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Table of Contents

Scholarship of Design Research Presentations

IEQ Factors in Learning: A Qualitative Analysis of the Impact of Acoustics on Students with Autism Spectrum Disorder- Michael Lekan-Kehinde, University of Minnesota

Peter Dohmen: Colorful Reflections Thru Time and Space- Stephanie Zollinger, University of Minnesota

Undergraduate Students' Sensory Experiences in Open Spaces of Higher Education-Yongyeon Cho, Iowa State University

Local or National? Sense of Community Advertising Effect in Virtual Reality (VR)- Kyoungmee Byun, Northern Arizona University

Sustainable, Biophilic Student Housing Contributes to Academic Success and Improved Mental Health- Susan Ray-Degges, North Dakota State University

Enhancing Socio-Emotional Development of Children in Learning Environments by Design-Sahand Abbasi, South Dakota State University

Interior and Environmental Design for Reducing Aggressive Behavior Among Residents of Juvenile Detention Centers- Ellie Nahirafee, South Dakota State University

Scholarship of Teaching and Learning Presentations

Inhabiting the Margin; Through Zines, Radical Tools for Student Empathy and Introspection-Aanya Chugh, University of Kentucky

What Do You Want to Be When You Grow Up? – Ahna Packard, University of Nebraska at Kearney

Let's Make Toast! - Connie Dyar, Illinois State University

New Domestics TV: Film, Domesticity and Interior Design Research- Evan Pavka, Wayne State University

Where have all the Students Gone? An Investigation into Studio Culture- Lynette Panarelli, Wentworth Institute of Technology

The Benefits of 3D Modeling: Measuring Student Development Through SLOs- Georges Fares, Kansas State University

A Case Study of 4th Year Studio: On the Fringe of Interior Design- Jill Lahrmer, Kent State University

Breaking Down Preconceived Notions and Preparing Interior Design Students for a Studio-Based Education- Meghan Hendrickson, University of Minnesota

Globalization and Culturally Relevant Pedagogy- Susan Ray-Degges, North Dakota State University

Proficiency Theory: A Primer for Designers Acquiring Higher Levels of Learning- Kevin Woolley, Purdue University

Creative Scholarship Presentations

A Cabin in the Woods- Yongyeon Cho, Iowa State University

Panel Presentations

Finding Opportunities within Constraints: Strategies for Managing Programs in the Current Academic Climate- Amy Roehl, Texas Christian University

(*Re*)balancing Empathy: (*Re*)shifting and (*Re*)framing Design Thinking- Kurt Espersen-Peters, University of Manitoba

Analyzing Strategies for Teaching Building Codes- Dana Vaux, University of Nebraska Kearney

Poster Presentations

Integrating Empathy: Designing a Makerspace with Rural Community Partners- Miyoung Hong, Indiana University Bloomington

Scholarship of Design Research – Diversity, Equity, and Inclusion Presentation

IEQ Factors in Learning: An Qualitative Analysis of the Impact of Acoustics on Students with Autism Spectrum Disorder

Michael Lekan-Kehinde, University of Minnesota

Abimbola Asojo, University of Minnesota B. Sanborn

Abstract

Autism spectrum disorder (ASD) is a condition that typically causes delayed verbal and social skill, restrictive and repetitive motor movement and has been theorized to occur due to the failure of the theory of the mind, mirror neuron system, weak central coherence or imbalances of empathizing and sympathizing. As a neurodevelopmental condition which could be complex, multifactorial and pervasive and is widely described under the umbrella term of Neurodiversity. About 30% of the population is currently estimated to be neurodiverse and therefore the design of spaces should adequately accommodate their needs from childhood and helping them integrate into the adult life in the most functional way both socially, economically and environmentally. One of the major factors that contribute to childhood development and how students with autism are able to integrate into life is the quality of their learning and learning spaces that support them. The Indoor Environmental Quality (IEQ) factors are metrics that has been identified by experts as important to ensure health, wellbeing and comfort within the learning environment. Acoustics is one of the 4 (four) major IEQ factors that affects learning. Acoustics impacts language acquisition, concentration, information retention,

and general comfort within the environment and therefore has enormous impacts on students with ASD. However, there has been limited research on this impact on students with ASD. This research uses a qualitative approach to understand the experiences, suitability of the current American Standards National Institute (ANSI) acoustic guideline on students with ASD and provide recommendation from industry experts on how to improve the acoustics of learning spaces for students with ASD. The research identified five major themes, the first theme is the Individuality of ASD, the second is the expert review of current guidelines, the third theme is the available solutions used to support the learning space and their limitations, the fourth are the recommendation for improvement and the last or the fifth is future study that are needed in this area. This research provides an understanding to the needs of students with ASD and future directions to how these needs can be improved for better inclusivity of students with ASD.

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Figure 1: Categories of Autism Spectrum Disorder



Figure 3: Three Functional level of Autism (www.veryweilhealth.com)







Figure 7: Impact of Acoustics in Learning Spaces (resonics.co.uk))

Size of Learning Space

Small Space

Volume of Less than or equal to 283m3 (10,000ft3) - (Small Space)

Medium Space

Volume of Less than or equal to 283m3 (10,000ft3) - (Small Space)

Large Space

Volume of Less than or equal to 283m3 (10,000ft3) - (Small Space)

Experience of Students in Learning Space

Behavior | Experience during Learning (Suitability Index) Psychological | Physiological Consequences Energibed | Productive | Frustrated | Fatigue (Annoyed | Stress) Tired





Scholarship of Design Research – History and Theory Presentation

Peter Dohmen: Colorful Reflections Thru Time and Space

Stephanie Zollinger, University of Minnesota

Abstract

I attended an auction in my hometown and was captivated by several watercolor cartoon drawings prepared as patterns for stained glass. I was shocked to learn that the artist and his studio, Peter Dohmen were located in a residential neighborhood my neighborhood right next door to me! I bid on the cartoons and won and have been researching my long-lost neighbor ever since. Although there has been much attention and excitement concerning the aesthetic side of Dohmen work, there has been little research and focus describing his innovations and contributions to the decorative arts, stained-glass industry, or sacred places. Analysis of archived materials and numerous interviews with former colleagues, family members, stained glass artisans, and historians were conducted over a two-year period. The interviews were intended to fill the void in literature and complement data in the archives. The purpose of this presentation is to introduce my interpretive research process (Groat & Wand, 2002) and the valuable contributions made to the decorative arts and stained-glass industry by my former neighbor, Peter Dohmen. Peter Dohmen (1904-1977) has been one of the most influential stained-glass artists of the 201 century. Dohmen was born in 1904, near Cologne, Germany. He started his artist career as a painter of religious oil paintings with traditional religious themes. He studied at several art academies of Europe and served

briefly as an art professor at the Institute for Christian Art in Dortmund before becoming the manager of a highly regarded art studio in Austria, where he worked in fresco murals, mosaic murals, and stained glass windows. Upon his return to Germany in 1936, Dohmen opened his own art studio in Cologne. Peter Dohmen and his family migrated to the United States after the Second World War. The Dohmen arrived in the Midwest during one of the harshest winters on record. Peter established the Peter Dohmen Studios in the suburbs of a prominent midwestern city. His more modern art style was just what young architects were looking for and had not been able to find. These architects did not want the very traditional church art, often referred to as kitsch. His timing was perfect, and he soon started receiving contracts for some very prominent institutions. Dohmen's works can be found in numerous churches in the Midwestern states. Among his major work are the mosaic murals at Carleton College in Minnesota, stained-glass windows in the library of the University of Notre Dame and the windows in the Chapel of the Resurrection at Valparaiso University, Indiana.

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Scholarship of Design Research – Open Track Presentation

Undergraduate Students' Sensory Experiences in Open Spaces of Higher Education

Yongyeon Cho, Iowa State University

Abstract

The university's public areas, such as the main entry lobby, an atrium, and common area seating, are not just for waiting. These areas are for a casual meeting space with classmates and faculty members, a rest zone between classes, an individual and a group study place for students, and even a space for eating. A well-designed space can influence occupant satisfaction, better health outcomes, and an overall positive sensory experience (Winer & Keim, 2018). Individual sensory inputs have a more substantial influence on cognitive responses and emotional responses (Augustin et al., 2009). which are closely related to designing a learning environment. The previous research investigates the sensory design and students' sensory experience in classrooms, outdoor learning environments, and autism centers (Hussein, 2012, Love, 2018). However, little research investigates students' sensory experiences in public areas in higher education settings. This research explores a case study assessing students' expectations and experiences of sensory design elements in campus entry lobby areas in the mid-west region in the US for three years, pre-and post-pandemic. This study examines two research questions: 1) What design factors in the college public area influenced the student's sensory experience? 2) How do the user's visiting patterns, type of space, and this pandemic impact the student's sensory expectations and

experiences? Mixed-method research was used to investigate the three research guestions. Sophomore students, mainly interior design majors, participated in the online survey using Qualtrics as a part of the course assignment. The researcher collected the data sets in 2019, 2021, and 2022. Participants visited three different college buildings' main lobby areas (Figure 1). They asked about the students' seven sense experiences in areas for qualitative research. The 125 participants used a modified version of Malnar Vodvarka's sensory slider (Malnar & Vodvarka, 2004) in the survey (Figure 2) to evaluate which level of sensory stimuli was the optimal level, which level of sensory stimuli the participants experienced in the area, and which design elements impact their evaluation. Demographic questions and visiting pattern questions were followed. Content analysis (Figure 3) was used to identify what environmental considerations impact the users' sensory experience in the environments. Statistical analysis was also used to discover the relationship between visiting patterns and users' sensory experiences. The survey results indicate that 'natural light' impacts students' visual sense the most, 'people (conversation/review/walking)' impacts their auditory sense the most, impacts their taste-small sense the most, 'openness/building shape/hallway' impacts their basic orientation the most, 'furniture (texture/clean)' impact their haptictouch sense the most, 'furniture' impacts their haptic-kinesthesia sense the most, and 'architectural elements' impact their haptic-temperature and humidity the most (Table 1). The results present that the visual sense was the highest level of user's expectation and experience, but the taste-smell sense was the lowest level of expectation (Table 2). The survey results demonstrate that sensory expectations and experiences are statistically correlated (Table 3). The research will help facility managers and interior designers

evaluate students' sensory experiences to find potential improvements in educational settings.

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Figure 3. Content analysis codebook and process

Table 1. Content analysis results of environmental factors that impact participant's sensory experiences

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Table 2. Survey result of participants' sensory evaluations of the three sites and the mean value in each sensory expectation and experiences

	Visual	Auditory	Taste- smell	Basic orienting	Haptic touch	Haptic kinesthesia	Haptic temperature and humidity
		O	PTIMAL LE	EVEL (0=LO	WEST, 10=	HIGHEST)	
Design building	7.42	6.50	6.67	7.08	6.01	6.45	6.68
Library building	7.18	7.00	6.23	6.78	6.71	6.52	6.87
Agricultural building	7.92	6.75	6.16	7.30	6.56	6.82	7.04
Total - mean	7.51	6.75	6.35	7.05	6.43	6.60	6.86
		OW	N EXPERI	ENCE (0=L0	OWEST, 10:	HIGHEST)	
Design building	6.42	5.53	6.44	6.32	4.98	5.90	6.28
Library building	6.53	6.01	6.06	6.24	6.37	6.18	6.23
Agricultural building	8.18	6.34	5.98	7.01	6.20	6.69	6.72
Total - mean	7.04	5.96	6.16	6.52	5.85	6.26	6.41

Table 3. Statistical analysis results of the correlation between the sensory expectations and experiences (Visual sense – Design building)

CORRELATION		Visual Expectation – Design	Visual Experience – Design		
Visual Expectation	Pearson Correlation	1	.305**		
- Design	Sig. (2-tailed)		.001		
	N	125	125		
Visual Experience -	Pearson Correlation	.305**	1		
Design	Sig. (2-tailed)	.001			
	N	125	125		

**. Correlation is significant at the 0.01 level (2-tailed).



Figure 1. The photos and floor plans of the three buildings that the participants conduct site observation and the online survey.

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Figure 2. An example of the online survey question to assess the sensory expectation and experiences.

Scholarship of Design Research – Social and Environmental Presentation

Local or National? Sense of Community Adverstising Effect in Virtual Reality (VR)

Kyoungmee Byun, Northern Arizona University Yummi Choi, University of Indiana Southeast

Abstract

Many researchers have addressed the importance of the community to the human social, emotional, and cognitive experiences (Waxman 2006; Oldenburg1999; Warrdono 2012). Socializing in space affects the lives of people positively by creating a sense of community, belonging, and attachment. Thus, environmental psychologists and interior designers have proposed social and physical factors to enhance social interaction in gathering places. However, it does not indicate detailed applications such as what degree and/or level of interior physical factors could have an influence on social interactions. In this study, participants will be exposed to the virtual reality setting of coffee shops rendered by Building Information Modeling (BIM) and their emotional responses to the proposed physical settings will be measured. In order to measure emotional responses, Mehrabian and Russells' model on approach and avoidance behavior is applied (Mehrabian & Russell 1974). According to Mehrabian and Russell, approach and avoidance forces are present in every interpersonal encounter, and socialization is derived from approach behavior (Mehrabian & Russell 1974). Emotional dimensions of pleasure, arousal, and dominance are positive mechanisms for approaching behavior; thus, those dimensions are evaluated in this study. In addition, as many coffee shops are using their space to be an advertising platform, the study will

measure the impact of having a sense of community advertising compared to strictly commercial advertising without the sense of community appeal. As a result, findings from this study will contribute to the design of gathering spaces, especially coffee shops, to enhance social interaction for creating a sense of community, and how advertising would make influence a sense of community. A virtual reality program will be designed for a coffee shop experience. A virtual coffee shop is designed to examine different physical settings (e.g., light, outside view, and furniture) which are chosen as independent variables from Waxman's suggested top five physical settings for the coffee shop (Waxman 2006). In addition, two different brands (national brand vs. local brand) will be displayed on the counter. Besides the counter, a large TV screen for advertising will be set up over a sugar and cream station. On the TV screen, three different advertisements will be shown (a community-engaged ad, a commercial ad, and no ad for the control group). Voluntary university students for this study will be recruited to experience a virtual coffee shop respectively to explore their perception toward advertising. Each participant is expected to take 30 minutes to complete the experiments. Each time participant stops at a point either at the counter or cream and sugar station, they will be asked immediately a set of prepared questions. All voluntary university students will participate in an anonymous experiment and answer quantitative questions. After completing the experiment, the researcher will analyze the collected data to find significant differences for each setting.

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Scholarship of Design Research – Social and Environmental Presentation

Sustainable & Biophilic Student Housing Contributes to Academic Success and Improved Mental Health

Susan Ray-Degges, North Dakota State University Jill Mueller, Victoria Nelson, Amy Stauffenecker

Abstract

What do college students think they need in their housing accommodations to be successful and are they struggling with mental health? College housing can help students succeed academically, socially, and psychologically by connecting students with peers, resources, and environments that promote good mental and physical health (Eisenberg et al., 2021; Newman, 2017; Xulu-Gama, 2019). This study explores what college students viewed as important in their housing accommodations to be successful and whether they were struggling with mental health problems. Mental health problems have been shown to negatively impact students academic success (Eisenberg et al., 2021). Suicide is the second leading cause of death within the collegiate population and student demand exceeds supply for mental health resources available on most campuses. This has led to a mental health crisis on college campuses (Eisenberg et al., 2021). Biophilic design is needed to reduce depression and anxiety in approximately 25% of college students (ACHA, 2019b, as cited in Eisenberg et al., 2021). Studies have shown a correlation between mental health and biophilic design (Berman et al., 2012; Largo-Wight, 2011) but few college housing accommodations are incorporating biophilic design elements. The lack of resources and housing accommodations

supporting mental health may be why so many students are struggling with anxiety and depression. Sustainable design contributes not only to a building's health and longevity, but to the health of those that inhabit the space (Beamish et al., 2011). Availability of healthy choices, safety, mixed designed land-use, environmental sustainability and stewardship, and the opportunity for nature contact are characteristics of healthy places and communities (Largo-Wight, 2011, p. 42). Methods. An online survey was distributed through a university student list serve and personal Instagram accounts to students 18 years or older attending or had attended college in the last 5 years. The survey consisted of open-ended questions, Likert Scale questions, ranking, and multiple-choice questions addressing academic success, mental health, housing, sustainability and biophilic design. Conclusion. The findings support that there is a mental health crisis on the college campuses. Of those students participating in the study, 87% self-identified as having some form of mental illness. Anxiety being the most prevalent (49%), followed by depression (34%). Students identified that biophilic design contributes positively to their moods (68.29%) and having direct access to nature was found to be important (69.11%) in contributing to a positive attitude. Students noted that sustainable practice is important to them with over 50% of the students agreeing on the importance of living sustainability. Study results support the need for sustainable and biophilic design solutions in housing to promote student success and good mental health. Outdoor space (31.5%) was found to be most important amenity for the students, followed by the gym (22.7%) and business lounge (21%). This exemplifies need for direct access to nature supporting numerous health benefits including the reduction of anxiety and depression. Student housing can provide a better response to post-pandemic

challenges that college students face today through design attributes as noted in this study's findings.

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Scholarship of Design Research – Social and Environmental Presentation

Enhancing Socio-Emotional Development of Children in Learning Environments by Design

Sahand Abbasi, South Dakota State University Ellie Nahirafee, South Dakota State University

Abstract

The built environment affects childrens' behavior and has an essential role in childrens' socio-emotional development. However, providing a learning environment that supports childrens' socio-emotional development needs is challenging because they perceive environmental factors differently than adults and to varying degrees. Besides, there has been a general lack of understanding of how environmental design features are essential in such environments. This study aimed to investigate the importance of physical design features in socio-emotional development. This descriptive, nonexperimental study adopted the mixed method approach to determine the importance of physical design features in the space planning and functionality of the different settings. The primary data gathering techniques for this study were focus groups and a set of comprehensive design analyses. A purposive sample of 8 early childhood educators and graduate students in childhood education was selected for the focus groups, and 30 settings studied and evaluated in the design analyses. Qualitative coding analysis of the focus group data and the correlational analysis (Pairwise Correlation Coefficient) were performed to examine the relationship between design and function features of the settings. A set of comprehensive design analysis including function, semantic, and

affordance analyses were performed to explore the effect of design on socio-emotional development. The study's finding illustrated that the most critical design features and functions of the setting which contribute to the socio-emotional development are having control over the environment by children and feeling safe and private, and supervision and access by the teachers and caregivers. The findings indicated that the physical design features, which contribute to identifying and functionality of the settings, are flexibility, structure, and affordances. In conclusion, the study found a significant impact of the design features on learning environment.

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Scholarship of Design Research – Social and Environmental Presentation

Interior and Environmental Design for Reducing Aggressive Behavior Among Residents of Juvenile Detention Centers

Ellie Nahirafee, South Dakota State University Sahand Abbasi, South Dakota State University

Abstract

According to National Council on Crime and Delinguency, annually 1.7 million youth commit offenses, and 550,000 are in secured facilities in the United States. Also, around 350,000 of them are in approximately 600 detention centers. A frequent issue in juvenile detention centers is aggression among residents. This aggression can result in harm, injuries, and hospitalization. Detention centers always apply a higher level of behavioral control by staff, that may lead to repression that escalates even more psychological problems among these juveniles. In previous decades, justice systems have realized that detention and incarceration cause critical aggression among individuals in secured facilities. A review of primary research illustrates that justice systems need to apply rehabilitation strategies instead of incarceration. This paper examines risk factors related to aggression among juveniles in detention centers. Aggression incorporates a diverse set of behavioral patterns that end with hurting and harming oneself or others. Suicide is one of these aggressive behaviors that happens frequently in juvenile detention centers; and delinquent juveniles in secured facilities (i.e., detention centers) are at a greater risk of suicide in comparison with the overall juvenile population. Also, there is a high percentage of self-injury among juveniles in

detention centers. These issues are strongly linked to juvenile aggression and are associated with psychiatric disorders and traumatic problems. According to the literature, a large number of juveniles in detention centers have diverse problems including substance abuse and physical and sexual assault experiences that can result in serious traumatic issues or maltreatment. These juveniles may experience fear and anxiety, or they may feel their autonomy is limited and they do not have enough control on the environment, events, or people in their surroundings. Accordingly, the risk factors of aggressive behavior among juveniles in detention centers can be environmental factors that trigger stress, anxiety, loss of autonomy, repression, and fear. Based on the literature, rehabilitation of delinquent juveniles has taken the place of incarceration in the justice system. And an appropriate model of rehabilitation is the Teaching-Family Model that focuses on counseling juveniles and their parent, skill-based training, familystyle living in a normalizing environment that reminds the juveniles of their home environment and does not prompt an institution environment. This study will identify features in the physical environment of juvenile detention centers that may cause or increase the effect of risk factors through the review evidence, and it seeks to determine the environmental design features that may reduce aggression among residents of juvenile detention centers. The most important factors considered in the design of the new floor plan are enhancing control, territory, and crowding. The design considerations mostly are pooled out from studies on similar environments like psychiatric facilities and adults jail, since there were not appropriate peer-reviewed studies regarding the design of such facilities.

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Scholarship of Teaching and Learning – Diversity, Equity, and Inclusion Presentation

Inhabiting the Margin Through Zines, Radical Tools for Student Empathy and Introspection

Aanya Chugh, University of Kentucky

Abstract

Interior Design education is at a crossroads, where the desire to promote diversity, equity and inclusion must confront its demographics. 2021 CIDA student demographics indicate that on average, 64% of students in the programs surveyed were white. Increasing diversity alone does not solve the problem, as BIPOC students in this context tend to group together as a form of resistance. (Carter, 2007). This naturally creates a lack of exposure to marginalized identities and experiences. After the Black Lives Matter movement, workshops like Racim Untaught emerged to interrogate the role design plays in the production of spatial inequality. These were fruitful thought experiments, but they did not get at the deeper systemic issues: much of interior design precedents, history and theory is still taught through a eurocentric framework, where the power structures of globalization and colonialism remain unquestioned. Scholar Tasoulla Hadjiyanni (2020) bravely asks what decolonizing interior design might look like beyond the traditionally western pedagogical framework. Going beyond the goal of diverse admissions, decolonizing implies creating shared spaces for dialogue, learning, and collaborative action ones that penetrate into the question of how power relations dictate who is at the top and who is at the bottom of the staircase and why (Hadjiyanni, 2020). This course builds off of Hadjiyanni's call for decolonizing interior design

education by encouraging a mostly white and middle class student population to critique who is at the top and who is at the bottom (Hadjiyanni, 2020), through equipping them with understanding of a broader cultural and social context. Media in all its forms is the predominant area of study, as its framing toward a selective audience ultimately decides who belongs, and who doesn't. Borrowing from radical feminist groups in the 1970's, students explored their relationships to power and marginalization through the creation of Zines. As forms of self-published media, Zines invert the typical power structure of how media is typically created and disseminated. The scholar Bell Hooks (1989) aptly describes this position as one of space of radical openness, where marginality can exist as a site of opportunity rather than as a barrier. Apart from highlighting other identities and perspectives, they are radical tools for building empathy. Acknowledging that certain forms of knowledge transcend the conventions of language, students approached storytelling through intuitive collage, a form of embodied research. The outcome of this project (figures 1-5) suggests immense potential for using narrative as a human centered approach to interior design. Students left the course feeling empowered and optimistic, suggesting the immense benefits of educational strategies more attuned to the development of soft skills, such as Social-Emotional Learning (Elmi, 2020). In order to develop empathy for others, students must be able to safely reflect upon their developing identities, their privilege, and their personal experiences with marginalization. While Diversity, Equity, and Inclusion may be the guiding principles, the actual work involves a nuanced and bottom-up approach that equips students with a sense of genuine empathy and introspective ability.

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Syllabus Excerpt:

Part of this course investigates the power of physical artifacts in our material culture to create specific narratives. For the final project, students are asked to use your precedent material to develop a short "Zine". A zine is a creative, handmade document that tells a specific story. This story should be told via a combination of drawings, photographs, text or montage. The content of zines vary greatly, but some examples include a fictional story involving certain invented or real characters, a set of instructions on how to do something (think DIY) or a series of declarations on a particular outlook. Through the act of self-publishing, students learn to critique the mainstream channels of how information is rupically disseminated while developing empathy and an understanding of marginalization.

Learning Objectives:

Self awareness (we are the stories we tell ourselves)
 Knowledge of the many voices and identities on the margins of practice
 Empathy through connecting the self to the "other"

e T Desig



One-page Zine workshop Student Work

Figure 1

Initial Collage Workshop Student Work



Final Student Project

Figure 2



Final Student Project



Final Student Project

Figure 4



Final Exhibition: "Zine Bombing"

Figure 5

Scholarship of Teaching and Learning – Diversity, Equity, and Inclusion Presentation

What Do You Want to do When You Grow Up?

Ahna Packard, University of Nebraska at Kearney Rebecca Hermance, University of Nebraska Kearney

Abstract

The design professions have been advocating for exposure to design among underrepresented youth. In summer 2021, IIDA and After School Matters piloted a pipeline program called Design Your World, whose mission is to expose BIPOC high school students to design, so they can feel, see and then understand it (OFS). There are many examples of design-centered camps in recent years. Chicago Mobile Makers has been providing problem-solving and design thinking activities for underrepresented youth since 2017, with a recent expansion to Boston (Mobile makers). Kids camps in Michigan, sponsored by a school of Architecture and Design, promotes tackling problems through design process, teaching kids to impact their own lives and communities through design (Renaissance Kids). In underrepresented communities, such as reservations and rural areas, there is minimal access to museums or architecture to realize the scope of design career possibilities. How do you let kids know they could design fabrics, lighting, interiors and all the other aspects of the design fields when they don't even know they exist? How do you open their eyes to the power of affecting their own environment through design? We present two different youth workshops with the goal of helping kids realize their ability to contribute to changes in their environment. Following are strategies used by two design instructors in the

summer of 2021 to teach young students about design and creativity. The two workshops were Lighting a Cereal Box Theatre, taught via Zoom, for age range 5-16, and Daring Designers, taught in-person to 3-4 grade students. Both workshops exposed students to various media and technologies for design ideation as well as active learning and hands-on activities to encourage exploration. Throughout the course of a week, students explored color and mood, spatial organization and 3D physical models incorporating built and found objects, all to assert individual control over their visions. Additionally, each workshop introduced youth to several different careers in design. Virtual workshop: each participant created a theatre with multiple scenes utilizing different colored light. The results were not immediately apparent on the last day of the workshop but the photos uploaded by participants a few days later showed continued work and exploration of the mediums. Teaching virtually felt like a handicap during the process, but it forced the participants to create their own solutions and allowed students on a remote reservation to attend. In-person workshop: students created their bedroom in a cereal box, using 3D paper furniture and paint samples to represent their ideas. Many students included reading spaces, craft areas, Lego tables and other elements indicating they were taking ownership of their space. Several students mentioned they were going to implement these ideas in their own bedrooms. Both youth workshops demonstrated you do not need expensive tools to explore design. A diverse group of students were able to present their ideas both virtually and in-person using mostly lowcost and reclaimed materials. These students have now been exposed to concepts that will continue to shape their attention to design in the future.

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LIGHTING A CEREAL BOX THEATRE Workshop for ages 5 - 16



Demonstration of theatre layout on cereal box.

Finished theatre with tape and marker design.



Students share their theatres on Zoom.





Student explores mood and story by adding different lighting colors. A battery operated light and colored lighting gels were included in the provided supplies.

DARING DESIGNERS Workshop for 3-4 grade





Students share their designs and explain how they have chosen to arrange their rooms.

Students sketching in gallery space at university Interior Design program.







Each student demonstrated what was important to them in their room design.

Scholarship of Teaching & Learning – Globalism and Multiculturalism Presentation

Let's Make a Toast!

Connie Dyar, Illinois State University Dana Vaux, University of Nebraska Kearney

Abstract

Ah, systems thinking. What is it and what does it have to do with the practice of interior design or any professional field of study? Donella Meadows (2008) defines a system as an interconnected set of elements that is coherently organized in a way that achieves something. For design educators, it is a line item in the Council of Interior Design Accreditation Standards (2020, 2022) and raises the question of how to assure students are producing projects using systems thinking. To meet this requirement and introduce concepts of systems thinking, students completed a making a toast assignment using a formal procedure of analysis for design problem-solving to understand how parts of a project are integrated in order to facilitate desired outcomes. One of the best ways to explain the systems thinking approach to the design process is to describe what it is not. It is not linear thinking, or a step-by-step approach likened to written directions to put together an IKEA sofa. The linear process is needed to assure all factors are included in the design solution. We even teach the design process in a linear approach with the design phases of programming, pre-design, schematic design, and design development (Botti-Saliksky, 2017). But it is often difficult for students to understand the struggle for a successful outcome if they have completed each phase. Inevitably we hear from students how many bubble diagrams, concepts, sketches, etc. do we have to

do evidencing they are missing the point of the process of design. Design is not a paint by numbers solution. Designers utilize a circular process of systems thinking. In a study by Huber, Waxman & Dyar (2020) systems thinking was an approach that was used to determine how design professionals' choice of various software influenced both the design process and the production of deliverables. The findings suggest that expectations for students, and consequently, their instructors, are evolving rapidly. With the need to use systems thinking in our approach to the design process how can we illustrate and demonstrate to our students the systems thinking approach that is used by design professionals? Systems thinking may be easy for some students to grasp but difficult for others. And most don't even know what it is. Very few students intuitively think in systems terms. However, they have been heavily influenced by linear, and stepby-step terms. The cause and effect of linear thinking led to checklists, not innovative design solutions. So how can interior design educators teach the why and the how of systems thinking across the design curriculum to students? In this presentation, the authors will demonstrate how the process of making toast can teach us how systems thinking is the ideal approach to the design process. Examples of exercises in entrylevel, upper-division courses, technical classes, and the studio will be shared. So let's make toast!

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Systems Thinking Theory

- Systems thinking is an application of General Systems Theory (GST)
- Uses a formal procedure of analyzing a design problem by understanding how parts of a project are integrated in order to facilitate a desired outcome aka design presentation and construction document
- Watch this video
- https://www.ted.com/talks/tom_wujec_got_ a_wicked_problem_first_tell_me_how_you_ make_toast?language=en



In-Class Exercise

- Each person will illustrate with sketches how they would make TOAST on a piece of paper handout in class
- Once all your sketches done now put each step you drew on your post notes that I handed out to you
- Then each person will be placed in a team of 3
- Final step is to look at what steps that each person has and stick up the sticky note that best represents each step
- May find that you missed a step or that someone did the step better graphically



What did we learn from making TOAST? How does it relate to systems thinking?

- To solve a problem of any kind it takes a series of steps
- · Sometimes you miss a step
- Sometimes someone else does the steps better
- That is why in design when we begin to put together a set of construction documents start with the Furniture Floor Plan even though it is not in CD set as the first drawing
- It is part of the steps in the process to get to a full set of documents







Scholarship of Teaching & Learning – History and Theory Presentation

New Domestics TV: Film, Domesticity and Interior Design Research

Evan Pavka, Wayne State University

Abstract

The house is a medium, and it is equally shaped by the media that disseminate its messages. From catalogues and publications to memes and television shows, the house is as much a form of media as it is a space [1]. A consequence of the COVID-19 pandemic was an even more robust increase in the presence of the house as media: endless zoom windows of residential interiors, a proliferation of influencer-generated digital content and more. How, then, might media be used to unpack the social, political and economic forces behind the typology of the house and its constituent parts? While the cinematic quality of film in relation to the built environment is well-established, what has been less considered is its potential as a form of interior design research. This paper employs three short films produced in two iterations of a senior interior design seminar course to explore the role of film-making in the context of interior design research and theory. New Domestics TV a 15-minute episode of a conceptual television program was the culmination of the seminar's investigations into the entanglements between media, race, gender, identity and the domestic interior. In a course centred on the history of media and its intersection with domestic life, moving images in the form of an essay documentary were leveraged as a mode of interior design praxis that inverted

and addressed the very medium in question. To begin, students were assigned weekly texts from a collection of artists, architects, philosophers, theorists, and anthropologists connected to a single thematic that ranged from haunted and model houses to the consistent parts of the home: bedrooms, bathrooms, kitchens and living rooms. In groups, they began to extrapolate the ideas from the readings, using them as a conceptual foundation to question the media enmeshed with each. The techniques of mass media were appropriated by students who intervened in an existing set of widelycirculated poor images alongside recording their content [2]. The outcome of the endeavour was two-fold. Initially, students gained more insight into the history of domestic space as well as the role media has played (and continues to play) in shaping its meaning. This provided a greater reflection on students' own practices and how values, ideas and morals associated with the built environment are influenced by circulating images. Secondly, the project presents the essay documentary, a format associated more closely with contemporary art, as an emerging mode of research for interiors that engage history and theory in a way that is not reflexive but projective. The result is a series of spatial investigations that unfold the nature of interiority through a strategic combination of moving images, text and narrative that resound beyond the confines of the course.

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A little butter finds its way into a great many of dishes in this kitchen.



The Ideal Kitchen FALL 2020



The Ideal Kitchen FALL 2020



The Bathroom FALL 2020



The Model Houses of Bali WINTER 2021



Full Haus WINTER 2021

Scholarship of Teaching & Learning – Open Track Presentation

Where Have All the Students Gone? An Investigation into Studio Culture

Lynette Panarelli, Wentworth Institute of Technology Jordana Psiloyenis, Queens University of Charlotte

Abstract

This abstract aims to provide strategies reimagining studio culture in a post-pandemic design studio. The definition of studio culture has been discussed for many years from Reyner Banham's essay in 1990, A Black Box, The Secret Profession of Architecture to the 2007, AIA studio culture administrative survey which concluded all accredited programs must create a studio culture statement as part of the NCARB requirements, (AIA 2007). Through the years, design studios have had a history for not creating healthy and inclusive environments: where lack of sleep and abundance of stress are worn as medals of honor. More recently, however, we find ourselves in a post-pandemic design culture shift where our students are now missing from studio. Comfortable working from home, they no longer desire to be in studio for the duration of class; they don't acknowledge the importance of learning symbiotically through peers because the precedent was not set. How do we bring them back? Current seniors were removed two years ago from their sophomore spring studio experience: eliminating the opportunity to create a culture with their peers both during and after studio classes. For two years, studios were either half full or empty based on university reentry policies. The fundamental principles of a traditional design Atelier for multiple cohorts and precedent

of decades of studio culture was gone. One Interior Design program decided to investigate and ask, how do we reinvent studio culture for today's students where precedent has failed them? How do we integrate the professional workplace shift into our studio culture? Over the course of two semesters and two cohorts, professors developed multiple techniques to challenge historic precedent, finding ways to engage students and faculty while intersecting professional design guidance that fosters a healthy studio culture reflective of current workplace practices. Strategies implemented consisted of creating mini studios that were more aligned with current design workplace culture. Students still created individual projects but were held accountable by critiquing their peers in small group pin-up presentations and round table discussions. Milestone expectations set by faculty were addressed individually and on a tri-weekly schedule with professionals. The objective of actively engaging with professionals is to remove the long buildup of a formal presentation while bringing design critique back to a conversation of creative design thinking, emulating client presentations. Mid-crits continue to be held online with various professionals, while final presentations become a show rather than a paneled critique. Outcomes presented will be based on documented techniques practiced in each studio. Photographs, interviews, and work examples will help communicate lessons learned. Results achieved include an increased studio attendance for longer periods of time, better time management and overall excitement for critiques from professionals. In conclusion, there has been an increased positive outlook to the current studio culture including a willingness to stay and be engaged with both faculty and peers. Faculty continue to challenge studio

culture and develop new strategies to engage an ever-changing diverse population of students who have forever shifted the historic definition of studio culture.

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Appendix: Where Have All the Students Gone? An Investigation into Studio Culture

Interior Design Senior Studio

WEEK		TUESDAY			THURSDAY	
	DATE		ACTIVITY	DATE		ACTIVITY
1					INTRO / SEE EVERYONE	
2		INTRO / SEE EVERYONE			PROFESSIONAL S2 / PROFESSOR S1	
3		PROFESSIONAL S1 / PROFESSOR S2			PROFESSOR S1/ S2 INDEPENDENT	
4		PROFESSOR S2 / S1 INDEPENDENT			PROFESSIONAL S1 / PROFESSOR S2	
5		INDEPENDENT S2 /PROFESSOR S1	SD MILESTONES COMPLETED		PROFESSOR S2/ S1 INDEPENDENT	SD MILESTONES COMPLETED
6		PROFESSOR S1 / S2 INDEPENDENT			PROFESSIONAL S2 / PROFESSOR S1	
7		PROFESSOR S2 / S1 INDEPENDENT			SEE EVERYONE	
8		MID CRITS - zoom			MID CRITS - zoom	
9		HOLIDAY			PROFESSIONAL S1 / PROFESSOR S2	
10		INDEPENDENT S2 / PROFESSOR S1			PROFESSOR \$1/ \$2 INDEPENDENT	
11		PROFESSOR S2 / S1 INDEPENDENT			PROFESSIONAL S2 / GUEST PROFESSOR S1	
12		INDEPENDENT S1/ GUEST PROFESSOR S2			GUEST PROFESSOR S1 / S2 INDEPENDENT	
13		PROFESSOR S1 / S2 INDEPENDENT			PROFESSOR S2 / S1 INDEPENDENT	
14		FINAL PRESENTATIONS			FINAL PRESENTATIONS	
15		Gallery Opening				

Appendix: Where Have All the Students Gone? An Investigation into Studio Culture

Interior Design Studio: Junior
Student Team Guest Crit & Team Schedule

Guest Critic	Employer	Discussion Dates	Final Date	Teams	Team Name (TBD)	Milestones				
						Requirements for Initial E	Discussion - This i	s for all in the cla	ass to work towa	rds.
						Student's meeting with G	uest Crits will be	responsible for ta	king notes & sub	mitting these following their desk
						Consider improvements /c	happen to the de	ringet perunent i	mormation and r	a for implementation. We will
						reference these at our ner	rt in-nerson (Tea	cher/Student) de	sk crit and will co	ptique to improve and expand on
						these ideas.				
						1				
						Requirements for present	tation:			
						Client description				
						Diagrams				
						First pass at a plan				
						•				
						Requirements for First Su	bmission			
						Digital submission: all wor	k to date includir	ng notes and next	t steps per discus	sion with professional and
						professors				
						Requirements for Second	Discussion			
						Plan				
						Sections				
						Sketches Renderings				
						Materials				
1		I								

How Mini Studio's Will be Created: Concept: Your concept should include at least two of the umbrella topics below. Example: Environmental Graphics & Sustainability Student mini studios will be determined by topic selection

TECHNOLOGY	SOCIOLOGICAL/PSYCHOLOGICAL	PHYSICAL/STRUCTURAL
Digital Computation Digital Fabrication AR/VR Identity Innovation Technology	Environmental Graphics Wellness Equity/Diversity/Inclusion Harmony Biophila Phenomenology Accessibility/Inclusivity	Concealment Exposure Flexibility/Modularity Utility Sustainability



Student groups working in various ways to critique work and support progress and encourage the use of studio space.



Scholarship of Teaching & Learning Teaching - Pedagogy Presentation

The Benefits of 3D Modeling Measuring Student Development Through SLOs

Georges Fares, Kansas State University

Abstract

Unlike many disciplines that focus on literature and lectures, design education is heavily rooted in hands-on learning experiences such as modeling skills which teaches perception and space visualization. Many beginning-level interior design students struggle to develop skills that enables them to create mental visualizations of threedimensional objects and environments (Arslan and Tazkir, 2017). The use of technologies, such as 3-D printing, may provide a needed perceptual leap for students by supporting and reinforcing their mental visualization of three-dimensional objects and can promote better comprehension of their designs. Furthermore, the 3D-printed models can enhance students' interest, learning, and enthusiasm. (Al Ruheili and Al Hairi, 2021; (Boumaraf and Inceoğlu, 2019). During the pandemic, the benefits of teaching modeling techniques became very apparent. Many remote learners struggled to convey their design ideas with clarity. Faculty teaching a second-year studio used these observations to enhance learning experiences as the challenges of teaching through the pandemic continued. INSTRUCTIONAL METHODS This presentation describes a comparison of project outcomes between three studio cohorts. During the spring 2020, students had to complete their pediatric project remotely after being restricted from using campus facilities; 2021 studio, students were taught through a

hybrid method with many students attending via Zoom due to ongoing contagion concerns; spring 2022 semester students were back on campus and completed their pediatric project in-person. During 2020, students had to design and detail their cabinetry and reception desk by working with faculty solely through Zoom, no one built models. During 2021, students could come to campus to use the campus facilities, and few engaged with 3D printing technology to explore design options for the desk. During the 2022 studio, students were all encouraged to 3D print their reception desk as part of their design iteration and final design. TEACHING/LEARNING OUTCOMES The rubric scores for the cabinetry and reception desk design of the project were compared over the three years. Scores from the 2020 class (n=35) averaged 83 percent. Scores from the 2021 class (n=21) averaged 82 percent. Scores from the 2022 class, (n=21) students) averaged 87 percent. In addition, other rubric criteria such as communication of design intent were also improved for 2022 projects. The author will share examples of the study models produced by students and visual comparisons of the reception desk design details between studio cohorts. Implications for incorporating these digital tools into an iterative design learning experience will be discussed. The significance of this pedagogical study is to evaluate the use of modeling technology in the studio learning experience to make it easier and more satisfying for students to enhance their design skills by better visualizing form and space. By understanding the developmental sequence of perceptual mastery, educators can also plan more effective learning experiences using both manual and digital tools simultaneously. This also promotes greater student engagement, better understanding of theoretical concepts, and integrates practical and theoretical skills (Assante, et al., 2020).

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Appendix A: Examples of students' projects









Appendix B: Rubric and Evaluation

Cabinetry Design and Communication

50 points remaining

Cabinetry and 3-Dimensional design detail drawings: these should include (but are not limited to):

- Elevations of reception desk (front and back)
- · Sections of reception desk (at least two, and can include architectural space as well)
- · Elevation of exam room cabinetry with a full sections through (should include soffit above cabinet if being used)
- + Reception desk model may be 3-d printed or made of foam core, but should include the accompanying
- context of floors, walls, soffits, etc.
- A full section of the waiting/reception area showing the reception desk in elevation and in context within the
 wail and surrounding space. (For example, with your back to the windows and looking toward the reception
 desk.)

	Spring 2020	Spring 2021	Spring 2022 Cabinetry Design and Comminication		
Cab	inetry Design and emoloation	Cabinetry Design and Communication			
	Score over 50	Score over 25	Scote over 50		
1	37	22.5	46		
2	42	20.5	45		
3	45	20.5	42		
4	44	18	46		
	41	22.5	40		
6	37	20	40		
7	45	21	42		
	42	17.5	46		
9	44	21	42		
10	42	18	40		
11	45	22.5	45		
12	40	20	40		
13	35	22.5	47		
14	41	21	45		
15	30	21	46		
16	42	20	44		
1.7	25	22.5	42		
18	46	22.5	46		
19	42	20	47		
20 46 21 40 22 45 23 46		21.5	42		
		20	42		
		2.2	43		
		1	0.640		
24	45	1			
25 45 26 46 27 46 28 44 29 45		1			
		1			
		1			
		1			
		1			
30	37	1			
31	44	1			
92	45	1			
33	15	1			
34	45	1			
35	32				
rage	41.74285714	20.71428571	43.54545455		
cant	83.48571429	82 85714285	87.09090909		

Scholarship of Teaching & Learning – Pedagogy Presentation

A Case Study of 4th Year Studio: On the Fridge of Interior Design Jill Lahrmer, Kent State University

Abstract

If you are in a shipwreck and all the boats are gone, a piano top buoyant enough to keep you afloat that comes along makes a fortuitous life preserver. But this is not to say that the best way to design a life preserver is in the form of a piano top. I think that we are clinging to a great many piano tops in accepting yesterday's fortuitous contrivings as constituting the only means for solving a given problem. Richard Buckminster Fuller (Meador, 2021) With much of the world economy on pause during the heart of the pandemic in winter 2020-21, senior level interior design students were concerned about their professional options nearing graduation. In order to broaden student's definition and reach of interior design, a fourth-year studio was developed, titled Industry Ready: On the Fringe of Interior Design. Students were encouraged to consider project proposals balancing the creative utilization of interior design with other aligned professions or interests. Students used design-thinking, readings and professional networking to construct design concepts, promoting depth of thought prior to moving forward into the design development phase crafting their solution. As shared by designthinking powerhouse IDEO, the designer's mindset embraces empathy, optimism, iteration, creativity, and ambiguity. And most critically, design-thinking keeps people at the center of every process. (IDEO, n.d.) The semester started with group and individual discussions, brainstorming interests and ideas. Readings from a variety of design

disciplines were explored to help students expand their project considerations. Some potential areas of study broadly discussed at the start of the semester were temporary space design for exhibits/museums, video game interior environments, film or theater sets; or students could chose to focus on development of interiors-related technical skills, human-centered research, interiors-focused product design, or an alternate fringe area of interior design, as proposed by the student and approved by the instructor. Throughout this studio a strong emphasis was placed on writing, sketching, iteration and prototyping, thus allowing students to understand the process involved in questioning, refining and implementing design ideas. Students were required to conduct (3) informational interviews to draw from a more personal route of collaboration from allied professionals to assist with design thinking. In order to keep the wide variety of projects on task, the traditional phases of design research and programming, schematic design and design development were used for execution of project work. Projects were evaluated on the basis of programmatic need, functionality, creativity, design comprehensiveness and quality of the final design solution. Implication: This studio allowed students to ponder the breadth of their potential outreach in the profession of interior design through an open forum of discovery, showcasing value in a flexible studio project scope. In addition to traditional interior design employment trajectories, allowing soon-to-be-graduates greater autonomy in the application of their knowledge and degree broadens students to become industry ready design-thinkers, exploring how they are capable of complimenting allied design disciplines in creative endeavors.
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EXAMPLES OF STUDIO WORK FROM SPRING 2021

COMMUNAL VILLAGE - TINY HOMES + OUTDOOR LIVING



RTA FURNITURE DESIGN WITH WEBSITE + INSTALLATION INSTRUCTION MANUAL



Created to re vamp th famous mid century modern style

RTA pieces are based and shaped right to your front door

Modern Shapes Collection



VIDEO GAME DESIGN



SKATE PARK + POP UP RETAIL



MOBILE HANGING STADIUM PODS FOR MINIMAL CROWD CONTACT



PRODUCT DESIGN | PORTION CONTROL EQUIPMENT



Scholarship of Teaching and Learning – Pedagogy Presentation

Breaking Down Preconceived Notions and Preparing Interior Design Students For a Studio-Based Education

Meghan Hendrickson, University of Minnesota

Abstract

Entry-level interior design education must dispel preconceived notions that the profession consists of merely finish application. Many students arrive at their first interior design course not realizing the complexity and space shaping that defines the profession. The project was designed to introduce new interior design students to abstract thought, exploration, and collaboration, while learning to appreciate and acknowledge the complex aspects of three-dimensional space. The project objectives were to develop a vocabulary and an ability to talk about the quality of space, to begin physical 3D modeling to explore spatial ideas, and to work in groups to appreciate others perspectives and contributions and create awareness of the intricacies and complexities of space. Rengal's Shaping Interior Space, Chapter 4, was used as a guide to formalize the Basics of Space through concepts such as literal and implied space, enclosure, containment, encapsulation, and permeability. (Rengal, 2020). This project was designed as a series of steps to give structure to students less familiar with abstract projects. It began with students reflecting in small groups about meaningful spaces they had experienced. Groups were given an adjective (a concept) and continued to reflect upon experiences they had had in spaces they connected to that adjective. In step three, they named the opposite of their adjective and reflected on

spaces that would fit with this opposite adjective. Step four introduced the design problem. Students were tasked with brainstorming a design problem driven by their adjective-concept. Steps 5-8 had the students working through a number of design iterations that met the design problem through sketching, modeling with rip-and-tear processes, and a final model that showed their solution. Color was not used throughout the process to force students to think about the aspects of space shaping within other elements and principles of design. While working through the project, the instructors received a variety of responses from students about this process. Some students found this project difficult; a project framed in divergent thinking was new and uncomfortable. Other students seemed to thrive in this type of learning environment. Setting the premise for this type of thinking in studio-based courses is critical to laying the foundation for more complex projects. Students learned to discuss the volumetric aspects of the spaces they designed while working with their group, during peer critiques, and the formal presentation at the end. The project outcomes varied in quality. Some students were able to use Rengal's (2020) concepts to create a space closely tied with their concept, while other groups still relied heavily on decorative elements to get to their concepts. All students gained a new perspective of the importance and meaning of space through their group discussions. The other underlying objective was moving beyond the preconceived notion of interior design as merely finish applications. This project accomplished it by removing the materiality of the spaces from the project scope and focusing on space shaping as a means of representing the concept.

References

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Appendix A Photos of student work at various stages of the project.



Figure A1. An individual rip and tear model. This was a mid-project submission for the concept "invigorating"



Figure A2. An individual rip and tear model. This was a mid-project submission for the concept "protected"



Figure A3. A final model for the "invigorating" concept.



Figure A4. A final model for the "calm" concept

Appendix B

The project prompt.

PROJECT 1: WHAT IS SPACE?

Objectives:

- · To become aware of the intricacies and complexities of space
- · To develop a vocabulary and an ability to talk about the quality of space
- To begin 3D modeling to explore spatial ideas.
- To work in groups to appreciate others' perspectives and contributions

Summary:

• You are all here in ID Studio 1 from different walks of life, you have all had different experiences when it comes to exploring different spaces. Likely, your innate understanding of interior space and your desire to create meaningful spaces are the reasons you are here, it unites you all. Everyone has a contribution to make to these discussions, and everyone's opinion is worthy of these journal entries.

• The task at hand is to use your personal experiences to talk about space. You will begin to develop a design vocabulary. Listen to your group members and learn to talk about space together.

Process:

1. Get into your teams. Discuss what space means to you. Take notes of your classmate's different perspectives of what space is.

•Questions for discussion:

- Think about a space that you've been to that was impactful. (but not a residence) Describe the space.
- · What about the space made it meaningful?
- What decisions did the designers have to make for the space to be successful?
- Record the discussion of each group member's space as Journal Entry 1
- Take the adjective assigned to your group. Think about a second space that meets the requirements of the adjective. Use discussion points such as:

- · How did you feel when entering the space?
- What about the space made you feel that it fits within the requirements of "your adjective"?
- · How was the space successful for its intended use?
- How do you suppose the designer used [the adjective] to accomplish their design goals?
- Record the discussion of each group member's space as Journal Entry 2
- Think about a third space that is the opposite of your adjective. This doesn't have to be an unsuccessful space, it could be purposefully opposite. Discuss each group member's space with discussion points such as:
 - How did you feel when entering the space?
 - What about the space made you feel that it was opposite of the requirements of "your adjective"?
 - How was the space successful for its intended use?
 - How do you suppose the designer used the opposite of adjective to accomplish their design goals?
 - Record the discussion of each group member's space as Journal Entry 3.
- 4. Define the problem. Brainstorm some ideas about what a space with [adjective] would be like. Brainstorm a list of what a space without [adjective] would be like. You should have 5-7 "rules" for each list, agreed upon by all members of the group.
- Ideation in-class: As a group you will ideate different ideas for a space. Preliminarily develop rip and tear models together as a group. Photograph your process, keep records for final.
- 6. Your homework is to individually create one model of a space that describes [adjective] using leftover cardboard (cereal or shoe boxes, etc.). This is a simple space of your own creation, not a model of one of the spaces you have described (although you may certainly borrow elements from it). This doesn't have to be a model that is to a specific scale or particularly complex. Only the elements that support your [adjective] need to be modeled. Create a "person" so we understand the scale of your space. Keep to your rules, and be prepared to defend your decisions for these models. Each member is to create their own Journal Entry 4 talking about their model.
- Rip and tear models are not meant to be pretty, but to get across *design intent*. These should be about 4-6", and can be held together with whatever tape you have laying around. This course is about **interior design** so design your model to see the inside of the space, the outside only matters as it shapes the interior space.

- 7. You should have as many models as group members. Carry out a *critique* for your models discussing what is successful and unsuccessful about each one. Re-evaluate whether your rules and restrictions are still necessary, adjust as needed, keeping [adjective] in mind. Brainstorm for your final model, which will be a white rip and tear model made from index cards. Develop sketches as a group. Record this process as Journal Entry 5.
- 8. Your group will create one final model. This one is going to be built using good craftsmanship. White unlined index cards (or cardstock) will be the medium. Use X-acto knives with straight edges for cutting, think about using a tape that is inconspicuous, and mount on a solid material for picking up. Neatly write (using hand lettering) The [adjective] and the group members names

Scholarship of Teaching and Learning – Pedagogy Presentation

Globalization and Culturally Relevant Pedagogy

Susan Ray-Degges, North Dakota State University

Abstract

Globalization is not a new phenomenon as countries have been linked together for decades, but how successful has design curriculum been in bringing this together for students to make clear connections between design practice and considering the cultural context to successfully operate in the world of the future? The goal of this qualitative phenomenological study was to discover the experiences of interior design students as they pertain to culturally relevant pedagogy. Ladson-Billings (1995) proposed three main components of culturally relevant pedagogy: (1) a focus on student learning and academic success; (2) developing students' cultural competence to assist students in developing positive ethnic and social identities; and (3) supporting students' critical consciousness or their ability to recognize and critique societal inequalities. Cultural competence (Cross et al, 1989) plays a key role in supporting an interior design student's growth to ensure they understand and respect values, attitudes, beliefs and mores across cultures. It is also critical that Interior designers have a global view and consider social, cultural, economic, and ecological contexts in all aspects of their work (CIDA, 2022, II-16). In a professional practice course, students develop a globalization essay focused on design in regional and global markets that addresses diversity, inclusion, and decolonization. Each student provides their critique and opinion on

guiding questions regarding globalization after completing a series of readings, videos and in-class presentations. The study was guided by two research guestions focused on (1) the student's ability to respond critically to cultural and social inequalities as noted in assigned readings and videos; and (2) evidence of cultural competence development within each students narrative. To make the sample representative of the student population, a computer program was used to randomly select 14 papers from the total number of 37 student essays across two academic years. The research questions were answered using Mayring's (2019) qualitative methodology for directed content analysis. In the descriptions of how students recognized and critiqued social inequities in relation to the interior designers' role in cultural context (diversity, inclusion, and decolonization), four categories were extracted: (1) culture erasure, (2) ethical responsibility, (3) culturally relevant designs, and (4) inclusive and sensitive design. In review of the student narratives to consider the development of cultural competence, three categories were extracted: (1) embrace cultural differences, (2) awareness of disrespect, and (3) appreciate cultural differences without appropriating or stealing. The findings indicate that providing students with an assignment guided by a culturally relevant pedagogy can successfully support their ability to identify and critique societal inequalities and develop skills in cultural competence. It is critical for students to develop a global view that will support successful regional and intercultural issues resulting in design solutions that respect and embrace different perspectives and worldviews. This cultural competence is necessary for the success of future designers.

References

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Cross, T., Bazron, B., Dennis, K., & Isaacs, M., (1989). Towards A Culturally Competent System of Care, Volume I. Washington, DC: Georgetown University Child Development Center, CASSP Technical Assistance Center.

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Global Essay Objectives:

Students will:

- 1. Be able to define "Globalization"
- 2. Gain knowledge on where selected firms that are involved in global design practice.
- 3. Be able to point out both challenges and benefits of globalization.
- Be able to explain an interior designer's role in being sensitive to cultural contexts as it relates to diversity, inclusion and decolonization.

Professional Standards 2020 addressed in this assignment

Standard 4. Global Context

Interior designers have a global view and consider social, cultural, economic, and ecological contexts in all aspects of their work.

 Students <u>understand</u> that human and environmental conditions vary according to geographic location and impact design and construction decisions.

Student work demonstrates understanding of:

b. how social, economic, cultural, and physical contexts inform interior design.

Perspectives on Globalization

""Globalization" is the most uncertain and most important popular term used in late 20th century. Its uncertainty lies in the fact that it carries many meanings and can be used in many ways. In a world extremely compressed in terms of both time and space, something that happens in a certain corner of the world can quickly affect people far away profoundly. Debates over "Globalization" are enlightening, and that's what makes globalization important" (Wiseman, 1998, p. 1) Source: Wiseman, J. (1998). *Global Nation? Australia and the Politics of Globalisation*. Cambridge: Cambridge University Press. doi:10.1017/CB09780511552250

"Below I try to sum up the views of scholars who see Globalization as Americanization, although I held a different view of Globalization: To many people who live in places other than Europe and North America, Globalization is Westernization, or even Americanization, because the United States has become the only superpower, holding a leading position in the economic, cultural and military aspects of the world. Most of the cultural phrases about Globalization are related to the United States, such as Coca Cola, McDonald's, etc. Since most multinational corporations are based in the United States or the Northern Hemisphere, some people think that Globalization concerns only the industrialized Northern Hemisphere, and the developing Southern Hemisphere seldom or even cannot get involved in it. Some people see this as a destruction of indigenous culture, which further divides the world and worsen the problem of poverty. Some people believe that Globalization divides the world into the winners and the losers, where very few people can find the path to a wealthy life and most people live in pain and despair. In the 1990s, the income of the poorest one-fifth of the world's population dropped from the pathetic 2.3% to 1.4%. At the same time, some multinational corporations sold to the developing countries goods that were restricted or prohibited in Europe and America" (Gibbens, 1999) Source: Giddens, A. (1999), Runaway World, The BBC Reith Lectures, London: BBC Radio 4, BBC Education, Lecture 1.

Review the Work of Tasoulla Hadjiyanni

See papers posted on Bb and class PPT slides that highlight Hadjiyanni's work.

- Hadjiyanni, T. (2005). Culturally sensitive housing Considering difference. Implications, 3(1), 1-6.
- Hadjiyanni, T. (2010). Globalizing interior design: Reflections on difference and transculturalism. In C.S. Martin & D.A. Guerin (Eds.), *The state of the interior design profession* (pp. 352 – 359). Fairchild Publications. (also listed below)
- Hadjiyanni, T. (2016). Toward culturally enriched communities. University of Minnesota. <u>http://minnesota.uli.org/wp-content/uploads/sites/31/2012/04/culturally-enriched-communities-report_final.pdf</u>
- Hadjiyanni, T., Hirani, A., & Jordan, C. (2012). Toward culturally sensitive housing Eliminating health disparities by accounting for health. *Housing and Society*, 39(2), 149-164.

Assigned Readings

Review **Guerin and Martin's** (2010) collection of globalization readings that examine five different perspectives on interior design globalization. [Section 9 - Globalization]

- Dettling, J.F. & Broin, K. (2010). Culturally relevant interiors. In C.S. Martin & D.A. Guerin (Eds.), The state of the interior design profession (pp. 346-351). Fairchild.
- Fletcher, V. (2010). A global perspective: Universal design as socially sustainable design. In C.S. Martin & D.A. Guerin (Eds.), The state of the interior design profession (pp. 362 368). Fairchild.
- Hadjiyanni, T. (2010). Globalizing interior design: Reflections on difference and transculturalism. In C.S. Martin & D.A. Guerin (Eds.), The state of the interior design profession (pp. 352 – 359). Fairchild.
- LeDoux, K.A. & LeDoux, F. (2010). Entering the global design market. In C.S. Martin & D.A. Guerin (Eds.), The state of the interior design profession (pp. 340 – 345). Fairchild.
- Pettipas, J. (2010). Globalism in design: Are we responsible? In C.S. Martin & D.A. Guerin (Eds.), The state of the interior design profession (pp. 335 – 339). Fairchild.

Review the Work of Anoushka Khandwala

Review Khandwala's essay "What does it mean to decolonize design?" to consider how different audiences may identify with what you may be creating – how are design solutions experienced when you are standing in someone's else's shoes. Are you exploiting a traditional design that has significance for an ethnic group? Something to consider as you develop your essay.

 Khandwala, A. (2019, June 5). What does it mean to decolonize design? AIGA Eye on Design. https://eyeondesign.aiga.org/what-does-it-mean-to-decolonize-design/

Review the Work of Dr. Dori Tunstall

Review Dr. Tunstall's video "Respectful Design: Models for Diversity, Inclusion, & Decolonization" to learn more about how we may more effectively address diversity and inclusion but more specifically decolonization. See posted YouTube "Dr. Dori Tunstall on Respectful Design: Models for Diversity, Inclusion, and Decolonization"

 Tunstall, D. [Mozilla]. (2020, August 18). Dr. Dori Tunstall on respectful design: Models for diversity, inclusion, & decolonization [Video]. YouTube. <u>https://www.youtube.com/watch?v=oaesVb7O38s</u>

GLOBALIZATION OPINION ESSAY – 100 points

Write an essay that expresses your thoughts/opinions about "globalization." The final essay should be at <u>minimum 5</u> pages in length (cover page and outline ARE NOT included in the page count), typed (Times or Arial /12-point font—double spaced) with 1" margins. Correctly attribute sources (APA format) to substantiate discussion. Be sure to include answers to the following questions as you write the essay: (see questions in "Introduction" & "Body of Essay" & "Conclusion" below)

If you find diagrams or design projects to help support your discussion please feel free to insert in your essay. The minimum 5-page requirement does not include pictures/diagrams or the reference page.

Cover Page (your proposed title for this assignment, your name, date) **Outline** (include main headings and additional sub headings as needed – you may use these w/n the body of your paper)

Introduction: Interior Design is a global profession. How would you define the globalization of the profession?

Body of Essay: Questions to consider- (Include details/examples to explain/support responses) [It is recommended that you include the questions as outline headings as necessary]

- Do we export/impose Western interior design/architecture precedents globally? What are the short- and longterm impacts? What are the ethical considerations of engaging in this activity?
- As American designers, what challenges do/will you face when working with someone across the globe? Will your designs be inclusive and sensitive?
- Why are culturally relevant interiors important to the employees of a global corporation? What does it communicate to employees in difference cultures and geographies when we integrate their culture?
- 4. How can the built environment create/reflect cultural identify without becoming stereotypical? How can it be culturally sensitive? How does the interior environment support diversity, inclusion & decolonization?
- 5. What does universal / inclusive design mean in today's globalized practice?
- 6. How do interior designers have a global view and consider social, cultural, economic, ecological contexts in all aspects of their work?

Conclusion: Where do you see the interior profession moving during this time of globalization and worldwide pandemic?

References: APA format (this page is not counted in the required 5 pages)

[Due no later than xxx @ end of the day – upload to course web site using the following file name: lastname. essay]

Grading Rubric

Category		SCORE 5=Outstanding; 4=Very Good; 3=Good; 2=Fair; 1=Needs Improvement	WEIGHT (Multiplier)	TOTAL (Highest)
Outline	 Includes main headings and sub headings as necessary [You are strongly encouraged to use outline headings w/n the body of your paper] 		x 1	<mark>(</mark> 5)
Introduction	 The introduction provides an overview of the topics to be covered essay Outlines the main points to be discussed. 		x 3	(15)
Body of Essay	 Student provides responses to the "questions to consider" based on facts, statistics, examples, etc. 		x 7	(35)
Conclusion	 Student provides a thoughtful and reflective response to how the interior design profession is moving/addressing globalization 		x 5	(25)
APA formatting	 APA formatting is followed correctly 		x 1	(5)
Capitalization & punctuation; mechanics	 Cover/title page Student makes no errors in capitalization or punctuation Essay is exceptionally easy to read. Paper is required length. 		x 3	(15)
Total (out of 100)				

Scholarship of Teaching and Learning – Pedagogy Presentation

Proficiency Theory: A Primer for Designers Acquiring Higher Levels of Learning

Kevin Woolley, Purdue University

Abstract

One of the significant distinctions of learning how to become an interior designer is the freedom and self-direction students have in their studio courses. It is here where much of their time is spent learning how to increase the necessary proficiencies required for future opportunities in the vast field of design. Learning is a process to modify proficiency (Knox, 1980). Knox believed that proficiency-oriented teaching has the potential to help students achieve at their highest level. This study applies Knox's proficiency theory to studio instruction and discusses in more depth the example of my own application and development of proficiency theory in studio teaching. Among the findings are ways to apply the principles of Knox's proficiency theory through definition, application with the novice designer, practice with the effective teacher, evaluation, and practical use in the design studio classroom. Effective teachers make important contributions as they select and help students choose learning activities. They serve to close the gap for specific learning deficiencies. In each instance, the student receives some idea of proficient performance and has the opportunity to emulate it through multiple, interactive loops. In other words, the first loop explains What to do? while additional loops explore How to do it? and Why should I do it? This entails periodic

teacher-student assessment of discrepancies between current and desired proficiencies related to any area of performance. This feedback can be in the form of praise related to the learner's effort or reinforcement of the performance of the task. I conclude that a complete understanding of each student's proficiencies and engaging in repetitive sequential learning tasks are essential for acquiring higher levels of learning.

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Running head: Proficiency Theory in the Design Studio

Appendix:

(There are no tables, graphs, or illustrations to submit for this research presentation.)

Proficiency Theory: A Primer for Designers Acquiring Higher Levels of Learning

July 1, 2022

An educated person is one who is at work on his own enlargement. If we learn things that become part of us, if we make efforts to develop our own particular understanding of life and of the order of life's goods, it is education we are doing. A person is something that it takes time to make; there is on everyone an invisible sign, "Work in progress"; and the considered effort to get on with the work is education. -Robert Redfield, The Educational Experience

Creative Scholarship – Design as Interior Presentation

A Cabin in the Woods

Yongyeon Cho, Iowa State University

Abstract

This project started with questions of who and why the cabin is needed. I hypothesize that a young professional couple lives in a one-bed and one-bath apartment in a highdense city, paying an expensive rental fee. The couple will rent this cabin to work and rest every other month because of a changed work-life pattern since the pandemic. During the week of working from home, they do not need to stay in the city. They spend their lives in this cabin in the woods. If another couple has a similar work-life pattern to this couple, they might share and switch the houses every other month. An increased population considers working from a vacation rental home (Hunter, 2020, June 26). An existing tiny house's problem was the privacy issues from inside and outside due to the size (Kilman, 2016). This project considers how to efficiently use the small space while protecting the visual privacy of the couple. Each space program is separated into different levels. As a result, the outside view of the inside is minimized. And the couple also occupies their own space if needed. In addition, by softening the edges in the space, each space boundary is blurred to minimize the feeling of constraint from the small space. Wood is the oldest, most environmentally friendly, and sustainable building material (Falk, 2009). This project aims to build a tiny house using a minimum of

sustainably grown and locally sourced trees. The tree's heartwood is used for the structure of the building. And the sapwood is used for the interior finishes. The branches of trees are crushed for landscaping and gardens, and the walls are made of Timbercrete using sawdust, bark, and concrete (Peckenham, 2016). The materials of the afterlife building can be recycled and reused to have a minimal impact on the earth. Planning the efficient use of water and electrical energy is essential for this sustainable microhouse (Siegner et al., 2021). This house's water and electric energy (lights, heating and cooling, working, and cooking) aim for a self-sustaining, off-grid building. The water systems collect subsurface water and rainwater, purify it, and use it for kitchen, bathroom, laundry, and gardening. The filtered sewage returns to nature. In addition, the collected rainwater and groundwater will be used for geothermal heating. All these systems are located under the kitchen and bathroom area that utilize the under-floor system. The energy used in this tiny house is designed to use solar energy. Besides, a minimum window was placed on the south wall for efficient thermal management, and all four sides were planned to be open for natural ventilation. A/C unit was installed for cooling and heating in midsummer and midwinter. The windows were designed to minimize artificial lighting during the day and use soft indirect diffused light to illuminate the space. The information from this project would be beneficial for interior designers and architects who are developing off-grid tiny houses where sustainable design ideas and technologies can be implemented.

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SPACE CONCEPT DIAGRAM



Max 25 m²

with 3 zones



3 different levels

for the zones



cations of programs





Softening the edges in the space

Extensions to the views

MATERIAL CONCEPT DIAGRAM



A CABIN in THE WOODS



A CABIN in THE WOODS

3/8











Scholarship of Design Research – Open Track Panel

Finding Opportunities within Constraints: Strategies for Managing Programs in the Current Academic Climate

Amy Roehl, Texas Christian University Barbara Anderson, Kansas State University Patrick Lucas, University of Kentucky Bryan Orthen, Indiana University Rene King, Columbia College

Abstract

The looming enrollment cliff (Kline, 2019) and pandemic fallout (Hubler, 2020) sets trends in higher education: 1) reduced human capital budgets results in fewer filled faculty and staff positions (CIDA, 2020) and increased dependency on temporary and part-time faculty, 2) reduced support outside the program (e.g. library, IT, and writing center), 3) institutional physical resource constraints challenge space-intensive learning practices, 4) intentional recruitment of more students (more income) while simultaneously reducing resources results in stretching human and physical resources to limits. Students, faculty, and administrators are also changing. Students demand personalization and customization. Desiring better work/life balance, faculty want greater flexibility and fewer uncompensated hours. Fearful of uncertainty, administrators tighten centralized control with authoritarian-style leadership. Demoralized by administration's micromanagement, faculty productivity suffers (McClure, 2022). Caught between upper administration and faculty, program leaders seek ways to efficiently

produce students capable of meeting the demands of industry and the extensive, prescriptive learning outcomes required by CIDA. These dedicated, over-functioning leaders often straddle full teaching loads alongside full administrative responsibilities and risk burnout. This unsustainable model requires insight and strategies to support existing leaders and attract individuals who want to be future program leaders. Made of up experienced solution-focused leaders the panel represents a range of institution types and sizes, provides insight for managing programs in the face of evolving challenges, and seeks audience participation to identify opportunities for positive change in the following categories: Human Capital Resources External to the University: How can we harness the power of external resources such as professional advisory boards, alumni, professional organizations, practitioners, and industry allies to support program outcomes? University Resources: How can we strategically use university resources to meet program needs? Enrollment Management: What strategies are being used to manage increased student numbers with reduced or static resources? Studio Management: What methods are being used to deliver individualized studio-centered and effective learning with fewer faculty members and constraints on space use? CIDA Accreditation Preparation: What is working to help the faculty who are stretched thin, procure the time and other resources to prepare for CIDA re-accreditation? Looking back to help emerging leaders move forward: How can emerging leaders effectively avoid pitfalls for their programs and for themselves? Valuing Design Education's Unique Needs: What crucial data do we need to collect and disseminate to provide administrators the rationale for the value of design education's unique needs? In summary, this panel shares program management strategies that successfully expand
the availability and effectiveness of human and physical resources to meet changing expectations of students, faculty, and higher education administrators. The panel addresses different program settings, situational challenges, and creative opportunities with an expectation of helping programs thrive and individuals flourish during this time of rapid change and significant uncertainty. Importantly, the panel and participating audience may identify crucial data that could help all programs advocate for the unique needs of design education and design educators.

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Scholarship of Teaching and Learning – Pedagogy Panel

(Re)balancing Empathy: (Re)shifting and (Re)framing Design Thinking

Kurt Espersen-Peters, University of Manitoba Tina Patel, Kent State University Andrea Sosa Fontaine, Kent State University Ariane Laxo, Kent State University Milagros Zingoni, University of Tennessee

Abstract

Empathy is beneficial to a variety of human endeavors and in constructing subjective and intersubjective relationships, but it is not without its challenges. Empathy is active in the formal and social sciences as well as education, history and aesthetics (Matravers, 2017) and impacts ethical, moral and social worldviews, beliefs and values (Nelems, 2018). However, empathy is also prone to bias and discrimination (Bloom, 2016), lacks a clear definition or purpose, and is often conflated with other concepts such as sympathy and compassion making it difficult to distinguish and apply in a universal context. The desire to be empathetic is wrought with significant challenges yet the personal and communal benefits appear worthy of continued perseverance and clarification. The role of empathy in interior design is no less contentious. Design thinking, education and practice mirror this larger contextual conundrum and while inroads have been made towards greater awareness and application of empathetic thinking and action (Paron, 2020), a trajectory for empathetic design remains elusive. In design education, if teachers and students embrace an empathetic approach, it remains to be seen how it can be implemented, given its evocative yet tenuous position. Locating empathy becomes an exercise in knowing when and where to think and act. We ask: how do we define and contextualize empathy within our discipline? What form does (or should) empathy take in interior design education and practice? Can teaching and practicing empathy enhance design innovation and imagination to create more human-centric spaces while responding to our increasingly complex social, cultural, and political realities? How do we evaluate empathetic engagements in design education? These are the questions that inform and launch this panel discussion. This discussion examines the role of empathy in design teaching and learning. Broadly speaking, interior design studios follow a linear approach divided into the analysis (research) and synthesis (consolidation/design) phases. The focus on progress usually dominates the process, where students often become enmeshed in resolving functional design problems while struggling to create meaningful spatial narratives that address a project's emotional, psychological, and experiential needs. While both approaches are necessary, one seems to consistently influence design thinking at the expense of compassionate engagement. Empathetic design proposes a (re)balancing of rationality and emotion (Postma et al., 2012) through the effective involvement of empathizing with others' experiences and the cognitive process of analyzing them (Kouprie & Visser, 2009). Empathy can (re)humanize the design process by returning to meaningful human-centric design solutions. The last critical question in this panel centers the dialogue around a more compassionate design process. The panelists will reflect on the methods and pedagogies developed and tested in studios, seminars and practice in the

pursuit of developing empathetic design processes and solutions. The discussion will work towards identifying areas and methodologies of empathetic intervention and engagement from reflective and prospective positions. We will conclude by outlining ways of enhancing the quality of interior design discourse in order to inspire the next generation of empathetic design thinkers and practitioners.

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Scholarship of Teaching and Learning – Pedagogy Panel

Analyzing Strategies for Teaching Building Codes

Dana Vaux, University of Nebraska Kearney Connie Dyar, Illinois State University Bryan Orthel, Indiana University

Abstract

Appropriate application and knowledge of codes, standards, and guidelines in design solutions is essential for interior designers (Setser 2010). Codes and standards ensure the integrity of the interior design profession by contributing to the general public's health, safety and welfare. Codes and standards are also an essential component of interior design education and accreditation. While essential to successful design, students and instructors may not enjoy or value learning about building codes. Students may not understand the importance of codes knowledge for their future work. Instructors may be challenged by the types and limitations of resources available for creatively teaching the topic. This panel explores methods to teach codes and standards that maximize student engagement and learning in meaningful ways. Even prior to the COVID-19 pandemic, interior design educators have argued for raising students' awareness and understanding of design safety and security, specifically through creative teaching methods (O& Shea & Awwad-Rafferty, 2009; Emily, 2019). Learning building code and standards is a challenge for students across allied disciplines (Solnosky et al., 2017). Students should be able to evaluate real-world situations and

apply the code in more than prescriptive ways (Berner & Brown, 2021). Educators recognize these challenges and have explored learning strategies to teach students more effectively and enjoyably about codes and strategies including gamification, charrettes, mini-lectures, interactive computer visualizations, and field applications. The panel explores strengths and weaknesses of alternative methods of codes-focused instruction at three universities. Panelists will each share case studies highlighting one strategy they have used. The case studies will examine just-in-time mini-lectures and charrettes, a dedicated codes course, and teaching codes in modules across the curriculum. The panelists will explain how these approaches fit into their universities interior design curricula. The strategies use scaffolded learning, hands-on and active engagement, and informed application. The panelists will share one-page summaries of their best practices and ask audience members to share successes in their own approaches to teaching code. The three approaches articulated in the panel can inform interior design educators in generating content and pedagogical approaches to enhance student learning outcomes related to building codes, regulations, and standards. The approaches also help programs meet CIDA requirements. The panel expands informal sharing to advance dialogue about teaching the leading role interior designers play in promoting health, safety, welfare of interior spaces through building code and standards. The significance and complexity of code requirements are not going away. Teaching these critical topics requires continued pedagogical improvement to ensure our students are prepared to protect clients and the public.

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Prepare a code analysis for the following scenario using the IBC 2015 and the provided files.

A client has purchased an existing, two-story building in the imaginary town of HSW, [STATE]. HSW has adopted the IBC 2015 as its building code. The client is considering two uses for the building. Either the building will be used as a bank (with offices on each floor) OR the building will be used as an events venue (with gathering spaces on each floor). The exact use for each room in the building are already listed in the Code Analysis spreadsheet.

You are responsible for completing the code analysis for both scenarios and determining if the existing building would meet code for the suggested new uses. If the building does not meet code, you will provide a short, typed list of changes that should be made to bring the building up to code for the new use(s).

The final submission for this assignment is a PDF file of two (2) 11x17 sheets. These sheets will be printed from the Code_Analysis tab of the provided Excel file. Submissions that are not formatted on two 11x17 sheets will not be scored.

Provided files:

- Building plans (PDF)
- Code Analysis worksheet (Excel)



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Accessibility Homework Problem

- Team up with a classmate.
- Review the ADA Standards in the Lecture Study Slides and the IBC 2018 Chapter 11: Accessibility
- Go to the location you were assigned and compare the actual dimensions and accessible features to the Standards. These may apply to issues of scope (# of elements or area) and technical aspects (dimensions, physical details).
- 1. Measure: measure the elements of the location relevant to ADA standards
- Draw: draw the space in plan and/or elevation with dimensions. You may draw it by hand or using computer software.
- 3. Annotate: include notes with arrows on the drawing to indicate important factors
- Explain: Write an analysis of what you found relevant to ADA standards including the following four points:
 - a. Explain how the space or element does or does not meet ADA standards.
 - b. Describe issues or complications that are evident and conversely ways it accommodates users with special needs.
 - c. Discuss important factors such as finishes, door swings, etc.
 - d. Imagine that you are an impaired user (visual, auditory or mobility). Evaluate the "accessibility" of the space from the users' perspective.
- 5. Submit the drawing with the measurements and annotations to Canvas by the due date.

Scholarship of Teaching and Learning – Pegagogy Poster

Integrating Empathy: Designing a Makerspace with Rural Community Partners

Miyoung Hong, Indiana University Bloomington Gabrielle Pierson, Indiana University Hunter Kaiser, Indiana University

Abstract

Today there is a growing enthusiasm within the education community across the United States and the world to provide students with makerspaces as learning environments (Mersand, 2021). A makerspace is a physical studio equipped with a variety of technologies fostering opportunities for creativity, interdisciplinary collaboration, and entrepreneurial innovation (Dousay, 2017; Martinez & Stager, 2019). However, due to limited resources, schools in rural America are facing challenges as they transform existing classrooms into makerspaces. To support the educational process and learning experiences in a makerspace, a service-learning project was initiated in which advanced undergraduate interior design (ID) students at a major American university were given an opportunity to design a makerspace in a rural middle school. METHODS: This case study explores pedagogical approaches employed in the servicelearning project to help the ID students to (1) better understand the users' needs; (2) identify key user experiences and underlying issues; (3) link their subjective personal experiences with objective placemaking action; and (4) develop design solutions grounded in evidence-based design (EBD). First, the ID students collected and

analyzed their evidence from the extant literature about the theoretical aspects of makerspace education and its roles in the built environment. Next, they completed a precedent analysis of makerspace archetypes. Then, they visited the site to observe and document the existing conditions. In addition, students conducted focus-group interviews with three groups consisting of four middle school students, four teachers, and two administrators respectively who were willing to share their experience and expectations. Students prepared structured interview questions in advance based on their previous research. During these interview sessions, students used the photoelicitation method an interview technique in visual sociology using images to obtain responses to collect multiple-users; priorities for changes or design interventions, in addition to verifying underlying issues identified from their site visit (Appendix 1). Coupled with EBD research findings, students developed three to four user-personas (Appendix 2) used in marketing research for user profiling and widely adopted in service design to model user experience to capture key users characteristics, needs, and goals based on the clients profile data and their interview findings. Finally, students presented their design solutions (Appendix 3) to their community partners. OUTCOMES: Using empathy throughout their design process, along with evidence, supported students decision-making and facilitated their design interventions in the interior built environment. The deep engagement with the stakeholders through a focus group interview was integral for the ID students to better understand the needs of users. Developing user-personas helped the ID students to quickly visualize users perspectives by elucidating their preferences and behaviors in the pre-design phase. While the reported approach had many strengths, there was also an inherent limitation.

The ID students struggled to translate the issues they had identified through the interview into their design solutions. This presentation will contribute to a pedagogical discussion on developing students abilities to integrate empathy throughout their design process, which might in turn help interior design educators to prepare their students for working with diverse communities once they become designers.

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Appendix 1. Interview findings documented by using a photo-elicitation method, excerpts from a student' work in the pre-design phase



Entrance from Corridor

The entrance to the space from the corridor is understated and does not encourage users to enter.



Northwest View

Carpet flooring, cinder-block walls, and acoustic ceiling tiles demonstrate and outdated work environment.



8 Kitchenette on South Wall

A residential kitchenette installed on the south wall is out of place and does not fully support user activities.



O Southwest view toward Ceiling

Lighting throughout the space is not adjustable and creates a sterile, unwelcoming ambiance.



O Northwest view in the Andillary Space The ancillary storage space on the west wall is underutilized and does not offer sufficient vertical storage.



Appendix 2. Overview of user-personas, excerpts from a student work in the pre-design phase



Appendix 3. 3D view of a student's final design solution in the design development phase

Collaboration Area



Placemaking Objectives





Transform

implement flexibility that allows for a personalized learning experience. (Karlippanon, et. al., 2019).

Innovate





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