



EXCHANGE

a Forum for Interior Design Education

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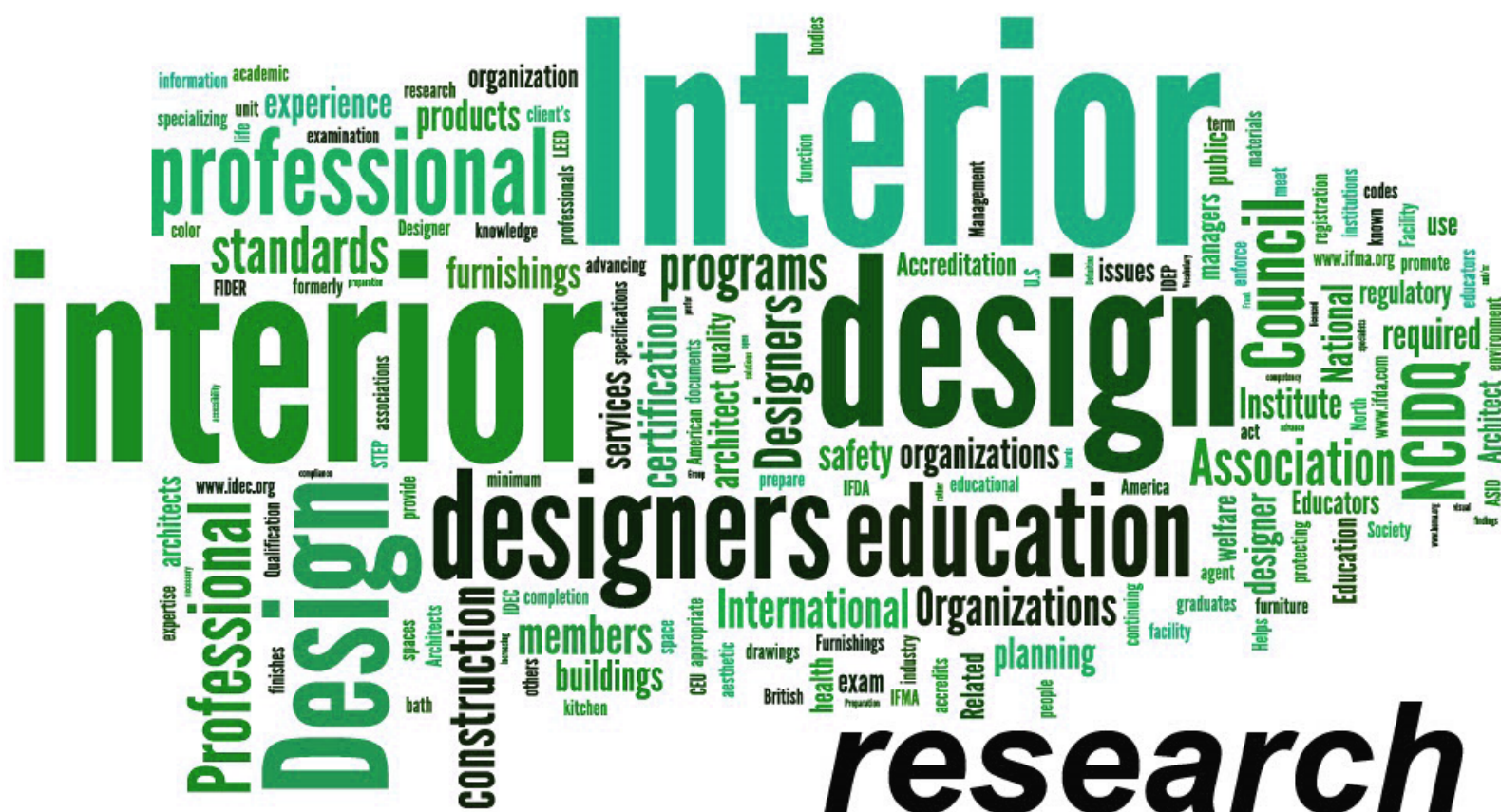




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Front Cover Created by Kathleen Ryan, NCIDQ, Design North, Pullman, WA.

Back Cover Rich Normality Design Collaborative creative scholarship titled 'Teasel'. Photo by Angela McKillip, South Dakota State University.

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Correction for Fall 2019 Exchange:

Image credits for page 18:

Top Left: Student Diana Erazo's paper window panel, Top Right: Student Jennifer Shiman Kwan's 100% wool acoustic wall panel, Bottom Left: Student Yixin Chang's mycelium wall panel, Middle + Bottom Right: Student Benjamin Kapoor's mycelium acoustic ceiling panel.

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MESSAGE FROM THE PRESIDENT

Susan Ray-Degges, IDEC

EVIDENCE BASED DESIGN: Past, present, and future

In reflecting back on how evidenced based design (EBD) has been integrated into interior design curriculum in the last twenty years, we have seen an explosion of web sites, scholarly articles, textbooks and academic presentations supporting the value of interior design solutions based on relevant research. Tracing the timeline provides retrospection and thoughtful consideration of how scholarship has been integrated into curriculum and practice. When looking back into course files it is interesting to note my own experience with students and the depth in which they have EBD experience has closely followed the trajectory of the industry.

The motivation to ensure future interior designers, graduating from North Dakota State University, was grounded in EBD in 2003. At a conference in the Minneapolis/St. Paul metropolis, I had the great fortune to be in attendance when Denise Guerin and Carin Martin unveiled InformeDesign (C. Martin, personal communication, April 3, 2020). InformeDesign, a website created and curated by Guerin and Martin, served as a catalyst for making EBD transparent for design practitioners. The focus of InformeDesign was to create an accessible tool with searchable research summaries into the hands of practitioners, students, and educators from a large variety of refereed journals. Research summaries were divided into key elements to help guide individuals to research findings that could be applied to design projects. These included the design issue (purpose and rationale of a study); design criteria; and key concepts. "Evidenced-based criteria provide[d] the evidence to inform [a design] solution. Unlike the peer-review journal article, design criteria on InformeDesign allow[ed] quick and easy access to information" (Nussbaumer, 2009, p. 14). This

innovative and valuable tool was available through April 2019.

With infant steps, the curriculum at my home institution introduced EBD research projects in 2005 to support senior capstone projects, prior to Council for Interior Design Accreditation (CIDA) Standards requiring evidence that students were able to "gather appropriate and necessary information and research findings to solve the problem (evidence-based design)" (CIDA, 2009, II-14). While these early CIDA standards begin to demonstrate the integration of research into curriculum in the first decade of the 21st century, it is promising as the recent standards indicate that student solutions "must generate evidenced-based design solutions" (CIDA, 2017, p. II-21; CIDA, 2020, p. II-21).

In a 2008 interview, Jain Malkin was asked, "How far have we come in the field of evidence-based design?" She remarked that: "We are really...the equivalent of a neonate...maybe some would think it's an embryonic field, I'd say we're a little farther than that but certainly not beyond neonate...I think if we could look forward 10 years, evidence-based design will be something that will be commonplace (CHD 2008, 00:05-00:34). It is at this same time we begin to see a preponderance of publications to help guide educators, students and practitioners successfully implement the design process while informing the design solution through research. Informing Design (Dickinson & Marsden, 2009), provided a pedagogical approach, based on case studies from leaders in design practice and education, to guide students through an informed research decision-making process.

Moving forward to support curricular goals and learning outcomes, I adopted many approaches to EBD and research. Numerous textbooks have included: Evidence-Based Design for Interior Designers (Nussbaumer, 2009), Research-Inspired Design: A Step-by-Step Guide for Interior Designers (Robinson & Parman, 2009), select chapters focused on EBD from The State of the Interior Design Profession (Martin & Guerin, 2010), Creative Research: The Theory and Practice of Research for the Creative Industries (Collins, 2010), Evidence Based Design: A Process for Research and Writing (Kopec, Sinclair, & Matthes, 2012), Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions (Martin & Hanington, 2012), and Ethnography for Designers (Cranz, 2016). Each source provided a new perspective and refinement as the years moved forward in redefining how to effectively prepare entry-level interior design students to be fluent in EBD.

“...evidence-based design is the practice of grounding solutions and decisions in a researched and documented knowledge base that includes the analysis and interpretation of research. This process provides information that helps designers predict, understand, and explain how our design may affect the quality of human life” (Stewart-Pollock & Menconi, 2005, p. 225)

As EBD has become fully embedded in our curriculum, an outcome of the senior capstone project is to successfully complete an undergraduate research project focused on a proposed area of study that demonstrates socially responsible design impacting the interior environment. Student teams complete the necessary research steps, apply those findings to inform the design decisions along with EBD criteria that have been identified during their review of literature, to support their final design solutions. Research posters and papers are also required so that each student leaves with the necessary research vocabulary and tools to be an asset to the firms that have positions for research specialists and those firms that are just beginning to implement EBD practice in their organization’s culture. While a student may not move into a “research” position directly as an undergraduate, I have seen the results of this model in motion and have had the opportunity to collaborate on a post-occupancy evaluation with alumni, Stefnee Trzpuc (NDSU 2002), a Design Research Knowledge Management Specialist (BWBR, 2017).

It is now 2020, a time Jan Malkin suggested EBD would be commonplace. While the commitment of EBD in education and in practice has become more common (Gensler, Perkins + Will, AECOM, Jacobs, HOK, Stantec) we still have work to do. One need is to insure clarity in the applied terminology to avoid confusion. Evidence and recent scholarly work indicates concern with the lack of clarity in the how EBD is defined. Some practitioners would like to create inclusive definitions for EBD and research informed design (RID) (Peavey & VanderWyst, 2017; Stichler, 2016). As we appreciate how far we have come in the last two decades, it is important to consider how we can provide strategies for clarity for the generations to come.

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Susan Ray-Degges, PhD
IDEC President 2019-2020



MESSAGE FROM THE
PRESIDENT-ELECT
Ellen Fisher, IDEC

Who Puts the Evidence in Evidence-based Design

Interior design education covers a multitude of knowledge areas: design, art, history, philosophy, technology, and science. It is the research and original thinking in each of these areas that generates new knowledge that has the potential to improve the lives people, the wellbeing of communities, and the health of our planet. Researchers, like many of IDEC’s members, create the evidence of “evidence-based” design. But, is this research being used? In 2011, Guerin and Martin documented the relationship of the interior design Body of Knowledge to people’s health, safety, and welfare in order to provide educators and interior design practitioners with knowledge of how their work improves the quality of life. The study demonstrated that indeed, the defined knowledge areas of interior design do protect people’s health, safety and welfare and that educated, experienced, and regulated interior designers through their practice could actually prevent people from being harmed. A recent study by Huber (2018) concluded that while practitioners value research, time constraints and lack of time to fully review and understand research studies means that relevant research, although available, is not utilized in interior design projects. Can we say that things are any different today? I think the answer

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Ellen Fisher
IDEC President-Elect 2020-2021



MESSAGE FROM THE EDITOR-IN-CHIEF Dana E. Vaux, PhD

Editor's Message: Spring 2020

Over the past century, Interior design has made a significant shift to a focus on the impact of the “health, safety, and welfare” of humans within the interior environment. Understanding the need for research in the design process is evident in the accreditation standards defined by CIDA that have increasingly strengthened the focus on theory-based, research-driven interior design scholarship, teaching, and practice. Additionally, research-informed design is now an expected component in professional design projects. Interior design professionals and emerging designers (students) need design researchers and educators to keep them informed on the forefront of evolving design research methods.

This issue of the Exchange is a dialogue about research-informed design. We look to the past to inform the present; we look at tried and true methods of pedagogy as well as emerging approaches; we share forward-thinking ideas for the future.

The essays in this issue provide perspectives on research-informed design in teaching, research, and practice. McKillip and Cutler show how the design-build model based in research can be a significant pedagogical tool that integrates with practice for creative scholarship outcomes. Orthel raises awareness of how the past can shape the present through history-informed research. Pable introduces embodied cognition (EC) as an emerging tool for interior design research and practice. In the following essay, Pable's students Huslanger and Lee share a class project that explains the application and shows the importance of embodied cognition. Chandrasekera shares students' personal perspectives on how learning and doing research

impacts design solutions. Robinson explains the role of theory as a foundation for research-informed design curriculum. Separate essays by Irish and Hermance explore issues of teaching undergraduate students the importance and skills of research-informed problem solving in the design studio course. Stafford and Pratesi trace the changes in CIDA requirements for skills since the first standards were published in 1972. Finally, Dickinson raises awareness on issues of transferring research knowledge from academia to the profession, charging interior design educators to lead the next generation of designers in evidence-based design practice.

As always, we are grateful for the contributions of Dan Harper, Gloria Stafford and Sarah Urquhart (associate editors) and IDEC's professional staff. This issue would not have come together without their dedicated work.

Twenty years into the new millennium, our profession continues to increase its actionable resources to ensure human health and safety through research-informed design. Considering the average individual in industrialized countries continues to spend approximately 90% of their time indoors—a statistic that has not changed over decades --our role as interior designers will only become more prominent. In fact, as this issue goes to press, we are experiencing an unprecedented reality as we practice “social distancing” and sequester in our homes to abide by “Stay at Home” directives. More than ever, we realize we have important work to do. Based on the content of this issue, we are up to the challenge.

¹Resources on the EPA website maintain this statistic since 1989. See for example: United States Environmental Protection Agency, Healthy Buildings, Healthy People: A Vision for the 21st Century, Report No. EPA 402-K-01-003, US, 2001. Retrieved April 1, 2020, www.epa.gov.

Dana E. Vaux, PhD
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JOURNAL OF
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In this issue of the IDEC Exchange focused on evidence-based design, I want to take the opportunity to provide the membership with an overview of the Journal of Interior Design's growth over the last five years. It was five years ago that I took over the editorship from Dr. Margaret Portillo, University of Florida. It is from her accomplishments and those of so many other past editors that these last five years have been made possible. I would also be remiss if I did not recognize the tireless efforts of the JID Board of Directors who have thoughtfully and strategically tended to the Journal's health and growth.

Over the last five years, JID has received more than 315 submissions, 63 of which were accepted for publication, taking us through the second issue of volume 45 (2020). This maintains our 20% acceptance rate and is an indication of the Journal's high quality content. Of those submissions, 25% now come from outside the US. We regularly receive submissions from Europe, Australia, the Middle East, and Africa with recent growth in South America. This is an important statistic. We are a global community and exceptional research is occurring around the world. It is JID's mission to be a repository for this scholarship, and to be a primary resource to fuel evidence-based design research for both practice and education.

One of the reasons for our international growth was the intentional move to expand our boards to have greater international representation. We were delighted to have Julieanna Preston join the Editorial Board in 2018. Since then, we have added reviewers from Australia, Canada, Korea, New Zealand, Sweden, and the UK.

The Special Issues continue to be a success with topics covering culture (2016), healthcare (2017), creative scholarship (2018), spirituality (2019), and marginalization (2020). These special issues remind me of the incredible range of research that can help inform what we do, how we do it, and why we do it. The guest editors are to be commended for their commitment and dedication to their issues (Hadjiyanni, Danko and Shepley, Preston, Kucko, and Webb respectively). Editing an issue is a mammoth task that each embraced and, in the end, delivered excellent content.

We maintain Virtual Issues to remind our readership of the depth and breadth of our library. Guest curators have explored a wide range of topics: studio (Dickinson), living environments for the elderly (Ankersen), social justice (Corry), creativity (Dohr), designing for spiritual experiences (Theodorson) and independence (Gaines), history (Cunningham), student preparation for research and careers

(Nichols), and homelessness (Pable). Half of these were launched in fall semesters in order to support the IDEC student competition. It is not a surprise to see our highest number of downloads September through November as undergraduate and graduate students mine our resources.

Perhaps one of the most satisfying statistics is the 100% increase in downloads since 2014. All journals are not experiencing the same growth. Other journals in related disciplines, who, in 2014, were seeing more downloads than JID, have since fallen behind JID starting in 2018. We now handily surpass them.

My term as editor-in-chief ends April 30, and I will turn the reigns over to Dr. Joan Dickinson. Dr. Dickinson is highly qualified for this position. She has been published in the Journal of Interior Design (and many others) and remains one of our most dedicated reviewers. Dr. Dickinson will undoubtedly maintain the Journal's high standards.

In closing, a heartfelt thank you to IDEC, Jennifer Webb and Caroline Hill (Chairs of the JID Board of Directors), Marilyn Read and Bridget May (past associate editor), Julieanna Preston and Nam-Kyu Park (current associate editors), all of JID's reviewers, and my invaluable editorial assistants Jeremy Bolton (2015-2017) and Claire Utley (2017-2020). This assignment as Editor-in-Chief has been the most humbling and rewarding of my academic career.



JID IMPORTANT DEADLINES

Engaging the Mind: Neuroscience in the Design Process

March 1, 2020 - Registration of Interest

Authors are asked to register their intent to submit a paper by sending a 150-word abstract to Jon Oits at jotis@pratt.edu. Please put your surname and "JID Special Issue" in the subject line. Registration of interest is not refereed, nor is it a requirement to submit. However, the acknowledgement of registration facilitates development of a proposal to full research paper by providing confirmation of fit with the special issue. Recognition of fit does not guarantee publication.

October 1, 2020 - Full submissions are due

On the heels of a timely keynote address from AJ Paron-Wildes at the 2020 Annual Conference, we turn our attention toward Evidence-Based Design. As AJ so poignantly described, EBD has flourished in the past 20 years, yet these strides have not been enough to close the gap in our industry. As educators, we have the power to change the trajectory of best practices such as EBD and those efforts can begin within the grass roots initiatives we have in IDEC.

Our time in Tulsa for the Annual Conference included a pre-conference Service Charrette in partnership with The Little Lighthouse, an education-based early childhood organization in Tulsa, OK whose focus is that students are valuable to us all. This organization has a wonderful facility for students of many abilities, yet some areas of their school were lacking direction or finishing elements their students needed. During the charrette, members were able to equip school leaders with design strategies to enhance the learning and creative spaces within their facility.

The connection between the keynote address and the Service Charrette was not by chance, and yet it begs the question, how else can we utilize the strengths among us to elevate the focus of EBD in design education and our industry? What does that look like for IDEC? Perhaps in addition to scholarship we might consider pointing social aspects of our members in this direction. For example, consider the potential of Networks focused on design practice areas such as healthcare, hospitality, workplace, etc. Educators

could utilize Networks to pool resources, bringing the most relevant EBD practices to the classroom from the far reaches of our membership and across all program types. As Slack is currently being utilized to bolster our understanding and collective ability to teach from a distance, so too could it empower a new generation of design educators and IDEC members with the wealth of information and experiences accumulated by others. This value-add scenario then becomes a major selling point of membership, something every organization is becoming more and more attuned to.

Design should, and can, do good for all people. Utilizing principles of evidence-based design, shared amongst its members, IDEC can take a leading role in this charge by modeling EBD in its Network groups, its Charrette focus, and so on. In this way, our collective presence can do good for the people in the communities our conference touches, as well as the new members we are fostering within our ranks.

The Service Collaborative encourages you to utilize Slack and our Networks to transform the way you teach. You are not an island. Whether it is information you are looking for, or information you are looking to share, we encourage you to utilize our collective knowledge and seek out ways we can do more to promote evidence-based design. Any questions regarding how you can make an impact can be directed to Stephanie Sickler, Director of Service, at ssickler@fsu.edu.

A LETTER FROM STANTEC

On behalf of our team at Stantec, I am delighted to celebrate the first anniversary of our partnership with IDEC as a Premiere sponsor! I've enjoyed meeting many of you both virtually and in person, and for those of you who are new to us, I want to briefly share a little about Stantec, why we are thrilled to be affiliated with IDEC -- what we accomplished this year, and what the next year holds.

Like IDEC, Stantec's reach is across many different regions of North America. We too are committed to our people, those we serve, and keeping community front of mind.

We are a multi-disciplinary firm, passionate about design, research, and innovation. We have 30 offices in most major cities in North America, as well as a presence in London and Dubai. Our larger interior design offices include Boston, Denver, Chicago, San Francisco, Vancouver, and Calgary. We believe we are 'better together' by connecting with organizations like IDEC.

We launched our Premiere sponsorship last year at the IDEC conference in Charlotte. Since that time, we published two articles in Exchange. The spring issue provided reflections from recent graduates working at Stantec about their transition from academia to practice. In the fall issue, which had a STEM theme, we shared an interview with our client from Camosun College in Victoria BC, who recently opened the doors of the Alex and Jo Campbell Health & Wellness Center, and demonstrated how the process and outcome of interior design is interwoven with STEM.

We also enjoyed the articles that you contributed as well, so thank you for allowing us to participate in that dialogue.

Throughout the year, I heard from many of you who reached out on a variety of topics - for instance students looking for internships or jobs in a particular city. You wanted to know if we had Stantec offices in those locations and with whom to connect, which we are very happy to do. Some of you shared research that you had published; research, I might add, that makes our practice that much stronger. We even had the opportunity to teach a class remotely. It has been a joy to connect with you and your students throughout IDEC.

Myself and my colleague, Jacqui McFarland, met with the board in early March of 2020 in Tulsa to share with them what a success we considered our partnership to be, and to propose an idea for elevating it to the next level this coming year. I am thrilled to announce a research partnership that Stantec will be sponsoring in conjunction with IDEC, whereby we, as interior design practitioners, will work with an educator and a student together on a joint research project. We want to be more than sponsors, and active participants in this project. We believe the synergy of three perspectives, student, educator, and practitioner, will add strength to the projects we undertake. The board has formed a task force to work with us to further develop the scope of this research partnership, and we will have more to share with you in the fall of this year.

Thank you again for the opportunity to engage with your wonderful community, and I look forward to our future collaboration!



Dr. John Turpin
JID Editor-in-Chief

THANK YOU TO JOHN TURPIN

For the past five years, Dr. John Turpin served as Editor-in-Chief for the Journal of Interior Design (JID). Dr. Turpin's outstanding accomplishments are numerous and include introducing the Visual Essay for creative scholarship along with writing the submission guidelines, establishing virtual issues, a complete graphic overhaul for the journal, a significant expansion of international contributions via readership and authorship, an impressive increase in download trends, and the continued rigor and excellence we expect from JID. Dr. Turpin read over 300 manuscripts during his five-year tenure along with providing guided mentorship to new and existing authors and editors. From the IDEC Board of Directors and the JID Board of Directors, we sincerely thank John for his vision, expertise, dedication, tenacity, and strategic thinking in guiding the journal forward.



IDEC COMMUNITY ARTICLES

RESEARCH-INFORMED DESIGN: THE RICH NORMALITY DESIGN COLLABORATIVE

ANGELA MCKILLIP, ASSOC. AIA, LEED AP, NICDQ
KAY CUTLER, PhD, SOUTH DAKOTA STATE UNIVERSITY

Whether termed design-build, service-learning, or build-to-learn, over the past 20 years this active learning model has become a significant pedagogical tool in studio instruction. This is evidenced most recently within interior design education by the introduction of the 'Special Topics: Design-Build' session and numerous other scholarship sessions at the Interior Design Educators Council Annual Conferences. Many projects integrate a client voice to include skills gained from direct interaction with key project stakeholders.

As this model matures, educators are expanding their objectives beyond the enriched student learning experiences to include explicit design research objectives (Hinson, 2007). The debate over the definition of scholarship sparked by Ernest Boyer in the 1990's is still active. The inclusion of 'synthesis and reintegration of professional practice' and 'the transformation of knowledge through teaching' form the basis of definitions used by many universities. In a continuation of Boyer's redefinition of scholarship, Robert Diamond (2002), suggested the following five criteria for determining scholarly activity:

- It requires a high level of discipline-related expertise
- The activity is conducted with clear goals, adequate preparation and appropriate methodology
- The activity and its results are appropriately documented and disseminated.
- The work has significance beyond its individual context.
- The activity is judged meritorious and significant via peer review.

The Rich Normality Design Collaborative (RNDC) aims to meet each of those categories, providing an example where an interior design studio integrates active learning to pursue answers to significant questions related to design education and the importance of environment in early childhood education.

The RNDC process underwent its first iteration in 2015, when desires for an ‘experiential’ project sparked conversation between Professor Cutler and Professor McKillip to simply ‘build something intentionally and to study it’. The pair connected with Christ Hume, Founder of KODO Kids. Within eight hours of the team’s first skype meeting, the framework of the experience was built: dovetailing creative practice, research, the scholarship of teaching and learning, and experiential learning. After three iterations, the eight-week collaborative project blossomed into a design experience that spans three academic semesters and integrates undergraduates and faculty from five disciplines--interior design, advertising, early childhood development, entrepreneurial studies and mechanical engineering--systematically producing industry-ready, licensable products.

Projects span up to three academic semesters and involve university, industry, and community stakeholders in every step. Phase one involves an intensive rapid-prototyping design charrette process where authentic users and stakeholders discuss, plan, ideate, gain empathy, and explore concept. During subsequent phases, refined prototypes are discussed



Rich Normality Design Collaborative creative scholarship outcomes.

and tested by children and teachers. The ongoing dialogue builds layers of perspective, informing and enhancing the work. During phase two, the industry partner leads market immersion of promising prototypes inviting students and faculty to engage in product testing, short run production, marketing development and national debut of the pieces. In the third phase, pieces are delivered and tested in early childhood classrooms across the nation. The undergraduate students engage in participatory research with faculty to further dissect the prototypes performance in classroom settings.

The Flexnest was created in the first iteration of the collaboration. The provocation was to create a ‘stool’ that went beyond the formal function of providing a place to sit, enhancing educational experiences in early childhood environments. The piece includes two stools, two trays, a complete block set and caster base. The large and small stools create four heights for story time, group activity, one-on-one work, dramatic play, etc. Two trays create the storage for the building planks and can be used in multiple ways, such as step stools, building platforms, and carriers. In total, 48 building planks are included, offering a set of loose parts that enhances engineering, construction and imagination. By nesting together, the play landscape requires little storage area, while carefully considering sustainability and maximization of material use. The entire piece is made from one sheet of plywood.

As Vecchi stated, “We must evaluate in everyday life how much environments allow or forbid, how much they encourage or censor, how much they educate ways of seeing, exploration and sensibility” (Vecchi, 2010, p. 89). One of the aims of the project was to heighten the importance of design and aesthetics in early childhood furniture design through designing with, instead of for. This experience exemplifies the epitome of the metaphor of Rich Normality redefining the beauty and the normality, as well as the great depth of the RNDC research-informed process.

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HISTORY AS RESEARCH: HERITAGE SHAPING DESIGN

BRYAN D. ORTHEL, PhD, INDIANA UNIVERSITY

History informs design. While the history we often learn is focused on era-defining events and the important places or people associated with them, history is much more. The history we know and use each day is activated as tradition, myth, response, and memory. History may tell us what has happened; heritage is what we understand is meaningful about what happens.

History-informed design recognizes the rich ways we incorporate ideas into a design process. A programming process that includes questions about a company’s culture and values includes history. A community-engaged design process that recognizes how members have different stories about the same place embraces heritage. A design solution that recognizes how past designs have solved a similar problem relies on history. Interior designers have responsibilities to the social and cultural context for the spaces we create.

Multiple times in my career, I have met with clients and used history and heritage as an intentional approach for engaging their specific problem. In one example, residents of a small community were in conflict about how a new building would change their place. I did not start with the design of the building. I started by asking them to tell me the history of their community. Over and over again, I sat with residents, listened to their stories, and heard what they valued. The questions I asked, the ways I recorded information, and how I interpreted the information rely on thoughtful methods. I was learning how they constructed the identity of their community.

Laurajane Smith explains people operationalize history as heritage: “Heritage...is a cultural process that engages with acts of remembering that work to create ways to understand and engage with the present.” For designers, operationalizing history in the way I describe is a heritage-based programming process. If programming is about searching for the problem, then a heritage-based programming process completes this task by looking at how the past is influencing the decisions people are making today. The heritage-based actions complement functional and technical information gathering to ensure the resulting program addresses the cultural requirements of a project, as well as the more quantified aspects of area and behavior.

Because a heritage-based approach requires in-depth engagement with a client, including it in a studio assignment requires preparation. If students are going to engage in the field, then they need to learn interviewing skills, how their language and reactions may influence an interviewee’s response, and what to consider as they listen. Alternatively, students may be provided with pre-recorded oral histories or interviews. In either case, they will require context about how history and heritage are used to define, and sometimes enforce, cultural stereotypes and bias. If strong methodology and procedures are used, a meaningful grounded theory can emerge that is inclusive of broad perspectives, related to the specific problem at hand, and is valid and reliable.

The past—operationalized as heritage—shapes how we design. We have ethical obligations to be intentional and meaningful in how we do so.



Emotional map of students’ reactions to an oral history. Students were asked to draw in real-time their reactions to hearing an oral history. They transferred these emotional ideas to their design process for addressing a related design problem. (Photograph by author.)

A DESIGN RESEARCH PLAYGROUND

JILL PABLE, PhD, FLORIDA STATE UNIVERSITY

About two years ago, I stumbled across an article about a psychology research study at my institution. Young women participants were divided into two groups and each participant was interviewed in a room about their intentions to start a family. For one group, the room had an audibly ticking clock on the wall. The other room did not. The researcher statistically confirmed that the women's observations about family planning were more urgent in the room with the clock than those in the room without it (Moss & Maner, 2013). The conclusion: the presence of the clock itself likely placed a sense of pressure on the participants when thinking about family planning.

These studies and dozens more like it make up psychological tests about 'situated' or 'embodied cognition', in essence concluding that the physical environment around us has potentially profound influence over how we see the world and ourselves in it--how we view others, make choices, and take action. "Primes", such as the clock, implant themselves in our subconsciousness and exert force over our perceptions that we are just starting to understand and appreciate. Other situated cognition studies (and there are dozens of them) are revealing fascinating glimpses of possible built environment connections (besides helping us to decide if we include clocks in a room), such as how a sense of perceived distance or closeness can influence how empathetic someone feels toward other people (Williams & Bargh, 2008). Might this finding, for example, invite design research that explores the choice of ceiling height in a community building? Another study concluded that people often equate the 'up' direction with optimism (Meier & Robinson, 2004). What might the subtle influence of uplit wayfinding signage do for hospital oncology patients? We don't know because no one has studied it yet.

The fact is, design researchers and practitioners have long known and operated on the premise that 'design matters' and affects people's lives. The difference is that now there is a significant, emerging body of empirical research by fields including psychology, neuropsychology, neuroscience and others that are bearing this notion out through studies like those mentioned above. But here's the rub: other fields are conducting research to test embodied cognition hypotheses, but these studies are often in controlled environments that don't necessarily mimic real life. That's all well and good, but I think we might agree that the true utility of such ideas lies in testing and determining their applicability to the real world and human beings' experience of it, in all of its messiness. This situation, I believe, represents a rich playground for design researchers, lending credibility because the research tests previously published research while also potentially confirming validated ways that built environment can support human well-being.

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EMBODIED COGNITION FINDINGS AND THEIR APPLICATION IN A HYPOTHETICAL STUDENT DESIGN PROJECT

MELISE HULSLANDER AND KHENG LEE, FLORIDA STATE UNIVERSITY

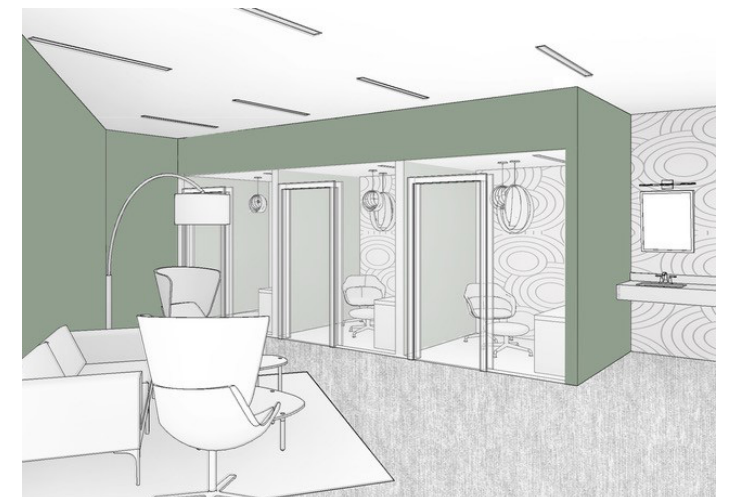
Note: Embodied cognition research has been the inspiration for a graduate student project in Dr. Jill Pable's Theory and Criticism class for the last several years, which challenges students to tap this research to apply its content in the re-envisioning of built spaces ranging from jail cells to divorce mediation rooms and houses of parliament. Following is a description of one project written by her students.

Embodied cognition (EC) informs us that what people experience in their environments and feel with their bodies affects them on a mental, emotional, and physical level and can influence their perceptions. Built environment may play an important role in shaping how people view the world and take action. When designers incorporate this understanding into their choices, interiors can better cater to the needs of the users. A class exercise provided us with a sandbox in which to interpret and implement findings from current embodied cognition research in a hypothetical design project.

In today's Western culture there is a negative connotation associated with breastfeeding in public. Lactation rooms offer privacy for necessary processes. Mothers that have just given birth are usually sleep-deprived, under significant stress, and in some cases experience postpartum depression. We suggest that supportive environments for this niche group of women are an excellent opportunity to implement EC design. Our group looked specifically at the current lactation room design within the Louisiana State University Student Union Center.

The built space in its current configuration consists of three cubicle stations, each with its own recliner, side table, and hand sanitizer, but little consideration beyond general privacy seems to have guided the design decisions. Mothers lack auditory and some visual privacy as the cubicles do not have an integrated ceiling within the larger room. The cubicles also reflect a corporate style environment in a monochromatic taupe hue that is cold and unreceptive, and may heighten negative perceptions within the mother. Our goals for the revised space were to create a diverting and serene space that provides breastfeeding mothers with positive memories and empowers them to feel pride in themselves and their bodies. We feel the proposed changes are simple but effectively apply relevant principles of EC, described here.

Williams and Bargh (2008) conclude that "the principle 'distance equals safety' is deeply ingrained in humans' biological makeup" (p.303). Therefore, we fully enclosed the individual enclaves within the larger lactation room so that both mother and child are imbued with a sense of security. EC studies also suggest that directing people's attention upward can subconsciously lift their spirits and that positive impressions are associated with physically bright stimuli (Moss, 2016). The proposed pendant lighting fixtures in the lactation enclaves serve a dual purpose of providing a visual diversion, physically drawing the mother's attention upward, while providing a warm, bright environment. Strepper and Strack (1993) found that people felt more pride receiving feedback when seated in an upright position than when sitting in a slouched position. By replacing the recliners with comfortable lounge chairs, mothers are encouraged to sit upright to subconsciously boost their confidence. We suggest that these adjustments, among others, hold the potential to significantly change the narrative of perceived experience and provide women with physical queues that support a positive, empowered view of their bodies and their capabilities.



The proposed space incorporates a proportionate sense of enclosure, positive lighting stimuli, and seating that supports empowered body posture. Opaque pod walls are shown in transparent view for explanatory purposes.

This exercise was a low-stakes yet effective means of practicing embodied cognition design. It helped us recognize the comprehensive effects of our design strategies may hold for people. We are hopeful that this approach becomes more mainstream and look forward to the effects and opportunities of research application in our profession.

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UNDERGRADUATE RESEARCH IN INTERIOR DESIGN

TILANKA CHANDRASEKERA, PhD, OKLAHOMA STATE UNIVERSITY

Designers are familiar with concepts such as Evidence Based Design and Research Informed Design. The idea behind these concepts is using research or evidence to support the design decisions we make. Students are instructed on using these concepts to inform their design process. In this process, they conduct research, report the findings and apply the finding to the design solutions. Undergraduate research in Interior Design address

several CIDA professional standard criteria. Most importantly, it focuses on human-centered design where students understand theories of human-centered design, identify, analyze, and apply this information in their design process. This provides Interior Design students with the necessary tools to excel and be successful in the future, in whatever pathway that they may choose to take.



Undergraduate research conducted with technology at the Mixed Reality Lab

[Kate Korneva- Okstate ID Student]: Because of my interest is in commercial interior design, together with my adviser, we came up with a study to see how people perceived space in linear and curvilinear store layouts. We developed the two layouts as a 3D model and used virtual reality to immerse individuals in these two environments. The equipment in the Mixed Reality Lab was helpful to measure the perception of these individuals using psychophysiological equipment such as fNIR (Functional near-infrared spectroscopy) devices. fNIRs allows the measurement of brain activity through hemodynamic responses associated with neuron behavior. My research was presented at the Interior Design Educators Council conference (IDEC) as well as the Environmental Design Research Association (EDRA) Conference and received the people's choice award at the Coalition for advancing Digital Research and Education Conference (CADRE).

[Molly Jackson- Okstate ID Student]:

I am interested in improving the physical environments of others, and I believe I can do that through incorporating evidence-based design into my future projects. Noticing that I had an interest in pursuing research, my faculty advisor encouraged me to start a path in that direction. In this research project I wanted to explore the inherent and extrinsic values in design students by using Verbal Protocol Analysis and fNIRs. The results of the research project confirmed that design is not only creative, but by learning design strategies, you can enhance

the creative design process. One of the most positive outcomes through this project was to learn about how research is conducted. I was also awarded the Undergraduate Library Research Award at OSU for my research project.

[Andre Ferreira- Okstate ID Student] :

Designing for the aging population has interested me and I was interested in working on a project that could promote the health safety and welfare of older adults by designing a specialized piece of furniture that allows older adults to move from the sitting position to the standing position ensuring their safety and comfort. The biomechanics of the sit-to-stand activity has been widely studied and documented. Poor knee strength and the lower height of seats both are threats to older individuals. During the initial phase I interviewed older adults, furniture manufactures, Interior Designers and physical therapists, to evaluate the market need. The National Science Foundation iCorps program provided funding for this project. Understanding the needs of individuals and developing furniture based on evidence was a new concept to me, and it was an educational experience.

These examples show that promoting and allowing students to explore Evidence Based Design/Research Informed Design is important for them to explore different pathways they can follow as designers in the

THE ROLE OF THEORY IN RESEARCH-INFORMED DESIGN

LILY ROBINSON, EdD DESIGN INSTITUTE OF SAN DIEGO

The Information Age has given us access to overwhelming amounts of data. What do we do with all of it? If social media has taught us anything, it would be that access to greater quantities of information does not necessarily mean that we are better informed. We need to evaluate the source, the perspective, the context, and integrate our own experience or prior knowledge in order to make sense of it.

It has been an important focus of research-informed design curriculum to emphasize quality sources. But there seems to be a disengagement between the research process and the creative process during which the students use, or wisely apply, this information. Students who practice research-informed design use information, but they may not use it appropriately. As an educator, I have seen “research” used as an

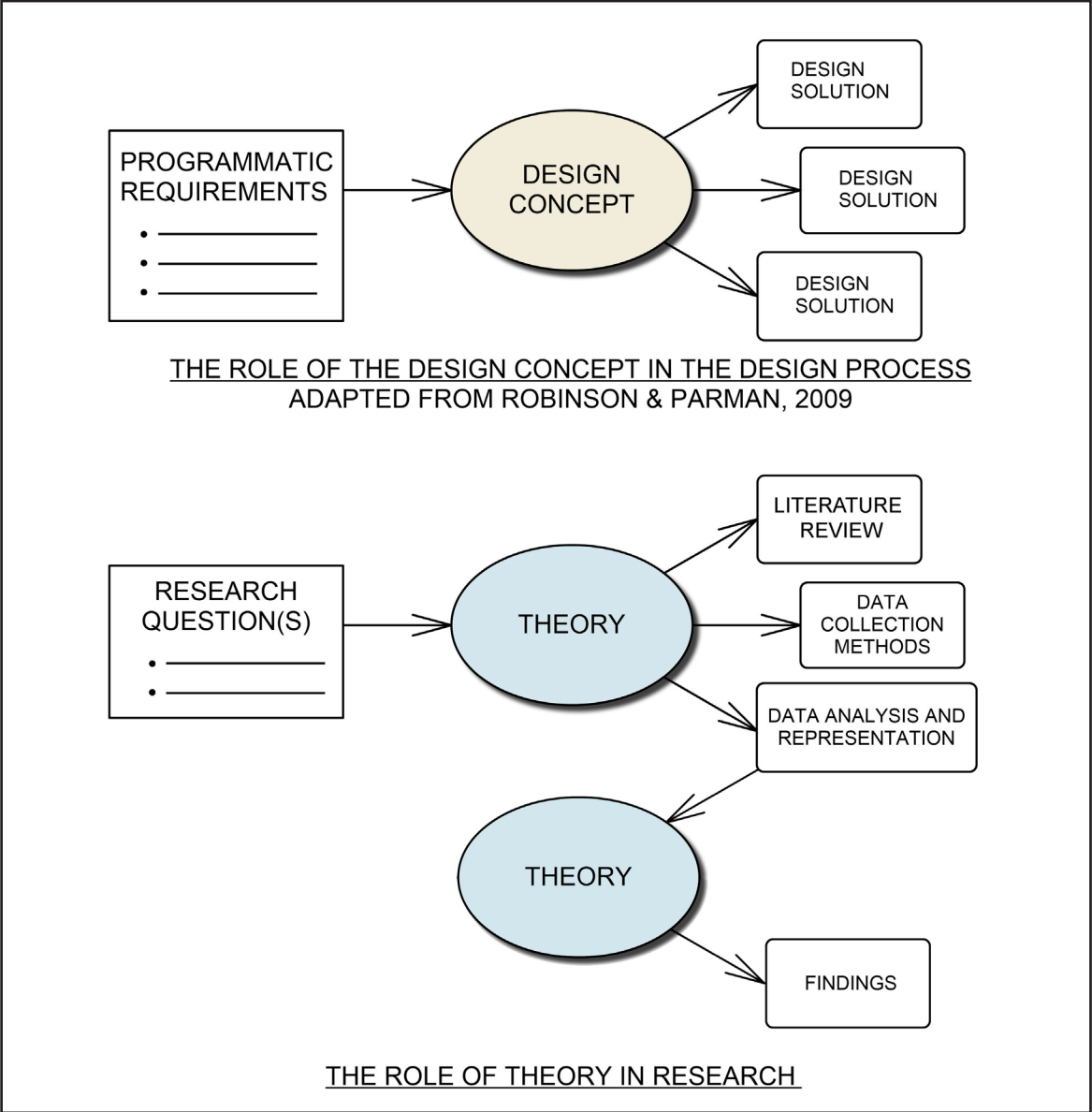
attention-grabbing infographic. For example, a statistic that “one third of homeless people are children” was used to justify a socially responsible program. After that, the subsequent design decisions seem to revert to typical design solutions. In the end, the design solution reflected the student’s assumptions about what kids need based on a relevant case study supplemented with anecdotal experiences. Research-informed design must go deeper. Compelling and attention-garnering statistics may be justifications for the project’s existence or validate the importance of inquiry. After that, original human-centered research conducted by the student is warranted to gather both project-specific and generalizable data about the site, end-users and other cultural or social issues. I call this next step training students to be “design-informed researchers.” But how do we motivate students to do what they

might consider boring research? One strategy may be to emphasize the role theory plays in the research process. Theory can be used as a lens for students to frame their study, view their data, or interpret their findings. The role of theory can be introduced to the students as a parallel to how the design concept is used in the design process. My argument is that theory is to research what the design concept is to the design process; a filter through which we view information and determine applicability to a particular situation [Figure 1].

Designers look to a design concept to “drive the bus” of the creative process. Similarly, theory can help researchers construct a metaphor or a visual tool to help explain their findings. Just as a design concept helps designers frame or guide design decisions, theory can help express what we believe to be underlying relationships, especially in the social sciences. If students of design are exposed

to theory in this way, I believe it will enhance their understanding of research and help to integrate the act of systematically collecting data throughout the design process.

In a talk entitled The New Frontiers of Design, Paola Antonelli (2017), called for a process-oriented curriculum in which perspective, theory, implicit and explicit values, and expression of process are emphasized. Research-informed design curricula should emphasize how systematically collected data, whether expressed quantitatively or qualitatively, can be viewed through a theory or theories, analyzed for patterns, trends or relationships with applications to practice and implications further inquiry. Theory provides fields of awareness to help students make sense of data, making the research process more accessible. This focus will help create a valuable connection between data and design.



The role of the design concept in the design process parallels how theory is used in the research process.

INTRODUCING UNDERGRADUATE STUDENTS TO FIRST-HAND RESEARCH: A TALE FROM THE FRONT LINE

JULIE E. N. IRISH, Ph.D. AND YONGYEON CHO, M.F.A.,
IOWA STATE UNIVERSITY

The purpose of this project was to provide undergraduate students in our Interior Design Program with first-hand research experience. We particularly wanted our students to understand what research-informed design meant in the context of their studies at an R1 doctoral university. Students were enrolled in a third-year studio with a semester-long project to design living accommodation for older adults, including independent housing and a community center. The studio also fulfilled the Program’s requirements to develop a full set of contract documents. The research component involved students interviewing older adults in a local senior living facility and incorporating the findings into their design projects. We identified a facility and the management and staff embraced the project. The project was approved by the University Institutional Review Board (IRB). As instructors, we held an information meeting to recruit potential participants, and 13 older adults indicated they would take part in the study. Back in the studio, 67 students undertook the IRB Basic Human Research Course: Social and Behavioral Research, a major undertaking to ensure all students were trained and subsequently

registered as study personnel on the IRB application. Data collection took place in participants’ rooms at the senior living facility. Students were divided into teams and assigned one of 13 participants. Students were responsible for obtaining informed consent, asking the research questions and recording the answers, providing participants a monetary gift for participating, and obtaining participant signatures on the required tax documentation. In this way they were able to experience a carefully managed research process for a vulnerable population. After data collection, the management of the senior living facility hosted refreshments for students and participants, and it was pleasing to see the residents and students engaging. Students shared their findings in class and incorporated elements of their research findings into their projects. At the end of the semester, some of the older adults, together with management and staff of the senior living facility, attended the final poster display of student projects hosted in the design college. The older adults and management seemed genuinely thrilled with the experience.



Figure 1. (Left) Research and facility introduction session on site for interview procedures and data collection, (Center) Students’ visit to assistant living facility, (Right) Senior’s college of design visit and review of students’ work, credit by author.

As part of this project, we were also interested in finding out the perceived benefits to students of this research-informed design approach. We therefore administered a survey at the beginning and end of the semester to measure student’s perception of their knowledge and experience. Our research collaborator analyzed the data. Results indicated that students had more of a positive experience of the project than a negative one.

Challenges included the time factor in conducting the research, which added time to the research and programming phase of the project, including a delay in data collection due to adverse weather conditions! This contracted some of the later project deliverables

and put pressure on students. This was also a new course for both instructors to teach and integrating the research component whilst grappling with creating new lectures and assignments, together with an unusually high number of students in studio, also proved challenging. However, we believe that this was a valuable learning experience for students that we can improve on by revising the timescale, processes, and course deliverables. We plan to carry out similar evidence-based studio projects in future semesters with outreach to a different user group. This will also give us better outcomes and more longitudinal data to find out the value of this type of research-informed design on students’ education.

USING RESEARCH TO INFORM A GLOBAL DESIGN STUDIO PROJECT

REBECCA HERMANC, UNIVERSITY OF NEBRASKA KEARNEY

Imagine being a stressed, but very motivated, new interior design instructor desperate to come up with an amazing studio project for students that incorporates a global component and teaches students how to use research in the design process. What do you do? Where do you start?

Faced with precisely this scenario, I turned to the university’s online newspaper for inspiration, a procrastination tactic that actually paid off. On the front page was an article about a professor from our university who had been doing a research project in Haiti. The article was fascinating, and the professor seemed easy to talk to, so I invited him to studio to talk about his research and knowledge of Haiti.

Prior to his discussion, I informed the studio class that our next project would be set in Haiti and encouraged students to prepare interview questions intended to inform their understanding of the country’s culture and politics. To supplement the guest speaker, students also watched a movie dealing with racial issues with the purpose of creating open dialogue and empathy. It was important for students to understand that as designers, we cannot go in with preconceived notions on how to ‘fix’ an issue, but rather need to respond appropriately to the cultural and social context.

Based on the discussion of Haiti, the problem was to design a boarding school for young adults who might be transitioning from an orphanage setting but who lacked training in trade skills. The class brainstormed a list of topics relevant to the project. Some examples were: climate and population, natural disasters,

recycling/reusing plastic and Styrofoam waste, trades to learn in Haiti, schools in Haiti, outdoor classrooms, and so forth.

Utilizing a divide and conquer approach, students broke into groups of two to research topics. They then presented their research to the class, so everyone had an opportunity to learn from each other. It gave everyone a chance to become a bit of an ‘expert’ on a topic and allowed everyone to access the research in a limited amount of time.

Following the initial research, students chose a research focus to inform their design. One group focused on the life skills and training the young adults would need to obtain a job. Another group focused on using plastic trash to create building bricks and using local and sustainable materials to build the school. A third group focused on the learning environment and the incorporation of outdoor classrooms and gardens.

This studio project was just the beginning of many that require student collaboration to obtain as much knowledge about the issues surrounding their designs as possible. The use of interviews, reading current and past research, empathy awareness activities and group collaboration, among other tactics, can encourage emerging interior designers to make carefully informed decisions throughout the design process.



Location Analysis

With the facility located in Hinche, it is imperative for it to have a passive system that allows the building to require little energy for space cooling and heating. Typical wind patterns in this area flow from the eastern and western directions. The facility is positioned so that the open windows allow for a cross breeze to keep the interiors cool. The building is also located near the river, which allows for easy access to water to power the ByFusion machine that creates a replacement for concrete blocks from plastic. On the roofs of all three buildings are solar panels that face east and west to absorb optimal sunlight.

Material Analysis

Material selection for this facility was an important factor in this project. It was important to design a building that can produce energy and water for itself as well as have the ability to be built with local materials. With Haiti having little to no resources for wood it was important to find an alternative. What Haiti does have, is a large resource of trash, specifically plastics. ByFusion is a company that has created a machine that is powered by water, to take plastic trash and create a “RePlast” block, which can be used in place of a typical concrete block. These blocks made from trash create an extremely high thermal and acoustic insulation that can be plastered over. The roofs of all three buildings are covered with a native grass, which create even greater insulation and keep the buildings cool. Research published by the National Research Council of Canada found that an extensive green roof reduced the daily energy demand for air conditioning in the summer by over 75%. The majority of the flooring is concrete, which can be locally sourced and made on site.



Craftsmanship:

Haitian Woven Sisal



Bead Work



Farming



Issues:

Trash



Orphanage



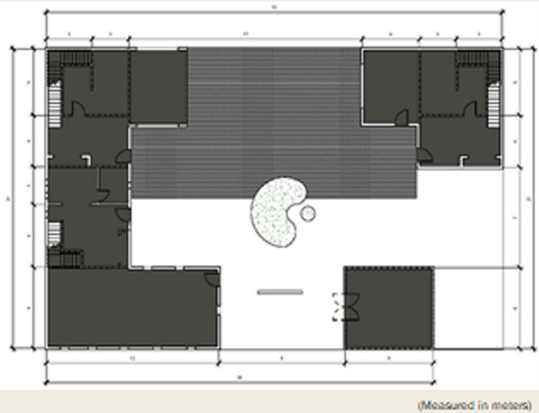
HPF Learning Center

Learning Center Info

- 30 Students; 15 girls and 15 boys aged 17-18
- Separate living spaces for male and female students.
- “Life skills” learning
 - Cooking
 - Gardening
 - Reading/Writing/crafts
 - Construction

Specialty Equipment

- Self-composting toilets
- Solar panels for electricity
- Solar-powered Ultraviolet (U.V.) water purification systems and wells in community-accessible locations



(Measured in meters)



(Left) Research and facility introduction session on site for interview procedures and data collection, (Center) Students’ visit to assistant living facility, (Right) Senior’s college of design visit and review of students’ work, credit by author.

EVOLVING RESEARCH SKILLS REQUIREMENTS WITHIN THE CIDA STANDARDS

GLORIA E. STAFFORD, Ph.D. AND ANGELA PRATESI, MLS
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Interior design educators must ensure that student work illustrates skills related to research. Such requirements are found within three CIDA standards: Human-Centered Design, Design Process, and Communication. To understand how requirements related to research have evolved over time, all versions of standards were analyzed. A summary follows:

The first FIDER standards (1973, revised 1980) included no objectives referencing research skills, instead defining the Interior Designer as, “one who is qualified by education and experience to identify, research, and creatively solve problems relative to the function and quality of man’s proximate environment.”

The 1988 Standards required that graduates “can synthesize information and analyze problems from many different perspectives.” Educational objectives now required that students have an “awareness” that “research techniques are necessary to enable designers to accumulate and analyze data to develop a design concept.”

In 1996, Standards added, “the use of information gathering techniques and reference materials is necessary to enable designers to accumulate and analyze data to develop a design concept. Students should also be aware of scholarly research as it contributes to the discipline.” Students now needed to show “competency” in “information gathering techniques” and “awareness” of “research contributing to the body of knowledge.”

The 2000 Standards accelerated educational outcomes, requiring students demonstrate “programming skills, including [...] information gathering research and analysis” and an “understanding of project management practices” like “information management.” Programs were now required to “incorporate learning experiences” supporting student development of “critical, analytical, and strategic thinking.”

The 2009 Standards (now CIDA) included distinct updates, including several new Standards categories: Human Behavior and Design Process, which included the first reference to evidence-based design.

Students now needed to demonstrate “the ability to appropriately apply theories of human behavior” and to “gather appropriate and necessary information and research findings to solve problems,” and “evaluate, select, and apply information and research findings.”

The 2011 and 2014 Standards saw changes around behavioral concepts. The 2011 version strengthened Human Behavior, stating students must demonstrate “the ability to appropriately apply theories of human behavior.” In the 2014 Standards, Human Behavior became Human-Centered Design, and the educational outcome were narrowed to add “in the built environment.”

The 2017 Standards readjusted research requirements. In Human Centered-Design, now students must demonstrate “understand[ing] of methods for gathering human-centered evidence” and “the ability to analyze and synthesize human perception and behavior patterns to inform design solutions.” The Design Process Standard required that students “understand the importance of evaluating the relevance and reliability of information and research impacting design solutions.” In the Communication Standard, students now must “effectively distill and visually communicate data and research.”

The first reference to design theories was added in 2018 to Human-Centered Design: “Student work demonstrates understanding of theories related to the impact of the built environment on human experience, behavior, and performance” and “the ability to gather and apply human-centered evidence.”

Today’s 2020 Standards include the requirement—within Human-Centered Design—that work demonstrates the ability to gather and apply human-centered evidence and analyze and synthesize human perception and behavior patterns to inform design solutions. Within Design Process, students must now synthesize information to generate evidenced-based design solutions and use precedents to inform design concepts or solutions. Additionally, students must understand the importance of evaluating the relevance and reliability of information and research impacting design solutions. And students must be able to effectively interpret and communicate data

and research, per the Communication standard. It is important to be aware of these evolving requirements, as content delivery and student outcomes which met standards mere years ago, may not suffice today. Those educators nearing CIDA reaccreditation reviews would be well served to note these accelerations within research skill requirements.

Many thanks to Ashley Marcangelo from CIDA for providing copies of all Standards versions.

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Student project by Hannah Hibberd Kizer. Photo by Corby Dorsey, Courtesy of University of Nebraska – Kearney.

EVIDENCE-BASED DESIGN THROUGH THE LENS OF THE *JOURNAL OF INTERIOR DESIGN*

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CAREN MARTIN, UNIVERSITY OF MINNESOTA

The Center for Health Design defines evidence-based design (EBD) as the process of basing decisions about the built environment on credible research to achieve the best possible outcomes (Center for Health Design, n.d.). While the term EBD permeates interior design, it might be interesting to examine the term “credible research” through articles published in the *Journal of Interior Design* (JID). In 1993, Dickson and White surveyed 96 interior design practitioners examining how frequently they researched a design problem along with sources used. Thirty-four percent (34%) researched a design problem 100% of the time, but 27% researched a design problem 25% of the time. Eighty-two percent (82%) used product catalogs, 71% used trade magazines, 57% used books, and 47% indicated they never consulted scholarly journals where original research is published.

The trend of not reading journals has continued. Dickinson, Marsden, and Read (2007) examined third and fourth year undergraduate interior design students (n = 89) from three universities and found an over-reliance on soft sources such as the Internet and magazines. A survey of 65 interior design faculty members discovered doubt as to whether research was used in professional practice (40%) or whether research experience was helpful in gaining employment (51%). Twenty-one percent (21%) of faculty felt that research findings in JID were irrelevant (Dickinson, Anthony, & Marsden, 2009). In a follow-up study, 310 interior design practitioners, members of the American Society of Interior Designers, were surveyed. As a whole, participants believed that undergraduate and graduate students should understand research with the ability to apply findings to design projects (i.e., EBD). However, practitioners did not respond positively to graduate degrees where research is often conducted (Dickinson, Anthony, & Marsden, 2012).

Recently, Huber (2016) continued to find that practitioners (n = 34) do not read primary research as 60% indicated they never access journals. Furthermore, 78% stated they spent less than 10 minutes reading articles. Huber’s 2018 study confirms these results as 27% of her sample of 88 commercial interior designers do not review academic journals and prefer to fast surf for information.

These findings from JID suggest that research strategies from practicing interior designers have not changed. Practitioners for the most part are not reading academic journals. Why not? As noted by Huber (2016) and Dickson and White (1993), practitioners need information quickly, and journal articles take longer to read and decipher. How can we make research accessible to practitioners? Perhaps two ideas are worth exploring: educating students who will be future practitioners and marketing JID results/summaries to current practitioners. In Figure 1, we illustrate an approach to design-decision making for students. Students should understand that design solutions are informed by a variety of sources, but EBD is design decisions based on credible research found in journals like JID. Another idea is to present summaries of results from JID and other journals in a way that enhances fast surfing (see Huber, 2016). Could a condensed version of JID findings somehow be marketed to practitioners? While this piece certainly does not have all of the answers, it is critically important that educators become leaders in EBD by informing the next generation of practitioners about the importance of where to find credible research.

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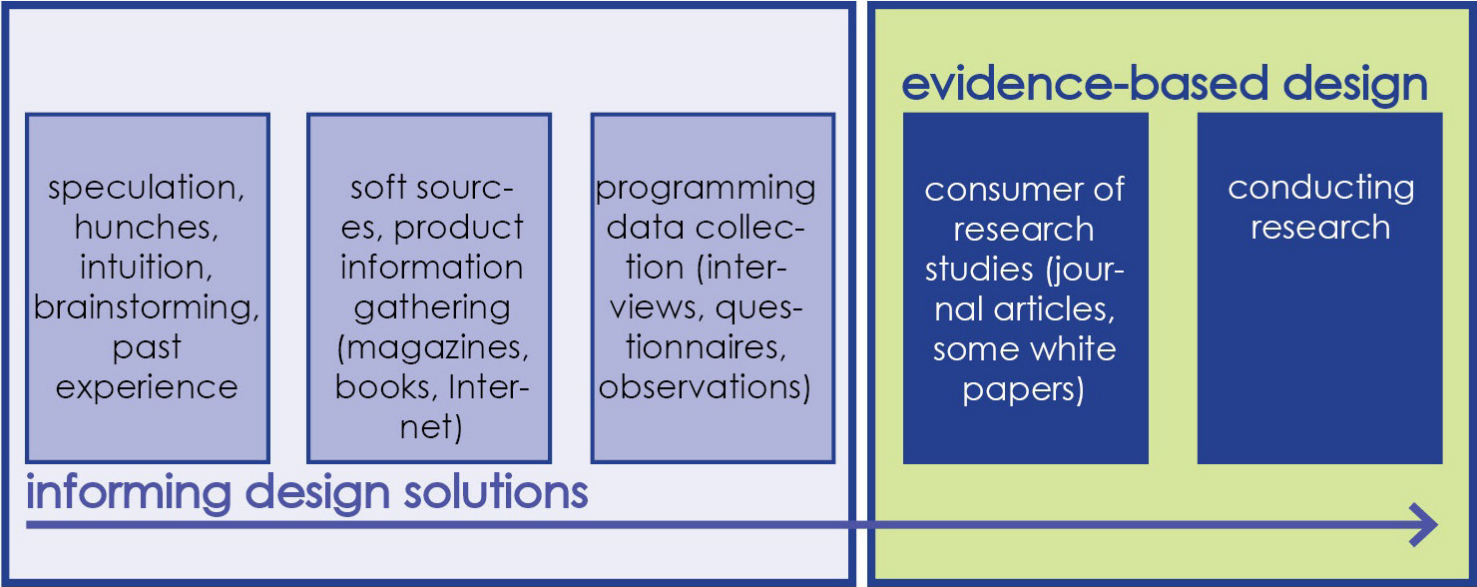


Figure 1. Informing Design Solutions

