Connecting Students through Online Peer Review

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In interior design education students must rely less on traditional lectures given by instructors and more on self-guided learning. They must increase their personal analytical skills in order to produce a well informed and detailed final product. It is the authors’ experience that many students struggle with this increased level of rigor, lacking the necessary confidence when transitioning to a more independent working environment. As their areas of interest and topics are varied, they often feel as though they have less interaction with their peers, leading to a sense of academic isolation. The Constructivist approach to teaching explains that connection is a key ingredient to student learning and performance. The standard methodology flows from student to teacher, but student to student connections are of equal significance. Peer review is a method the instructors believed could reformulate these connections between students. During peer review, “students learn ... by explaining their ideas to others and by participating in activities in which they can learn from their peers. They develop skills in organizing ... working collaboratively with others, giving and receiving feedback and evaluating their own learning.”

Although we had tested onsite peer review in the past, we found that students often became distracted or quickly disinterested. Online review was an obvious next step to develop a closer academic community. In response, the instructors focused on two types of learning environments during the 2014/15 academic year: a capstone research and programming writing course and a junior design studio. Developing the peer review vehicle proved to be a significant challenge as many of the popular online review sites utilize Word files with open editing formats. Students of interior design, however, often use advanced graphic software that is unsupported by these sites. PDF editors, we soon found, were perfectly poised to address our unique challenges. Once online, a central location was created for each course to upload drafts of papers and design projects. Student were taught how to peer review and also assigned a rotation of fellow classmates they would provide feedback to. Surveys were distributed at key points throughout the semester to evaluate the effectiveness of the process. In studio, we found that online peer review provided a flipped classroom option, allowing more time during studio for field trips, exploratory group work and detailed lectures. In capstone research and programming the online peer review process was so successful students were noted as leaving supportive comments on work long after our requirements had ended and often on work they were never assigned to. Overall, the work in both courses was more comprehensive and focused in nature. Students expressed that they felt connected, motivated and had a positive attitude towards learning. They also felt that they benefitted not only through comments on their own work but by reviewing their peers’ projects. This presentation will focus in detail on the software, methodologies, and lessons learned in both courses in order to allow instructors to adapt this format to their own classrooms and studios.

Boud, David, Ruth Cohen, and Jane Sampson, eds. Peer learning in higher education: Learning from and with each other. Routledge, 2014.
Hyperspace: A First Week Experience

Author: Heidi E. Schlegel, Rochester Institute of Technology

In 2013, CIDA required accredited programs to report student attrition and retention rates as part of the Student Achievement Data. This pushed programs to evaluate how they support student retention. According to research conducted by Strayhorn, the key to student retention is supporting a student’s sense of belonging: without it, academic performance and self-esteem suffer, depression may set in and student retention rates decrease. Building interdependent relationships within educational programs are key to establishing learning environments that promote a strong culture and sense of belonging. Student retention is increased when students are bonded with their peers. Freshmen are at highest risk of drop out. Upper classes are more often strongly grouped within their year level but rarely reach beyond their common peers. How do we actively reach out in a holistic manner to an entire program in order to create social interconnectedness? This presentation will address one method: Hyperspace, a first week experience. Formatted as a design charrette, Hyperspace is an annual learning experience that facilitates departmental and potential interdisciplinary collaboration and mentoring for students of all levels. Students not only learned to work with their peers, but developed friendships and mentoring relationships they may otherwise not have experienced. Students were grouped in teams of 4-5 from all year levels (freshman to senior) and tasked with completing a small design project within the college featuring sponsor’s products. Four problem sets were established (appendix). The programs consisted of a short paragraph or single sentence; an intensive experiential learning assignment. A set of five simple design dictates were given that were required to be expressed within the projects; identity, teaming/community building, sustainability, sense of place and form, space and order. Learning objectives focused on understanding the requirements for programmatic development, product knowledge and the industry demand for rapid development of ideas but most importantly: effective teaming. Students were motivated to participate through competition and small sponsor prizes. Juniors were tasked with project management in order to challenge the seniors to concede leadership to a subordinate: diminishing the potential for a dictatorial environment. They had enough knowledge to lead but generally, did not dominate due to educational status. Post project feedback (appendix) showed students had introspective responses to their own performance and how they related to their peers. Responses were surprisingly honest and there was a clear pattern represented. Findings showed that students’ morale was raised, confidence increased and those who would not otherwise rise to a leadership role embraced the position and learned from their successes and failures. There was a strong understanding that in order to work effectively with others, a proactive work ethic, respect, communication and most importantly; trust, are required. Relationships were gained, giving that sense of belonging to many where it previously lacked: most importantly freshmen. Building morale, emphasizing teaming and tearing down the traditional hierarchal, territorial separation of freshman, sophomores, juniors and seniors serves to not only to increase student retention at the freshmen level, but enforce the strength of the department as a whole.

Exploring the Process of Concept Development and Applying Various Methodologies in the Interior Design Studio to Achieve Innovation and Creative Problem Solving

Author: Sandra Reicis, Villa Maria College

Introduction: “It is essential that the interior design studio incorporate an extensive exploration of conceptual design in order for students to develop innovative, dynamic projects that push the boundaries of creativity” (Travis 2011) Literature and design surveys represent the importance that concept plays in the development of strong and successful design projects. Educators must emphasize the significance of effective concept development at the early stages of design and provide the means and methods for a conceptual thinking process. In 2001 an updated taxonomy for learning introduced and placed ‘creating’ at the top of the list, demonstrating that this was now considered the most challenging of mental functions. (Puccio 2012) However, when emphasis is placed pragmatics and the final design product at the expense of a consistent focus on concept development the result is a practical solution lacking creativity. Significance and Relevance: Concept development is a critical component of the design process and is often misunderstood and under-utilized by design students. An effective concept will drive a design idea, provide the basis for analysis and evaluation, promote innovative design solutions and result in creative and cohesive design outcomes. However, on the subject of concept development there is a lack of emphasis on the conceptual design process in much that is written for the interior design process. (Travis 2011) The review copy of the 2017 Council for Interior Design Accreditation (CIDA) Standards recognizes the importance of effective concept development and has included within Standard 8, Design Process, under program expectations, a requirement to demonstrate evidence of ‘exposure to various methods of concept development’. The goal of this presentation will be to address a variety of concept types and provide various examples of diverse and successful concept development applications in a range of student projects. An overview will include Tim McGinty’s five concept types, and their evidence in the built environment and will introduce and underscore the broad range of possibilities and their connection to design typologies. (Rowe 1991). I prescribe that it is the role of the educator to expose students to multiple means and methods of design exploration and design thinking and a goal of this presentation is to provide a foundation for effective concept development exercises. Outcomes and Summary: This presentation will include examples of basic concept introduction in a freshman course, development of conceptual thinking with a stronger emphasis on abstraction and interpretation at a sophomore level and at the junior level encouraging a higher level of analytical and critical thought by relating concept to project research and evidence based design. During these lessons and exercises students are exposed to subjects and topics such as biophilic design, fine art as inspiration, cultural and global influence and the creative thought process. By emphasizing conceptual thinking in the educational process students were able to design unique projects that were both thoughtful and functional.
The Scales of Interdisciplinarity

Author: Peter Greenberg, Wentworth Institute of Technology

Within a studio course taken by students of both Interior Design and Architecture, student teams were tasked to work inside and outside of their disciplinary comfort zones. Three scales of inquiry were used: the scale of material assembly, the scale of planning and the scale of the urban form. Student teams used this framework throughout the semester — for analysis projects of existing conditions as well as for synthetic master plan design solutions. The three scales allowed students from each discipline to enhance their participation in the broader project by sharing a scale of exclusive disciplinary knowledge as well as one scale of common inquiry. This strategy let the student teams focus on transforming both the inside and the outside and, critically, the dialogue between the two realms. The studio project responded to a real-world inquiry: a historic complex designed by Paul Rudolph is threatened with demolition and the State Agency that manages it sought ideas for its transformation. There were two principal design tasks: to repurpose complex interior spaces as well as to increase density on the site to generate new sources of income. Paralleling professional team structures, interdisciplinary teams of students worked together to address these integrated challenges — one at the scale of the city, and one at the scale of the interior. Working in each other’s unfamiliar territory also presented opportunities for fresh and unconventional solutions which has been linked to more effective learning and teaching (Smith & McCann, 2001 and Chandramohan & Fallows, 2009). Professional rivalry between the closely aligned disciplines of Interior Design and Architecture is often reinforced by academic isolation and territoriality (Oculus 2015). While professional Architects are qualified to design interior space they do not study it in school; Interior Designers are seldom asked in school to consider inceptive ideas that generate building forms based on structural or urban implications. Yet the real-world exercise of this studio addresses this problem by challenging students to work in teams that were collectively responsible for all aspects of the design solution. Emphasizing the three scales enabled the student groups to address the salient constraints of the exercise: the place of the building site in the city (scale 3), the organization of existing interior spaces and sequences (scale 2) and the particular material vocabulary that characterized a dialogue this site (scale 1). Since urban issues were unfamiliar to Interiors students and large-scale interior resolution was unfamiliar to the Architects, the three scales enabled the teams to bring their own disciplinary rigor to their collaboration as well as to design in unfamiliar ways. The common scale of planning (Scale 2) served as a common linguistic meeting point. As Jorge Silvetti has observed about interdisciplinary projects, “as we take on new partners we must consciously and purposely strengthen our own identity by coming prepared with our own riches” (Silvetti, 2012). As evidenced by the work of the student teams, the three scales present a strategy to reinforce these disciplinary riches as well as to tread on unfamiliar territory.
Researching the Effect of Ergonomic Considerations of Productivity when specifying for Interior Environments: A Systematic Review of Literature

Authors: Cathy Hillenbrand-Nowicki, M. S. & Kristi Julian, PhD., High Point University

OBJECTIVE: Studies have shown that ergonomic considerations contribute positively to human comfort, productivity, and attitude. Sustainable ergonomics is increasing in importance as a component informing FF&E specification, reflecting global demographic and climate concerns. A systematic review of literature was conducted to assess how users are affected by topical ergonomic choices made when specifying for interior environments. BACKGROUND: Ergonomics is an important topic for Interior Designers because of the possible impact it has on user productivity and cost control (Ulrich, Berry, Quan, & Parish, 2010). Various industries have been questioning how ergonomically informed environments might affect building occupant safety, productivity, overall well-being, and retention. Studies indicated that poor ergonomic design choices could reduce the level of user well-being, increase anxiety, elevate blood pressure, and cause physical pain (Ulrich et al., 2008). Ergonomic considerations in product specification encourages professionals from a variety of industries the opportunity to engage in research that might impact all aspects of environmental design. METHODOLOGY: A systematic literature review was conducted to examine current and past studies from a variety of industries about ergonomic design in the built environment. Descriptive statistics were performed on Occupational Safety, Healthcare, and Furnishings Industries’ studies to discover the topical areas of interest for contemporary ergonomic research. Data were also analyzed to understand research designs, methods, and settings. Databases searched included: Medline/PubMed, Cinahl, Embase, and the Cochrane Library. RESULTS: Ergonomic design factors for the built environment had a positive influence on user health, overall well-being, and productivity. Studies indicated a decrease in absenteeism, pain, illness, anxiety, and stress levels when users were exposed to certain ergonomic interventions. Descriptive statistics indicate that topics and settings most frequently cited are in keeping with current healthcare and safety issues across all industries. CONCLUSIONS: Informed ergonomic choices used when specifying for the built environment seems to play a role in designing a better work environment and contributes positively to individuals' outcomes. A few conclusions can be made as a result of this study. Systematic, meta-analysis studies should continue to be viewed as important to ergonomic design research and education. Occupational Safety, Healthcare, and Furnishings Industry individuals are all in unique positions to be objective when determining the best
ergonomic designs. Lastly, additional ergonomic research, and resulting practitioner / student education should be undertaken to better influence the design specification process.


A Trans-Disciplinary Approach to Theoretical Framework in Interior Design

Author: Dr. Junghwa K. Suh , Chaminade University of Honolulu

The purpose of this study is to explore a trans-disciplinary method of establishing theoretical framework that translates demographic-specific key physical attributes to spatial characteristics. The value of the methodology and its process lie in creating design guidelines with graphic analysis. During the design analysis stage in the early interior design process, designers go through both literal and visual exercise to develop persuasive and logical rationale (Dodsworth, 2009) based on the collection of precedent work and client's needs and wants. This is the time when designers go through visual ideation of translating, extracting and analyzing the information that can support the rationale for the specific design project. In this study, social characteristics of defined demographic population are organized, and their preferred physical attributes are visualized through the "Voronoi" diagram, a mathematical concept developed by R. Descartes in the 17th century (Okabe, Boots, Sugihara, Chiu, 2000). The diagram's structural properties suggest creative applications to various disciplines in constructing the relationship among variables, and it is appropriate fit for understanding, illustrating, and explaining social context (Lazlo & Krippner, 1997). The method is filtered through the Combinatoric theory (Bona, 2011) to define characteristics of spaces by mapping the combinations of key physical attributes. Then, it is applied to an interior design project illustrating how this trans-disciplinary perspective can build a logical rationale in design. The scope of the design project is a work environment for the millennial generation. This study demonstrates the process of synthesizing and articulating the concept of the "Voronoi" diagram into a theoretical framework addressing the design problem. This methodology may be generalizable as a process to various demographic profiles, diagnosing their socio-cultural characteristics in spatial design. This process further emphasizes that trans-disciplinary thinking can broaden the possibilities of creative solutions for interior design.


The Seated Musician: A Cultural Blindspot

Author: David Brothers, New Jersey Institute of Technology

Music is a fundamentally biological process and, yet, no significant studies have been undertaken to determine how the furniture that musicians use might influence this activity. It is frequently pointed out how important it is for the musician to find a chair, stool, or bench that “fits” correctly, however, there is scant research that links specific instruments and their particular biomechanical requirements with the latest understanding of how humans sit. Curiously, music and design communities have neglected to consider how the furniture that musicians use are virtual extensions of the instrument itself and as equally deserving of thoughtful design as the venues in which they play. This research presents the ongoing findings of a study that examines how specific sitting postures for musicians who play different instruments might influence the design and application of chairs for their use. Current ergonomic research challenges conventional notions of how to properly sit healthfully while performing tasks. This research tests the hypothesis of whether the conventional postures maintained by musicians in the strings, brass, and woodwinds section of an orchestra can be fundamentally improved through seating design. Musicians express their musical dialogue partly through their body postures and movement. It has been demonstrated that a musician’s motion corresponds to the structural aspects of a musical score and may actually have an aesthetic role in the musical performance. The relevant question, therefore, is whether a close examination of sitting posture while playing can lead to seat designs that promote movement through the entire functional range of motion, both to avoid extreme postures and possibly improve musical interpretation. A reciprocal question is implied; how is the audience’s perception affected by the design of furniture and equipment surrounding musicians? For example, can emerging digital technologies eliminate the need for printed sheet music on stands that visually impede large portions of an orchestra? Can dynamic seat designs for chamber ensembles improve the visual experience of a performance? The methodologies that underpin these analyses include a comparative review of conventional practices gleaned from music education books, music and medical journals, Internet sites and blogs specific to individual instruments, as well as first-person interviews with professional musicians. It compares these findings with an empirical study of musicians at play with photographic, video, and observational analysis. The results of these studies are used to develop a series of schematic design concepts that inform the design of a prototype seat. This chair is presented as a proof-of-concept design intended for manufacture. It is meant to serve as a foundation for further study and investigation of the relationship between behavior, function, and body mechanics relevant to musician furniture and presents a framework for defining a new furniture typology.


Design Thinking for Transformation- The Design of a Sustainable Micro-Campus in Tharaka Nithi, Kenya

Author: Lesley Sager, University of Wisconsin-Madison

Design has become a powerful tool with sophisticated methods and processes for creatively tackling a variety of problems. Designers are called upon to place human needs at the center of their design engagement. Because of this, Design Thinking has become a powerful approach to addressing issues at both micro and macro levels, ranging from simple to complex problems. It transcends roles and disciplines and is essential both for analyzing existing conditions and generating new opportunities. By exploring different ways of thinking and learning and equipping ourselves with the processes and tools of design, we can prepare ourselves to tackle a myriad of design problems. The course titled “Design Thinking for Transformation” introduces and elaborates on the tools and practice modes of design thinking with an emphasis on practical application. To be true to the design thinking process of empathy, define, ideate, prototype, and test, this course is continuous. Students are encouraged to take it multiple times, as well as, to travel to Kenya to test their ideas. Students from multiple disciplines combine their knowledge and collaborate design challenges centered on the design of a sustainable micro-campus called, Shule Ya Ndoto (The Dream School) in Tharaka Nithi, Kenya. The intention is to design and build a campus where the youth and family members can gather, build skills, gain creative confidence, and ultimately change their perception of their own ability and agency in the community. During the course, students leverage the research and development strengths of the university and community partners to identify existing low-cost sustainable building technologies, best practices for sustainable farming, and water collection while focusing on what is both viable and feasible within the constraints of the community. Through a human centered lens, faculty and students will follow the transformation method defined by Burns et al. (2006), which characterizes projects as follows: 1) defining and redefining the design problem to tackle; 2) collaborating between disciplines, 3) employing participatory design techniques, 4) building capacity and not dependency, 5) designing beyond traditional solutions to tackle issues with a more holistic perspective; 6) creating fundamental change, leaving a vision and champions to continue the work. Faculty and students have visited communities within Tharaka Nithi for the past three years. During which time they have been given land and begun the working with the youth and families from impoverished rural areas by reflecting on their needs and creating a master plan for a sustainable learning environment that serves as an “oasis” for the community and incorporates features that facilitate personal health and growth. The vision of The Dream School comes directly from the students and is to be a self-sustaining environment with fruit trees, experimental vegetable gardens and green houses, a fish farm, healthy livestock. It will also be a place for week long workshops, product design and innovation, outdoor sports and community events.

Lighting Effects

Author: Erin Speck, George Washington University

An important aspect of interior design studio projects is the selection of materials and finishes. However, there is an important interaction between lighting and finishes. Where and how do students learn to understand the various effects lighting can have on finish appearances and how that can be used to enhance the appearance of the space? Students often select finish materials with interesting textures and finishes for their studio design projects. A frequent requirement of that studio design project is a reflected ceiling plan showing locations of light fixtures used relative to the spaces designed. Sometimes shaded or rendered elevations or sections are created to demonstrate a key idea, a designed piece, or desired lighting effect. As part of a lighting design class, students are tasked with taking photographs of surface finishes and their lighting effects for use in class as analysis and for an understanding of the seven types of luminaire light emission patterns. An important skill is integrating lighting and finishes in a way that projects the intent of the design. In order to encourage the development of that ability, students are required to study the interplay of light and surfaces. As part of this, students take photos with examples of what they believe to contain contrast and stimulation; variation, finishes and reflectance, 3D form and glazing, wash and accent, glare, and direction and distribution, which include direct concentrated, direct diffuse, indirect concentrated, indirect diffuse, direct/indirect diffuse, omnidirectional diffuse, and multiple distributions. Richard Kelly’s three elements of light; ambient luminescence, focal glow, and play of brilliants, and John Flynn’s Subjective Spatial Impressions; spaciousness, perceptual clarity and pleasantness were also introduced as concepts to include. Contrast, established by developing patterns of light and shade, and involves selecting specific finish materials to receive light while others do not. Environments can be classified as either high load or low load environments depending on the degree of peoples’ stimulation. Therefore, synthesizing these concepts provides tools for the student to use when designing a studio project. These tools inform users of interior environments about the space, and are used to create a more informed environment. This approach could also include a compilation of the best photo examples from each category, compiled and posted to a website available for student download and use as a reference for understanding and creating lighting effects. Additionally students can expand this reference and use these concepts to organize their portfolio based on aspects of their designs, reflecting a range of degrees of stimulation and a grasp of lightings effect on the interior.
Paradigm Shift of Buildings Information Modeling in Interior Design Profession Today and How Educators are Adapting

Author: Robert Szudzik, Villa Maria College

Thom Mayne once wrote: “Technology enables us to control the nature of our own creative process, as well as the realization of what we design” (Marble, 2012). The integration of Building Information Modeling (BIM) has had a significant impact on not only the professional side of design, but the educational side as well. With so many options available, such as Autodesk® AutoCAD® and Autodesk® Revit®, today’s design students must learn both software types in order to be marketable post-graduation. In the industry in general, BIM tools have proven their efficiency and once fully implemented into the workflow, will aid firms in documenting and coordinating their designs like never before (Roehl & Shannon). Statistics show a steady increase in BIM implementation in current workflows for many building design and construction firms. The percentage of companies using BIM rose from 17% in 2007, to 49% in 2009, to 71% in 2012 (McGraw-Hill Construction). Studies have shown that BIM can help the interior design process (Johnston), but there is still a percentage not making the change. As educators, we should have confidence in the tools we provide our students for further design development and documentation leading to the other side of this discussion, which is to explore what other schools are doing differently than before to introduce and implement this technology in their current curriculum and follow the required standards set out by regulatory agencies. This presentation intends to gain a better understanding of what factors are preventing Interior Design programs and firms from implementing a BIM type workflow into their current design, analysis and documentation process and how current educational models for teaching the software are reacting to these possible deficiencies. The goal is for students to not only feel prepared, but ready to lead the charge for helping their profession move in the appropriate technological direction. We will explore some instructional approaches presented at a series of BIM Academic Symposium’s sponsored by The Building Smart Alliance. Their goal is to bring together representatives of different academic programs and industries to discuss the technology-based collaboration among the architecture, engineering, construction, owner and operator (AECOO) industry. The Academic Workshop will explore how BIM educational activities incorporated at different levels of college curriculum are affecting the attainment of educational outcomes through credentialing, accreditation or certification. (BIM Academic Symposium). Then, we will analyze these findings with research gathered from professionals though interviews, testimonials and my own professional experience to draw a conclusion as to whether or not these new standards and enhanced teaching techniques are leading students in the right direction to fulfill the needs outlined from the firms we analyzed.


Anthropometrics: Design and the ‘Scientific’ Body

Author: Ronn M. Daniel, Vicki E. Daniel Ph.D., James Madison University

Mostly it was... what Denise Scott Brown has called “physics envy.” -- Colin Rowe, As I was Saying While attempts to describe the human body through idealized geometry are as ancient as architecture itself, the “scientific” practice of precisely measuring and quantifying human anatomical diversity – anthropometry – is a product of the 19th and 20th centuries. Designers who rely on anthropometric data, which has been included in the authoritative Architectural Graphic Standards since 1941 and in Panero and Zelnik’s Human Dimension and Interior Space in 1979, rarely consider the historical complexities from which it arises. Anthropometry is a diverse science, uniting the work of physical anthropologists, physicians, social reformers, industrial capitalists, and military planners. Human bodies have been measured to validate colonial empires, justify racial oppression, create an industrial working class, and amplify military power. Using materials from the history of science, the writings of Frederick Winslow Taylor and his followers, cold war military studies, and architectural anthropometry catalogs, this paper will attempt to articulate this complex history in order to highlight the processes by which anthropometry’s ideological agendas masqueraded as non-ideological numerical descriptions. The paper will demonstrate how, through the promulgation of proportions and standards for “normal” and “adequate” bodies, other bodies were necessarily left to carry the burden of difference. It will discuss how the reliance on numerical tables, in lieu of other possible discourses or descriptors of the human body, functioned as a displacement whereby architectural expressions of political and cultural conflict were masked behind veneers of technocratic objectivity. Numbers about bodies are, inescapably, a cultural project.


