s Taxonomy of Significant Learning

FIGURE 2:
Retrieved from: http://www.univie.ac.at/diversity/dimensions.html

FIGURE 3:
Studio Phases
BACKGROUND
This project addresses the challenging and complex issues of understanding and representing culture, remembrance, and places of historic significance. We will examine the history and tragedies leading up to the Wounded Knee Massacre of 1890, observe its impacts on people, place, culture, etc. over time, and create a design for a memorial and cultural center at the site of this tragedy in human history. In analyzing spatial typologies and precedents for this project, students should research such architectural works as war memorials, holocaust museums (and museums, in general), cultural centers, and community engagement facilities. This will be a complex program, for a complex place and a complex and diverse audience. Be cautious of over-simplifying. This project should challenge not only how you design, but how you think, feel, and respond to space. It should challenge stereotypes, your thoughts about diversity, and hopefully the ways you believe design can impact the world.

PROJECT DESCRIPTION:
Using the site at Wounded Knee, students will be responsible for selecting one of three architectural concepts provided by a local architect and developing the design program, spatial needs analysis, and design schematics for a museum and memorial. This project is highly conceptual, intensely political, and remains incredibly controversial for many people. Your challenge as designers goes beyond merely making space – it is about using space to tell a story. In order to do so, you must decide what story to tell, from whose point of view, and tell it in a way that is meaningful and universally understandable to a widely varied audience. Your mission is to use space to help with resolution, not as a symbol of division. Furthermore, in the design of museum/memorial spaces, it is imperative that your rendition of the story is accurate, thoroughly researched, and impeccably documented. This is Part A of the project: Research & Design Programming.
REMEMBRANCE

PROCESS:
1. Students will research Lakota culture, symbolism, the Wounded Knee Massacre, the design
typology of museums and memorials, Lakota arts/crafts, etc. as a means of preparing for a 4-
day immersive study tour to Pine Ridge, SD, and writing an extensive research and
programming document highlighting relevant issues in designing for diverse populations.
2. Students will participate in this travel study trip to Pine Ridge the first week after Labor Day.
Students should plan to take extensive notes, ask questions, sketch, photograph, (perhaps
audio and/or video, as well) as they learn from the site, several key speakers/teachers, tribal
elders, and through immersive experiences of Native culture (i.e. participating in various
ceremonies and customs)
3. Students will complete Exercise 1: Photo Essay (see course management website) to record
their thoughts, observations, and research regarding their experiences on the reservation.
4. Upon returning to campus, students will finalize programming requirements as a class, select
one of three architectural schematics, and embark on a 10-week intensive design project to
develop the interiors in keeping with the overall architectural concept. Further, the completion
of Exercise 2: Diversity & Design Process Essay will require students to articulate the way that
their approach to designing for diverse populations will influence their decision-making, design
priorities, and overall process.
5. Exercises 3 & 4 will require students to develop systems integration and project detailing in
keeping with the ideas for their concept and priorities to serve diverse populations.

LEARNING OBJECTIVES
Students will:
- Learn to understand diverse cultural points of view through:
  - immersive cultural experiences and/or ceremonies
  - confronting bias and contrasting authentic experiences with the stereotypical
    assumptions
- Learn to weigh and assess the validity of a variety of points of view related to a highly
  controversial topic/issue
- Learn to analyze a design problem through the lens of another culture
- Learn about symbolic meaning for people of diverse religious beliefs and cultural backgrounds
- Gather and analyze diverse precedents to inform the synthesis of their design
- Synthesize a design sensitive to the complexities of the context, client/audience, concept, and
  the intricate cultural symbolism, ritual, language and history of the Lakota people in the Black
  Hills

PROJECT REQUIREMENTS
The final deliverables for this project will include:
A written research/programming proposal (20-30 pages)
Presentation
- Concept
- Concept development
- Process Drawings and Diagrams; Parti
- Site plan
- Presentation floor plans
- Interior illustrations as needed
• Sections as needed
• Elevations as needed
• Finish sample board
• Furnishings sample board

Technical drawings (11x17 Draft for redlines, 11x17 final copy bound into Project Book, 24x36 copy final drawings)
  • To be discussed and developed in separate handout

Trip booklet/Photo essay with forward and afterward.

Programming document/final project book:
(Document shall be professional bound. The contents of the document shall be organized as follows):
• Cover page
• Index
• Problem statement
• Concept statement
• Solution statement
• Reflection statement
• Research (see ID programming document standards)
• Process: documentation of ANNOTATED sketches, models, etc.

Students will have final boards, sketches, process, FF&E selections, and models for use in a formal final review. Interim reviews, pin-ups, and desk critiques will be determined by the instructor and outlined in the semester schedule

OUTCOMES
By the end of this project, students will demonstrate their abilities to:
• Immerse themselves in a cultural design exercise and approach the project from an objective perspective.
• Demonstrate design thinking to solve issues related to the design of space for diverse user groups
• Incorporate concept from the very large scale to the very small, detail scale
• Integrate building systems into the details of a project.
• Think holistically about a complex project and design within the parameters of a set of schematics provided by a regional architectural firm.

ASSESSMENT
Students will be evaluated on their demonstration of proficiency in several broad categories:
• Thesis statement
• Research Writing
• Attitude & Response to Critique
• Concept Development
• Design Process
• Global Context (Cultural Understanding/Personal Reflection)
• Design Communication
• Professionalism, preparedness for class, critiques, etc.
FINAL REVIEW:
Thursday, October 30, 2014 from 1-5pm

PROJECT CONSTRUCTION DOCUMENTATION DUE:
Thursday, November 20 at 5pm

RECOMMENDED RESOURCES:
Klein, Christina. "Everything if Interest in the Late Pine Ridge War are Held by Us for Sale: Popular Culture and Wounded Knee." Western Historical Quarterly (Spring 1994): 45-68.
A cross-cultural study of luxury concept and luxury color in retail interior design

Ji Young Cho & Eun-Jung Lee
Kent State University

ABSTRACT
Color is believed to relate to certain responses (Elliot & Maier, 2007). People tend to think that red or yellow are stimulating and arousing, whereas blue or green are calming. Many researchers have attempted to identify the relationship between color and an associated feeling (e.g., Elliot & Maier, 2007; Kobayashi, 1990). Findings from such research can bring considerable implications to marketing and branding because consumers’ emotional responses towards color of the retail environment can impact their perceptions on the brand itself (van Rompay, Tanja-Dijkstra, Verhoeven & van Es, 2012).

Luxury brand is one of the growing industries and prominent topics in brand research, and particularly fashion luxury brand product occupies largest proportion of luxury product sales (Miller & Mills, 2012). Thus, identifying the concept of luxury perceived by consumers and the color combinations matching to the luxury concept is important in both marketing and interior design because the findings can bring managerial and design implications to luxury retail design. In addition, with the global brand and market industry, understanding similarities or differences in different cultures has a significant meaning. Although there is rich literature on luxury branding, little study exists on cultural differences in the concept of luxury and how people perceive color in terms of luxury. Thus, the purpose of this paper is to identify (a) the concept of luxury that people perceive; (b) color combinations that match with the concept of luxury; and (c) any cross-cultural difference in the previous two aspects.
A cross-cultural study was conducted in two countries- one East Asian country (South Korea) and the other in western country (USA). The rationale for selecting these two countries is because huge import and export of luxurious brand products between the two countries are observed. Total 50 students in the USA and the other 50 students in Korea participated in the study. A 3D rendering of one retail store, created by using a computer-aided program (REVIT), was shown to participants on a 19” computer screen individually. A total of eight different color combinations were shown to participants, who were asked to rate the degree to which they thought the color combination matched a series of adjectives (total 20) related to luxury. Students were also asked to select the degree the suggested adjectives match to their concept of luxury. The adjectives were extracted and developed from the Dubois, Laurent and Czellar’s six main facets of luxury (2005).

The result shows differences exist in the concept of luxury between the two cultures and in most luxurious color combinations. While Americans considered luxury to be non-functional, beautiful, and pleasant one, Koreans considered it to be traditional, with long history, and restricted. In addition, the best matching color combinations that each culture considered were different. However the least matching color combination was the same in both cultures. The result will provide important implications to interior designers and marketing professions in terms of more appropriate use of color in interior design of luxury stores by considering cultural differences. The research findings are yet early stage, and the reasons of differences in the two cultures need to be further studied.

REFERENCES (APA)


CULTURAL AGENCY: Exploring Perception, Product and Approach

Marsha Cuddeback & T.L. Ritchie
Louisiana State University

ABSTRACT

Problem
Expanding awareness of the production of culture encourages students to reflect on personal assumptions and beliefs, cultivate a regard for diversity, understand the limitations of ethnocentrism, and develop an approach to design that is culturally responsive and sensitive to globalization’s potential for “new forms of cultural expression (Steger, 2014, p. 75).” Integrating culturally driven research and analysis investigations in the design studio provides opportunities for students to examine and understand the interior environment as both a product and expression of culture, which in turn shapes the way we view the world.

Method
This paper illustrates a process for learning that employs a qualitative approach to research, grounded in social constructionism, to help prepare interior design students for practice in a culturally diverse and evolving global environment through taking “a critical stance toward our taken-for-granted ways of understanding the world (Burr 2003, p. 2).” The learning process choreographed three sequential, interrelated investigations, where learning was active and contextualized; an off-campus archaeological field study, an investigation of human rituals in the interior environment, and a comparative analysis of traditional building typologies in multicultural settings. Each investigation was designed to strengthen reflective, observational, descriptive, and analytical skills development, while examining their assumptions and beliefs about culture and
design. The investigations were prefaced with reading Horace Minor’s satirical essay on modern American culture, Body Ritual among the Nacirema, to engage students in a thought experiment (Sorensen, 1998), encourage critical thinking about American culture from the point of view of distant observer, and begin to reflect on the condition and impact of ethnocentrism. This preface formed an atypical segue for students to develop an approach for conducting research and analyzing cultural comparisons, and encourage students to question how and why culture is manifest in interior environments. Through systematic observation and data collection the students examined a large public building to determine how the interior environment was shaped by social, historical, cultural and economic factors. Next they conducted a comparative analysis of five common interior building typologies in eleven different countries worldwide. The students worked collaboratively in teams to document the behavioral manifestations and the physical characteristics of spaces and artifacts for each building type. The sequence of investigations culminated in creating a contemporary artifact through reflecting on what they learned which would be the starting point for a design project.

Outcomes
A student perception survey was conducted 9 months later indicating 88% of the students agree or strongly agree that they are more likely to consider cultural differences as a factor in design, and 82% agree or strongly agree that the experience in this class helped them develop a personal design process that responds to cultural diversity. Through examining how culture evolves and is manifest in the design and adaptation of interior environments, students understood the value of multiculturalism, developed an appreciation of the interior environment as a mode of cultural production, began to “navigate an interconnected global reality (Hadjiyanni 2013, p. vii),” and developed a personal design methodology responsive to diversity.

REFERENCES (Chicago)


CULTURAL AGENCY

Exploring Perception, Product and Approach

Selected, Abbreviated Class Activities

Ritual and Artifact

Cultural Artifact

A cultural artifact tells a story about cultural background; the creator and users. It provides knowledge about many aspects of society such as technological processes, the economy, social structure, and more.

“People make things. Although highly challenged in the 20th century by Jane Goodall’s observations of chimpanzees, the capability to make tools was the distinction that scientists had traditionally used to differentiate humans from other primates. As a result of all of this production, human civilizations have left a lot of things lying around over the past several hundred thousand years. A cultural artifact is an item that, when found, reveals valuable information about the society that made or used it. What is qualified as a cultural artifact? Burial coins, painted pottery, telephones, or anything else that evidences the social, political, economic, or religious organization of the people whom they belonged to can be considered cultural artifacts. Not all cultural artifacts are ancient. We are making, purchasing, selling, and throwing out items every day that could be considered cultural artifacts. Just as a Stone Age figurine of a fertility goddess can hint at the level of technology and medical knowledge of that time, an iPhone can be used as evidence of the way people communicate in the early 21st century.”

-- Education Portal

During the archaeological field studies excursion you will design and create a contemporary cultural artifact. Your artifact must reflect some aspect of contemporary society or culture.

To prepare for this activity, please write a short story about your artifact: the idea, what it represents, why it tells a story about contemporary culture, and why this story is important to tell. Please limit your story to 500 words and be sure to check spelling and grammar.

Sample student cultural artifact story …

1

Log 1.176 There it was again, sitting quietly on the counter, sometimes twitching about. Always searching, underneath itself it seems, for a new surface to gain traction. Though it had a tail, it appeared to be on the wrong end and went on for a largely disproportionate length compared to its size. For a rodent this creature was small and unnaturally smooth and hard. Its head folded in on itself, the ears flattened against the head. The nose was high, always spinning, clicking. If it had feet they were not to be seen, and used only as a barrier to the surfaces it traversed. There were lines, deep grooves in the sides, as though the creature were actually put together from multiple parts. But that’s crazy, only machines have parts. An appendage then attached itself, as it always did, and enveloped the creature. Then the clicking began again. Click, click-click. The nose spun around and around, always between the flattened ears. When the appendage moved the rodent, a light shone; perhaps this creature is somehow connected to a device or its environment somehow. It’s only a video, bad quality and from a poor angle, but it seems important somehow. One of these days the mystery of this mouse-like creature will be uncovered, and then the findings will be reported along with the others.

Log 1.227 New developments: someone brought in a new tape today, another rodent. This time the angle is better, not as fuzzy looking either. The appendage belongs to a person; perhaps this is the person’s pet. This creature looks quite different: it’s smaller, has bright colors painted on it, and a faint red glow can be seen underneath. It seems to move on top of a pad of some kind, and when it does the same faint glow appears. Fingers can be seen now, pressing down on the ears, click, click-click, click, click. Now they are rubbing the nose, spinning it, clicking as the light flickers until the nose comes to a stop.

Log 1.891 Today the latest tape revealed the nature of this creature as a non-organic and man-made object. It is called a mouse, according to one of the people operating the creature. This mouse had stopped functioning properly, and was in need of being replaced. Apparently it is a cheap device created for the
purpose of aiding people in the use of what they call computers. When one such device ceases to function it is 
scraped, and replaced by another of the exact same make and model. This leads to an interesting query: As 
a mass produced object to be used and thrown away, does it hold any real value in the grand scheme of 
things?

Preface to Building Rituals

Building Ritual among the Nacirema

“Looking from far and above, from our high places of safety in the developed civilization, it is easy to see all the 
cruelty and irreverence of magic. But without its power and guidance early man could not have mastered his 
practical difficulties as he has done, nor could man have advanced to the higher stages of civilization.”

--- Bronislaw Malinowski, Magic, Science and Religion

As a preface to Cultural Impact on Building Rituals, please read the assigned anthropological study, Building 
Ritual among the Nacirema, by Horace Minor. Once you have completed the reading, assemble your 
team, discuss the study, reflect on what you learned and, together, respond to the following prompts:

Part 1 (adapted “Metodické Listy.” Varianty.)
1. How did you find the Nacirema rituals of body?
2. Which of their habits did you find most peculiar and why?
3. Did you find some of their habits useless, cruel, or insensible? Why?
4. How would you perceive the Nacirema rituals when compared to the system of our own patterns 
of behavior, habits, and values?

Part 2 (adapted “Metodické Listy.” Varianty.)

After your team responds to the prompts above, take a pencil and paper and write the name of the 
tribe, NACIREMA, backwards. What do you discover? Discuss your reaction to learning that the study is, 
in fact, about American culture. As a team, compose a reflective response to the following:
1. Identify as many rituals embedded in American culture as possible (food, clothes, hygiene, 
proposing, sexual habits, gender roles, ways of communication, etc.).
2. Can all our rituals be rationally explained or do we stick to them just because “it has been done 
like that from time immemorial”?
3. Have you ever come across different rituals of living or traveling in another country? What were 
they like?
4. As this article was written in the 1950’s, do you think it would be written differently today? Does 
time change our perspective on cultural rituals?
5. Do you think one way of “living in the world” can be considered better than others? Why?
6. Do you think that these cultural rituals affect the way we design and live in buildings? Do you 
think that the way we design and live in buildings effect these cultural rituals?

Sample team reflections on Nacirema and cultural rituals …

- It is cyclical - cultural behaviors shape buildings and buildings, in turn, shape and affecting how people 
  experience their world.
- Culture primarily influences the design of buildings; however, in specific situations, building design can 
affect culture.
- Cultural rituals definitely affect the way we design and live in buildings and vice versa. While design is 
  manipulated to accommodate the way humans’ function relative to their environment, the opposite is 
  also true as our environment and surroundings also influence our behaviors (further going into health, 
safety, and welfare).
- We were shocked. We understood there was a parallel, but it shocked us that it was written directly 
  about American rituals.
- We build our interior environments based on what we want and need, now and in the future. It all 
  works together.
- This activity was intended to have us objectively look at how culture drives behavior patterns or rituals 
  that then affect how we shape our surrounding spaces or buildings.
Building Rituals
Observing, documenting, and analyzing building rituals

The Context Matrix
The ‘Broader Context’ that informs the design and use of an interior environment is shaped by social, historical, cultural and economic factors. The ‘Immediate Context’ considers Purpose/Function, Users/Players, and Activities/Events/Rituals performed in the interior environment. As discussed in the text, there are also ‘Situational Factors’ that direct the users’ experiences. There are events and narratives that take place in specific locations, where people play specific roles, utilize given resources, and are surrounded by other people, objects and building elements. These join in complex and intricate combinations to become unique contexts for our activities. Understanding how these factors are woven together assist in designing enriched spaces.

Each student will be assigned a significant public building. Your charge is to analyze the context and use of this building. Careful observation and documentation of the rituals and events in experiencing the interior environment is critical. Document the results of your analysis on the Context Matrix template provided by the instructors. Consider the following:

Broader Context
   Social: social status or mores, community interaction/relationships
   Historical: architecture/building type, materials, use
   Cultural: cultural rituals, rules, taboos
   Economic: building budget/use, public/private, extravagant/ modest

Immediate Context
First, define the Purpose/Function of the total building, Specific Activities to be performed, and the Specific User/Players performing the activities. Second, isolate the rituals and events as you move through the building to perform the targeted activity.

   Approach: anticipation and surroundings, general conditions, act of arrival, important first impressions
   Arrival 1: entrance experience into building, act of entering, first impression of interior, orientation
      Waiting - waiting room or area of experience, anticipation and expectation, suspended attention
      Moving to Destination - circulation to destination, corridors, views
   Arrival 2: entrance to destination space, transition between two interior spaces, first impression of destination, accomplishment of arrival
   Arrival at Activity Destination: final activity destination depends on role of user, place where users engage in specific activity
   Engaging in Target Activity: engaging in target activity at target destination, activity varies by type of facility and role in the activity, stationary or involving locomotion and exploration, represents the function of the facility
   Side Trips: short term visits to other spaces, not necessarily essential component of target activity, includes circulation
   Secondary Activities: additional meaningful events, can be part of other events such as waiting
   Departing the Destination: departure transition may be preoccupied with last details of activity, gathering items, or anticipation of next activities, starts departure process
   Moving toward the Exit: proceeding to exit, relaxed or hurried, familiar or concentrated
   Final Departure: last space and exiting of the facility, final impression

Situational Factors
   Occasion: particular kind of activity: formal/informal, relaxed/ intense
   Players: people involved in the occasion, lively/subdued, important/ordinary
   Resources: physical resources, such as space, equipment, plus intangible items, such as time and money.
   Surroundings: the aspect of the physical environment that has a presence of its own as an entity, peripheral surroundings close enough to be noticed or have an impact
Cultural Impact on Building Rituals

Comparing time, location and rituals

“Beneath the Charm-box is a small font. Each day every member of the family, in succession, enters the shrine room, bows his head before the charm-box, mingles different sorts of holy water in the font, and proceeds with a brief right of ablation.”

-- Horace Miner, Body Ritual among the Nacerima.

This inquiry employs a qualitative approach to conducting research on human factors and cultural influences. Team comparisons and analysis will be based primarily on observations, description, knowledge of the subject, and knowledge developed through team interaction. During this investigation, each team will explore the condition of culturally diverse and evolving global environment through taking “a critical stance toward our taken-for-granted ways of understanding the world (Burr 2003, p. 2).” Our inquiry will examine the perspective of time and global location on the design and subsequent living patterns in common building types. Students will work in teams of four. Student from other countries or those who have had an extended experience in another country will serve as a global living team leader and offer personal knowledge of the social and cultural norms of their country.

<table>
<thead>
<tr>
<th>BUILDING TYPE</th>
<th>USA TIME PERIOD</th>
<th>GLOBAL LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19th CENTURY</td>
<td>COUNTRY A</td>
</tr>
<tr>
<td>RESIDENTIAL</td>
<td>SINGLE-FAMILY</td>
<td>TEAM 1</td>
</tr>
<tr>
<td>RESIDENTIAL</td>
<td>MULTI-FAMILY</td>
<td>TEAM 3</td>
</tr>
<tr>
<td>RETAIL</td>
<td>EXCHANGE OF GOODS</td>
<td>TEAM 5</td>
</tr>
<tr>
<td>WORK</td>
<td>OFFICE OR FACTORY</td>
<td>TEAM 7</td>
</tr>
<tr>
<td>EDUCATION</td>
<td>INSTITUTIONAL</td>
<td>TEAM 9</td>
</tr>
</tbody>
</table>

Each team will compare two time periods OR global locations in their assigned building type. When this comparison is complete, two teams will join to compare the present USA, Country A and Country B. The comparisons will analyze the real and perceived differences of the same types of
spaces either in a framework of time period or global location. Each pair of teams will complete 3 matrices. The matrix is a structure for conveying your research, assembling images, identifying physical differences and describing behavioral manifestations. The Human, Social, and Cultural Influence Inventory below will assist you in analyzing the behavioral manifestations that impact the physical manifestations of your team’s building type.

<table>
<thead>
<tr>
<th>Privacy Threshold</th>
<th>Level of privacy expectation before comfort zone is exceeded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Economic influences on human behavior and spatial inhabitation; affluence, poverty, normal expectations</td>
</tr>
<tr>
<td>Social</td>
<td>Impact of human factors in sociology that influence use of space</td>
</tr>
<tr>
<td>Psychological</td>
<td>Impact of human factors in psychology that influence use of space</td>
</tr>
<tr>
<td>Historic</td>
<td>Historic or developmental influences on the use of space and building conditions</td>
</tr>
<tr>
<td>Community Conditions</td>
<td>Type of community; town, city center, suburban, transportation, access [pedestrian vs vehicular]</td>
</tr>
<tr>
<td>User Attributes</td>
<td>Age, gender, race, physical challenges</td>
</tr>
<tr>
<td>Proxemics</td>
<td>Personal distances affecting psychological impact on space, interpersonal physical distances</td>
</tr>
<tr>
<td>Hierarchal Structure</td>
<td>Structure based on an accepted hierarchy, especially in the workplace but sometimes in familial structures</td>
</tr>
<tr>
<td>Collaborative Structure</td>
<td>Structure based on collaborative activities, especially in the workplace but sometimes in familial structures</td>
</tr>
<tr>
<td>Health</td>
<td>Impact of health issues on spatial organization and criteria</td>
</tr>
<tr>
<td>Stress Levels</td>
<td>High, low, healthy, managed</td>
</tr>
<tr>
<td>Density</td>
<td>Influences of population density; high density such as urban areas, lower density in suburbs</td>
</tr>
<tr>
<td>Family Structure</td>
<td>Matriarchal, Patriarchal, Multi-generation</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Efficient, low maintenance, durable</td>
</tr>
<tr>
<td>Comfort Levels</td>
<td>Temperature, light, acoustics, and climate effects</td>
</tr>
<tr>
<td>Governance</td>
<td>Codes, rules, health, safety and welfare</td>
</tr>
</tbody>
</table>

**Human, Social, and Cultural Capital**

- Systematic observations of human, social, and cultural impacts on building rituals
- International Federation of Interior Architects / Designers (ifi)
- USA Time Period
- USA

<table>
<thead>
<tr>
<th>Building Type: Residential</th>
<th>Single Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy Threshold</td>
<td>Lower</td>
</tr>
<tr>
<td>Economic</td>
<td>Affluence and infrastructure</td>
</tr>
<tr>
<td>Social</td>
<td>Larger families</td>
</tr>
<tr>
<td>Psychological</td>
<td>Economic: Expense of multiple bathrooms</td>
</tr>
<tr>
<td>Historic</td>
<td>Cultural: Much Larger Houses</td>
</tr>
<tr>
<td>Community Conditions</td>
<td>Economic: Affluence and infrastructure</td>
</tr>
<tr>
<td>User Attributes</td>
<td>Social: Larger families</td>
</tr>
<tr>
<td>Proxemics</td>
<td>Psychological: Impact of human factors in psychology that influence use of space</td>
</tr>
<tr>
<td>Hierarchal Structure</td>
<td>Social: Smaller families</td>
</tr>
<tr>
<td>Collaborative Structure</td>
<td>Psychological: Impact of human factors in psychology that influence use of space</td>
</tr>
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<tr>
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**Human, Social, and Cultural Capital**

- Systematic observations of human, social, and cultural impacts on building rituals
- International Federation of Interior Architects / Designers (ifi)
- Global Location

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</tr>
</tbody>
</table>

**Comparisons**

- USA
- Country 1
- Country 2

**Observations**

- Economic: Affluence and infrastructure
- Social: Larger families
- Psychological: Impact of human factors in psychology that influence use of space
- Cultural: Much Larger Houses
Hybrid Spaces of Worship: Muslims in Atlanta

Zamila Karimi
Southern Polytechnic State University

ABSTRACT

In an effort to uphold their values, adopt to new cultures and preserve their heritage and traditions in the host environments, Muslims in North America are trying to carve out places for religious and cultural practices. In the peripheries and in-between spaces of our urban areas Muslim places of worship become performative spatial markers in the cultural landscapes of our cities that provide a window into the social and religious life of these communities. They often situate themselves in the fringes of the city in neglected and dilapidated warehouses, office buildings, old houses and big-box buildings revitalizing the fading suburban communities.

This paper examines the symbolic and cultural value of two case studies that I will critically analyze for different sects of Islam, in the Atlanta Metropolitan area of DeKalb County. They are Atlanta Jamatkhana and Ismaili Center for a Shia Muslim congregation of about 1,000; and Masjid-al-Momineem, largest refugee congregation of 1,000 Sunni Muslims in Atlanta. Although both these cases exist within three miles of each other, they offer a unique insight into the spatial, social and cultural representation of their diverse communities and their impact on the larger socio-cultural landscapes. Using these specific case studies, I will examine how immigrant communities have become a catalyst to rejuvenate the country’s outdated suburbia. In the process, they add positively to the physical landscape of our cities thereby transforming the social and cultural geography. I explore issues central to Muslim immigrant community’s need to practice their faith within the conservative context of Atlanta. In doing so, I provide a critical analysis of the spatial transformation of the building specifically its spaces imbued with Islamic
architectural principles as a visual manifestation of the community’s goal and aspirations within the regional context.

The questions I explore are: what are the tactics employed to remodel mundane urban spaces into places of worship as spatial representations of Muslim identity? How do they impact the social and cultural landscape of the urban fabric in which they exist? How does community engagement play a key role to address larger issues of assimilation, identity, gender and race? As Muslim Diaspora communities grew in numbers, and the baby boomers settled permanently in their new countries it became vital to establish places of worship and assert their rights in the public space. The metamorphosis of such informal spaces into our cultural landscapes brought forth larger issues of race and identity; education and culture. Several key theorists from Oleg Grabar, to Akel Kahera to Renata Holod and others have brought forth issues of plurality of the Muslim world. The practice of faith represents a diversity of cultures and social attitudes as manifested in the places of worship.

The methodology I will use for case studies will be a combination of ethnographic research tools with mapping strategies to collect primary data. As an architect and interior designer for both these projects, I have access to historical data and ongoing documentation to show how the projects transformed over the years. I will present the data collected via maps and illustrations to augment the narrative. Using several key examples of contemporary retrofits of mosques, especially spaces in the Western context. I demonstrate how engaging the community is crucial to the success of such projects. The building acts a catalyst to bring people together, address issues related to assimilation and offer tools to become part of the civic space. The spaces and places of Muslim worship further act as a bridge to ease tensions within the larger socio-political environment. It subtly brings to light the pluralistic traditions of world’s 1.5 billion people who are ordinary men, women and children of civil society with aspirations for a better life.

REFERENCES (Chicago)

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Khalidi, Omar; Import, Adapt, Innovate: Mosque Design in the United States; Aramco, 2001

Glassie, Henry; Architects, Vernacular Traditions and Society, TDSR Vol 1, 1990

Avcioglu, Nebahat; Identity-as-Form: The Mosque in the West, Cultural Analysis, 2007

Dunham-Jones, Ellen; Suburban Retrofits, Demographics, and Sustainability, p 10, Places 17 (2), 2005
Engaged Scholarship and Historic Preservation of Interiors: Sustaining Identity and Facilitating Integrity in Iowa’s Carnegie Libraries

Diane Al Shihabi
Iowa State University

ABSTRACT

Historic preservation of interiors is a rapidly emerging specialization for interior design practitioners, facilitated globally by UNESCO’s World Heritage Sites program and in America by the USGBC’s decision to prioritize the greening of existing buildings. While formerly associated with the development of historic house museums and under the purview of architectural historians, contemporary historic interior restoration and rehabilitation projects require practitioners who not only understand design historical aesthetics, but who also have the ability to address code, functional, and environmental requirements. The evolving specialization further requires the development of research models that can identify historic interior design systems and assess their meanings, and that can contribute to the comprehensive determination of a building’s significance and a project’s preservation plan.

Through Carnegie libraries, this study examines how interdisciplinary methodologies, combined with processes that juxtapose academia with communities, can engender mutually beneficial collaborations and facilitate civic responsibility. The resultant knowledge yields a type of engaged scholarship (Furco 2005, 10) that serves both the academe and society. Between 1886 and 1919, Andrew Carnegie awarded grants to 1,412 American communities to construct 1,679 public libraries (Mausolf 2007), of which 105 were in Iowa. Many of these buildings have outgrown their functional use and are undergoing different means
of preservation. This study analyzes historic preservation research processes and treatment approaches of Carnegie Libraries in four Iowan communities: Davenport, Cedar Rapids, Perry, and Sigourney. It asks how historic integrity and authenticity of interiors could be enhanced through interdisciplinary and collaborative research models that engage historic interiors specialists and community stakeholders from the onset, and how cultural identity can be sustained on local, national, and international levels through restored historic interiors.

Research methodology integrates content analysis (Mostyn 1985) of archival documents, photographic analysis of period imagery, material culture analysis (Prown 1980) of extant interiors, and community stakeholder input of preservation processes. The study identifies formal interior design systems and other character-defining elements of interiors, and weighs importance of these features in terms of early twentieth century social and cultural concerns, including taste and identity. It then examines extant forms and finishes in restored and rehabilitated interiors and considers dominant influences and values driving contemporary preservation decisions. Lastly, it assesses how outcomes could be improved through interdisciplinary and collaborative processes.

The study finds that integrity and authenticity could be increased if interiors’ specialists are introduced in the master-planning phase and jointly contribute to the development of the historic structure’s report. Integrating a historic interiors’ perspective with those of specialists from other disciplines, and with community stakeholders from the project’s inception could also prevent loss of historic fabric and enhance the sustainability of cultural identity at all levels. The study contributes to a growing interiors’ perspective in historic preservation, and accentuates the importance of interdisciplinary and collaborative research methodologies in the treatment of historic interiors and in its scholarship. It signals the importance of qualified historic preservation of interiors’ practitioners and the need for specialized design historical training beyond core history courses.

REFERENCES (Chicago)

Engagement at the University of California: Recommendations From the Strategy Group on Civic and Academic Engag


Studio-based History Lessons: Interdisciplinary Collaboration to Discover Mid-century Values

Kimberley Furlong
University of Arkansas

ABSTRACT

Students often struggle to comprehend that the built environment, and for that matter the designed object, comes to have its form and meaning through human intention and the cultural values of the time it is constructed. If students look carefully at the built evidence that surrounds them, if their investigation requires them to tease the parts, the details, the materials of the artifact, they begin to truly grasp the spirit and the awesome human motivations that brought that place, building, interior, or doorknob into being as they experience it.

In three separate studios, with admittedly high and diverse goals, architecture, interior design and preservation students collaborated to discover and make the design goals of post WWII society tangible and meaningful in their own work. Two of the three studios were inclusive and sought to parallel contemporary design practice by integrating the complementary objectives and skills of architects, interior designers and preservationists. Acknowledging that buildings rarely come into being through the efforts of an isolated individual, students explored how their collaborative work might transcend conventional disciplinary divides, provide a broad and meaningful reading of societal values at mid-century, and ultimately result in a strong, historically sensitive, design and building intervention.

Undergraduate and graduate students worked in teams of three; each bringing their individual skills and perspective to the problem at hand. Students began with
a sequence of precedent and Modern design case studies that evolved into a preservation and adaptive re-use project proposal. Each was designed to enable critical historical analysis and ‘philosophical dialogue’ using a newly formed vocabulary to express and formulate the students’ deepening comprehension of the historical movement. Three Mid-Century buildings by O’Neil Ford, Edward Durell Stone, and Harwell Hamilton Harris, respectively, were operated-on and employed as sort of proofs to test the manifestation of Mid-Century socio-cultural changes in their design. Before proposing the building’s future, students made critical assessments of their current and past contexts, structures, and inhabitation with particular attention paid to the circumstances that inspired them, and ultimately attempted to determine their historical value.

This course of study led each student to a personally formulated and reasoned understanding of Mid-Century design aspirations, strengths and limitations. A design and construction vocabulary was developed to express and formulate their deepening knowledge of the movement. While these studios were limited to the investigation of Modern design, the format and process they followed may prove effective for teaching the significance, relevance and future value of history from many periods.

REFERENCES (APA)


Expanded practice in interior design, New York: Princeton Architectural Press.
ADVANCED DESIGN STUDIO
Interior Design, Historic Preservation + Architecture
Advanced Undergraduate + Graduate Students

Intervention
A series of failing mid-century modern lift-slab buildings, designed by O’Neil Ford, at Trinity University in San Antonio, sited at the campus juncture between academic, residential, and public life are fit with a new program — a museum, archive, and museum studies laboratory.

Students made a critical assessment of existing six campus dormitory buildings, considered the circumstances that brought them into being, their current state, the potential for a new program, and ultimately attempted to determine their historical value.

The studio was inclusive, and sought to parallel contemporary design practice by integrating the particular but complementary objectives and skills of architects, interior designers and preservationists. Acknowledging that buildings rarely come into being through the efforts of an isolated individual, students explored how the combined efforts of an interdisciplinary team of professionals might result in a strong, multifaceted, design and building “intervention”. Undergraduate and graduate students worked in teams of three, each bringing their individual skills and perspective to the problem at hand.

Select Examples of Existing Condition Value Studies

FORMAL SITE + BLDG. ORGANIZATION

CHARACTER DEFINING FEATURES + MATERIALS

- Simple rainscreen off
- Slab projects beyond walls, removal of typical projection sequence point of emphasis
- Operable windows allow individual users to control thermal comfort point possibility in climate controlled (art path)
- Simple floating furniture, clean lines, horizontal emphasis consistent w/ BLDG. character
- Built-in cabinetry for spaces w/ stable program (low flexibility)
- Subtle texture on underside of concrete slab ceiling
- Typical glazing sequence, fixed window above center pivot awning window, above single hung

SECTION THROUGH ENTRY LOBBY, ROOF-TERRACE + CAFE
ADVANCED DESIGN STUDIO

Interior Design, Historic Preservation + Architecture
Advanced Undergraduate + Graduate Students

intervention

SECTIONAL MODEL
through Gallery + Conservation Lab below

GALLERY

GALLERY with opening to Conservation Lab below

SECTION THROUGH GALLERIES, ARCHIVE + LECTURE HALL

SECTION THROUGH CONSERVATION LABS + VIEWING BALCONY ABOVE
ADVANCED DESIGN STUDIO
Interior Design, Historic Preservation + Architecture
Advanced Undergraduate + Graduate Students

Intervention

DAYLIGHT STUDY WITH MODEL IN HELIODOME

DAY LIT LARGE OBJECT GALLERY

DAY LIT SMALL OBJECT GALLERY

DAY LIT CIRCULATION CORRIDOR

DAY LIT CONSERVATION LAB with public viewing gallery above
Writing Wright’s Legacy: Edgar Kaufmann Jr. on Frank Lloyd Wright

Elise King
Baylor University

ABSTRACT

Frank Lloyd Wright remains one of design history’s most studied figures. In the past scholars have relied on the Wright canon—the common narrative developed in the years before and directly following the architect’s death. These seminal texts provide a valuable but narrow view, often colored by authors who had personal relationships with Wright. Today, scholars are only beginning to reexamine this loop of information that has been repeated, generally without question, during the more than fifty years since Wright’s death. To better place Wright in the history of architecture it is imperative to examine those who have shaped the conversation about his work and influences. Among the most important of these was Edgar Kaufmann jr. [sic].

Kaufmann is the lens through which many, unknowingly, view Wright. From the 1950s until his death, in 1989, Kaufmann authored thirty publications on Wright, the most of his contemporaries. In addition to writing, Kaufmann also exerted influence through his management of Wright’s masterpiece, Fallingwater. As the only son of Edgar Kaufmann Sr.—the department store magnet who commissioned Wright to design Fallingwater—Kaufmann was responsible for managing the property after his parents’ deaths. Following his father’s wishes, Kaufmann bequeathed the home to the Western Pennsylvania Conservancy, working closely with the organization to establish its tour program. Fallingwater continues to operate under Kaufmann’s explicit guidelines. This includes the material discussed, and omitted, on tours as well as the physical presentation of
specific furniture, accessories, and art. For the nearly five million people who have visited Fallingwater, their experience—from the design of the visitor’s center to the location of the parking lot and content of the tour—was dictated, in large part, by Kaufmann.

Common themes in Kaufmann’s writings and Fallingwater’s tour program offer insight into his understanding of Wright, and the image of Wright that he sought to convey. Of Kaufmann’s thirty publications, the majority focus on Wright’s “organic” period—dating from the late 1920s to the early 1940s. Influenced, no doubt, by his intimate relationship with Wright during this period, Kaufmann places an inflated importance on Fallingwater and Wright’s other “organic” projects, suggesting this to be the pinnacle of Wright’s career—a belief many scholars have repeated, with little evidence. Kaufmann continues to discuss organic architecture in his most well-known work, “Plasticity, Continuity, and Ornament” (1978). Here, he serves as Wright’s interpreter, explaining the meaning behind the architect’s often contradictory and cloudy rhetoric.

Kaufmann’s definitions of plasticity, continuity, and ornament—key Wright concepts—have been rarely questioned, now an accepted part of the Wright canon. Kaufmann remains primarily associated with Fallingwater. But his influence extends beyond the house to his seminal texts on Wright, introduction of Wright’s work in museums, preservation of Wright-designed homes, and several exhibitions. Regarding Wright as a personal friend and teacher, Kaufmann had a unique perspective among scholars. Examining critically Kaufmann’s writings and dissecting his methods of analysis reveal his biases as well as his contributions to the Wrightian narrative.

REFERENCES (Chicago)


Where Western Interiors Begin: Analyzing Design Regionalism in Texas Interiors

Carl Matthews & Caroline Hill
University of Arkansas

ABSTRACT

In the 1920’s and 1930’s politicians, community leaders, and writers consciously and adeptly began a campaign to distance Texas identity from a stereotypical view of the American south and its legacy of slavery (Ely, 2011). This distancing focused on “Old West” aspects of Texas history and culture. However, when driving across the 773 mile east to west extremities of the state (TSHA) one experiences great geological, cultural, architectural, and industrial differences. The eastern region or Gulf Coast Plains have much in common with neighboring states of the “deep south” such as Louisiana, Alabama, and Mississippi. The North Central plains are characterized by high rolling plains, cross timbers, and prairie. The panhandle and great western plains are primarily arid stone escarpments and dry-brush land. The South western most region of the state is more like northern Mexico in geology, vegetation, and climate.

These vast physical differences in the landscape are also mirrored in demographic variations of the regions settlers and inhabitants. Native American populations, European (especially German), Latin American, and African American immigrants have all left their social and physical mark on the state. While the current economy of Texas is quite diverse, the four major businesses that shaped the state prior to World War II were ranching (cattle and bison), cotton, timber, and oil. Even though great physical, cultural, and economic differences exist in the state, it is the romantic legacy and lore of cowboy culture that has been most employed to establish a cohesive Texas identity. This identity is rooted in desire for open spaces.
and free range, cultivation of rugged individualism, protectionism, and connection to or dominion over nature. The cultural lore is peppered with larger-than-life characters and historical figures.

The proposed presentation will provide a framework for understanding how the convergence of physical aspects of the state have merged with cultural, historical, and economic aspects to create a distinctive and identifiable Texas interior. The paper draws from academic concepts in popular culture (theory of mass society, theory of culture industry, and theory of progressive evolution) and design/architecture (vernacular architecture, architectural regionalism, critical regionalism, and phenomenology). The concept of establishing a sense of place and identity through design that is both intentional and goes beyond ornamentation will frame the discussion. Specifically, a series of designed interiors (both commercial and residential) will be presented to illustrate how a wide range of influences from kitsch pop culture to abstracted architectural forms and volumes have been employed to create a branded Texas interior – an interior typified by grand scale, regionally derived and inspired materials, attention to light and views, and integration of iconography and symbolism. The interiors are drawn from many areas of the state to illustrate how the overarching notion of Texanness is interpreted throughout the sub-regions of the state.

The discussion posits that interiors are shaped as much by perception, memory, imagination, and literature as by current human needs and desires. Negative effects of these attitudes which has led suburban sprawl, resistance to densification, and resistance to spatial usage efficiency will also be discussed.

REFERENCES (APA)


The Architects Room: Cultural Hybridity on Display and “In-between” at the Winterthur Museum

William Riehm
Mississippi State University

ABSTRACT

This paper examines the history and evolution of the Architects Room, one of 175 rooms at the Winterthur Museum in Delaware. Henry Francis DuPont opened Winterthur to the public in 1951, and it is now seen as “the premier museum of American decorative arts, with an unparalleled collection of nearly 90,000 objects made or used in America between about 1640 and 1860” (Winterthur Museum 2014). The Architects Room is one of the smaller rooms in the museum, approximately 120 square feet containing 172 museum objects. The room, originally a representation of primarily Massachusetts made objects, has evolved to include objects diverse in heritage and less Anglo-centric. The Architects Room provides an opportunity to study representations of American decorative arts and material culture, shifting away from an Eastern seaboard focus and embracing more diverse, culturally hybridized perspectives.

The theoretical framework used here rests in material culture as a function of cultural hybridization and creolization. Recently, cultural theories of creolization have expanded to embrace transition and ambiguity in material culture. Baron and Cara make this point poetically, “we are freed to focus on cultures in transition, allowing us to grasp the ‘in-betweens,’ the ambiguous spaces where cultural boundaries blur and disappear as hierarchical categories collapse into each other” (2011). Bellion and Torres discuss this emerging understanding saying we should not only “consider objects as final tangible products of processes of hybridization,” but also “expose how objects reflect and shape human experience” (2011). The
primary source methods of research include direct investigation of the room and contents, Winterthur’s object registration files, and archival research, specifically Henry Francis DuPont’s personal papers. Interviews with current, previous, and emeritus museum staff offer additional, important insight. The original and current focus of the room, an early nineteenth century operable Sheraton drafting table, was purchased by DuPont in 1941. In an unusual flourish of opinion, DuPont wrote to the table’s seller on January 2nd, 1941, “your drawing table is so swell that, although I haven’t the faintest idea where I could use it, I must ask the price” (DuPont Manuscripts). DuPont assembled objects related to draftsmen and included surveying tools. He furnished the room with Massachusetts’ Sheridan pieces including a fine 1790s gentleman’s secretary. But overtime, the room evolved to showcase objects that are of non-Anglo origin, including a Jeffersonian slave-made bookshelf, Louisiana Creole and Federal Campeche chairs, and a bulky, unusual Baltimore wardrobe/desk replacing the Sheridan secretary.

It was in the 1980s and 1990s that there was a curatorial shift towards concepts of diversity. In 1991 the room was included on Winterthur’s “diverse nation” tour. Emeritus curator, Charlie Hummel, explains that the room was seen as an accidental “potpourri” room, difficult to reconcile with the DuPont’s vision of Winterthur as a repository for fine American (Eastern seaboard) decorative arts. In fact, the “diversity” highlighted in the tour was that of an enlightened gentleman, an architect. Former curator Robert Trent was less kind in his analysis, stating that curatorial and academic “borderline racism” kept the diversity theme from developing a more robust interpretation. It becomes clear that much of the acquisition of non-Anglo objects occurred in an undercurrent.

Certainly the final analysis of this space does not conclude that the institution or traditions of American material culture and decorative arts studies are racist. But this analysis, which catalogs the slow divestment of Sheraton artifacts and investment in non-Anglo objects, shows how a simple room can be a more expressive representation of an American material culture “in-between” - accidentally, subversively, or otherwise.
REFERENCES (Chicago)


Figure 1. The Architects Room, 1955. (Courtesy, Wintherthur Museum.)
Figure 2. The Architects Room, 1987. (Courtesy, Wintherthur Museum)
Figure 3. Baltimore wardrobe/desk, Jeffersonian bookshelf hanging beyond. (Courtesy, Wintherthur Museum.)
Environmental satisfaction and human comfort: Toward a process-oriented and contextually sensitive theoretical framework

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ABSTRACT

This study proposes a new theoretical framework of environmental satisfaction and human comfort in built environments through a logical argumentation. The theory builds on ecological frameworks (Bronfenbrenner, 1999) and the life course perspective (Elder, Johnson, & Crosnoe, 2003), and emphasizes the role of human agency in the interaction between humans and environment and the context within which such interactions occur. The goal is to provide a theoretical framework that allows a user-centered approach to studying human-environment dynamics, establish interdisciplinary collaboration, and help decision-makers and design practitioners construct a better environment in which human agency can dynamically achieve environmental satisfaction and human comfort.

Four important principles in the field of design research served as building blocks for the theory building: human agency, nested spatial structure, place, and optimization. First, the theory builds on the principle of human agency, which suggests that a human is a complex thinker who operates with goals and purposes and has the capacity for change, not a passive recipient of external stimuli. People's reactions to their environment is conditioned through their previous learning and experiences, present situations, and future goals and purposes (Polkinghorne, 1995, figure 1). Second, the theory suggests that the physical space in which human actions occur has a nested structure of building-community-larger ecosystem. The interconnected and interdependent nature of the social-
ecological system in the building process is highlighted (figure 2). The theory suggests a third principle: the spatial impact on human behavior can only be understood when human agency is placed in its original context with its nested system of social and psychical environments (figure 3). The final principle of the optimization process suggests that human agency imbedded in a place continuously interacts with the environment to optimize it and achieve a dynamic state of satisfaction and comfort. The optimization process involves four different modes of adaptive behaviors: (1) environmental modification; (2) behavioral adaptation; (3) normative adaptations (the adjustment of one’s expectations and norms about the setting); (4) withdrawal (Morris & Winter, 1975). This process is viewed as an on-going and cyclical process (figure 4). Thus, the newly synthesized theory conceptualizes environmental satisfaction and human comfort as conditions dynamically accomplished through one's active perception, interpretation, and modification of his/her socio-physical environment.

Three methodological directions are proposed to support the new theoretical framework. First, the study proposes the use of multiple methods to increase methodological consilience and convergent verification. The methodological consilience refers to how much a research method or a set of methods employed can explain the given data set versus the portion that cannot be explained by the methods (Luke, 2005). The convergent verification refers to cases where the results from multiple methods to study one phenomenon reinforce each other, therefore providing independent validation of a potentially imperfect single research design. The study suggests a series of methods that can be combined to increase methodological consilience and convergent verification: multilevel modeling, social network analysis, and Geographic Information System analysis. Second, the study further suggests employing multiple sources of information to include the multiple perspectives of those involved with the given environment. Finally, the study suggests creating case research profiles for similar building types in similar contexts to accumulate useful information for practitioners and decision-makers in the field.

REFERENCES (APA)


PERSON AS EMBEDDED IN A NESTED SOCIAL SYSTEM
Individual as a member of multiple groups, organization, or networks. Arrows indicate channels through which individuals’ values, norms, and lifestyles influence each other.
SATISFACTION AND COMFORT AS PLACE BASED & PROCESS ORIENTED CONSTRUCT

PERSON AS EMBEDDED IN A NESTED SOCIAL SYSTEM
Individual as a member of multiple groups, organizations, or networks. Arrows indicate channels through which individuals’ values, norms, and lifestyles influence each other.

BUILDING AS A NESTED PHYSICAL SYSTEM
PHYSICAL PROPERTIES (Weisman, 2003)
- Structural shell
- Enclosure system
- Mechanical systems
- Finishes,
- Furnishings

SPATIAL PROPERTIES (Weisman, 2003)
- Size
- Proportion
- Location of spaces relative to one another

SENSORY PROPERTIES (Weisman, 2003)
- Light levels
- Sound levels
- Odors
- Textures

OPTIMIZATION PROCESS
Interactive, cyclical process between individual and socio-physical environment to create satisfaction and comfort. Four modes of adaptive behaviors are:
1. Environmental modification
2. Behavioral adaptation
3. Normative adaptation
4. Retreat/withdrawal
BUILDING AS A NESTED PHYSICAL SYSTEM

PHYSICAL PROPERTIES (Weisman, 2003)
- Structural shell
- Enclosure system
- Mechanical systems
- Finishes
- Furnishings

SPATIAL PROPERTIES (Weisman, 2003)
- Size
- Proportion
- Location of spaces relative to one another

SENSORY PROPERTIES (Weisman, 2003)
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Raising the Bar on Pinterest: History of Interiors in a New Context

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ABSTRACT

In the most recent Journal of Interior Design Perspective, “Navigating the Past: What Does History Offer the Discipline of Interior Design?” Cunningham (2014) illustrates how the study of the history of furniture design, interior design, architecture, and decorative arts can seem irrelevant to our students and makes a compelling argument encouraging educators to place the study of history into a context that is relevant to students and to the contemporary practice of interior design. The following assignment is a component of the History of Furniture and Interiors course that has sought to provide students with a deeper understanding of the history of the discipline of interior design and related fields. The problem, to engage students in active learning and critical thinking in history of interior design and assist them with developing a better understanding of the content in the textbook, was resolved utilizing Pinterest, an image based social networking site.

Pinterest is a virtual bulletin board where individuals can organize and curate images from many different resources into one place (Marino, 2012). An image is pinned to the board complete with the URL where the image was originally sourced if it was sourced online. Pinterest is an extremely popular social networking site with the majority of pins being related to fashion, home decorating, cooking, and crafting. While Pinterest is criticized for its lack of content, evidence suggests instructors are finding compelling ways to use Pinterest in the classroom engaging students by having them share and elaborate on images (Marino, 2012). The Visual Resources assignment is one of several thought
provoking assignments that are employed in this history course. In the assignment students are asked to research key terms and furnishings from their textbook readings and develop a definition stated in their own words, and to supply an appropriate image that illustrates that subject. Each student retains ownership of their own board and the instructor follows the students’ boards to evaluate student participation in the assignment. The project was developed after a workshop on critical thinking and is conducted in the History of Furniture and Interiors course utilizing an adaptation of the critical thinking process outlined in SEE-1 (Nosich, 2012), a strategy for clarifying content within a subject area. SEE-1 is an acronym for State, Elaborate, Exemplify and Illustrate. In this assignment, students state the term that they are clarifying, they elaborate on that term by writing a definition using their own words. Next they search the internet using search engines that allow them to amass imagery related to that term. For the second E, exemplify was modified to evaluate as exemplify and illustrate seem to be synonymous. The students evaluate the imagery from the search for fitness with their understanding of the terminology. Finally the students capture the image and illustrate the term using the “Pin it” button to place it on their board.

The result is a carefully curated board of relevant terms for the chapter. After the first assignment is completed the students invite the instructor to “follow” the board. Pinterest allows for open comment directly on the pinned image on the board, so the instructor can view pins, read definitions provided by the student, and provide feedback directly on the board. Students in the course enjoy using Pinterest to complete the assignment and are already familiar with Pinterest from previous interior design studios where they use it as a repository for design inspiration and to collect resources for projects. Student feedback indicates that the Pinterest boards created during in this course make studying easier and are a reference that they can refer back to after the course is over. Students are empowered by choosing what they include on their boards citing that they are in control of their learning and not just completing an assignment.

REFERENCES (APA)


Appendix A Assignment Instructions

History of Furniture and Interiors
Visual Research Assignment

The terminology and vocabulary in the textbook is critical to clarifying the content of the chapter and developing a better understanding of the evolution of furnishings, building and decorative techniques, and interior design. While you are not required to elaborate on all of the terminology in your readings in this assignment format, you will be responsible for understanding all of the terms in the chapters. This assignment is designed to assist you in the creation of a visual reference that will help you develop a context for understanding the subject matter we are studying.

This assignment is completed in two parts. The first part will remain the same for each chapter in the textbook. The second part of the assignment will change with each chapter.

Part 1

5 concepts, furnishings or terminology (including images) + explanation inspired from the content of the chapter.

As you read the chapter, make note of terms or ideas that intrigue you, confuse you, or inspire you. When you have finished the reading, choose 5 items from your list to explore further. Share these on your Pinterest board. Be sure to include the term (or concept) and its definition (in your own words) and a supporting image or illustration. Please make sure that as you borrow images that you are also maintaining and communicating a reference as to where you found the image. All of the words that you write should be your own. Please refrain from re-pinning from other students’ boards.

Terminology Examples:

![The sedia chair was the most common chair in wealthy households in the Renaissance period. Typically the legs extended up the back and arms and stretchers would connect the front and back legs. Normally it would have a tall back and high upholstered seat. (Textbook)](image1)

![This Mesopotamian design is known as “gulloche” and has been used by many civilizations in everything from furniture to architecture. Its influence has most definitely transcended through to present day. (Textbook)](image2)
Part 2

5 images + explanation as directed in the assignment.

This part of the assignment will vary from chapter to chapter. This will keep the assignment from becoming routine or boring and expand on content from the chapter. You may be asked to compare items, locate supporting cultural imagery relating to fashion and fine art, or you might be asked to find modern interpretations of historical design elements. Please read the assignment carefully each time.

For Chapter 2, Ancient Mesopotamian, Persian and Egyptian Design

Examples:

Note: We will be doing this type of assignment each week throughout the semester. The assignment will typically require ten images/explanations each week. What you research will always be up to you, but please read and follow the assignment carefully.
Koolhaas and the Autonomy of the Interior

Jim Sullivan
Louisiana State University

ABSTRACT

In his tome, S,M,L,XL, Rem Koolhaas wrote of what he called Bigness, the condition in which a building becomes so large that it ‘cannot be controlled by a single architectural gesture.’ (1) Among the consequences of Bigness is that it ‘triggers the autonomy of its parts,’ and with that autonomy, the ‘traditional humanist expectation of “honesty” is doomed: interior and exterior architectures become separate projects.’ To deal with Bigness, Koolhaas returned to his earlier work, Delirious New York, to make explicit in this current work what was implicit in the early text. Yet Koolhaas did not elaborate on this return, nor did he explain the implication for interiors of this radical disjunction between inside and out. Instead, he focused on the repercussions for architecture and urbanism. But what of Delirious New York? To what aspects of the book was he referring? And how does the book contribute to Bigness and interior’s status?

In this paper, I address these questions by examining Delirious New York. In doing so, I identify an underlying theory of interiors in that informs Bigness and other works by Koolhaas. This underling theory argues for a radical restructuring of the relationship between interior and exterior whereby the western architectural tradition of agreement between inside and out is abandoned. Instead, this theory proposes an incongruence between inside and out that prompts the interior to operate as its own enterprise and, further, to seek representation on the outside. The works that I explore, Koolhaas’s text Delirious New York, and three projects by OMA, Tres Grande Bibliotheque, Seattle Library, and Casa Musica, are episodes in the development of Koolhaas’s theory of interiors and his exploration into its use. Delirious New York offers the basic arguments for the incompatibility of inside
and out, the legitimacy of the interior program distinct from the exterior’s program, and the liberative dimensions of this discrepancy, while the three projects experiment with the potential uses and productive consequences of this argument. Two sections of Delirious New York are pivotal in this argument: European’s and Skyscrapers. European’s focuses on Salvador Dali’s surrealist activity, the Paranoid Critical Method, which is intended to liberate the unconscious self from the conscious self. (2) Such a liberation is predicated the incapability of the outer and inner selves. Each operates through its own tenets. Further, this liberation is predicated on the desire of the inner self to be represented on the outside - a desire that is often evidenced through parapraxes. Lastly, this liberation is productive in that it offers unexpected associations among and novel perspectives on things that exist in the world.

Skyscrapers, the second pivotal section in Delirious New York, focuses on the New York Skyscraper, which, like the inner and outer selves of the PCM described above, also holds an incapability between its inside and out. (Koolhaas, 1994. 235-280). For Koolhaas, the skyscraper has the architectural equivalent of a ‘lobotomy’ in which the building’s exterior is detached from its interior. The exterior’s obligations are to the city while the interior, free from obligation to the exterior, becomes its own legitimate enterprise. Koolhaas refers to this enterprise as a ‘mutant brand of interior design’ that ‘recycles, converts and fabricates memories and supportive iconographies’ in support of a ‘hyper-density of private meanings.’

The three projects that I examine offer examples of how the interiors of the buildings operate under the auspices of their own tenets, separate from their exteriors. Further, each project shows signs of the interior’s desire for expression on their exterior. In doing so, the projects join with Delirious New York to outline a potent theory of an autonomous interior, driven by its own principles and with desires for representation beyond the confines of its exterior.

REFERENCES (APA)


Casa Musica

Seattle Library

Tres Grande Bibliotheque,
The Historical Foundations of Efficient Office Design and Ergonomics

Terrence Uber
Kent State University

ABSTRACT

The Historical Foundations of Efficient Office Design and Ergonomics

Contemporary office furniture manufacturers are a major source of data on ergonomics and the design of office interiors. Their research findings are reported through white papers which become reference tools for professional interior designers and architects in designing office interiors and for educators teaching about office environments. The findings are also the basis for the development of new products and innovation in office design promoted by the manufacturers. This paper will discuss the historical precedents for contemporary ergonomics research and the functional design of office furniture and office interiors.

Through an analysis of furniture trade catalogs, business journals and monographs, the historical influence of furniture manufacturers on the design of office furniture and interiors will be illustrated. As business structures changed drastically in the late nineteenth and early twentieth centuries, the need for new systems of organization and the demand for office furniture to accommodate these changes also increased. An essential component of the evolution of office design, furniture design, and the role of the worker were the publications written by businessmen and theorists who were initially influenced by the work of Frederick Winslow Taylor, the father of Scientific Management. Among them were: Arch W. Shaw, partner in the Shaw-Walker Company and founder of the journal System; William Henry Leffingwell, a disciple of Taylor, who took the industrial concepts of Taylor and adapted them to the office/business environment; and Frank and
Lillian Gilbreth, perhaps best known for their time-motion studies and consideration of the human element in their fatigue studies. Examples were identified in a variety of primary sources, including furniture trade catalogs, business journals and monographs. In the trade catalogs, new furniture forms adapted to the new business practices were promoted as tools of efficiency. As an example, in response to the card filing systems developed for data collection and record keeping, the Shaw-Walker Company designed a desk which could hold 80,000 file cards within arm’s reach of the worker (See Fig. 1 in Appendix 1). Business journals included essays on the office and proper design, illustrations and photographs of innovative office layouts and the invaluable advertisements from manufacturers (see Fig. 2 in Appendix 1). The business monographs include texts such as H. W. Leffingwell’s Making the Office Pay, which was used as a text in business courses as well as being available to business owners. These monographs, which dealt with many aspects of business operations, included chapters on office design and appropriate furniture forms and photographs of office layouts, often with before and after images (See Fig. 3 in Appendix 1).

Through this investigation of primary sources, it became clear that the early foundations for ergonomic research and office design were in the archives of business publications and furniture manufacturers. There were no precedents to accommodate the new types of work required in the office. And there were no individuals who specialized in office design. As the form and nature of business enterprises changed in the late 19th and early 20th centuries, requiring new and innovative offices to meet their needs, the primary sources of information for business owners were the furniture manufacturers, who analyzed those needs and developed product lines to accommodate them; and business publications which analyzed the current business conditions and proposed solutions to existing problems.

REFERENCES (Chicago)


Fig. 1 Card Filing Desk
Art Metal Equipment Service

Is your present filing system satisfactory to you in every respect—or do you feel it might be bettered? Is the arrangement of your record housing throughout your office the best you could have for your particular business, your office work, your records?

If not, let the Art Metal man in your city go over your present methods and needs with you and offer suggestions on how you may be able to save time and footsteps throughout your office.

The Art Metal representative specializes in making your office furniture work for you as it should—give you the most for your money. Good substantial office equipment, fitted to your particular requirements by experienced, capable men who make a study of your needs for each piece, pays daily dividends. The satisfaction such equipment gives you, the time it saves in the daily office routine, make it by far the most economical equipment you can buy.

Art Metal Service through the Art Metal representative or Branch Office in your city, takes the form best suited to your needs. If a single file or desk is required, the Art Metal man will go into the merits of the various types of equipment in order that you may select the one best fitted to your requirements.

Should you need more room in your office without expanding the space, or if you are contemplating new or enlarged quarters, the Art Metal man is prepared, after consulting with you, to submit floor plans, drawn to scale to show the best working arrangement.

If you would like to see how your battery of filing equipment or safe interior is going to look, the Art Metal man will submit a paste-up reproduction showing the equipment in colors and to a scale of one-tenth actual size.

For the purpose of checking up you may have a copy of the pamphlet illustrated at the top of this page, "An Analysis of Efficiency in Office Equipment." In this pamphlet modern office standards as approved by the highest authorities are listed. It contains a series of tables by which you may analyze the present standing of your office; charts on which you may check over your records and indicate the various sizes, quantities, replacement values and their location in the files. The analysis of records alone, is a valuable feature in determining the amount of protection that you now give valuable records.

And finally, the "Analysis" contains the material for a picture plan of your office. Instead of guessing that a certain desk should be moved it is possible to say by means of this picture-plan method that it must be moved just so many feet and inches.

Fig. 2  Art Metal Construction Co. Services
Art Metal Steel Office Equipment, Cat. No. 764, c. 1925
WHY DESKS SHOULD NOT BE ARRANGED LIKE THIS

In the office shown here seven eighths of the girls cannot leave their desks without disturbing someone. Furthermore, work cannot be distributed to one worker without disturbing all. Another point worth noting is the use of individual desk lamps; as a rule, in offices like this, too strong concentrated light on the white paper is extremely fatiguing to the eyes. Another point worth noting, perhaps, is that only a few of the girls have copyhold

A MORE EFFECTIVE ARRANGEMENT

One feature that makes this office arrangement more effective than the one shown above is the position of the desks, arranged in two, side by side. This is usually a good arrangement as each worker can leave her seat without disturbing anyone else. The center aisle is perhaps a little wider than necessary, and some of this space could have been added with benefit to the aisle on the left. The lights in the office are specially effective, both natural and artificial.

Creating Moments: The Role of Time in Interior Environments

Jennifer Webb
University of Arkansas

ABSTRACT

Concepts of time frame pragmatic characteristics of the built environment such as seasonal tendencies, daylighting, and programmatic needs, all varying across days, months, and years. Time can be a more provocative element in the design of interior space. Rion Willard states ‘Architecture is an event or series of events in time much like a performance complete with characters and protagonists both human and architectural.’ The purpose of this paper is to explore time as a protagonist in interior space through the writings of scientists, philosophers, and designers with the goal of understanding its critical impact on design.

Specific objectives include: 1) introducing scientific and philosophical constructs of time, 2) describing how designers understand and use time across space and its inhabitants, and 3) revealing the moments constructed by the users as they fill a space with meaning, memory and experience. Great thinkers pursued scientific and philosophical inquiry on time. Newton developed objective concepts of relative time and relative space, based in human measurement and aspects of change. Kant approached time and space philosophically, emphasizing sensation and intuition. Einstein merges time and space into spacetime, allowing any point in space to be located with three physical points [e.g., latitude, longitude, and feet above sea level] and a fourth measurement of time. These diverse constructs establish the idea that if time and space have perceptible, measurable, and experiential characteristics, they are critical in the creation and assessment of interior design. Kant, Merleau-Ponty, and Palassma explored the
phenomenological, subjective, and lived experience of time and space and this is central to the interior design discipline. Individuals alter their lifespan by reflecting on events and people, cherishing stories, and caring for places and objects from the past. They imagine other generations and events, sharing the possessions and stories of the day to be carried forward.

Understanding world events and trends that influence generational cohorts, drive values, set priorities, and create belonging is critical to every design endeavor. The zeitgeist – the prevailing school of thought characterizing an era’s cultural and design values – codifies decision making. The inhabitants are directly influenced through environment-behavior relationships, lifespan development, and aspects of the lived experience inherent aspects of a successful solution. Poldma and Wesolkowska explore frameworks established in geography and anthropology. They propose that digital technologies and travel speed transform the spaces we inhabit physically and virtually; experiencing other places in real time shrinks the spaces in between. Poldma and Wesolkowska further claim “that flexibility and media will drive spatial experiences.”

When spaces become temporal and media becomes the driver of experience, what will the interior designer’s role be and how will we create, anticipate, and control the spatial experiences with which we are tasked? The work of scholars suggests that experiences of interior space occur moment by moment. The first impression of a space, before inhabitants begin using the space, changing it, and creating their own meaning, is perhaps the only moment designers are able to control. Subsequent moments differ from those preceding and following as the inhabitant is changed through engagement with the space, evolving with each passing moment. We cannot prototype expectations, memory, or meaning. Programming cannot account for the lived experience of today, tomorrow, or some point in the future. As an effect of technology and societal values, the design community must consider that they are no longer creating spaces and places intended to last centuries or even decades. From pop up shops to taco trucks located by Twitter, the spaces we know and plan today are increasingly ephemeral, bound and freed by concepts of time.

REFERENCES (APA)


Toile de Jouy: Three interpretations of a traditional French pattern

Lois Weinthal
Ryerson University

ABSTRACT

Wallcoverings and textiles have the ability to capture our attention through patterns and imagery. The traditional eighteenth century French textile pattern, Toile de Jouy is an example of this type whereby multiple vignettes depict French scenery. (Figure 1) The artists at the time looked to recognizable themes such as florals, the arts, and bucolic scenery to populate a pattern of floating vignettes across the surface of the textile. (Grant 2010: 5) While this type of pattern has endured, contemporary designers have questioned how the imagery is reflective of current times.

This paper looks at three examples of Toile de Jouy that reflect interpretations by contemporary designers to the reimagining of everyday vignettes. In these examples, the designers referred to fundamental characteristics in the pattern, such as site, vernacular architecture, and everyday activities. The result places emphasis on place and culture. The three interpretations identify contemporary examples of these characteristics and replaced them with updated contextual elements. Landscape and architecture provide the background for traditional French Toile de Jouy vignettes. In the first example of an updated version, the African American interior designer Sheila Bridges, used Harlem and its cultural identity as a means for redesigning the vignettes in Harlem Toile de Jouy, 2006. (Figure 2) Her design portrays African American characters in everyday activities of “…couples dancing with a boom box nearby, girls doing double Dutch jump- rope and a trio playing basketball…”. (Seymour 2006) At the same time, Bridges
left the characters clothed in traditional French garments to reinforce a connection back to the original. In a second example, the graphic design studio Revolver, in collaboration with Mike Diamond, reinterpreted Brooklyn in a similar manner in their version titled Brooklyn Toile, 2012. (Figure 3) In this version, iconic sites and personalities associated with Brooklyn and pop culture provided characters and site-specific elements such as subways and bridges, upon which floating vignettes recall daily life in Brooklyn. In the third example, the American ceramicist, Beth Katleman makes reference to traditional French Toile de Jouy and transforms the bucolic scenery associated with these prints into a contemporary version of three-dimensional wallpaper titled Folly, 2010. (Figure 4) She crafts ‘islands of folly’ in porcelain that require a second look to fully grasp her new narrative. Katleman included the typical set of characteristics that appear in the toile, such as people, animals, architecture and nature, but reconfigured the vignettes with cast figurines to transform the narratives into vignettes that reinforce the absurdness that the term ‘folly’ implies. The ordinary two-dimensional background is amplified to a three-dimensional surface that allows onlookers to occupy fictional narratives.

These three contemporary examples reveal the potential for traditional interior elements to be rendered into a contemporary language while retaining fundamental characteristics of the original. In each example, the designers analyzed the collection of elements that formed the narrative and saw the opportunity to translate them into contemporary elements. People, animals, architecture and nature are still present, but the details of each allow for this pattern to transcend time and be continually updated with site and culture.

REFERENCES (APA)


Appendix for Abstract:

Toile de Jouy: Three interpretations of a traditional French pattern

Traditional Toile de Jouy as seen in *The Cherished Sheep*, cotton, roller-printed. Manufactured by Favre, Petitpierre et Cie, Nantes, c. 1785.

Figure 2

*Harlem Toile de Jouy, 2006*

Sheila Bridges
Figure 3

*Brooklyn Toile* (right: detail), 2012

Mike Diamond and Revolver New York
Produced by Flavor Paper
Figure 4

_Folly (right: detail), 2010_
Porcelain, wire, steel rods and heat-shrink tubing, 108” x 192” x 11”

Beth Katleman
Barriers to energy efficient behaviors in high performance office buildings

Julia Day
Kansas State University

ABSTRACT

Relevance/Problem/Context
In recent years, more stringent codes and environmental standards have led to an increase of higher performance building designs that use less energy, which are often heavily reliant upon occupant interactions with the building (Brown et al., 2009). It is typical that designers and building owners recognize the intent of a given design and any sustainability goals, but the people that work in these buildings on a daily basis may not comprehend how their actions affect the building’s energy use (Janda, 2009). For example, occupants’ interactions with daylighting controls or passive ventilation strategies may have either a positive or negative impact on both building energy use and occupant thermal/visual comfort.

Method
A sequential mixed methods study was conducted to better understand the relationships between occupant behaviors, reported environmental satisfaction, and learning in high performance buildings. First, interviews were conducted (n = 3) and documents were analyzed to determine the study population. Second, a survey was sent to ten high performance office buildings in the U.S. (n = 118), and third, follow-up interviews (n = 41) were conducted with occupants from selected buildings to better understand the survey responses. The hypothesis predicted that if participants had received training for high performance building features, then they would be more satisfied with their environment than those who had not
received training. Data were analyzed through both statistical (quantitative) analyses and coding (qualitative) for emergent themes.

Outcomes
Results indicated there was a significant difference between the two groups (those who had received effective training and those who did not), and the null hypothesis was rejected. Individuals who reported having received effective training were significantly more likely to be satisfied with their office environment than those who did not receive any training. In addition, some of the most interesting findings emerged from the following subsidiary research question: for what reasons do occupants choose not to interact with high performance building features? Occupants chose not to interact with high performance building features for several reasons, including the following: 1) social concerns (occupants did not want to affect others) and/or the culture in the office was not conducive to changing thermal or visual conditions, 2) “Not my dime” in reference to energy use, 3) occupants did not understand how to effectively control the building features, 4) lack of perceived control, or 5) occupants were unable to alter controls or interact with the building (e.g., in one of the study buildings, override switches were not provided to control the electric lights, which was incredibly inconvenient for occupants who needed night vision capabilities to perform their job at a weather station – a programmatic and design misstep). These emergent themes tie back to the literature surrounding social influence (Jain et al., 2013), lack of understanding (Hadi & Halfhide, 2011), and lack of control (Day et al., 2012). Educating occupants about how to control building systems, encouraging interactions and energy-saving behaviors, and explaining the rationale behind building energy savings may all be ways to address the issues identified above.

Advancement of design knowledge
Findings of this study demonstrated 1) the importance of an integrated design approach that considers needs of the occupants as well as programmatic goals (Brown & Cole, 2009), and 2) the need for occupant education surrounding interactive building controls. We, as interior designers, have an opportunity to not only educate occupants through our designs, but we may also be able to create environments that encourage active occupant engagement and foster an increased awareness of energy efficiency in buildings.
REFERENCES (APA)


Are we achieving our goals with green school buildings?: Comfort, mental health, and the pro-environmental awareness of 5th graders in green and non-green buildings

Jung-hye Shin & Joy Huntington
University of Wisconsin-Madison

ABSTRACT

This study examines LEED certified and non-LEED certified elementary school buildings in the Midwest with the following research questions: (1) What are the differences between LEED and non-LEED certified elementary school classrooms in terms of children’s satisfaction with their audio-visual & thermal environment, overall comfort, mental health, and pro-environmental attitudes?; (2) Do LEED buildings outperform non-LEED buildings in the areas identified in research question (1)?; (3) What are the contributing factors to children’s classroom comfort and overall mental health?

In linking the seemingly discrete concepts of indoor environmental conditions, green buildings, children’s mental health, and pro-environmental awareness, we employ the proposition put forth by Chappells & Shove (2005) and Humphreys (2005) that indoor environmental qualities and related human comfort are highly negotiable socio-cultural constructs and therefore should be measured against performance criteria that are informed by the original project goals. Thus, we began our research by establishing the commonly cited goals of LEED certified school buildings: (1) the health and wellbeing of the occupants; (2) minimizing the potential environmental impact of the building; (3) inculcating stewardship of natural resources (educational component). Our study examined (1) and (3) to
assess the success of LEED certified school buildings. Goal (2) was not included in the scope of this study. We hypothesized that students in LEED certified buildings feel more comfortable, have better mental health, and have higher levels of pro-environmental awareness. We secured four LEED certified and three non-LEED certified elementary schools in the Midwest. From each school, all 5th graders were invited to participate in the research. A total 280 students participated in the study. To objectively document the physical environment, we measured acoustics, lighting conditions, thermal comfort, and window configurations. Students’ subjective responses were measured by using questionnaires: their demographic information, satisfaction with audio-visual & thermal environment (Preiser & Vischer, 2005), overall comfort, mental health (Osika, Friberg, & Wahrborg, 2007), and pro-environmental attitudes (Manoli, Johnson, & Dunlap, 2007). All measurements were conducted once during the summer and once in the winter. The physical data and the survey data were analyzed using descriptive statistical analysis. Then, the effects of LEED buildings were tested with hierarchical analysis while controlling the social support levels of individual students, which tend to closely correlate with their parental attention and socioeconomic status. Contributing factors to children’s overall comfort and mental health were identified with another set of hierarchical analysis.

The results indicate that students in both types of buildings are slightly satisfied with all of the IEQ items (4~5 range out of 7-point scale). Their overall satisfaction and comfort remained at a similar level. Second, during the summer season, students in LEED buildings reported higher levels of comfort, satisfaction with noise, mental health, and more pro-environmental attitude and the differences were statistically significant. During the winter season, however, all such differences disappeared. The only item that LEED building excelled in winter was satisfaction with temperature. Third, the contributing factors to overall classroom comfort during the summer season were temperature, window view, and noise, while, during the winter, daylight, window view, and visual comfort significantly influenced the students’ overall comfort. Significant contributing factors to overall mental health during the summer were the temperature and window view. In the winter, noise was the only contributing factor. Study limitations and implications to building planning and design were discussed.
REFERENCES (APA)


Learning From Neuroscience to Teaching the Concept of Embodied Parti

Ryadi Adityavarman & Neal Hubbell
Kansas State University

ABSTRACT

The proposed paper presentation will discuss the notion of embodied mind and visual creativity through the teaching of the parti in design education for students of the millennia generation. The paper presentation will explore multiple approaches from current discoveries in neuroscience on the cognitive learning functions of the brain to recent thoughts in philosophy on the interconnection between mind and body.

The combination of approaches helps to explain the effectiveness of the parti for creative composition, and its ability to facilitate more effective teaching strategies. Arguably the current millennial generation of students suffer from dualistic detachment problems because of the excessive influence from digital communication and technology. This generation of students exhibit various problematic behaviors such as a lack of the capacity to think holistically due to typical compartmentalization of reasoning, and the loss of an intuitive connection between mind and body. The parti offers a sensitive, effective, and personalized approach to overcome this compartmentalization. The architectural parti is a conceptual /visual diagram, as derived from the Beaux Arts tradition and has been used extensively as a fundamental learning methodology in design education for nearly two hundred years.

Using selected relevant neuroscience principles; the paper presentation will describe the connection between brain mechanisms especially pertaining to
Gestalt principles and visual cognition processes in general to explain the effectiveness of the parti as a design tool. In addition to the focus on visual understanding, the paper will explore the potential of other bodily senses on the notion of embodied cognition. This additional layer of bodily exploration, based on recent examinations in phenomenology and contemporary philosophy, is part of an attempt to explore the underlying integration between rationality of cognitive mind and intuitiveness of bodily experience, including feeling, toward a holistic, genuine, personalized form of knowledge. Subsequently, learning about the visual aspects of the parti in formal visual composition could transcend into a higher realm of the embodied parti. In this ideal realm, the students will be able to imagine the rigor of the visual pattern in creating congruence spatial composition of the parti with the imagined living experientially of the potential users in the spaces they inhabit.

REFERENCES (APA)


Integrating Non-Design Majors into a Fourth Year Design Studio: Crafting a Collaborative Design Process

Nathan E. Bicak
Radford University

ABSTRACT

“Design has never recognised [sic] discipline silos, and designers and design researchers have always crossed boundaries, stepped into other disciplinary realms to create solutions to problems, to challenge orthodoxies and to innovate.” (1)

Context
In the spring of 2014, an instructor began an interdisciplinary design-build studio focused on examining the environmental, political and social impacts of residential spaces. The intent of this studio is to create an educational initiative rooted in the principles of sustainable living and learning through making, and does so through the design and construction of a tiny house (Appendix A). To create a collaborative atmosphere, the course – currently in its second iteration – is comprised of a diverse group of students: Interior Design, Communications, Business, Regional and Rural Studies, Geo-Spatial Science and Journalism. This multi-faceted class structure unites students of distinct backgrounds and skill sets; it allows students to address the complexity of sustainability through an interdisciplinary lens. Students in the course are designated as Scholar Citizens, a university initiative focused on students applying academic experiences to solve real world issues.

Problem
An interdisciplinary approach to the design-build process presents unique pedagogical challenges for a design instructor. There are variances in language, communication styles, research methods and a wide range of technical skills.
amongst the students. Furthermore, when working with a multitude of disciplines, the instructor must continuously ensure that each student has the opportunity to share their perspective.

Methods
The instructor addresses these challenges through a variety of methods. To begin, non-design students are paired with design students and the teams engage in observational information gathering on their sustainable products/practices. Students must also interview industry experts for guidance as to the viability of the selected materials/products. Flexibility is an important trait in this process because if these interactions reveal that a team’s focus is fruitless, they must revise their direction. From this experience students gain insight, confidence and excitement in their investigation. The class utilizes design-thinking methods to establish a set of guiding principles for the project. The instructor establishes categories that represent the core values of the project, and students submit Post-it Notes in response to these categories. These ideas are reviewed as a group and common themes are identified (Appendix B). The Post-it Notes are also utilized in the design process. The tiny house is divided into component spaces and the students identify the values that each space should fulfill (Appendix B). The students form new interdisciplinary teams for the prototyping phase. Each team takes a portion of their collaborative design and builds a full-scale section to test its spatial viability (Appendix C). When students test their design ideas through prototyping they watch their concepts become reality through their own craft.

Outcomes
The formation of interdisciplinary teams encourages each student to contribute their unique disciplinary knowledge to the design project.(2) In this studio students learn about sustainable products and practices, determine and make recommendations as to what products and systems are to be utilized, and gain valuable teamwork skills through a collaborative design process. As a prominent Scholar Citizen course, this project has gained positive attention for our interior design program on campus, and has led to the formation of other collaborative partnerships. A design-build project is a complex endeavor and it benefits greatly from the incorporation of disciplines beyond design. The process of involving non-
design students can be a challenge, but the methods above provide insight as to how the process can be rich for all involved.

REFERENCES (Chicago)


Appendix A: Tiny house design, resultant of the collaborative process.
Appendix B

Students establishing guiding principles for the project through the Post-it note process.

Students establishing spatial values for the tiny house through the Post-it note process.
Appendix C: Students prototyping their design ideas.
A Studio Foundation for an Evolving Discipline

Kimberley Furlong & Marie Gentry
University of Arkansas

ABSTRACT

The interior design discipline is becoming more collaborative, faster paced, more diverse, less clearly defined. Lines between allied disciplines are blurring. If interior designers are to grow in relevance, lead innovation, and evolve in response to societal and technological changes, academic programs must provide a broad foundation that encompasses the human experience and empowers future designers with diverse design thinking skills, design agility, and confidence (Heinz, 2012; Preston, 2012).

While graduates must be highly skilled in interiors-specific subjects, they must also be capable of crossing conventional disciplinary boundaries. "With massive advances in technology and shifts in cultural, social, political, and economic conditions, the twenty-first-century designer requires a far more integrated and diversified knowledge than ever before. For a designer who shapes the built environment for people, it is important to have a broad overview of all design-related and general global impacts. But it is also very important to cultivate a depth of expertise which can be put to specialist use." (Caan, 2011)

First year studio is the opportune time to lay the groundwork and breakdown preconceptions of the discipline. To support a strong design foundation and “...develop his [the student's] understanding and his recognition of the abstract elements of any design situation” (Kostellow as cited in Hannah), three goals were identified: build a common design language, focus on relationships of spatial elements, and promote accountability. Three discrete, progressive teaching units included: Precedent, Light, and Body/Inhabitation. Each consisted of 5
assignments comprised of research, exploration, concept development, drawings, models, photos, and written analyses. Underlying themes (form, scale/proportion, compositional systems, transition, structure, assembly/making, light, inhabitation) associated with spatial qualities were considered (Ching, 2007). Weekly seminars required students to present precedent research that reinforced themes and foundational concepts. Strategies to encourage confidence, rigor, and accountability included evaluations that assessed product and process equally on three criteria: Integrity and Pursuit of Process, Grasp and Understanding, and Resolution and Product. Evaluation of work was communicated at six and ten weeks through individual progress meetings. Daily pin-ups with peer reviews encouraged accountability and increased self-confidence.

The most successful students were open to diverse ways of problem-solving, including experimentation with multiple solutions. For those eager to learn, a progression of foundational and skill development was evident, regardless of initial skill levels. See project examples in Appendix A. For students accustomed to explicit recipe-driven instruction and detailed grading rubrics, this studio approach was challenging. The methods outlined may serve as an instructional model for first year studios. Regularity of weekly assignments, independent exploration, experiential learning, resistance to interiors-specific content, and less frequent assessments emphasized process over product. Requiring a broad foundation in design fundamentals may prepare future designers to be confident and elastic. "It is these high performers that are easily adaptable, have broad skills, are technologically adept, innovative and are self starters. They are mentally nimble and are able to take their skills and easily apply them to new situations. These individuals are the ones all companies want." (Heinz, 2012)

REFERENCES (APA)


BODY in SPACE studies
movement in time

9' x 9' paper

front elevation photographer
side elevation photographer

plan
PRECEDENT studies
PROCESS SOLID + VOID

Each decision is PREDEEDED by a prior decision.
LIGHT +
SHADOW studies
choreograph +
manipulate light
LIGHT + SHADOW studies
real to abstract

“We find beauty not in the thing itself but in the patterns of shadows, the light and the darkness, that one thing against another creates.”

Junichiro Tanizaki – Japanese author
BODY in SPACE studies
kinetic body drawings
3-d wire drawings
connective tissue relief
ON-SITE X-RAY VISION: THE ROLE OF FIELD STUDIES TO LEARN MATERIALS AND DETAILING

Peter Greenberg
Wentworth Institute of Technology

ABSTRACT

For interior design students, especially those who attend schools in urban centers with examples of significant built projects, on-site field studies offer lessons about real construction materials that cannot be replicated in the classroom itself. While an academic course dedicated specifically to interior detailing can offer various methods of instruction and skill development to learn about materials – technical drawings, analyses of published works, synthetic design projects, topical lectures – it is direct observation of actual buildings that best reinforces the reality of material assembly so essential to being a good designer.

Site visits to built master works provide students the opportunity to document how details are made in a kind of x-ray-vision of reverse-engineering-the-real – detective work of what invisible layers hold others layers in place. Students learn to see in a new way by perceiving not the picturesque overall effect of a project but the technical physical assembly that makes it possible. Through the physicality and immediacy of the work students learn to see as producers of designs rather than as consumers. The problem being addressed by this paper is that normative educational models for design often emphasize the visuality of an idealized situation based on computer simulations and not the physicality of actual construction (Mitrovic). This approach leads many students to produce designs based on naïve presumptions of what the computer can represent in gravity-free space. The strategy to address this problem is for students to analyze actual material properties through onsite empirical observation – for example, thickness,
weight, reflectivity, rigidity and gravity. These on-site lessons reinforce lessons of materiality in fundamental ways that depth-less CAD material libraries cannot. The focus on material detailing of a built historic project - rather than its organizational or its strictly historical narratives – allows students to directly access design decisions that instrumentally define the character of individual spaces.

As students demystify how materials go together in exemplary ways, they envision the creative possibilities of material assemblies in their own designs. The paper will present an analysis of the outcomes (student work) to offer evidence of these conclusions. While analyses of historical precedents are generally introduced into the curriculum through preliminary exercises preceding the design phase of a project, visiting actual master works and concentrating on the design detail offers several distinct pedagogic advantages. By focusing on the interior details of historical precedent, the academic discussion shifts to issues of architectonic character from questions of spatial organization or the context of historical innovation. A detail is at least as effective a tool to describe the most salient aspects of a scheme as traditional ordering devices like the plan or the parti – and arguably more so to embody issues of spatial character (Frascari, Frampton). Details also offer the benefit of focusing on materiality and how spaces are actually made, thus making the historical model more relevant for advanced students who benefit from investigations that more directly parallel professional activities. Details thus prioritize the built reality of the precedent over its theoretical construction (Gregotti). Lastly, by asking students to use the sectional detail in field studies, their powers of observation are honed to investigate how real materials comprise actual designs.

The design detail challenges the student of Interior Design to understand how materials are assembled and how they embody design intent. By looking closely at the details of historic precedent, particularly in the field through direct observation and analysis, a connection is established between a student’s understanding of constructed material issues and their own studio work.
REFERENCES (MLA)


APPENDIX:
ON-SITE X-RAY VISION: THE ROLE OF FIELD STUDIES TO STUDY MATERIALS & DETAILING

Figure 1: Student Feld Studies

Student field work at visits to significant built designs offer lessons about real construction materials and how they can be replicated in the classroom itself.
By recording their observations in a field notebook, and by drawing sectional details, the students use a kind of x-ray-vision of reverse-engineering-the-real – detective work of what invisible layers hold others layers in place.
Figure 3: Using the Detail to learn about the relationship between Material Properties and Design Intent

Site visits are great ways of creating opportunities to figure out how things work.

Studying the detailing of precedent designs offer the benefit of focusing on materiality and how spaces are actually made, thus making the historical model more relevant for advanced students who benefit from investigations that more directly parallel professional activities.
By asking students to use sectional detail in field studies, their powers of observation are honed to investigate how real materials comprise actual designs.
Students learn to see in a new way by perceiving *not* the picturesque overall effect of a project but the technical physical assembly that makes it possible.
Laying a Research Foundation for Building Technologies Class

Cathy Hillenbrand-Nowicki
High Point University

ABSTRACT

Innovative approaches to traditional undergraduate research methodologies can successfully function as pedagogical vehicles for enhancing comprehension and enjoyment of lecture based building technologies and construction courses. Programming provides the evidence-based research foundation for successful studio based projects, and is readily accepted by interior design students as a required part of solving a design problem. "Visual" students do not often feel that traditional cited research papers contribute to design learning in the same way, and often find them daunting or think them unnecessary for design practice. Marshall-Baker (2005) in her article Knowledge in Interior Design concludes that "Interior Design and social science both value research.

The scientific method is used in each field to understand the human and environmental variables that affect health, development, and quality of life. This is critical to interior designers who rely on research to make informed decisions concerning the design of interior space." Data mined from traditional research assignments can be beneficial when teaching how to select and specify building systems and materials, and contribute to student comprehension of highly technical subjects. The pedagogical goal of exposing Interior Design students to the importance of traditionally cited research as an additional tool for successful programming, and an opportunity for departmental participation in the Big South Undergraduate Research Symposium with other university students engaged in traditional scientific research, provided a new project opportunity for the Building
Technologies course. The professional practice requirement of FF&E specification was used as a premise for this exercise. Students were asked to choose a building system topic or material that interested them from their readings, lectures, or site visits. They then completed a traditionally cited research paper on their topic, addressing historic precedent, recent innovations, application, and sustainability. Paralleling the "analysis/synthesis" metamorphosis (Karlen 2009) undertaken during planning methodology in design process, students were asked to distill down their findings and translate them into the visually communicative vehicle of a 2' x 3' plotted poster for a target audience unfamiliar with building technology or construction. This format required condensing and enlarging text, adding charts, and choosing representational photographs to best represent their subject. Posters were also judged on visual composition.

The students had a very positive response to the assignment. After poster presentation and research discussions, students related methodologies on how they condensed their information into the visual format required. After grading, 6 of 35 posters were submitted for consideration to the Big Surs Undergraduate Research Symposium, featuring students from 15 regional Colleges and Universities. Three posters were accepted for presentation. Symposium participants were excited and proud to demonstrate the important role research plays in Interior Design education and practice, and of their part in raising awareness of how demanding Interior Design education is, and what Interior Design practitioners do every day to improve business productivity, safeguard building occupant health, and enhance quality of life through the creation of interior environments.

REFERENCES (APA)


INT3190 Building Technologies: Project 2: Undergrad Research

*Please note: This project will run for the remainder of the semester in phases, with the final poster due on the last day of class.

In this class we are studying how typical structures are built, what factors contribute and have contributed to their design and why a modern day emphasis on sustainable design practice should always be incorporated in construction. CIDA standards 2 & 13

If your topic is interesting to you, research can be fun! Designers research every day when they do programming, but investigative research is appropriate when preparing to specify FF&E for a project.

How do you know the best system solution for a specific project need?

PART 1: Compose a Cited Research Paper

1. Select a type of universal building system that interests you: foundation type, wall type (outside and inside), roof/ceiling, floor, fenestrations (windows & doors, include sun control and privacy options), integrated passive or active sunspace, structure integrated green space, elevator/escalator or moving vertical conveyance, innovative integrated storage system, heating system/thermal control, plumbing system, lighting system, electrical system, auditory/sound control system, security system, building automation. Find something that you are really excited about!

Note: No more than 2 people may have the same topic in both sections of INT3190, and they must be different in some way: i.e.: Topic: Roofs: slate roof, tile roof, metal standing seam roof, etc. Walls: wooden exterior walls, stone walls, post and beam walls, adobe walls, etc.

2. Research its history & write a 6 - 8 page double spaced research paper with citations (APA) on how your system has evolved throughout the history of construction since its inception through its modern day use. Analyze and discuss typical construction methods and materials used to build it, past and present. We will have check dates along the way to keep your project on task (Paper process check dates: topic choice, reference materials and citations, and final paper due date).

3. For your paper find 4 current photographic examples showing it in use today (or adaptations of it if it is historic). Global examples are highly encouraged.

4. Please provide photos of actual sample materials used for construction: discuss how global site or regional location might affect material selection.

5. Suggest sustainable practices and sustainable materials that are being used or might be used to make your system more LEED compliant or earth friendly.
6. Construction drawing / detail: If it is a structural system: Draw or provide a construction section showing the system as built. If it is a building system such as electrical, heating, or plumbing: Draw or provide a building section, elevation or floor plan showing the typical system installation methodology (you will see examples of this in your research when articles and texts explain it) Label all of the necessary parts. You audience must easily understand how it works.

Paper Submission Requirements:

1. Your research paper is to be submitted in a plastic folder cover with a title page containing: course name and section, your name, date, and report topic with a selected representational graphic / photo of your system.

PART 2: Presentation Poster

For this phase you will distill the information from your research paper down to essential information using a poster format, which will easily and quickly educate and communicate to an audience unfamiliar with your building systems topic from a minimum distance of 2’ away.

1. Brief talking points, or a synopsis of the highlights of your research, and items 3-6 listed above are to be presented on a 2’ wide by 3’ long color poster plotted on glossy paper (vertical orientation). You will be evaluated on:

2. The completeness of required content

3. The visual clarity of the information presented to your audience (non- pixilated, not blurry appropriately sized images)

4. Composition /format: how well you compose, organize, and balance the visual elements of your poster using the Principles and Elements of Design.

You may use Publisher, Illustrator, or any other publication software to do your layout, but it must be professional and attractive as well as informative. Posters will be presented on the last day of class.

* Four of the most successful posters will be submitted for consideration, and if accepted, presentation, at the Undergraduate Research Symposium.

Check Dates & Due Dates:

PHASE 1

WED Sept 11: Part a: Submit 2 of your favorite topic choices and write a brief justification as to why you should be selected to research that topic. SELL ME as you would sell your design solution to a client! Topics will be approved based upon the following:
1. The quantity of research materials selected on your subject
2. The feasibility of adaptation of that topic for LEED issues / sustainable building
3. The level of interest shown via your justification / desire to do that topic

_____ 5 pts.

**WED Sept 25:** Part b: 4 – 5 pertinent research articles highlighted showing the content being referenced in your research paper

_____ 15 pts.

**MON Oct. 7:** Items 3 – 5 Optional desk check (Photographs / samples / LEED materials)

**MON Oct 21:** Research Paper due

_____ 30 pts.  

**PHASE 1: 50 pts**

**PHASE 2**

**MON Nov 18:** Desk Check of Poster Content: Graphics and Text

_____ 20 pts.

*Students are encouraged to meet with the instructor to discuss poster layout at their convenience during instructor’s office hours at least 2 weeks prior to Dec. 4

**WED Dec 4:** Last day of class. Project 2 Poster due!

**Poster Presentation**

_____ 30 pts.  

**PHASE 2: 50 pts**

Total : 100 pts.
1. Research paper turned in with poster; amended as per professor’s comments, with spelling and composition errors corrected. 

___ / 10 pts

2. Poster plotted vertically (Portrait) on 2’ x 3’ shiny poster paper. Good clean images. No blurs, streaks, faded images or pixilation.

___ /10 pts

3. Visual Composition: Neutral colored background. Positive and negative spaces balanced. Background images do not conflict with text. Correct amount of text, with text sizes and font choices appropriate for audience viewing. Title and author shown as assigned.

___ / 10 pts

4. Appropriate information chosen to best convey topic. General information from research paper distilled down to essence of information to convey most important issues to an audience within a 20 – 30 second timeframe. Interesting and informative graphics and photographs complimenting and enhancing text.

___ / 20 pts

Total ___ / 50 pts.
By Laura Twomey

What is Slate and How is it Applied?
- Slate is a fine, low grade mud rock with a well developed penetrative cleavage.
- Slate's cleavage allows the rock to split into platy sheets.
- Slate is durable, fireproof, has aesthetic potential and is available in multiple colors.
- Construction: A hole is trilled through the slate and uses a copper nail to the rafters.
- Weighs about 750lbs per square ft., three times more than an asphalt roof.

History of Slate Roofs:
- 13th Century Europe: Slate was used as roofing on castles and churches.
  - Most popular in Ireland and Wales.
- Came to the New World by the settlers.
  - Slate was so rare in the colonies that “The Slate House” referred to William Penn’s House.
- Slate was primarily confined to the large eastern cities that were concerned with possible spread of fire.
- With the development of railroads, slate became more accessible and economical.

Styles and Culture of Slate Roofs:
- Mid 19th century slate was one of the most popular building materials, because of the architectural taste of the time period.
  - Slate laid in multi-colored decorative patterns, suited the curved or strait Mansard or Empire roofs of the High Victorian Gothic Style.
  - New Queen Anne Style adopted slate roofing and used its textures and colors for roofs.
- Late 19th, Early 20th century the colonial revival style replaced Victorian Styles it adopted the slate roof and contributed to its popularity.
Fostering Effective Collaborative Partnerships in a Retail Design Studio

Matthew Holmes-Dallimore & Liam Colquhoun
Virginia Commonwealth University, Qatar

ABSTRACT

Introduction
This proposal revolves around scholarship of teaching and learning with emphasis on retail design and branded environments. The authors established, through pedagogic experience, collaboration as a critical course element, with partners from industry as well as other design programs contributing to the studio experience. Retail Design is an inherently cross-disciplinary field. The unified, holistic approach to brand-related projects necessitates a collaborative approach, which can lead to very specific challenges. Our proposed report uses three case studies of different collaborative models to highlight these challenges, and illustrates how different approaches to the pedagogical process can help support collaboration and successfully navigate potential problems.

Issue
“Individuality is prized in Design because it is seen to be a creative and personal endeavour. This however is not reflected in professional practice as designers often find themselves working in teams with other designers as well as non-designers.” (Yee, McKelvey & Jefferies, 2006) The undergraduate design studio experience often supports an individualistic or ‘elitist’ approach. Students are often eager to work alone on a project and submit a solution that represents a personal vision. Getting the students outside of their ‘comfort zone’, working with partners from different fields/levels of expertise/cultural backgrounds is a more realistic reflection of the industry they are training for. Secondly, the CIDA professional
standards 2014, states as standard 5: “Entry-level interior designers engage in multidisciplinary collaboration.” The introductory or exploratory nature of sophomore studio projects together with the capstone requirements of Senior studio projects leave a fairly short window of opportunity to provide the student with projects rooted in real world experience.

Methods
The presentation focuses on three case studies of collaborative projects, undertaken during the Retail Design Studio, over three different academic years, with corresponding models of collaboration that were developed to optimize the experience for all participants. The three kinds of collaborative partnerships profiled in case study are: 1. Industry - Where the partner is a commercial, interdisciplinary design firm. 2. Internal - Where the partner is another department from within our institution, such as Graphic Design or Communications. 3. External - Where the partner is a program from an overseas university. The corresponding case studies we propose to discuss were collaborations with: 1. Fitch, an international design firm specializing in Retail Design. 2. The graphic design department of our own institution. 3. An interior architecture program of a Scottish design school. Approximately 20 students participated from our studio, with similar numbers participating from partner programs and departments in the second and third case study examples.

Outcomes/Findings
An obvious obstacle to collaborative endeavors is that of communication. We found that the use of technology as a collaborative tool, while effective as a way to record interaction, was limited as a means of real-time group ideation, echoing the sentiment of Schneider (2006), who referred to existing systems as “unsystematic mode[s] of collective learning processes.” Cultural misunderstandings were also a reflection of the students’ unfamiliarity with the dynamic. While we did our best to respond to these circumstances, we also recognized the importance of the students experiencing and negotiating these occurrences themselves as part of their learning experience. Other findings will be shared with conference attendees. We also intend to showcase, as part of our presentation, the project briefs as they were conceived, evidence of the projects in practice with specific strategies employed and examples of submitted outcomes from participants.
REFERENCES (APA)


FOSTERING EFFECTIVE COLLABORATIVE PARTNERSHIPS IN RETAIL DESIGN STUDIO

IDEC 2015 ANNUAL CONFERENCE
Scholarship of Teaching and Learning

Abstract Submission Appendix

EXAMPLE OF AN INDUSTRY COLLABORATION
Project: Cultural Retail/Information Kiosk Concept

Spring 2012

Introduction

Designers frequently have to work within unfamiliar fields. Clients are often specialists within a particular industry or, as a result of globalization, foreign nationals, operating in international marketplaces. Author and founder of legendary design company IDEO, Tom Kelley (2005), uses the terms ‘cross-pollinator’, ‘collaborator’ and ‘anthropologist’ to describe three of the multiple roles of the successful designer. These terms refer to the designer’s ability to step outside the familiarity of their own experience to study and work with people from different cultural and professional backgrounds. Kelley’s point is that good design usually stems from an understanding of the subject and the context within which it operates.


Description

This project will be a collaborative exercise where design teams from will each design a retail/information kiosk that represents elements from each other’s country and culture. In other words, design teams will design a kiosk that is somehow representative of , while design teams will design a kiosk that represents .

Team organization

Each design team will be comprised of 2 students, which will be part of a larger ‘work group’ of 8-10 students (comprised of teams from both programs) - in total there are 4 work groups.

Each work group will be scheduled to meet via Skype on a weekly basis (during studio time) to present their work, share their ideas and discuss relevant topics. This weekly contact time is to be considered a brief working meeting and participation with the other teams’ projects are mandatory. Each design team will act as advisors to the teams from the other program (as well as their own) and help navigate the potentially treacherous terrain of cultural representation.

To reiterate: Each team of two students performs dual roles – as designers of their own kiosk and consultant/advisor to the other teams in their work group.
Communication

As well as the weekly meeting, each 2-person team will create an online blog that will be their record of research, ideation and collaboration. Students should post all material relevant to their project online and invite commentary from other design teams, as well as contributing to the blogs of other teams. Collaborative participation will be monitored to make sure you are not just working on your own project, but also participating in other teams’ work.

Project outline

The kiosk will appear at international ‘World Fair’ type of events promoting industry and tourism to a global audience. Exactly what each kiosk offers in terms of content will be up to each design team but it is important to note that in this context, what each kiosk sells or gives away is less important than what it says about the country it represents, either overtly or in the nuances of the design – choice of materials, communication of message, 3D form etc. Also, the transient nature of these events means that mobility and a modular-style of construction is important.

Information

- The design, finishes, and construction of each kiosk should, in some way, reflect the image, identity, and character of the subject country (or region).

- The kiosk will fit into a 3m x 3m space.

- Signage and “messaging” should be clearly visible.

- There will be one or two persons working the kiosk at any time.

- In addition to the cultural representative nature of the kiosk, consider other key characteristics such as:
  - Economy of Scale
  - Identity
  - Merchandise
  - Context
  - Transience and Mobility

Each individual student is expected to produce:

1. One A3 (min. size) sketchbook with evidence of freehand drawing/sketching (including both exploratory and final concepts), brainstorming and mind-mapping and diagrams which convey thoughts and ideas. The sketchbook should have at least 20 pages filed as outlined above. (20%)

2. An additional grade will be awarded at the instructor’s discretion that will reflect the individual student’s participation in the collaborative process. (10%)

As a two-person team you are expected to produce:

3. 3D physical models to reinforce 2D work. There should be a series of process/sketch models alongside a final model. The final model should be presented at 1:20 scale on a square of black foam core, 250mm X 250mm in size. (20%)

4. A blog, which captures the research & investigation process, concept development and final outcome in a clearly communicated manner. (This could be in the form of text, images, movies, slideshows, audio, or photos of model making, sketchbook work, etc.) The blog should include at least three tabs with the following headings: ‘Research and Investigation’, ‘Concept Development’ and ‘Final Outcome’. The blog should also contain evidence of dialogue and conversations via comments left between you and your partner teams in (20%)

5. A final presentation that will be posted into the blog, which should include:
   - Collections of images that represent the concept/mood of the solution
   - Perspective sketches
   - Scale drawings such as plan and elevations
   - Material samples board
   - Consideration of graphic content and communicative devices

(30%)

It is up to the individual team how they wish to incorporate these drawings into their final presentation but keep in mind that the presentation will need to be in a suitable format to present back to the ‘partner’ teams in via online communication. Although consideration is to be given to the kiosk in terms of mobility, the kiosk should be represented in a suitable situation/environment/site. The presentation should also highlight relevant research, and convey a clear creative process and concept.
EXAMPLE OF A COLLABORATION WITH EXTERNAL PARTNERS
AXONOMETRIC OF CIRCULATION

1. SAMPLE STOP
2. MAKERY
3. BAKERY
4. GOODIE GALLERY
5. DESTINATION MY CREATION
6. CAKE ME AWAY
7. Picture Perfect Packaging
8. ELEVATOR
9. DECORATION STATION
10. CAFE'
11. DESTINATION MY CREATION

EXAMPLE OF A COLLABORATION WITH INDUSTRY PARTNERS
Design for Aging in a Modern World: Linking Aging Theory and Design Process

Migette Kaup
Kansas State University

ABSTRACT

Design for Aging in a Modern World is an advanced level course offered on-line to both undergraduate design students as well as non-design students studying gerontology at the undergraduate and graduate levels. The focus of the course is to use foundational theories of environmental gerontology (e.g. Lawton, 1980, see Appendix A) and life course perspectives (e.g. Moody, 2006; Settersten, 2003) as a way of framing solutions to modern design problems for older adults. The course is organized around four core sections. The first section addresses the foundational theories on aging as well as the physiological changes that are common in later years. The second section introduces the process of design thinking and targets issues for products used in everyday life. The third section focuses on design issues for home and work. And, in the final section, the class considers design consideration for community planning.

One of the major objectives of the course is to teach students how theories on aging and life course are exceptionally powerful when combined with the design process to solve critical issues relevant for aging populations. In the second module, the students are asked to select a product or an environmental design feature, analyze it from several perspectives as introduced in the first module, and then re-envision the product or attribute as re-designed or improved to better address an older user group. The analysis starts with consideration to commonly held life-course perspectives such as modernization theory of aging (Cockerham, 1997) or activity theory of aging (Cummings & Henry, 1961), and, they are asked to
consider dimensions such as physiology, psychology, sociology, and culture, and describe what will matter most to this user group (See Appendix B). The strategy to guide students through an analysis and re-conceptualization process includes the use of a web-based resource called the “Inclusive Design Tool Kit.” The kit provides planning and analysis tools and demonstrates steps in design and problem solving. The kit can also demonstrate an assessment of the demands that a task places on the user’s capabilities and provides feedback on the proportion of individuals who would be unable to complete that task. As students begin their analysis, they are required to share their experiences and pose questions to each other about the web-based tools. They also provide ideas and feedback relative to what their peers are discovering in relationship to their selected items. Students then proceed with an individual narrative analysis articulating their assessment as well as the suggested changes for enhanced acceptability and usability of the item for an older user group. Finally, the students are asked to either design or narrate an advertisement that would be directed at and be attractive to this targeted group.

Results demonstrated through the student projects reveal that a heightened awareness and understanding of user/product interface is developed through this active learning experience. Non-design students are especially attracted to the tools as a mechanism to understand the relationship between the human experience and physical design attributes. Design students develop a stronger ability to tie social theoretical constructs to the design and problem solving processes that they’ve come to take for granted. Student dialogue demonstrates a strong appreciation for the shared learning experience facilitated through the use of the web-based tools.

This presentation will outline the structure of the on-line course and this targeted student learning outcomes (SLOs), provide a detailed explanation of the assignment that is used to achieve the SLOs, and, provide examples of projects that demonstrate how students reconsider the interface of environmental attributes and the aging human body along with the social constructs that provide meaning and value to the items that individuals interact with on a daily basis.
REFERENCES (APA)


Appendix A: Environment & Aging Theory

Lawton & Nahemow, (1973)

M. Powell Lawton
1923-2001

Lucille Nahemow
1933-2000

Competence / Press Model
theory on aging & environment

Environmental Press

Competence

Low

Weak

High

Strong

Negative Affect
Maladaptive Behavior

Tolerable Affect
Marginally adaptive behavior

Zone of Maximum Comfort
Adaptation Level (AL)

Zone of Maximum Performance Potential

Marginal Affect
Marginally adaptive behavior

Negative Affect
Maladaptive Behavior
Appendix B: Assignment & Grading Rubric

Sell it to a “Boomer”
Design for Aging in a Modern World

ID630/ GERON720

Exploratory Learning:
Everything that we interact with has to be “designed” to do something, and all of us can name a design we love – a product, service, program or something that we just can’t imagine living without. If we could live without it, life would not be nearly as good. It might be a pair of roller blades, a wheelchair that fits you just right, or a jacket with the perfect combination of fabric, fit and color.

This activity asks you to identify an object or attribute of physical space and analyze it for the needs, desires, and preferences of older consumers or users.

Design – when it works, is capable of improving your life.

Your task is to devise a strategy to test and market a product to a generation consumer bracket of “ Boomers” (or older if you’d like) to convince these consumers that they’d find this product useful and/or life-enhancing.

Part 1: Analysis of your Target Audience
You’ve learned about some of the physiological changes associated with the aging process, and you probably are aware that there are generational differences that impact how people of different ages will perceive, value, and assign different levels of meaning to things as well.

Like the point made in the Parade Magazine (July 15, 2012) cartoon to the right, we should not forget to consider the life-course perspective of the Boomers. Ask yourself, what is in their history of experiences that might influence how they view this product?

So, as you plan the analysis of your selected product, what do you have to consider; physiology, psychology, sociology, culture? And, why... what will matter to this user group?

Part 2: The Design Analysis
Next, look carefully at the existing design details of your product and apply a little “expert opinion” on the current usability and perceived value the product has to the target audience in its current state. You should describe the pros and cons of the product’s design features in relationship to specific characteristics of older adults. You are encouraged to evaluate your product using the “Inclusive Design Tool Kit” that is available to you in the module (University of Cambridge, 2013).
Part 2: The Design Analysis, cont.
Next, you need to describe how would you propose formally studying the product’s usability and perceived value to your user group? Your readings provide you with a variety of research techniques. Which of these techniques would you suggest employing, and why? What would you expect to learn from this strategy, and, what information might not be able to be learned from this strategy or form of analysis?

Part 3: Develop a Promotional Advertisement
Now, write (or design) an advertisement piece that convinces an older consumer that they will LOVE this product and need it to make their lives easier or more satisfying. If you are not comfortable doing something with visuals or “graphics” write the promotional text and include some photos that you’d hand over to the copy editor for a magazine advertisement. This part needs to be heavy on the imagery, and succinct with the words. Advertisements are short and to the point! If you can’t read your text in 90 seconds or less, it’s probably too long.

Submission Expectations:
Part 1 and Part 2 are for the long explanations, supporting evidence, and background information. This narrative should be about 2-3 pages, single spaced (nicely formatted).

Part 3 can be submitted either bundled together with the narrative in a single submission, or, if you’re using 2 different types of media (such as a Word.docx narrative and a PowerPoint advertisement or other format like a YouTube video) you can submit them separately.

I expect that you will use your personal and professional skills and talents. This means, design students...I expect you to design this advertisement, and produce something that is well composed using your 2D design skills. Non-design students, you may stick to a more text-based format if you’d like. But, if you’re wanting to use learn some new tricks with Word or PowerPoint® just let me know, and I’ll be happy to help you out.

I will NOT grade non-design students down for graphic design errors - so don’t let that hold you back if you want to experiment with something you’ve not tried before.

I will also start a message board for posting questions about using different programs. If you see someone asking about something you know the answer to, please help them out. Remember, we are a learning community.

References:
This assignment was adopted (in part) from Satisfied Customer. In “Why Design” (p. 18) by Anna Slafer and Kevin Cahill, Chicago Review Press, Chicago, IL (1995).
Appendix B: Assignment & Evaluation Rubric

Sell it to a “Boomer” - Section 2
Design for Aging in a Modern World

ID630/ GERON 720

This assignment is worth up to 25 points toward the final grade in the class. The following criteria will be used to evaluate and score the submission. Scores will be given in increments of .5 from a score of “weak” up to a score of “strong” as outlined below.

Comments for evaluative criteria will be made directly on the assignment.

Evaluation Criteria:

Parts 1 & 2: An analysis of the product is articulated according to the stated criteria

The description of the product is provided in both a narrative format that is richly descriptive, complete, and professionally written (grammatically correct, appropriate word choice, etc.) AND an image of the product is provided.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Strong</td>
</tr>
<tr>
<td>2.5</td>
<td>Moderate</td>
</tr>
<tr>
<td>1</td>
<td>Weak</td>
</tr>
</tbody>
</table>

An analysis of the target audience is provided within the context of “this” product. Justifications are well supported and multiple aspects of physiological and social criteria are explored.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Strong</td>
</tr>
<tr>
<td>4</td>
<td>Moderate</td>
</tr>
<tr>
<td>1</td>
<td>Weak</td>
</tr>
</tbody>
</table>

An analysis of the design details is provided with suggested research strategies that could be employed to study the usability and perceived value. The reasoning for the user-design “fit” is well presented and justified.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Strong</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
</tr>
<tr>
<td>1</td>
<td>Weak</td>
</tr>
</tbody>
</table>

Part 3: A promotional advertisement is presented that could be used to market this product to the target audience.

The advertisement includes the succinct language and images that would capture the attention of the target audience and convey the promotional message.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Strong</td>
</tr>
<tr>
<td>4</td>
<td>Moderate</td>
</tr>
<tr>
<td>1</td>
<td>Weak</td>
</tr>
</tbody>
</table>

Overall:

The assignment is professional in its appearance? (See assignment for expectations)

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Strong</td>
</tr>
<tr>
<td>2.5</td>
<td>Moderate</td>
</tr>
<tr>
<td>1</td>
<td>Weak</td>
</tr>
</tbody>
</table>

Academic Honesty: The instructor reserves the right to grant no score if the report is deemed fraudulent in any way - Academic Honesty Standards apply and dishonest submissions may be subject to sanctions.
Assessment of Millennial Interior Design Students’ Perceptions Concerning Game-Based Learning

Jessica MacKenzie, Stephanie Clemons & Kenneth Tremblay
Northern Arizona University

ABSTRACT

Problem
Research indicates that Millennial-aged students perceive that lecture-based courses are ineffective for engaged learning and, therefore their least preferred method of information delivery in college-level courses. Yet, many interior design programs offer lecture-based courses as part of their approved interior design curriculum (Demirbas & Demirkan 2007). Game-based learning (GBL) has been proposed as a method of teaching that may more clearly engage Millenial students in the learning process and meet the pedagogical goals of the course (Jones, 2012; Trybus, 2012). While GBL has been attempted in at least one lecture-based, interior design course (Clemons & MacKenzie, 2014), little assessment of this pedagogy has been reported. This presentation will discuss the assessment of Millennial students who participated in a lecture-based course that was partially flipped using GBL strategies. This presentation may interest those desiring to understand how Millennial interior design students think of and respond to GBL as well as those interested in modifying curriculum to match preferred learning styles of Millennial students.

Strategy
The objective of this explorative phenomenological study was to interpret the meanings of the participant’s attitudes and perceptions of GBL in a lecture-based, junior-level, lighting design course. Student participant volunteers were organized into focus group sessions and asked a series of open-ended questions concerning
(1) perceptions of lecture courses and educational games, (2) positive or negative aspects the specific games played (e.g. Illuminating Race), (3) perceptions regarding the retention, transferability and application of lighting information learned as a result of GBL activities, and (4) suggestions for interior design educators interested in implementing GBL in their curriculum. Focus group sessions were analyzed using Interpretive Phenomenological Analysis. Emerging themes were organized in a summary table, which illustrates the phenomenon the participants experienced. (See Figure 1, Table 1, and Table 2 in Appendices).

Outcome
Based on previous experiences with lecture-based courses, participants perceived they connected and engaged more in learning course materials using GBL strategies. They offered both positive and negative assessments of their GBL experiences focusing on (1) peer influences, (2) emotional and motivational factors, (3) how the games impacted their retention and transferability of information, and (4) how the implementation of games and the mechanics of the game affected their learning. The majority of participants agreed that GBL assisted them in developing and strengthening lighting vocabulary as well as concepts concerning theory and design application. They also shared they would not have been as confident about their ability to communicate lighting or to work with diverse groups had GBL not been implemented into their course. Participants valued the use of GBL because of its effectiveness in lecture-based course learning. Participants shared suggestions for educators interested in developing GBL activities that may result in enhanced student learning. Strategies included the importance of carefully planning GBL activities, the need to appeal to multiple learning styles, and the importance of instructional feedback during gameplay. Some participants shared that many instructors overlook opportunities for engaging students in the learning process by relying on previously-used methods of content delivery. Completing the cycle of course re-design, the course instructor implemented participant suggestions into revised GBL activities and assessed quality of learning among students the following semester. Assessment and continuous improvement within courses can ensure enhanced quality of teaching and learning.
REFERENCES (APA)


Appendix

Figure 1.

Participant Preference Ranking for Interior Design Course Types

- Most Favorite
- Second Favorite
- Third Favorite
- Least Favorite

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Most Favorite</th>
<th>Second Favorite</th>
<th>Third Favorite</th>
<th>Least Favorite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamental Courses</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Artistic Courses</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Technology Courses</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Studio Courses</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
## Appendix

### Table 2

Themes of Study: Table of Participant Likes and Dislikes Concerning Each Game

<table>
<thead>
<tr>
<th>Game</th>
<th>Likes</th>
<th>Dislikes</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Hundred Thousand Dollar Pyramid</td>
<td>- Setup well</td>
<td>- Unfamiliarity with game</td>
</tr>
<tr>
<td></td>
<td>- Easier to learn from</td>
<td>- Peers were unprepared</td>
</tr>
<tr>
<td></td>
<td>- Easier to pay attention</td>
<td>- Difficulty describing lighting terminology</td>
</tr>
<tr>
<td></td>
<td>- More memory triggers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Learned about social dynamic of class</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fun to watch others play</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Learned how to describe</td>
<td></td>
</tr>
<tr>
<td>Who Wants to be a Lighting Designer?</td>
<td>- Familiar with game</td>
<td>- Game did not trigger many reference points</td>
</tr>
<tr>
<td></td>
<td>- Received the most feedback</td>
<td>- Distracting side conversations from peers</td>
</tr>
<tr>
<td></td>
<td>- More familiar with the information</td>
<td></td>
</tr>
<tr>
<td>The Illuminating Race</td>
<td>- Got to run around</td>
<td>- Did not learn any new lighting concepts</td>
</tr>
<tr>
<td></td>
<td>- Refreshed memory on reflected ceiling plan layout</td>
<td>- Embarrassed about disrupting computer lab</td>
</tr>
<tr>
<td></td>
<td>- Learned how quickly they could produce a reflected ceiling plan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Learned how to work in a diverse team environment</td>
<td></td>
</tr>
</tbody>
</table>
### Table 2

**Themes of Study: Table of Themes and Sub-Themes**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Sub-Theme</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Influences</td>
<td>Teaming</td>
<td>• Want to be engaged as entire group as opposed to individually or one team at a time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Want to be teamed with people they communicate and collaborate well with</td>
</tr>
<tr>
<td></td>
<td>Distractions and Focus</td>
<td>• Easy to lose focus when peers are disengaged and disruptive to gameplay.</td>
</tr>
<tr>
<td></td>
<td>Preparations</td>
<td>• Students who are prepared for gameplay disliked students who were unprepared therefore causing frustrations with game-based learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Unprepared students knew they were unprepared but did not express emotion about it, but did express frustration with learning from game</td>
</tr>
<tr>
<td>Emotional and Motivational</td>
<td>Competition</td>
<td>• Competition was deemed motivational, fun, and helpful for gameplay.</td>
</tr>
<tr>
<td></td>
<td>Winning and Prizes</td>
<td>• Winning and prizes were described more like secondary benefits as opposed to the overall goal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Participants mostly described winning and prizes as motivational</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• One participant felt peers were too prize-oriented which hindered game-based learning</td>
</tr>
<tr>
<td></td>
<td>Alignment with Learning Style</td>
<td>• Participants enjoyed game-based learning most when games aligned with learning styles and skill strengths</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Observation of others engaged in gameplay was important to personal learning</td>
</tr>
<tr>
<td></td>
<td>Fun and Excitement</td>
<td>• Game based learning was fun when participants experienced competition, winning, and being engaged with peers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Most participants looked forward to the games because it would provide a break from the monotony of lecture</td>
</tr>
<tr>
<td></td>
<td>Pressures and Stresses</td>
<td>• A few participants described feeling unwanted pressured to provide the correct answer for the team</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A few participants described feelings of embarrassment when they provided the wrong answer for their team</td>
</tr>
<tr>
<td>Retention of Information</td>
<td>Creating Memories</td>
<td>• Participants indicate retention of information happens when memories are created</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Awkward or unique moments create long-lasting memories</td>
</tr>
<tr>
<td></td>
<td>Getting the Wrong Answer</td>
<td>• Participants indicate they do not remember correct answers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Wrong answers trigger a memory</td>
</tr>
<tr>
<td></td>
<td>Receiving Feedback</td>
<td>• Participants indicate when the instructor provides feedback during gameplay, they retain the information longer</td>
</tr>
<tr>
<td></td>
<td>Active Class Participation</td>
<td>• The act of playing and immersing in gameplay helped retain information</td>
</tr>
</tbody>
</table>
| Difficulties Retaining Information | Participants who did not retain information from gameplay shared little to no memory triggers  
| • Participants who did retained information shared multiple memory triggers |
| Game Mechanics | The Game Itself | • Flaws in the game can hinder learning from the game  
| | • Participants considered games flawed when questions were too hard or when questions and answers were poorly written  
| | • Quality of graphics and design of game indicated to participants that instructor took their learning seriously |
| Gameplay | • Disruptions during gameplay can hinder learning  
| | • Participants considered gameplay disrupted when directions were confusing, when gameplay disrupted other people, or when there was not enough time to complete game tasks  
| | • When instructors took gameplay seriously, so did the participants |
| Transferable Skills Learned from Games | Terminology | • What most participants say they took away from the game-based learning experience |
| | Team Work | • How to create design solutions despite varying opinions and personalities in the team |
| | Speed | • Unexpected understanding of how long it can take to finish a project |
| | Ability to Communicate Lighting Designs | • Ability to speak intelligently and confidently about lighting to clients and other professionals |
Collaboration Redefined: Leveraging Tactics of Crowdsourcing and Technological Utilities to Enhance Resulting Knowledge in a Multi-Disciplinary Collaborative Project

Lyndsey Miller, Jacob Gines, Alexis Gregory, Michele Herrmann & Suzanne Powney
Mississippi State University

ABSTRACT

Crowdsourcing, a term coined in 2006 by Wired journalist Jeff Howe, is the employment of a broad audience to generate creative solutions to a core problem using digital tools as a platform (1). Particularly related to design, those contributors have a variety of backgrounds and, because iteration is required, the convergence of expertise brings about robust results to the design problem. As authors Lingyun Sun et. al. describe, “crowd who collaborate could learn from others’ design processes and improve their design ability, and this enables sustainable crowd work.”(4)

While crowdsourcing in its traditional, yet youthful, form have primarily been applied to large audiences on a global scale, those at PwC propose that the methods can be applied on an internal, corporate level in order to promote ideation that “mirrors the community-centric nature of the Internet at large.” Furthermore, young audiences, such as those entering college and soon the workforce, are much more habituated to broadly communicating on a global scale, removed from hierarchical barriers (3). Design pedagogy in higher education, in turn, should begin to adopt proven crowdsourcing strategies, which are more apropos for today’s student body, that will result in better project outcomes,
seamless transition to practice, and improved learning outcomes in the process. At the start of the fall semester, students at one university were immediately engaged in a multi-disciplinary, industry-sponsored competition. Modeling PwC’s methods for implementing crowdsourcing into corporate environments, this project sought to replicate their five key strategies: 1. Include a diverse audience. 2. Provide a clear purpose. 3. Motivate to participate. 4. Allow time to innovate. 5. Don’t throw out ideas. This endeavor, as part of a larger five year study, was modified significantly for the calendar year to address major concerns and issues evaluated in previous years (2). The first was to incorporate a more diverse group of students, beyond those concentrated on the built environment. Graphic design students were incorporated into the teams which had previously been comprised of Architecture, Building Construction, and Interior Design.

The faculty of the respective groups also engaged preliminarily to standardize the scope and procedures the teams would ultimately follow. Additionally, students were removed from their respective studio environments and converged in a neutral on-campus location that enabled active learning. The facilitating faculty were positioned as mentors, promoting engagement and interaction in a trusting environment. Regeneration of ideas, be it through ideation and failures, were encouraged and the learning objectives were as much about the process as the resulting final products. Through these methodologies, a variety of technologies were incorporated to facilitate a higher level of communication between students of varying work ethics, class times, skillsets, and personalities.

This presentation will discuss, in more detail, specific implementations in this multi-disciplinary project. In addition, a comparison of outcomes from the three-previous years and the modified components will be considered. Ultimately, by implementing philosophies of crowdsourcing, applied for corporate environments, the resulting projects, students’ engagement and perceptions, and knowledge gained prove that the experience is facilitating the desired positive outcomes.

REFERENCES (APA)


APPENDIX

CONDITION DESCRIPTION FOR THE SURVEY:

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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</thead>
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<td>Number of teams: 11</td>
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<td># of levels: 1</td>
<td># of levels: 1</td>
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<td></td>
<td>Story height: 9</td>
<td>Story height: 8’ up to 25’ (sloping)</td>
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<tr>
<td></td>
<td>Floor Area: 13, 320 sq. ft.</td>
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<td>Floor area: 1,500 sq. ft.</td>
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<td>Team Composition:</td>
<td>Team Composition:</td>
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<tr>
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<td>Architecture: 3rd Year (2 per team)</td>
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<td>Architecture: 4th Year (2-3 per team)</td>
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<td>Interior Design: 4th Year (1 per team)</td>
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<td></td>
<td>Team Composition:</td>
<td>Team Composition:</td>
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<tr>
<td></td>
<td>Architecture: 4th Year (2 per team)</td>
<td>Architecture: 4th Year (2 per team)</td>
<td>Architecture: 4th Year (2-3 per team)</td>
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<tr>
<td></td>
<td>Building Construction: 4th Year (2 per team)</td>
<td>Building Construction: 4th Year (2 per team)</td>
<td>Building Construction: 4th Year (1-2 per team)</td>
</tr>
<tr>
<td></td>
<td>Interior Design: 4th Year (1 per team)</td>
<td>Interior Design: 4th Year (1 per team)</td>
<td>Interior Design: 4th Year (1-2 per team)</td>
</tr>
</tbody>
</table>

In addition to the student participation, there has been participation in facilitation and critique processes from 2 Architecture Faculty, 1 Building Construction Faculty, 1 Interior Design Faculty, 1 Graphic Design Faculty (2014), and at least 1 Industry Partner each year.

DEMOGRAPHIC DATA

<table>
<thead>
<tr>
<th>DISCIPLINE PARTICIPATION</th>
<th>GENDER ANALYSIS</th>
<th>RACIAL ANALYSIS</th>
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<tbody>
<tr>
<td>INTERIOR DESIGN 24%</td>
<td>FEMALE 54%</td>
<td>AFRICAN AMERICAN 6%</td>
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<tr>
<td>ARCHITECTURE 32%</td>
<td>MALE 46%</td>
<td>ASIAN 4%</td>
</tr>
<tr>
<td>GRAPHIC DESIGN 19%</td>
<td></td>
<td>CAUCASIAN 12%</td>
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<tr>
<td>BUILDING CONSTRUCTION 26%</td>
<td></td>
<td>HISPANIC 1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PREFER NOT TO ANSWER 77%</td>
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</table>

In addition, 19 of 78 students were from out-of-state; 18 of 78 students had a grade point average of greater than 3.49; and 25 of 78 students scored higher than a 25 on the ACT.

INITIAL SURVEY RESULTS

What characteristics do you think are essential to successful integrated project delivery?
What are your goals for this collaborative project?

- Learn the strengths of the other disciplines
- Improve communication
- Prepare for collaboration that will take place in practice

FINAL SURVEY RESULTS

Were your goals for this project realized?

Yes. I learned the strengths of other disciplines, improved communication skills, and/or prepared for collaboration that will take place in practice.

No, but I gained something else of value.

No, it only served to reinforce stereotypes about the other disciplines.

Written responses for “No, but I gained something else of value”.

- It didn’t turn out exactly how I had envisioned it, but that is the point with a group project. We are supposed to be comparing our ideas.
- How important it is to understand the strength of everyone’s discipline and how one person should not be in charge of the group and design ideas. Everyone should share design ideas.

Yes, because I met new people who contributed something I could not.

Yes, because the end result was something better than I could have obtained on my own.

No, because I don't like working in groups.

No, because my group members didn't offer any skills or knowledge I do not already have.
What have you learned from this collaborative project?

- How to communicate effectively
- The strengths of other disciplines
- How much collaboration will be necessary in my career
- All of the above

Has this project changed your perception of the other disciples in this collaborative project?

- Yes, in a positive way, because each discipline had skills and/or knowledge that exceeded my expectations.
- Yes, in a negative way, because each discipline lacked skills and/or knowledge I expected them to have.
- No, because group work is never shared equally.
- No, because the entire group never gets along.

Would you recommend a collaborative project like this to other students?

- Yes, because it is preparation for what I will face in my career.
- Yes, because it will be looked upon favorably during a job search.
- No, because group work is never shared equally.
- No, because the entire group never gets along.
Do you anticipate working on a collaborative project like this when you are a professional?

Notable written comments:

- I would like to work collaboratively again because there are some things that I may not know as well as others. By working with these professionals, I would be able to learn more things to help better my career.

- I really enjoy seeing what other disciplines can bring to the table so I can better myself.

- The diversity of skills and opinions brought by the different disciplines helped push the project forward when things slowed down.

- I realize that in most work places collaboration will be required, however I really enjoyed working with my teammates and look forward to working with other disciplines in the future.
Teaching Them to Weave: Preparing Textile Students for Long-Term Memory Retention

Nancy Miller
University of Arkansas

ABSTRACT

Problem Statement
Change from a traditional textile science-based ‘Introduction to Textiles’ course to one that imparts essential textile information while supporting the strong tradition of ‘making’ established in our school.

Method
The process of change began with research investigating ‘experiential learning’ as a pedagogical strategy for the course. Drawing strongly from the learning tenents presented in Dewey (1938) and endorsed by Bloom’s (1956) writing, Cannon & Feinstein (2005) set out to assess the Kolb Learning Style Inventory (Kolb, 1984). This theory addresses how students move previous knowledge into their own thoughts—how they interpret these experiences, what meaning is given to them, and what their reactions are to them in the future. Cannon, et.al. (2005) furthered this thinking, saying higher levels of long-term learning are gained when students analyze their experience, evaluate the relative merits of the outcomes, and alter their actions to achieve desired results. This became the underlying pedagogy in the class.

Our program is one of few interior design programs to house its own textile course. The students enrolling in the class are first- or second-year students with little background in textile science, something Kolb urged as needed. However, these students are familiar with apparel and the class had the potential to build
experience in the classroom through lectures supported with clipping room swatches, followed by creative application to build from that foundation. The semester's lectures addressed basic broad-based foundational topics such as fiber types, classification, and properties, etc.; topics such as codes and finishes were addressed in lecture format supported by 'swatch searches' in the clipping room. To build upon Kolb’s desire to connect the previous knowledge with new materials, these lectures were designed to build heavily on what students may already know about interior textiles and heavily referenced apparel, where they may have deeper knowledge.

The course was divided into 7 units and the classroom was flipped. During each unit the students were asked to read a specific chapter in the text (Wilbanks, et.al., 2009) outside of class, and were to find appropriate swatches in the clipping room. Another class used small groups to apply learning from text and samples by answering study questions. The creative portion of each unit focused on production of swatches (hand woven, felted, printed, 3-D). The students created samples that were intended to support the specific focus of the unit. For example, when studying weave structures, the students wove specific samples on a 4-harness loom; designed a weave structure using software, wove the design on a computer-aided loom, then analyzed their sample for suitability-to-purpose by means of critique and reflective writing. The last activity in each unit was to design an improved sample—thus applying and building upon previously gained knowledge. The units were carefully ordered to follow Kolb’s and Cannon’s suggestions that to be integrated into the student’s long-term knowledge, it must build upon previously information.

Analysis
Always a difficult course, the changes made to the Textiles class yielded higher final exam scores, thus supporting an intermediate level of long-term recall. The essential structure of the class was successful and while there are always changes to be made in succinctness and clarity, the pedagogy promoted by Kolb and Cannon & Feinstein will remain the same—work to build course content on previously gained knowledge in an orderly manner.
REFERENCES (APA)


notebook

When listening to the first lecture, you may think the notebook sounds like a lot to cover in one semester! During the course we will learn different technical aspects of fiber and textile production. During each unit, you will read the assigned chapters in the text, answer questions that will help you learn the material and study for the exams, apply that information as you select fabric samples, create original designs using the information you’ve learned, analyze the samples for suitability to the end use, and finally, design an additional sample incorporating those changes to fiber, yarn, weave structure, coloration type, potential finishes to be applied, and codes needing to be met. You will be including all those things in this notebook. This notebook is an individual effort.

purpose of project

One of the ways student learn is to gain and apply information, then analyze the results as a written reflection. As you move through the Studio coursework in the Interior Design program, one of your goals should be to create unique (custom) design solutions fitting to your clients. The goals of this assignment are to 1) support your learning in the textile course; 2) learn a wide array of textile information and design techniques; and to 3) keep a record of your work to use in more advanced classes to create additional textiles.

objectives

By completing this assignment, students will:

- Learn, understand, and reflect upon fiber characteristics and their appropriate end use
- Reinforce textbook learning in the field of textiles for interiors
- Discover textile labeling regulations and codes and record those
- Explore, experiment, and record textile design processes
- Compile a record of supplies, equipment, and processes appropriate to a wide array of textile design techniques that may be used in future studio courses
- Keep a record of resources that will augment future creative textile design

method | format | process

Study Guide Questions and Answers, Assignments, class and reading notes, and creative samples need to be compiled in a three-ring binder or similar means of containment. The material should be separated by dividers large enough to be seen beyond the edges of the binder and arranged by the seven units explored in this class: 1) Felt Making, 2) Surface Design, 3) Woven Textiles, and 4) Three-Dimensional Textiles. Each unit will include all notes, etc. for that unit. Swatches distributed in class should be included with your class notes. This collection of materials will serve as your personal “tutorial” when selecting textiles as a part of your design solutions and recreating original textile designs in future studio classes.

Each of the tabbed sections of the notebook should contain the following: and is an individual effort rather than collaborative:

1. Reading notes
2. Study Guide—This part is a collaborative in-class effort of a small group.
3. Help sheets posted on Blackboard for each process. These sheets will not be available to you after you complete this course, hence the need for printing and including them here.
4. A running record of electronic resources (URLs) provided to you, and discovered by you. You might want to divide this record into lists...each headed by a title such as: videos, web sites, blogs, equipment and supplies, etc. so they are more manageable.
5. Images of inspirational textiles together with the attribution in APA format.
6. Each of the 12" x 12" samples created in fulfillment of class requirements.
7. Extra samples created.
8. Reflective writing. This writing should include the following:
   a. Goal—what you were trying to achieve in this sample, both from a functional standpoint and intended aesthetic. For example you want to create a light-weight, drapable, residential window covering (functional goals). Additionally, you want the textile to design to be inspired by the precedents being studied in Studio and to use a small, repetitive block pattern.
   b. Outline of objectives used to achieve the goals...you will purchase sheer fabric of a suitable color, use a succession of block designs created with linoleum blocks ranging in size from 1" x 3" up to 4" x 4". You will use the textile ink intended for block printing available at the bookstore.
   c. Listing of any changes you made as you progressed through the creation of the textile
   d. Photos (can be 4 to a sheet in portrait view or larger) of you making your textile sample—beginning, two during the process, and one at the end.
   e. Evaluation of the end product:
      i. Does your end product achieve your goals? Why or why not?
      ii. What comments regarding successes and areas for improvement were made during your critique? Do you agree with these comments? How would you address those areas for improvement?
      iv. Evaluate the textile’s aesthetic qualities using the Principles + Elements of Design.
   f. Suggestions for improving this sample to reach intended goals. Focus the first paragraph on selection of fiber, yarn type, fabric structure, necessary codes, etc. The second paragraph should focus on aesthetics of hue, texture, surface design, etc.

**evaluation criteria**

Using the guidelines for grading found at the end of the syllabus, the notebook will be evaluated based on completeness of inclusions, quality and accuracy of reflections, quality of the craftsmanship throughout, and application of design. Going beyond the minimum required (including helpful but not repetitive information) will be important when determining the contents of your notebook.

**calendar**

Individual creative portions of the notebook will be collected for evaluation at the end of each unit. The completed notebook is due at the time of the final exam, Wednesday, 7 May 2014. At 10:15. They can be retrieved on Friday, 9 May, or they will be held for you until the beginning of Fall Semester.
Three-Dimensional Textiles
Surface Design

Techniques Used:
- Painted dye background
- Two blocks used for printing
- Folded, clamped, low-immersion dye
- Block printed
Felted Textiles

Processes include: Wet, Needle, and Nuno Felting
Technology, Practice, and Education: A Model for Mastery

Jeff Nordhues & Dana Vaux

University of Nebraska at Kearney

ABSTRACT

This paper proposes a model for integrating technology into design practice and education. The framework includes the cognitive and knowledge dimensions from the Revised Taxonomy, overlaid with Polanyi’s concepts of subsidiary and focal awareness (Krathwhol, 2010; Polanyi, 1958). These two theories merge to create a new and simplified model consisting of two dynamic parts: base thought and elevated thought. The framework articulating the base/elevated thought model serves as an unbiased means of analysis applicable for both design education and design practice with regards to the usefulness, application, and integration of technology into the design process.

Context
The procedural details, steps, or outside influencing factors of a master craftsman, or “focal awareness,” still exist while a master presses on toward a goal; however, they fall into a state of “subsidiary awareness” not requiring direct focus of the master to reach the goal. This progression cannot be short-changed, rushed, or transferred from master to apprentice verbally or diagrammatically. For the novice, it requires assimilation through an active and direct teaching relationship with the master (Berrett, 2014; Polanyi, 1958).

Method
The proposed base and elevated thought model provided a means of analysis for the Revised Taxonomy and Polanyi’s concepts at a simplified level as an abridged
entry point for the proposed framework. The framework was used to analyze the mastery of technology in novice designers through the use of a model with inputs from academic design course content and design industry partner feedback. Examined contents within the framework include design program size, diversity of academic courses taught, types of technology, transferability to industry and academia, as well as consideration of current theory regarding the flipped classroom. At the core of the framework are concerns for the person, as opposed to a pedagogical method or industry standard, including academic, student, and professional.

Findings
A change in instructional processes and methods after implementing the base/elevated thought model resulted in improved student mastery relative to more time with the "master," or in this case, the course instructor. Allocating base knowledge to other means of instruction (for example online tutorials or flipped classroom techniques) freed up the master's time, and allowed the master to engage novices in more direct student-instructor contextual learning requiring higher levels of cognitive thinking.

Conclusions/Implications
Technology is a tool with many ends utilized within the design process requiring both base and elevated thought in order to generate creative solutions. However, it is essential designers employ the right tool for the desired production aesthetic or functional outcome, not technology for technology’s sake. Designers must learn how to master the learning of technology, not simply the technology itself. This is applicable for design practice where novice designers may be required to learn to use technology and apply it to the design process at an advanced cognitive level without direct supervision for acquiring the technical skills. While this paper utilizes the proposed framework within the context of a technology-focused model, its application is also transferable to other contexts where base and elevated thought are needed for mastery.

REFERENCES (APA)

Detailing design thinking: Evidence and application

Julia K. Day & Bryan D. Orthel
Kansas State University

ABSTRACT

Relevance / Problem / Context
“Design thinking” draws from vibrant research into how individuals process and produce solutions to complex problems. The depth of this research, while often ignored in interior design, provides important background for recognizing how design students are taught to think. Interior design educators need to understand the unique actions they are teaching in order to successfully communicate what design is. This research project evaluated student learning on construction detailing exercises for evidence of design thinking. Literature supports the idea that design thinking can be developed in a variety of ways (e.g., Dym et al., 2005; Kimbell, 2011). For instance, construction detailing exercises in non-studio courses challenge students with small-scale wicked problems. Rittel and Webber (1973) outlined the characteristics of wicked problems, which include problems with no stopping point, no singularly correct answer, and essentially unique parameters. Detailing exercises, which typically require conceptualization of aesthetics, construction, materiality, and performance, reflect this definition. The detailing process models a designer’s reliance on tacit and explicit knowledge in fluidly developing and recognizing ideas (Schön, 2009). Ultimately, construction detailing can assist students in understanding how they are thinking about solutions to design problems.

Method
Many theories of design thinking exist (Kimbell, 2011). This research project is framed in the context of Buchanan’s (1992) work, which posits that design thinking is not simply a way of reasoning or a set of skills, but rather is a much broader
theory speaking to what designers do and how they do it. For this research project, detailing assignments provided “places of inventions...where one discovers the dimensions of design thinking by a reconsideration of problems and solutions” (Buchanan, 1992, p.10). The student work analyzed was produced in three construction methods and materials courses and a detailing-related studio, taught at two universities. Different individuals taught the courses, but relied on similar course content and instructional resources (e.g. lecture slides, textbook, assignments). Process and final work product from approximately 330 students were examined using a grounded theory methodology. The grounded theory approach, which reveals patterns and emergent themes, enabled evaluation for evidence of student use and / or development of design thinking attributes. The researchers started with awareness of design thinking characteristics drawn from literature. Data were coded and analyzed for the presence of reflection / re-representation, iterative development, and repositioning / abductive logic. Coded data were cross-compared for thematic and content similarities.

Outcomes
Data analyses revealed that students initially struggled with framing and re-framing the given detailing problems (i.e. looking at problems in a new way). Students were intentionally asked to revise or repeat certain detailing exercises. The “forced” revision / re-representation oftentimes resulted in demonstration of basic principles of design thinking. Independent reflection or re-representation occurred, but infrequently. The detailing process helped students practice design thinking. The negotiation of unfamiliar subject matter and (seemingly) complex detailing problems required abductive thinking. However, students struggled to reposition and transfer what they had learned to other contexts.

Advancement of design knowledge
These outcomes challenge design educators to reconsider how and where we teach design thinking. By using skill-based assignments to model the complexities of design thinking, we can potentially enrich and interrelate the learning experience for students. Diversified exposure to design thinking increases the student’s likelihood to understand how they solve problems and how this way of thinking can be applied beyon
REFERENCES (APA)


Designing From the Inside Out: Museum Interpretation, Spatial Manipulation

Elizabeth Pober
University of Oklahoma

ABSTRACT

Purpose
Volumetric design is a significant component of interior design and spatial thinking is a very important pedagogical focus in interior design curriculums. The majority of interior design projects within these curriculums tend to be located within the confines of existing buildings that are either fictional or real. The given constraints of the building architecture often lend no significant opportunity for students to truly shape their own volumetric designs without restrictions. Since architecture responds to human activity and the needs of those activities that happen within enclosed interior environments, priority must be given to those interior environments with the exterior architecture responding to the interior needs. This is not a typical practice. The purpose of this project was to provide the students with an opportunity to analyze and shape the interior spaces within a museum project and allow the exterior architecture to develop from the interior volumetric design. The exterior of the building was not an important consideration at the beginning, but rather the size, shape and volume of the interior spaces themselves and how the volumetric design could affect the occupant’s spatial perception and the activities taking place therein. Utilizing shape grammar to create the composition of these interior volumes of space and further define their relationship to one another and connection to the world outside, the poetry of the overall architecture was determined.
Methodology
According to Violet-le-Duc, effective design develops from the skills of reading and writing architecture, where reading involves the process of determining what the elements and parts of a building are and then describing them grammatically. Writing architecture follows thereafter with constructing or composing the overall design (Viollet-le-Duc, 1990). Stiny’s studio method involves developing and providing a five stage programme for creating the new design languages that includes a vocabulary of shapes, spatial relationships, shape rules, initial shapes and shape grammars (Stiny, 1980). The shape grammars are initially defined in three-dimensional spaces that metamorphosis through rules and connections to create three-dimensional architectural grammars. Fawcett and Wojtowicz define shape grammar as “the principle by which vocabulary elements can be put together, and inherent in a grammar is the set of mappings between vocabulary elements such that certain groupings of elements can be transformed into another group” (Fawcett & Wojtowicz, 46-67).

Summary
The museum design project required the interior design students to utilize shape grammar early in the design process to analyze their program and develop a design as a system of parts or components. Volumetric shapes for each of the programmed activity areas and spaces for the project were then created based on an in-depth analysis of each space during the programming phase. Typically the students would develop two-dimensional prototypical drawings that would then be combined into block diagrams to help develop space plans. With the shape grammar process, they developed prototypical three-dimensional prototypical volumes of space and created rules to combining and connecting them through volumetric model combinations and transformations to create not only preliminary block and space plans but also overall volumetric compositions that created the overall architecture. By removing the boundaries of the given architecture that interior designers are normally given, and working only with overall outcome size constraints and some provided rules to apply to the exterior design that developed, the students were able to create interior designs that were not only functional but more volumetrically dynamic and creative then they had created in previous design projects.
REFERENCES (MLA)


The focus for this project is on the spatial needs of the exhibits and activities within the museum and the interior environments you are designing for them. You have utilized design programming to analyze, list and explain the requirements of the museum. You must now incorporate this program into the overall conceptual development of the volumetric design. Following our Shape Grammar lecture today, utilize the following process as a guide in developing your own shape grammar for this project.

The Shape Grammar Process:

Step 1: The Shape Grammar design process analyzes structure/design as a system/kit of parts, components, or elements. Take your programming list of activity areas for your client. Create volumetric shapes for these spaces.

Examples of Vocabulary Elements/Components are:
- Volumes - Lines
- Planes - Solids
- Geometric Shapes - Vertical Elements
- Linear Elements - Curved Elements

You are not limited to this list; you will be rewarded for creativity.

Step 2: In the shape grammar process, there are always transformations when arranging or assembling the composition. These are what we classify as Rules. Design rules/relationships are created for assembling the components. Below are some examples of transformations/rules/relationships. (packets posted on d2L for pages referenced below). Create some conceptual sketches (minimum of 8) showing the application of the rules based on these concepts. Remember, as mentioned previously; use all of the four spatial interactions at least once. These sketches can be done on the computer. Please print off various views of each concept with shaded, hidden, and wireframe drawings.

- **Dimensional Transformation**: relates to transformations along an axis (x, y, or z). Can be a horizontal or vertical plane.
- **Subtractive Transformation**: removal of parts of an object (Corbusier and other designers employed this in design composition)
- **Additive Transformation**: spatial tension, edge to edge contact, face to face contact, interlocking volumes, Ching pg. 56
- **Organization Principles**: centralized forms, linear forms, clustered forms, grid forms
- **Repetition**: copy, move, scale, rotate, stretch, etc.
- **Rhythm**: “a unifying movement characterized by patterned repetition or alternation of formal elements or motifs in the same or modified form”, Ching pg. 321.
- **Axis**: a line established by two points in a space and forms can be arranged around an axis
- **Datum**: “a line, plane or volume that, by its continuity and regularity, serves to gather, measure, and organize a pattern of forms and spaces”, Ching, pg. 321.
- **Symmetry**: balance, radial, symmetrical, asymmetrical
- **Hierarchy**: most emphasized to least emphasized

Step 3: Create 3 Abstract Models out of cardstock, or construction paper based on your shape grammar. Utilize multiple colors to represent various spaces in your program

- Scale 1/8” = 1’-0”
- Use pipe cleaners, straws, dowel rods, etc. to create an outside “frame” to show your boundaries (this can be flexible so you can take it apart and put each of your three models inside of it)
- Identify which spaces from your program that each shape represents
Parameters:

- The spatial parameter within which you will design your museum is a cube: 60’w x 60’d x 40’h.
- You will be “shaping” space into volume and form; each program space needs its own shape and form.
- A minimum of 3 levels of space must be accommodated; these should be a combination of different heights at each level.
  - This should not be a basic stacking of levels on top of one another—like a birthday cake, but rather an interlocking of levels, each of varying heights
  - Your spaces can be from one to three stories high
- All volumes combined must fit within the cube
- Volumes should touch but not go beyond the outside boundaries of the cube
- Incorporate each of the following four spatial interactions at least once,
  
  Please see Kilmer, pg. 99, or Ching, pg. 179
  - Enveloped / Space within a space
  - Juxtaposed / Adjacent spaces
  - Interlaced / Interlocking spaces
  - Transition / Spaces linked by a common space
- You must utilize at least 50% of your allotted volume of space as positive space; if you have 50% positive space you will have 50% negative space. As you choose your quantity of positive space, your negative space will also change.
  - Semi-enclosed spaces that are left as negative spaces within your overall volume can become exterior spaces for covered entrances, exterior patio spaces, etc.
- Remember – Every good designer must be able to explore Design in three-dimensions.
- Your design must be modular, i.e. a system of parts!

Part 5: Refining Designs

The focus for this project is on the spatial needs of your client and the interior environment you are designing for them. You have utilized design programming to analyze, list and explain the requirements of the museum. You have now investigated your overall conceptual development of the volumetric designs. Continue with this development and make your spaces functional and innovative.

Develop your concept further with a refined composition by producing the following:

- Refined Model (should show development from your previous study models)
  - Model (can be done on the computer), show multiple views both inside and out
  - Show “bounding frame”
- Drawings:
  - Drawings @ ¼” = 1’; 8.5 x 11
  - Correlating block and stack plans
  - Schematic floor plan for each level (must be detailed)
  - Cross section (carefully placed to show best vertical design connections)

Follow Project 3 - 4: Shape Grammar Process and Project Parameters, and incorporate these additional parameters:

- At some point, all five sides of the cube must be touched by any of the volumes of space
- 2 semi-enclosed exterior spaces within the cube must be incorporated (min.)
- 3 unique/different ceiling forms
- Stairs: must be appropriate for a commercial setting

Notes:

1. Wall and floor thicknesses must be indicated in sections. (Use an overall floor/ceiling thickness of 1’)
2. Stairs must be drawn(depicted correctly in all applicable drawings.
3. All openings between spaces and to the outside must be indicated in drawings and model.
4. Include a scaled human figure in section
5. Drawings must include some overall dimensions, room labels with square footage totals, section labels
Remember that FUNCTIONALITY IS IMPERATIVE---spaces must accommodate FF&E and provide for appropriate circulation.

---

**Part 6: Final Submission Documents**

**Research/Programming Booklet**
- Bound in a 3-ring binder, or spiral bound
- Problem & mission statement
- Client & site identification
- Precedent studies
- Research
- Programming: program analysis, program, prototypical drawings, square footage analysis, adjacency and criteria matrices
- Concept development
- Code Identification
- Process sketches, models, floor plans, etc.
- Specifications: all flooring materials, all paint/wall finishes, finishes of reception counter, furniture for offices, classrooms, reception area seating, and any display equipment or seating in the exhibit space

**Construction Drawing Requirements**
- 11” x 17”
- Technical floor plan for each floor with drawing label, room labels, dimensions, door and window labels
- Furniture floor plan for each floor with furniture annotations
- Technical drawings of reception desk with built in pamphlet/brochure display (plan, elevation(s), section, detail)
- Schedules: furniture, door and window

**Presentation Drawings:**
- Digital Presentation boards
  - Formatted and printed at 11”x17”
  - Presented digitally in class
- Process board showing art therapy center focus/client/site identification, design concept, process sketches/drawings, pictures of study models, etc.
- Floor plan of each floor with room labels, section label, elevation labels - not rendered
- Building section – not rendered; (make sure your section is cut in an appropriate location to explain vertical connections/openings and vertical relationships)
- One rendered perspective of a prominent space
- Two rendered elevations (do not repeat what is shown in your section or perspective)
- Two exterior isometric views showing opposite sides of your building; use your final computer generated model – not rendered
- FF&E
  - Material images represented must include all flooring materials, paint/wall finishes, finishes of reception counter,
  - Images of studio furniture, office furniture and reception area seating
  - Images of typical artwork/exhibit equipment

**Model**
- Corrugated cardboard; Scale = 1/4”
- The 60’ x 60’ x 40’ cube boundary must be recognizable and must not be exceeded
- Not rendered
- Show all doors, windows, millwork and display units
- Stairs may be include as vertical planes rather than cutting out every single tread/riser (please indicate all tread noses with a lines on planes); include landings where appropriate
Shape Grammar Example: sketching phase

Final Design Examples:

Shape Grammar Example: Study Model Phases
Final Design Examples Continued:
In Situ

Deborah Schneiderman
Pratt Institute

ABSTRACT

Problem
“Using small-scale models to explore ideas becomes confused in full-scale constructions, while drawings have trouble making the transition from two dimensions to three dimensions” (Weinthal, 2011, p. 24). The opportunity to test design at full scale and in situ provides unparalleled opportunity for design students to appreciate the impact and functionality of their work. While it is critical that students design with a strong conceptual base, it is simultaneously crucial to create a rounded investigation in the process of making that shifts between scales and processes including testing design at full scale (Dowling, 2012). This case study presents an in situ project designed and installed by Interior Design students, as part of an invited juried competition, at the SOFA 2013 art fair in Chicago.

Teaching Methodology
This senior Interior Design studio coursework was specifically developed to introduce concepts of sustainability and interior prefabrication, and also to include testing at full scale. For the design, 144 initial seating and canopy studies were produced within a studio of 12 students. These proposals were narrowed down, modified, and hybridized until the final design was reached. The resulting design and pattern was inspired by studies of Chicago’s iconic art and architecture. The final proposal consisted of two major elements, a seating-scape and a canopy, that create a connection between the SOFA visitors and the students. The intent of the lounge was to create a space where 20,000+ art fair visitors could find a place of repose within the fair. The conceptual design investigation was generated by site:
Chicago’s skyline is a constant in the reflection of the Cloud Gate sculpture, yet it is sandwiched by the ever changing skies above and the movement of people below. This translated into the relative permanence of the different types of seating within the lounge. The criticality of sustainability, making and fabrication were in balance with concept in the design process. Seating arrangements were fabricated from discarded cardboard plotter tubes that amass in the school’s print labs. The primary joinery method of hand-stitched twine references the tradition of furniture upholstery. While the method of pattern making by laser etching utilizes contemporary technology to produce a pattern inspired by traditional upholstery fabric. The lounge seating is sheltered by white plastic trash bags; hung and massed to create a dome-like form. The trash bags reference the massive waste created by our society and the alternative possibility to utilize that ‘waste’ to create something positive (as with the fabrication of the seating).

Outcomes
Herzog and DeMuron build full-scale mock-ups “as part of a process driven by thinking, discussing and trying” (Herzog, 2008, p. 222). In this studio, students were challenged to develop a strong conceptual base and to design, build at full scale, test, and rebuild. Through the full-scale prototypes, students confronted the limitations of designing at small-scale and often discovered that their initial design investigations did not perform conceptually or physically as they had anticipated. Building and testing in the design studio before installing the final design in situ heightened students’ learning and was a critical step in the design process. The reaction to the lounge by professionals and fairgoers was overwhelmingly positive. Our lounge was unanimously voted first place in the juried competition, which we attribute to the multiple full-scale iterations that were built and tested in studio.

REFERENCES (APA)


144 studies of seating and canopy design were produced within a studio of 12 students. These initial proposals were narrowed down, modified, hybridized until the final design was reached. The resulting design is inspired by studies of Chicago’s iconic art and architecture. The final proposal consists of two major elements, a seating scape and a canopy; they seek to create a connection between the SOFA visitors and the students.
Inspiration from Chicago’s iconic art and architecture drove the design. Chicago’s skyline is a constant in the reflection of the Cloud Gate, yet it is sandwiched by the ever changing skies above and the movement of people below. This translated into the relative permanence of the different types of seating within the proposal – a permanent lounge and temporary modular seating form an interior landscape. Seating arrangements have been designed to make use of the discarded cardboard plotter tubes that amass in the school’s print labs.
The primary joinery method of hand-stitched twine references the tradition of furniture upholstery. While the method of pattern making by laser etching utilizes contemporary technology to produce a pattern typical also to upholster fabric. The imagery and plans of some of Chicago’s most iconic designs, such as Marina City, the Agua Building, the Cloud Gate and Navy Pier’s Ferris Wheel, were manipulated and abstracted to create a floral pattern set on top of a linear background.
SOFA CONNECT LOUNGE

The lounge seating is sheltered by white plastic trash bags; hung and massed to create a dome-like form similar to the “omphalos” on the underside of Cloud Gate. The canopy mass is articulated by movement as the wind traverses through the structure. The trash bags reference the massive waste created by our society and the alternative possibility to utilize that ‘waste’ to create something positive (as with the fabrication of the seating). The cloud gate’s omphalos offers a unique, ever-changing view to its visitors. This is mimicked in the proposal by projections aimed onto the surface which are seen as merely a soft glow from the exterior. Projections show the process of the materialization of the installation: sketches, diagrams, models, methodology, time lapse, etc. as a means of demonstrating the project process.
SOFA CONNECT LOUNGE

The juxtaposition of the installation’s two elements, the canopy and the seating, references SOFA Chicago’s objective of providing a market for artists who are interested in combining traditional decorative arts with functional objects. In addition to connecting the SOFA Chicago visitor to the surrounding city, the environment seeks to create a connection between the SOFA Chicago visitors and the students. The seating arrangements are designed to re-purpose the discarded cardboard plotter tubes that amass in the school’s print labs. The project was built from approximately 300 of these tubes. As seen in the works of designer, Shigeru Ban, it is possible to re-purpose mundane waste into beautiful and functional objects or structures. The lounge creates the opportunity for many people to sit on the same furniture piece while simultaneously composing a personal space and individual vantage point.
Respectful Collaboration: Teaching Collaborative Skills to First-Year Students BEFORE They Form Their Discipline Identities

Jacob Tucci, Carol Hermann & Greg Lucado
Philadelphia University

ABSTRACT

“We are not self-made. We are dependent on one another. Admitting this to ourselves isn’t an embrace of mediocrity and derivativeness, it’s a liberation from our misconceptions.” — Kirby Ferguson

The purpose of this study was to research and develop a new common core experience for interdisciplinary collaboration within a multidisciplinary architectural college, composed of Architecture, Architectural Studies, Construction Management, Interior Design and Landscape Architecture. Better, earlier, more frequent cross-disciplinary interaction between students and faculty will develop awareness of the real world relationships between allied disciplines, and advance curricular content, encourage active classroom practices, and create better awareness of a student’s chosen profession and respect for other’s chosen disciplines. Currently Construction Management sits to the side of the other disciplines, yet in many ways it is the one that all other disciplines must interact with.

This study researches best practices for both the method of interaction and the time in a student’s learning process for collaboration. Relevant priorities include student and faculty engagement and collaboration, and integrative projects grounded in real world scenarios. The Questions that were asked: How are other universities approaching cross-disciplinary collaboration in first year courses? How
does student disciplinary expertise affect their ability to collaborate? What specific content should be included in the course? How can we best instill mutual appreciation for the project contribution of each professional discipline?

The research consisted of several levels of investigation: precedent studies of other colleges, analyzing and categorizing our college’s learning outcomes, interviewing faculty across many disciplines (including the liberal arts and non-built environment design disciplines) and facilitating two charettes. The charettes conducted with first-year students from various disciplines were designed to help determine when and how to integrate fully cross-disciplinary awareness and respect. The project-based charettes were designed to NOT rely on specific disciplinary roles or skills and allow the students to negotiate their roles in the group. Pre and Post surveys were given for each charette. The two charettes varied in the number of participants, project topics and types of incentives (one with paid volunteers, one within the context of a required course).

The study produced evidence in favor of incorporating cross-disciplinary collaborative learning in the first year. Questions asked both before and after the charettes showed a statistically significant change in seven of the measured responses: Stronger agreement that multidisciplinary teams produce better results; Stronger agreement that extroverts perform better in teams; Stronger agreement of valuing the contribution of those with whom they collaborate; Stronger agreement that they can see things from the perspective of those who are different than themselves; Stronger agreement that they work well in teams; Weaker agreement that they work better alone; and Stronger agreement that they spend more time talking than listening when working in a group.

Observations include: first year students are capable of learning to collaborate with other allied disciplines before they have gained their individual discipline skills and knowledge set; it is best practice to establish and communicate to the students that the primary learning objective is successful collaboration rather than a good product; and even though the survey was intended for research purposes, the pre and post survey encouraged the students to reflect on their role on the team and how they grew from the experience. As a result of the study: seminars
have been added to freshman curricula that include professionals from the field discussing their profession and how they interact with their allied colleagues.

REFERENCES (APA)

STUDENTS’ WORK
An evaluation of the effects of external writing feedback on design specific writing skills

Sarah Urquhart & Marta Halaczkiewicz
Utah State University

ABSTRACT

Interior designers must effectively use a variety of communication methods (CIDA, 2014). In interior design education, focus is placed most heavily on teaching visual communication methods. While visual communication is critical in design, the accompanying written information should theoretically ground the design solution with an articulate rationale (Guerin et al., 1999). While research on facilitating articulate writing in design has increased slowly over the past several decades (Guerin et al., 1999; Beecher, 2006), this skill receives little focus in the classroom and students often struggle to articulate the rationale behind their designs. The goal of this study was to explore the effectiveness of external writing feedback via a classroom level university offered program in a freshman level interior design course.

The research questions were: Would the intervention affect design specific writing skills and would any improvements in writing correlate with improvements in design skills? Writing has long been presented as an effective means of enhancing learning. This approach of using writing to facilitate learning is often called writing-to-learn. Writing-to-learn is based in constructivism and the belief that students must actively reason with and construct their own knowledge about material presented in order to reach deep understanding (Klein, 1999). Previous research indicates that writing affects learning and can produce better understanding of content between pre and post-test conditions. In addition, writing is thought to facilitate the transformation of knowledge between modes
including visual to linguistic (Siegel, 1995), which is the aim for writing-to-learn in design. While these studies have been done in a variety of disciplines, few have been done looking at the effect of writing-to-learn based interventions in the interior design classroom. This is problematic because research in this area also indicates that learning outcome results tend to be discipline specific and cannot be easily generalized between areas of expertise (Klein, 1999).

A quasi-experimental design using a pretest, treatment, and posttest strategy was used to explore the effects of a structured writing intervention on design writing skills and correlations between improvements in writing and design abilities. Our hypothesis was twofold: First that design writing improvement and design strength improvement will affect each other; secondly, feedback from writing experts outside the field of design increases the effect. Students from two sections of a freshman level interior design course (N=112; See Table 1) completed the same assignments and were taught identical content by the same instructor. One section of the course was randomly selected to participate in a writing support program providing a writing tutor for every 10 students (See Appendix). Students in both sections turned in a rough draft (pretest) and final draft (posttest) for two design writing assignments. Students in the experimental section were required to work with a writing tutor prior to submitting a final draft. Students in the control section completed the assignment on their own. In addition, all students completed a final writing and design project without tutor assistance. Design work was scored based on strength of design by two trained raters before and after the intervention. Writing was scored by 2 trained raters and the ETS scoring engine.

Preexisting conditions were not likely compounding factors as no statistically significant relationship existed between pretest design and writing abilities in either section. Statistically significant correlations were found in posttest results between writing ability and design ability (p=.006) and design writing ability and writing ability (p=.001 See Appendix 1). While the writing assignments clearly strengthened student writing and design ability, participation in the intervention did not predict or increase the effect.
REFERENCES (APA)


Appendix 2

Writing Evaluation Matrices

Abridged versions presented due to space considerations. Holistic matrices based on ETS scoring guidelines for Analytical Writing.

Writing Evaluation

Score of 6 Outstanding
A 6 paper presents a deep, well-articulated reflection, conveys meaning skillfully.
- Clearly demonstrates personal connection to the process of writing; develops ideas cogently; organizes ideas logically; demonstrates control of language.

Score of 5 Strong
A 5 paper presents a generally thoughtful, well-developed reflection and conveys meaning clearly.
- Clearly demonstrates personal connection to the process of writing; sensibly supports the connection with details; develops ideas clearly; demonstrates sentence variety but may have minor errors.

Score of 4 Adequate
A 4 paper presents a competent reflection and conveys meaning adequately.
- Sufficiently demonstrates personal connection to the writing process; supports connection with minimal details; organizes ideas but may not connect them well; reasonable clarity and language control but may have some errors.

Score of 3 Limited
A 3 paper demonstrates some competence in reflecting and in conveying meaning, but is obviously flawed.
- Does not demonstrate personal connection to the writing process; elaborates on tangential or irrelevant matters; lacks clarity.

Score of 2Seriously Flawed
A 2 paper demonstrates serious weaknesses in reflecting and conveying meaning.
- Does not demonstrate connection to the writing process; provides litter if any relevant or reasonable support; disorganized and illogical.

Score of 1 Fundamentally Deficient
A 1 paper demonstrates fundamental deficiencies in reflection.
- Provides little or no evidence of reflection; little or no evidence of ability to organize a response; severe problems with language and sentence structure.

Design Writing Evaluation

Score of 6 Outstanding
A 6 paper presents a cogent, well-articulated design concept, conveys meaning skillfully.
- Clearly identifies big ideas behind the design; clearly links principles and elements of design to design decisions; develops ideas cogently; demonstrates control of language and descriptive vocabulary.

Score of 5 Strong
A 5 paper presents a generally thoughtful, well-developed design concept and conveys meaning clearly.
- Clearly identifies big ideas behind the design; develops and organizes ideas; sensibly supports big ideas with specific examples; link to principles and elements is clear.

Score of 4 Adequate
A 4 paper presents a competent design concept and conveys meaning adequately.
- Identifies big ideas behind the design and supports them with examples; examples and links to principles and elements is not as strong or surface level only.

Score of 3 Limited
A 3 paper demonstrates some competence in concept design and in conveying meaning, but is obviously flawed.
- Does not identify the big picture behind the design; offers examples that don’t support a big idea; elaborates on details and what can be seen.

Score of 2 Seriously Flawed
A 2 paper demonstrates serious weaknesses in concept design.
- Does not present a big idea behind the design. Provides little if any relevant or reasonable support related to the principles and elements of design.

Score of 1 Fundamentally Deficient
A 1 paper demonstrates fundamental deficiencies in concept design.
- Provides little or no evidence of the ability to understand or explain big ideas behind a design. Provides little or no evidence of the ability to link the principle and elements to a design.

Post Design Evaluation

<table>
<thead>
<tr>
<th>Excellent</th>
<th>Adequate</th>
<th>Needs Improvement</th>
<th>Weak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent. Appropriate clearances are not only used, but relationship between furniture pieces is clear. All space is used extremely well. Principles and elements are clear organizing factors of the design.</td>
<td>There may be one or two small areas where furniture relationships are not clear, or an awkward empty place occurs in the layout. However clearances are provided and all major circulation routes are clear. Principles and elements</td>
<td>Needs slightly better planning. Relationships between furniture is not always clear because pieces are too far apart, or the furniture fills up the space too much. Two or more clearances are not provided or a major circulation route is not clear.</td>
<td>Major issues with planning and layout. Unclear relationships and inappropriately sized furniture. Major circulation routes are unclear or not provided.</td>
</tr>
<tr>
<td>10 pts</td>
<td>8 pts</td>
<td>6 pts</td>
<td>4 pts</td>
</tr>
</tbody>
</table>
Graphic Language in the Classroom: Integrating Graphic Design with Interior Design Studio and Graphics Coursework

Roberto Ventura & Susie Tibbitts
Virginia Commonwealth University

ABSTRACT

Motivation
Evolving interior design practices like those of Eva Maddox, Ghislaine Viñas, and the Rockwell Group demonstrate how graphic design increasingly influences interior space conceptually, technically, and experientially. Equipping interior designers with basic graphic design fundamentals supports this demand for graduates who can critically engage with these interdisciplinary collaborations. Historic examples from Margaret Macdonald to Rem Koolhaas reinforce the traditional connections between interior design and graphic design. Surveying CIDA accredited undergraduate programs revealed that less than half have a graphic design department or program in the same division or institution. Searching the Journal of Interior Design for scholarship on the integration of interior design and graphic design yields only one result (Budd, 2011), but it advocates to study graphic design only to strengthen imagery. Scant evidence exists that interior design education values the integration of graphic design into its body of knowledge. Lacking access to faculty or scholarship emphasizing graphic design fundamentals, interior design students base two-dimensional design decisions on uninformed rationales. With an explicit foundation in graphic design, interior design students could more critically engage the increasingly prevalent intersection of these two disciplines common in contemporary interiors practice.
Method
Educators at two schools sought to address this schism by integrating graphic design content into existing interior design studio and visual communication classes because of the synthetic and applied nature of those courses. Instructors identified significant overlaps between graphic and interior design fundamentals as articulated by Ballast (2010) and Lupton, et al (2008) and augmented it with graphic design-specific exercises elaborating on typography, compositional studies, and communication. Typography studies introduced students to typeface anatomy, pairing strategies, and type’s expressive potential. Compositional studies introduced analytical methods for understanding spatial zones (Carter, 1990) in two-dimensional layouts. These exercises informed graphic design-intensive assignments on visual presentation and dossier assembly. Graphic design academics and practitioners provided feedback to the students on these projects. Learning activities addressed CIDA student learning expectations for Professional Standard 6: Communication via the application of varied communication means and methods and the ability to develop clearly integrated oral and graphic presentations (2014).

Results
After introducing graphic design learning activities into interior design studio and visual communication courses, instructors noted changes in student work. Heightened awareness of typography resulted in more sophisticated hierarchical and ordered applications. Spatial zones and their coordination across compositions informed two-dimensional work and suggested parallel analyses of three-dimensional space. Requiring layout drafts early in the design process strengthened compositional decisions on presentations and dossiers and suggested additional content. This planning also improved oral presentations, as graphic compositions informed speaking outlines. Graphic design practitioners and academics provided critique, reinforcing instruction and providing additional learning opportunities for students and faculty.

Reflection
Instructors found the integration of graphic design principles into studio and visual communication coursework to be effective and efficient. Student confidence with graphic communication, especially with portfolio development, bolstered
their post-graduation employment search. Without explicit prompts, students integrated graphic design into studio work via graphics and imagery. Additionally, students explored professional paths that bridged both disciplines, like environmental graphics, web design, and exhibit design.

REFERENCES (APA)


Council for Interior Design Accreditation Professional Standards. 2014

Exercises geared towards typography familiarized students with typeface structure, breadth and emotive potential.
Rough drafts of presentation layouts led to stronger graphic compositions.

before (top) & after presentation layouts  andrea manrique
w hotel bar brady mathews
Presentation graphics improved with added time for revision.

**perspectives:**

1. View into lift from standing in the ticket line
2. View looks at the website area, front desk, and ticket line
3. View of ticket desk getting off the elevator
4. View of lift box lounge from Concourse 7
5. View of Concourse 11 from south end of building

---

**furniture & finishes: public areas**

- **Chair:** Manufacturer: Suite NY
  Product: Slate Chair
  Color: Red
  Dimensions: 31.1" w x 20.1" d x 30.8" h
  Purpose: Lounge seating

- **Chair:** Manufacturer: Suite NY
  Product: Sangwanted Chair
  Color: Red
  Dimensions: 21" w x 23.5" d x 34.75" h
  Purpose: Waiting seating

- **Chair:** Manufacturer: Suite NY
  Product: Sangwanted Chair
  Color: Red
  Dimensions: 30.5" w x 23.5" d x 33.5" h
  Purpose: Lounge seating

---

**furniture & finishes: private**

- **Chair:** Manufacturer: Damien Jackson
  Product: Tango Cush Chair
  Color: American Walnut
  Dimensions: 30" w x 22.5" d x 33.5" h
  Purpose: Lounge seating

- **Chair:** Manufacturer: Damien Jackson
  Product: Tango Cush Chair
  Color: American Walnut
  Dimensions: 30" w x 22.5" d x 33.5" h
  Purpose: Lounge seating

---

**film institute (detail)**

Lois Kim
Stronger portfolio layout built confidence in students as they embarked on post-graduation employment searches.
Using the Charrette Design Model to Foster Connections amongst Peer Designers and External Allied Fields

Steven Webber
Florida State University

ABSTRACT

Young interior design practitioners are expected to excel in frequently cross-disciplinary environments with allied consultants to complete projects. By contrast, students in higher education have very limited opportunities for interdisciplinary interaction (Buchbinder, 2005). This discrepancy between higher education and the interior design profession highlights the value and need for greater emphasis on collaboration between students of varying levels of expertise and professionals outside the interior design profession (CIDA). This proposal describes research findings that suggest the charrette design model can help address this need.

This study examined the effectiveness of a charrette as the means to training students to work across lines of expertise and discipline. “Charrette” is French for “cart”. As legend describes it, in 19th century French architecture schools, a cart would be pushed through the student work spaces to collect drawings at the deadline. As students heard the approaching cart, work would accelerate, with often a tremendous amount of progress being made in those closing moments of the deadline (Kelbaugh, 1997). Today, the charrette design model seeks to capture the spirit of this intense productivity and mimic time constraints of actual projects for students. In the 2013 fall semester, interior design student teams took part in a charrette with the goal of re-designing an existing building to withstand a zombie outbreak. Despite its fantasy-oriented nature, the charrette had the serious goal of
engaging students with professionals in the areas of urban design, architecture, mechanical engineering, electrical engineering, and medical triage so that students could understand these fields’ criteria and apply them effectively in their solutions. Each practitioner provided the student groups a 30-minute presentation introducing their fields’ criteria for the project. Each four-student team was organized vertically across the sophomore-to-senior student levels. Student projects were required to accommodate 50 users and five dogs for two weeks by providing spaces for their essential needs of eating, sleeping, sanitation, and security. Students and experts addressed zombie capabilities based on “The Zombie Survival Guide” by Max Brooks (2003). The study examined student perceptions of the success of collaboration, both within the team and with the external experts. The study’s student survey instrument used a 5-point Likert scale, examining, among many topics, these overarching questions: 1. Do the students find collaborative learning experiences with their peers to be effective in advancing their learning process? 2. Do the students value input from cross-disciplinary professionals in their learning process?

Survey responses show that the students found value in the vertical team organization in that the less experienced students’ learning experience was enhanced. The survey responses also show that the students found the input from four of the five outside professionals valuable to the design process in the charrette, suggesting that the students recognized the contribution that outside fields have to the design process. This presentation will share further detailed results and work examples of the charrette experience, lending support to the premise that the charrette design model can be a valuable teaching tool to prepare interior design students for a cross-collaborative professional environment.

REFERENCES (APA)


APPENDIX A: CHARRETTE DESCRIPTION

The figure below was provided to the students to introduce the charrette design scenario. Redactions ensure double-blind review.

Project Z Design Guidelines

Task
Based upon the design all necessary modifications to the existing structure to support 50 people for 2 weeks during an intense Class 2 Zombie Outbreak.

Scenario
Details are unclear, but the initial outbreak of the Solanum virus started during the football game at Stadium. It is suspected that a fan was the first infected. The initial Class 1 Zombie Outbreak was not publicized due to a media cover up. Containment of the infected was unsuccessful and the situation quickly developed into a Class 2 Outbreak. At that point, media outlets began picking up the story. Meanwhile, a strict Federal response has begun to seal off the perimeter of the city. The situation around the Hospital and Police Department Offices is dire – don’t go there. You and your team, along with a resolute group, are locked within the city limits and must prepare on your own for the pending Class 3 Zombie Outbreak. Your education and training will be vital to your survival.

Your team has two choices to make. First, what is your group of 50 occupants going to focus on – hunkering down and salvaging culturally relevant objects and documents from within the City for preservation, or conducting an offensive against the zombie horde? You must choose between these two scenarios as it will greatly affect your design concept and execution. Second, is your group going to accept newcomers over the next two weeks, or not? If yes, then you will need to provide accommodations for 10 additional people. All 10 will be healthy and able-bodied.

The occupants of your design will continue to experience this traumatic event, and some of them will get injured, during the two weeks. Within the first 48 hours, 2 will need crutches, 2 will have one arm amputated below the elbow, 3 will have one leg amputated above the knee, and 3 will have suffered a head injury. The design will need to accommodate these 10 users throughout the 2 weeks. The occupants are evenly split male and female (25 each). You must also accommodate 5 dogs – 2 German Shepherds, 1 Labrador Retriever, 1 Golden Retriever, and a Springer Spaniel.

Design Requirements
Based upon the answers to your scenario choices above, make design modifications to the existing structure that will:
1. Provide a defensible haven against an intense Class 2 Zombie Outbreak that will intensify as the two week time frame progresses.
2. Provide a place to sleep, eat, bathe, and defecate based upon physical capabilities (disabled or not) for 50 people minimum and the dogs.
3. Provide storage of life and defensive essentials, and precious objects/documents if applicable, for a minimum of 2 weeks.
4. Provide clean water.
5. Provide clean air.
6. Provide food.
7. Generate a minimum of electricity.
8. Triage for the injured as described above.

Design Deliverables
The types of diagrams, drawings, images, and renderings are up to you and your team. Your chosen visual communication tools must accomplish the following:
1. Clearly and thoroughly describe the design concept and intent.
2. Clearly and thoroughly describe the design modifications and how they work.
3. Grab the attention of the viewer through visual engagement.
4. Written descriptions, annotations, and conceptual statements to enhance the graphic nature of the presentation.

Your team will have an area of wall 18” wide by 48” tall to display your work. There will be NO verbal presentation permitted prior to judging.

Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>17:00</td>
<td>10.16.2013</td>
<td>Project Z Begins</td>
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<tr>
<td>08:00</td>
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<td>Design Work Complete and Pinned Up</td>
</tr>
<tr>
<td>17:00</td>
<td>10.30.2013</td>
<td>Project Z Awards</td>
</tr>
</tbody>
</table>
APPENDIX B: BREAK-OUT SESSION NOTE-TAKING SHEET

The figure below shows an example of a guided note-taking sheet provided to the students to help facilitate the interaction between students and professionals.

Urban Planning Expert Break-out Session

1. What is CPTED (Crime Prevention Through Environmental Design), and why does it exist?

2. What general CPTED strategies did you hear about that you need to relay to your team members?

3. What did the guest expert have to say about the following specific areas of the Fine Arts Annex?
   a. Immediate surroundings/neighborhood buildings
   b. Street level/Sidewalk areas
   c. Building Edges/Entrances
   d. Building Roof

4. What did the guest expert have to say about certain issues that may need to be coordinated with other areas of expertise as outlined below?
   a. HVAC
   b. Plumbing
   c. Electricity
   d. Architecture
   e. Medical Planning Concerns

5. What additional things do you need to relay to your team members regarding the content of this break-out session?
APPENDIX C: STUDENT SURVEY

The figure below shows a sample of the survey provided to the student charrette participants after completing the charrette.

Your completion of this questionnaire will assist faculty in making future design charrettes better for students. Feel free to answer honestly as your answers are anonymous and cannot affect your grade.

1. What is your status in the Interior Design Department?
   A. Undergraduate  B. Graduate

   1a. (If A is selected above)
   What is your status in the department?
   2nd year  3rd year  4th year

   1b.1. (If B is selected above)
   What is your status in the graduate program?
   1st year  2nd year  3rd year (or beyond)

   1b.2. (If B is selected above; to follow 1b.1)
   What is your track in the graduate program?
   1st Pro  Adv. Pro  MFA

External Experts
Inviting outside experts to speak on various topics to students is a high priority of this Interior Design Department. Please rate the usefulness of each expert to your design solution that was provided to you for this project. Use this scale below:

0 = I did not attend this session
1 = not at all useful
2 = minimally useful
3 = moderately useful
4 = very useful
5 = extremely useful

2. Urban Planning Expert, [name]:
   0 1 2 3 4 5

3. Mechanical Expert (HVAC + Plumbing), [name]:
   0 1 2 3 4 5

4. Electrical Expert, [name]:
   0 1 2 3 4 5

5. Medical Expert, [name]:
   0 1 2 3 4 5

6. Architecture Expert, [name]:
   0 1 2 3 4 5

7. If you thought another topic(s) should have been included in the expert sessions, please list it/them below.

________________________________________________________________________

________________________________________________________________________
APPENDIX D: STUDENT SURVEY RESULTS

The figures below graphically show the results of several key questions in the student survey.
This figure shows a work sample from the student team who earned a first place award in the charette.
Using the Charette Design Model to Bind Creativity with Technical Knowledge into One Cohesive Design Process

Steven B. Webber
Florida State University

ABSTRACT

Creating good design requires both creativity and technical knowledge (Lawson, 2006), yet it appears that design students need more opportunities to bring these two big ideas together during their design education. Achieving expertise within a discipline, such as interior design, while utilizing the knowledge base of other disciplines is necessary for reaching an innovative solution to a design challenge (Sonnenwald, 1997). The charrette design model is perfectly poised to meet this educational need for integrating technical knowledge with the design process. This study examined the effectiveness of a charrette as the means to training students to bring technical knowledge into the design process while achieving creative design solutions.

In October 2013, interior design student teams took part in a charrette with the goal of re-designing an existing building to withstand a zombie outbreak. Despite its fantasy-oriented nature, the charrette had the serious goal of engaging students with professionals who possessed a technical knowledge base (urban design, architecture, mechanical engineering, electrical engineering, and medical triage) that would be critical to their design solutions. Each practitioner provided the student groups a 30-minute presentation introducing their fields' criteria for the project. Student projects were required to accommodate 50 users and five dogs for two weeks by providing spaces for their essential needs that also addressed indoor air quality, clean water, and electricity generation. Students and experts addressed
zombie capabilities based on “The Zombie Survival Guide” by Max Brooks (2003). Each four-student team was organized vertically across the sophomore-to-senior student levels with the seniors having already completed a course in construction systems, the juniors were engaged in the course, and the sophomores having no knowledge of construction systems.

The charrette design model was chosen because this methodology significantly alters the typical design process and challenges peoples’ default thinking modes, so innovation is more likely to occur (Sutton, 2002). The study examined student perceptions of the success of the charrette model to bring technical knowledge and creativity together because these perceptions indicate students’ level of engagement with the material. The study’s student survey instrument used a 5-point Likert scale, examining, among many topics, this overarching question: "Did the charrette affect students’ understanding of a technical design topic (Security, HVAC, plumbing, electricity) in context with the interior design process?"

Student responses show that sophomore students learned more about security, HVAC, plumbing, and electricity as a result of having taken part in the charrette when compared to the seniors (App. D). In addition, with no changes in content to the course, test scores are higher in the construction systems course for those students who took part in the charrette prior to taking the course as opposed to those who did not. Both of these factors indicate that the charrette contributed to improved learning outcomes. This presentation will share further detailed results and work examples of the charrette (App. E), lending support to the premise that the charrette design model can be a valuable method to prepare interior design students to integrate technical knowledge into the creative design process.

REFERENCES (APA)


APPENDIX A: CHARRETTE DESCRIPTION

The figure below was provided to the students to introduce the charrette design scenario. Redactions ensure double-blind review.

Project Z Design Guidelines

Task
Based upon the [redacted], design all necessary modifications to the existing structure to support 50 people for 2 weeks during an intense Class 2 Zombie Outbreak.

Scenario
Details are unclear, but the initial outbreak of the Solanum virus in [redacted] started during the [redacted] vs. [redacted] football game at [redacted] Stadium. It is suspected that a [redacted] fan was the first infected. The initial Class 1 Zombie Outbreak was not publicized due to a media cover up. Containment of the infected was unsuccessful and the situation quickly developed into a Class 2 Outbreak. At that point, media outlets began picking up the story. Meanwhile, a strict Federal response has begun to seal off the perimeter of the city. The situation around the Hospital and Police Department Offices is dire – don’t go there. You and your team, along with a resolute group, are locked within the city limits and must prepare on your own for the pending Class 3 Zombie Outbreak. Your education and training will be vital to your survival.

Your team has two choices to make. First, what is your group of 50 occupants going to focus on – hunkering down and salvaging culturally relevant objects and documents from within the City for preservation, or conducting an offensive against the zombie horde? You must choose between these two scenarios as it will greatly affect your design concept and execution. Second, is your group going to accept newcomers over the next two weeks, or not? If yes, then you will need to provide accommodations for 10 additional people. All 10 will be healthy and able-bodied.

The occupants of your design will continue to experience this traumatic event, and some of them will get injured, during the two weeks. Within the first 48 hours, 2 will need crutches, 2 will have one arm amputated below the elbow, 3 will have one leg amputated above the knee, and 3 will have suffered a head injury. The design will need to accommodate these 10 users throughout the 2 weeks. The occupants are evenly split male and female (25 each). You must also accommodate 5 dogs – 2 German Shepherds, 1 Labrador Retriever, 1 Golden Retriever, and a Springer Spaniel.

Design Requirements
Based upon the answers to your scenario choices above, make design modifications to the existing structure that will:
1. Provide a defensible haven against an intense Class 2 Zombie Outbreak that will intensify as the two week time frame progresses.
2. Provide a place to sleep, eat, bathe, and defecate based upon physical capabilities (disabled or not) for 50 people minimum and the dogs.
3. Provide storage of life and defensive essentials, and precious objects/documents if applicable, for a minimum of 2 weeks.
4. Provide clean water.
5. Provide clean air.
6. Provide food.
7. Generate a minimum of electricity.
8. Triage for the injured as described above.

Design Deliverables
The types of diagrams, drawings, images, and renderings are up to you and your team. Your chosen visual communication tools must accomplish the following:
1. Clearly and thoroughly describe the design concept and intent.
2. Clearly and thoroughly describe the design modifications and how they work.
3. Grab the attention of the viewer through visual engagement.
4. Written descriptions, annotations, and conceptual statements to enhance the graphic nature of the presentation.

Your team will have an area of wall 18” wide by 48” tall to display your work. There will be NO verbal presentation permitted prior to judging.

Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>17:00</td>
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</tr>
</tbody>
</table>
APPENDIX B: BREAK-OUT SESSION NOTE-TAKING SHEET

The figure below shows an example of a guided note-taking sheet provided to the students to help facilitate the interaction between students and professionals.

Mechanical Expert (HVAC + Plumbing) Break-out Session

1. Why is IAQ (Indoor Air Quality) important?

2. What IAQ strategies did you hear about that you need to relay to your team members?

3. What IAQ issues do you need to address in terms of a dense population in the Fine Arts Annex while not having access to reliable electricity?

4. What are some low-tech ways of improving IAQ and controlling temperature and humidity?

5. What hazards exist with providing access to clean air at/near ground level?

6. What did you learn about sanitation as it relates to this design scenario?

7. What are possible sources of clean drinking water for this design scenario?

8. How do sanitation and clean water needs affect space for storage in your design?

10. What did the guest expert have to say that may need to be coordinated with other areas of expertise as outlined below?
    a. Urban/CPTED (Crime Prevention Through Environmental Design)
    
    b. Electricity
    
    c. Architecture
    
    d. Medical Planning Concerns
APPENDIX C: STUDENT SURVEY

The figure below shows a sample of the survey provided to the student charrette participants after completing the charrette.

HVAC, plumbing, and electrical systems along with security were very important issues to this design scenario. Based on the five point scale below, please answer the questions below.

1 = I learned nothing new.
2 = I learned a minimal amount.
3 = I learned some new things.
4 = I learned a significant amount.
5 = I learned more than I thought possible in such a short time.

1. As a result of taking part in this design competition, how would you rate your understanding of the role of interior design in relation to building security?

   1  2  3  4  5

2. As a result of taking part in this design competition, how would you rate your understanding of the role of interior design in relation to HVAC and indoor air quality?

   1  2  3  4  5

3. As a result of taking part in this design competition, how would you rate your understanding of the role of interior design in relation to plumbing?

   1  2  3  4  5

4. As a result of taking part in this design competition, how would you rate your understanding of the role of interior design in relation to electrical systems?

   1  2  3  4  5

5. Please describe how you felt about your preparedness to address HVAC, plumbing, and electrical systems and security in this competition after your teams' attendance of the expert sessions:

   ____________________________________________________________

   ____________________________________________________________
APPENDIX D: STUDENT SURVEY RESULTS SAMPLE

The figures below graphically show the results of two key questions in the student survey.

Aggregate Undergraduate Student Response to:
"As a result of taking part in this design competition, how would you rate your understanding of the role of interior design in relation to building security?"
Use this scale below:
1 = I learned nothing new; 2 = I learned a minimal amount;
3 = I learned some new things; 4 = I learned a significant amount;
5 = I learned more than I thought possible in such a short time.

Mean Aggregate Undergraduate Student Response by Grade Level to:
"As a result of taking part in this design competition, how would you rate your understanding of the role of interior design in relation to building security?"
Use this scale below:
1 = I learned nothing new; 2 = I learned a minimal amount;
3 = I learned some new things; 4 = I learned a significant amount;
5 = I learned more than I thought possible in such a short time.

Aggregate Undergraduate Student Response to:
"As a result of taking part in this design competition, how would you rate your understanding of the role of interior design in relation to electrical systems?"
Use this scale below:
1 = I learned nothing new; 2 = I learned a minimal amount;
3 = I learned some new things; 4 = I learned a significant amount;
5 = I learned more than I thought possible in such a short time.

Mean Aggregate Undergraduate Student Response by Grade Level to:
"As a result of taking part in this design competition, how would you rate your understanding of the role of interior design in relation to electrical systems?"
Use this scale below:
1 = I learned nothing new; 2 = I learned a minimal amount;
3 = I learned some new things; 4 = I learned a significant amount;
5 = I learned more than I thought possible in such a short time.
These figures show snapshots of student work samples that focus on the systems and security components of their design solutions, using media beyond what was suggested, including models.
High Tech or Low Tech? Analyzing design with an immersive environment

Li Han
Virginia Commonwealth University, Qatar

ABSTRACT
Design and visualization are two inseparable disciplines. All design needs to be analyzed and communicated through visual forms. High tech has brought dramatic changes to how we analyze design. However, this does not render low tech an irrelevant method. The goal of this research is (1) to understand the advantages and limitations of Immersive projection and (2) to understand how high tech and low tech methods can complement one another in design communication. This research is being conducted through a series of progressive case studies over a semester in an advanced visualization class, including several interim student presentations as well as final student presentations involving the client. In addition to the Immersive projection facility, this research employs Techviz, Rhino, Autodesk Showcase, Revit, HDR (High Dynamic Range) images and manual renderings at various levels.

Immersive Projection and Communication
The fundamentals of an immersive environment are simple: a system displays two images to mimic what is seen by two eyes and filters out one image through a receiving device, often a pair of stereoscopic glasses, to allow the eyes to see two different images to create depth. “The principle is based on a technical device that separates the images so as to show only the desired image to each eye” (Fuchs, Moreau, and Guitton 2011, 213). At the same time, a tracking system is often employed to respond as the viewer changes position. In this case study the software (TechViz XL Base License for 2 Channel) and hardware (a Barco Display
System and ART trackpad Basic) provide an immersive experience for visual depth and body movement; however, it does not provide the experience of gravity or collision. Spatial perception is the perception of the size, shape and distance of various objects in the field of view (Hatfield 1990, 32-33). Immersive technology brings realistic experiences of spaces to viewers. Research shows the sense of movement, balance, sound, and other sensations of physical presence in the environment enhance spatial perception (Hernandez et al. 2007, 489). A significant improvement is noted in communication between designers and clients. Clients rarely have the same level of comprehension of spaces as designers. For the clients, immersive environments are more engaging and can be understood easily. In contrast, the case studies show less significant improvement in visual communication for design students and faculty during the interim project presentations. The initial responses from the students suggest that they were impressed by the immersive projection; however, due to their prior understanding of spaces, the improvement in communication is less significant.

High Tech and Low Tech
There is a noticeable disconnection between high tech and low tech in design visualization. Manual rendering is often overlooked in digital visualization. However, manual rendering which brings more poetic and emotional experiences deserves to be preserved and brought into the realm of high tech as a meaningful complement. People often believe what can be seen is realistic; therefore the same environment should be perceived the same by everyone. However, that’s often not the case. Human perception is often abstract and selective and therefore differs from person to person. Visual perception happens in three stages—a physical stage, a physiological stage and a psychological stage. At the physical stage, light is reflected by an object into the eye and is formed into a retinal image. At the physiological stage, the optic nerve transmits the retinal image into the brain. Eventually, the mind is affected by the physiological process of the sensorium and generates mental images upon the event (Hatfield 1990, 33). The final mental image is generated by the mind; therefore the perception of the same visual stimulations can be vastly different for people. Manual rendering often presents “unrealistic” environments with particular
REFERENCES (Chicago)


Revisiting the Role of Interior Design in Building Fire Safety: A Plan for Action

Fred Malven
Iowa State University

ABSTRACT

Things change—often slowly; but, sometimes, abruptly. Interior design’s efforts to certify its public health, safety and welfare (HSW) role have exemplified both. Not so very long ago, convincing legislators of interior design’s role in the protection of public health, safety and welfare was often an uphill battle, and not always successful. But, that situation is poised for a dramatic change. The incidence of serious fires has declined over the past quarter century. However, recent research by Underwriter’s Laboratories presents an alarming prognosis for the future (Dalton, Backstrom and Kerber, 2011). It warns of the potentially dire consequences of continued “optimization”– trying to do more with less. Collectively, UL’s research points to a proliferation of large, light-weight, inadequately fire protected structures, incapable of resisting fire in their own highly volatile interior furnishings and materials. It underscores interior design’s significance as a participant in the battle against fire in the built environment, placing the field squarely in the front lines of the battle. As such, it signals the need for new, more in-depth efforts to fully prepare the profession to meet this escalating responsibility.

This paper reports on a multi-year project aimed at enhancing the designer’s familiarity with design factors essential to fire prevention and control. It asked several questions: 1) what interior components are most significantly involved in fatal residential fires and what factors contribute to their involvement; 2) what can be done to demystify and clarify the designer’s role in eliminating or controlling
this threat; and 3) by what means can designers best be prepared to meet or exceed their fire safety responsibilities? The project involved several phases. First, it employed content analysis of two national data-bases that compile reports of fires and their causes. In 2011, the Consumer Product Safety Commission’s (CPSC) National Electronic Injury Surveillance System (NEISS) was reviewed for narrative reports of fatal residential fires where interior furnishings and materials were cited as significant factors. For the years involved, an estimated 450 fatalities per year were projected to have caused by fires where [mostly upholstered] seating was the first item ignited. Mattresses, bedding, drapery and other loose soft goods played a similar role. Of particular significance to this study, analysis identified eight distinctive fire safety principles related to interior contents as fire “fuels:” a) quantity, b) volatility, c) fuel contribution, d) fuel form, e) concentration, f) vertical placement, g) orientation, and h) enclosure. In 2012, a replication study was undertaken based on data in the United States Fire Administration’s National Fire Incident Reporting System (NFIRS). Although this data gave less detailed attention to interior components, the eight fire safety principles identified earlier were validated by being able to comprehensively categorize all of the scenarios found in the NFIRS data.

Focusing on the eight principles emerging from content analysis, the project moved in a more expressive direction-- development of a uniform method of introducing and explaining the principles. First, inspired by a short section of William Pena’s book, Problem Seeking (1977), a simple, concise, one-paragraph definition/explanation was developed for each principle. Each explanation was augmented by one to four informative illustrations. Finally, following the precedent of Edward Allen’s book, Architectural Detailing (2008), a unified set of symbols was developed to reinforce the meaning of each principle and serve as a prompt to summon its recall. As a final step, the information developed was submitted for validation by the faculty of Scotland’s prestigious Centre for Fire Safety Engineering, University of Edinburgh, after which some illustrations were revised.

REFERENCES (APA)


Fuel Form-- Greater Exposed Surface Area = Faster It's Heat Release

<table>
<thead>
<tr>
<th>Issue:</th>
<th>Principle:</th>
<th>Response:</th>
</tr>
</thead>
<tbody>
<tr>
<td>--A major development in the fire threat posed by interior design components has been an industry-wide tendency toward lighter weight assemblies. Furnishings are often built up of more widely spaced components to offset possible reductions in strength, with the potential result of exposing far more of their total material surface area to the effects of fire.</td>
<td>--During a fire, the more of an assembly’s surface area that is exposed, the more simultaneous flame contact and the more rapidly it gives off its heat.</td>
<td>--Light weight assemblies (those with high exposed surface-to-mass ratios) should be used in limited amounts and in less vulnerable locations--especially where high occupant densities are present.</td>
</tr>
</tbody>
</table>

Notes:

--Five pounds of wood shaving (of a specific type) produce the same amount of heat as a solid block of wood--but much more quickly.


Figure One--Example of fire-safe interior design “pattern.”

William Riehm, Robin Carroll & Lauren Black
Mississippi State University

ABSTRACT

Issue
3-D printing is advancing and becoming an integral part of interior design education due to reduced costs and availability of a wider range of printing materials (see Bull et al. 2010; Koltick 2014; Ransdell 2014). Makerbot Industries, a major manufacturer of desktop 3-D printers, recently introduced translucent printing materials. These cornstarch based filaments, polylactide (PLA), are now commercially available in a range of colors. The questions posed in this presentation are, what are the characteristics of these translucent materials when used as a filter for artificial light, and what are the potential applications for these materials as part of a lighting design curriculum?

Method
Using a Makerbot Replicator2 3-D printer, 6"x6" panels of translucent natural, yellow, blue, and red where printed in thicknesses of 1/16" and 1/8". These panels were placed over a sealed light box and readings for luminance (foot candles [FC]) and color temperature (kelvin[K]) were taken for each panel using a Cooke Corporation Cal-color 400 light meter placed one foot away. As a control, readings were also taken with no material in place. Seven different lamps were used in the light box, two halogen (2800K and 3000K), three compact fluorescent (2700K, 3500K, and 6500K), and two LED (2700K and 5000K). Each lamp was a 100 watt incandescent equivalent. This range of lamps allowed for a comprehensive
examination of the impacts the materials have on the quality of light (see Karlen, Benya, and Spangler 2012, 62-64).

Findings
All of the translucent materials reduced luminance. Although the control, unfiltered, luminance of the lamps varied from 43FC to 86FC, the impact of the materials on luminance was proportional for each lamp. The color of the material, though, greatly affected luminance with the natural PLA reducing luminance an average of 46%, blue 56%, yellow 60%, and red a dramatic 92%. The compact fluorescent and halogen lamps had no noticeable variation in color temperature for natural, blue, and yellow within an average variation of 4%, 2%, and 8% of control respectively. (It should be noted that the reduction of luminance by the red material and the nature of the color temperature measurement scale led to unreliable or not applicable readings of color temperature for the red material (see Gordon 2003, 45.) In contrast, the LED lamps’ color temperature readings were noticeably impacted by the yellow material with an average warming by the yellow material of almost 1000K or 22%.

Application
These data were incorporated into a pilot lighting design charrette assignment where an individual student designed a luminaire to utilize these translucent materials. The student’s response, a pendant luminaire, was modeled digitally using Rhinoceros 3-D software, and a series of scale prototypes were printed. Each was lit with a 1 watt 5000K LED type E12 (nightlight) lamp. These pendants capture the variation of the material; in red they hold and temper the light, while in blue and in yellow, the color temperature and clear luminance give individual character. Implications This research reveals two important trends in lighting design and lighting curriculum, the role of rapid prototyping and exploration of materials in conjunction with design development as well as the impact of color temperature rendition by LED lamps. This research calls for a deeper examination of these materials, and perhaps with more academic investigation, printer and filament manufacturers might be called upon to develop materials specifically for lighting prototyping.
REFERENCES (Chicago)


Figure 1. Average luminance by material color.
Figure 2. Average color temperature by material color.

<table>
<thead>
<tr>
<th>Material Color</th>
<th>Control</th>
<th>Natural</th>
<th>Blue</th>
<th>Yellow</th>
</tr>
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<tr>
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<td>1882</td>
<td>1857.5</td>
<td>1905</td>
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<tr>
<td>Halogen 3000K</td>
<td>2077</td>
<td>1992</td>
<td>2000</td>
<td>1906.5</td>
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Concrete understanding through mobile device mediation

Sarah Urquhart
Utah State University

ABSTRACT
While many challenges face the contemporary interior design classroom, a major issue that educators at all levels of education are grappling with is the introduction of mobile devices into the classroom. Although arguments exist for inclusion and exclusion of devices in the classroom, data about mobile phone ownership make it clear that smart phones are here to stay and that owners are nearly inseparable from their devices (Attewell & Savill-Smith, 2004). When looking at the college population of adults between 18 and 29, 97% own cell phones and 80% own smartphones (Brenner, 2013). Not only are devices available, students also tend to have a significant amount of time invested in understanding the features of their personal devices. This relieves the burden of providing or requiring laptops which are bulky, less mobile and significantly more expensive. Additionally, mobile devices provide technology access to larger class groups where visiting a campus lab isn’t feasible.

The power and availability of mobile devices provides a significant opportunity for use in the interior design classroom especially as a tool for teaching and concretizing the principles and elements of design including color theory. The principles and elements of design form the foundation of design language and communication and have long been identified as a critical part of interior design foundation curriculum (CIDA, 2014). Yet students often struggle to articulate the rationale behind their designs, which often results from a superficial understanding of the principles and elements. Design students must move beyond
basic cognition levels (Bloom, 1956) in order to situate their work in the context of design theory and practice (Guerin et al., 1999). However, it is often difficult for students reach deep understanding of ideas like color value for example because they tend to remain abstract in the human experience. Mobile device cameras externalize the viewing process, allowing it to be shared, deconstructed, and analyzed. In addition, cameras do things our eyes cannot, and thus can be used to challenge student perceptions of the principles and elements of design. This study explores the significance of mobile device mediated, experiential activities in teaching the principles and elements of design including the concept of color value. During a first year interior design course, students participated in a series of assignments requiring the use of a mobile device camera.

The first assignment requires students to discover hidden potential in everyday surroundings and communicate that potential to an external viewer. Students photograph either a found alphabet or a series of found faces. During a series of design theory based critiques, students share the photos on their devices with peers. The mobile device serves as a collection tool and mediates the experience by providing a platform for communication. The devices also provide access to immediate feedback during critique and facilitate peer feedback. Students are able to make concrete improvement suggestions on issues like effective cropping by pinching and manipulating the display of the device rather than talking about ideas in the abstract.

During the second activity, students construct a multi-color value scale by eye. The goal of the activity is to provide students with an experiential opportunity to concretize color theory understanding through visual identification of value as a separate from hue and chroma. Upon completion, each team viewed their value scale through a grayscale filter on a device camera which reveals the value in each step of the scale. Many (51%) teams adjusted their value scale in response. More than half (57%) of the students (N=143) reported strongly improved understanding while the majority of students (81%) reported moderately improved understanding indicating that device mediation provides significant and concrete interaction with the principles and elements of design.
REFERENCES (APA)


Reflection Questions:

or easy? Were some more difficult than others and why?

<table>
<thead>
<tr>
<th>Easy</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Difficult</th>
</tr>
</thead>
</table>

2. On a scale of 1-10, how did seeing your value scale through the gray scale filter affect your understanding of color value?

<table>
<thead>
<tr>
<th>No Affect</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Strongly Improved</th>
</tr>
</thead>
</table>

3. Describe your how your perception changed after viewing the value scale through the gray scale filter.

4. How has your understanding of hue, tone and shade changed as a result of this exercise?
Match colors to the value squares. **Use as many colors as possible.**
Match colors to the value squares. **Use as many colors as possible.**
Virtuality to Reality: Furniture Designing through Digital Prototyping

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ABSTRACT

Studies on physical prototyping or model making in design have shown to increase fixation (Christensen, and Schunn, 2007). Designers may tend to fixate on the design during the time that they spend on making the physical prototype. This is considered as a sunk-cost effect in physical prototyping (Viswanathan and Lindsey, 2013). Digital prototypes maybe an approach to alleviate any fixation effects caused through physical prototyping, due to their ambiguous nature and time needed to generate them. While identifying digital prototyping as a valid method in problem solving this study explores the connection students make when translating the virtual models into physical reality using digital fabrication.

Two sections of an early interior design studio, with a total of 29 students were selected as subjects for this study. They were provided with a simple interior design problem and as a part of that design problem they were asked to design a piece of furniture that corresponded to their overall design concept. Students used the sketchup software to model the 3D virtual models of the piece of furniture. These furniture pieces ranged from Chairs, Bunk beds, Tables to Closets. Then students used a desktop 3D printer to print the model. 20 students out of the 29, answered a questionnaire that was based on the Technology Acceptance Model (TAM) regarding their use of the software and hardware in 3D printing.

The results suggest that students found digital printing to be easy to use and very useful for their future carriers as designers. There was a positive correlation
between Perceived Ease of Use (PEU) and Intention for using in their profession later on, as well as a positive correlation between Perceived Usability (PU) and Intention for using in their profession later on. Future directions in this study are seen in duplicating the study with more subjects as well as comparing with traditional and virtual modeling through a between groups study. The anticipated results of the study are expected to contribute to design education to understand the implication of using different mediums to express design intentions, and to better understand how different mediums provide means of alleviating fixation in the creative design process.

With the advent of new technology it is important to identify how the profession can adopt them to be used effectively and efficiently. Providing students with knowledge on how to use these tools in school give them an added advantage when they go in to the profession.

REFERENCES (APA)


Transitional Modern Desk Chair Combo

I really wanted to capture a modern feel that can be suited for both male and female students to live in. I achieved this by doing a simple but interestingly shaped white desk. The color of the chair is a very unisex color: it can be liked by girls as the current trend of tiffany blue, whereas on the other hand a classic blue that boys always appreciate. The sleek modern shape of the desk is very different from what dorms are used to having and could possibly attract more and new prospects to OSU. I also decided to do a clear blue plastic for the chairs to bring in color to the space but also be a light look to not make it feel dense wherever the desk also has a very innovative compartment that allows the chairs to be stored inside of the desk to clear room for when the dorm is transformed into a hangout place. The chairs can either be stored inside the desk and the desk be moved to a spot to be a coffee table, as well as the chairs being left outside of the desk to be used as extra seating. While the chairs are out, the negative space left can serve as storage space for school supplies.

Twin Bed with Lofted Desk

Project Two
Custom Furniture Model

Design Concept Statement

Intended to be a fluid design, the structure is completely seamless. It combines two necessary components of collegiate dorm room into one. We allow the student to capitalize on the small space they occupy. Organic shapes are utilized to further support the fluid concept of the model. The outer material is a durable plastic, concealing a steel frame.

Preliminary Sketches

Sketchup Models

Jessica Franklin DHM 2073 Section 001
The Modern Rocker

The idea behind the chair...

Let's face it - dorm rooms are not our ideal living quarters. They are small, unwelcoming, and generally designed without much thought into the actual design of the space. That's why I wanted to create a furniture piece that would give the room a more modern feel as well as functionality. A rocker gives you the best of both worlds, as it is more casual and relaxed than your typical square dorm room chair, but then also gives a more modern and edgy look to the space; a style that our generation is known for. So sit down, relax, and rock on!

Materials:
- Transparent polycarbonate

CURVILINEAR DESK

My idea for the piece of furniture was to portray a futuristic look with sustainable material. Sustainability is important because all the choices and actions we make today will affect everything in the future. So, I thought it was important to incorporate both futuristic and sustainable qualities into the desk.
Designing with Digital Media

[Virtual Models + Digital Fabrication]
All things considered, using a 3D printer in Interior Design is:

- **85% Good**
- **15% Bad**
- **70% Wise**
- **10% Foolish**
Designing with Digital Media

Virtual Models + Digital Fabrication

Pie charts showing distribution of responses:
- Favorable
- Neither
- Somewhat Favorable
- Unfavorable
- Very Favorable
- Very Unfavorable

- Negative
- Neither
- Positive
- Somewhat Positive
- Very Negative
- Very Positive

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PECHA KUCHA
The Interior Design Educators Council (IDEC) invites educators from around the globe to submit creative teaching ideas in a fast-paced visual format to be presented during IDEC Pecha Kucha night. Submissions are double-blind reviewed by a panel of distinguished interior design educators. The following presentations, were accepted for IDEC 2015 Annual Conference, and can be viewed at http://www.idec.org/pk

*Envision: Students use Design Thinking to Save Main Street*
Christina Birkentall – Rochester Institute of Technology

*Mission Possible: Encouraging Peer Engagement at the Freshman Levels*
Amy Crumpton – Mississippi State University

*Can Codes & Standards Class NOT be Boring? Field Notes from a Novice*
Nadya Kozinets – University of Louisiana at Lafayette

*Creating a Collaborative Culture*
Elizabeth Lockwood & Marjorie Marcellus – The Art Institute of Portland

*Opposites Attract - Collaboration between Science and the Arts at the World’s Premier Magnetic Research Laboratory*
Anthony Purvis & Steven Webber – Florida State University

*Saying it Hot: A Graphic Design Primer for Interior Design Presentations*
Susie Tibbitts – Utah State University & Roberto Ventura, Virginia Commonwealth University