human centered

ucda design education summit

PROCEEDINGS

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University & College Designers Association
The University & College Designers Association supports and recognizes all you do to create every day. We know what working in education is about. Our members are designers, design educators, art directors, creative directors, managers, directors of print shops, editors, writers, directors of media services, photographers, and businesses associated with visual communication.

UCDA provides a forum for new ideas, new perspectives on the design industry, professional development opportunities, and access to a large network of generous professionals.

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We know that learning doesn't stop. During this time when location-based events are being cancelled, the ability to meet and learn from your peers is more essential than ever. That's why UCDA has taken the UCDA Design Education Summit online.

Proceedings

Design educators and graduate students—join your colleagues in the 15th annual **UCDA Design Education Summit.** This national summit for design educators, chairs, and students, continues an ongoing community created specifically for graphic design educators with many opportunities for professional participation and development.

Human-centered design (HCD) is a creative approach to problem-solving for human needs. It starts with the people you are designing for and includes them as active participants and subject-matter experts in the creative process. They become partners and co-creators in designing products, services, interactions, spaces, and experiences that meet their actual needs. In the classroom, HCD creates opportunities for experiential learning, innovation, and social impact as well as connections to, and collaborations with other disciplines.

The **UCDA Design Education Summit: Human Centered** will focus on how HCD is shaping the way we engage, educate, and prepare students for a career in design. We are seeking individual and collaborative projects that highlight successes, failures, best practices, theories, and new models/ conventions of engaging HCD in the classroom.

This free online summit is open to UCDA members and non-members, design educators and practitioners, and students. Included in the summit are on-demand recordings of the panel discussions, workshops, and paper and poster presentations selected from abstracts submitted through the peer reviewed process.

Special thanks:
The Human Centered mark and branding designed by **Katie Seglar**, BA in Graphic Design and BAJMC in Advertising, Drake University. Expected graduation May 2021.

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Cam Davis, Cedarville University

01 “Thank you” “No problem”

Martha Carothers
University of Delaware

Abstract

Well, there is a problem. And, design is a solution to the problem. It is a human-centered situation that students too easily dismiss as “no problem”. Beyond Dear Abby’s good manners advice, sending a thank you note is equally responsiveness and identification with people. A remedy for such indifference is to redirect student understanding and recognize the opportunity for establishing empathy with the people to be thanked. Design education provides numerous encounters with individuals such as guest speakers, visiting designers, workshop originators, field trip presenters, portfolio reviewers, and alumni. While these interactions aid in engaging, educating, and preparing students for a career in design, student response to thank these people is a significant design model, and just good manners. Back in the classroom in follow up to these experiences, discussion and reactions strengthen the teachable moments when coordinated with designing a creative thank you with written comments. This conference presentation demonstrates various scenarios of persons who supplemented the syllabus, along with the subsequent development of student observation-specific design ideas/solutions, as well as the preparation of meaningful and relevant remarks hand-written on the thank you note. Visual examples further emphasize student originality and inventiveness. Samples of written text highlight student connection and insight gained from the experiences. As a human-centered design solution within the context of a design course, there is also an explanation of the project’s evaluation rubric included in the course grade. The impact of the HCD thank you is documented with both direct and anecdotal results. As validation of best practice and good manners, no problem.

02 #FirstWorldProblems: A Human-Centered Design Approach

William Rowe
Ohio Northern University

Abstract

While Twitter has evolved in many ways ever since its launch back in 2006, it still remains as one of the most potent social media forces on the Internet. Millions of users worldwide use Twitter to connect and form relationships, whether those relationships are personal, business, political, or otherwise. If you use Twitter, then you must know that hashtags are a big part of the experience. Hashtags allow you to "tag" your tweets so that they can be categorized for ease of search and collectivity.

On Twitter, #FirstWorldProblems showcases concerns that seem important to those living in wealthy, industrialized countries. Yet, these concerns are, in fact, trivial compared to people struggling to survive. Why should we care? Can designers help address and create an awareness for—and therefore more involvement in—local communities to make a positive change? Can social design strategies be a larger activity that contributes to making positive changes in our community?

This presentation highlights the methodologies and learned experiences of #FirstWorldProblems. It's an upper level design project developed to challenge students to eliminate the hashtag instead of promoting it. This case study integrates various student learning outcomes, such as sensitivity towards human-centered design, strengthening research skills, and learning to identify available resources. Students learn that the expertise needed to solve complex problems does not rest solely with designers or those at organizations, but rather equally with users. Solutions provide people with a platform to learn and to share their connection with their community and/or experiences. The comprehensive projects also work with organizations to bring awareness of various social issues and to encourage participation in local or global communities.

03 A Study of Visual Factors in Municipality Portal Design in The Developing and Developed Countries: A Comparison Between The City of Tehran and Washington D.C.

Samira Shiridevich
University of Florida

Abstract

This study intends to compare the visual qualities used in municipality portal designs by the City of Tehran and the City of Washington D.C. This case study considers the context of these local governments and proposes recommendations based on the analysis of the similarities and differences of their online presence. E-governments are able to provide a wide range of information and services to people including data for research, forms and services, public policy information, employment and business opportunities, voting information, tax filing, registration or renewal of license, payment of fines. This study employs a mixed methods research approach. The results of the research have been achieved through simultaneous analysis of qualitative and quantitative approaches. The sample frame includes 20 visual elements that were chosen from images of the urban portals of the aforementioned city websites. The portal of the capital city of the United States is ranked the 10th in UN e-Government survey 2018 " according to the ranking published in public administration. un.org". The City of Tehran, with a population of nearly nine million people, runs an e-government portal that obviously deals with a non-Latin written language structure. The samples have been examined using a researcher-made checklist. Analysis of the research data was carried out as quasi-quantitative. It is important to recognize and observe technical and artistic points of the graphical user interface design to understand the fundamentals of the proper design and implementation of these interfaces, particularly in municipal portals, which provides a high level of interaction people. Nowadays, e-government seems to focus on enhancing managerial performance and creating a legal framework that gathers centralized data and promotes social awareness. In the best cases, this municipality model leads to the enhancement of democracy through the distribution of power and greater participation of the people.

04 Blurring the Lines: Bringing Digital Experiences to Physical Exhibitions

Ting Wang-Hedges
Oklahoma City University

Abstract

Wechat at its core, is a Chinese message App that has been an overwhelmingly dominant staple in China, essentially becoming the operating system for one's daily life. Chinese people have become accustomed to this way of living, scanning QR codes in most public and even private settings. The gap between the digital and physical in China has become very minimal. In the case of China Academy of Art's Capstone exhibitions, students used the Wechat App to sell their works without being present, connecting their personal and business Wechat accounts and online stores. Additionally, these students created digital content that complemented their on-site exhibitions. Almost all of these activities were made possible via the scanning of QR codes through the app.

How can this experience be translated and applied to a graphic design class in the heartland of the United States and is it adaptable to student needs. In the Interaction Design Studio Fall 2019, an open-ended project was created for seniors to explore the relationship between physical and digital experiences. The goal of the project, right before the student BFA Capstone course, was to explore and examine what the possibilities are for their own works. What do the physical and digital experiences mean to them and their projects? Can students apply a similar approach in China during their own Capstone Exhibition? Are audiences and visitors willing to download the extra app in order to view the work? Is there any different way to connect the physical world to the digital that goes beyond a QR code? Would virtual reality make sense?

This being the first time this project has been implemented, the intention of this presentation is to selfevaluate and analyze it and its processes in the XXX Design program setting. With an open dialogue this will hopefully open up discussions on how the boundaries of future graphic design can be pushed, and what is needed to do so.

05 Bringing Peace (Circles) to (Design) Practice

Dave Pabellon
Dominican University
Assistant Professor,
Department of Art,
Graphic Design Program

Abstract
This presentation explores the use of peace circles in the academic environment, specifically the graphic design/art studio, to create greater student engagement and produce new outlets of communication by challenging the hierarchical nature of the classroom. A peace circle is a restorative justice model that can be used to address conflict holistically with the aim of finding resolve. Designers know from professional practice, intuitive understanding, and qualitative and quantitative research that there are strategies that are foundational when creating spaces meant to have a positive impact on how we think, feel, and see. Incorporating the peace circle process into the designer's repertoire of space development can elevate that understanding. Examples of circle practice from peer institutions, non-profit sectors, community-based arts organizations, and cross disciplinary departments from within the institution will be referenced in the presentation, but the majority of the paper focuses on the Senior Seminar course conducted in the Fall of 2019. It is in this course where peace circles were implemented as means to discuss and critique existing art, graphic design projects, and exhibitions dedicated to addressing the issues of long-term incarceration in the state of Illinois. In addition to commenting on existing work, peace circles were also used to plan and critique new work that were produced in the course as part of the closing gallery exhibition. This presentation argues for the use of peace circles in the studio to encourage deeper human centered relationships that support open discussion, discourse, and critical thought with students.

Introduction
With the rise of automation in all facets of labor, the field of graphic design has seen a growing need to humanize the practice as a means to separate itself from the technical. It will be the ability to strengthen the soft skills that will make the designer's of tomorrow invaluable and irreplaceable by the computer. The key soft skill that Human-Centered Design (HCD) leverages is empathy. In general, the basic idea of empathy in design is truly understanding the users' histories, perspectives, and experiences, which in turn help designers become best equipped to provide ethical and sound design solutions by prioritizing the needs of the user. This paper and the subsequent research proposes a set of means to address the general definition above with one key alteration, changing of the term "user" to "Other."

Other refers to a member of a dominated out-group, whose identity is considered lacking and who may be subject to discrimination by the in-group. Historically speaking, the origin of the Other began with the exotification and exploitation of the East by dominant Western colonizers, formerly known as Orientalism. Since then the Other has also gone on to include groups oppressed due to race, gender, sexual orientation, and class. The contemporary Other demographic addressed in this paper will be that of the incarcerated, specifically individuals serving extraordinarily long prison terms (60, 70, and 80 years or above), and the people and places affected by their absence.

Throughout my career, I have made a conscious effort to use my craft to combat social injustices while simultaneously being in balance with my commercial work. This particular work involved me being either hired as a designer by organizations, non-profits, or academic institutions specializing in specific social justice arenas or participating in community based art projects as either an instructor, facilitator, or contributing artist/designer. In regards to the Illinois-based organization Prison + Neighborhood Arts Project (P+NAP), I fulfilled both of the roles of a designer and facilitator.

P+NAP is a visual arts and humanities project that connects teaching artists and scholars to men at Stateville Maximum Security Prison (located in Crest Hill, Illinois) through classes, workshops and guest lectures. My working relationship with P+NAP began as a rebrand project for the organization, which then led to a refresh of their web presence and concluding with a few print publications. Building that initial trust led to more involvement with the organization as a contributing artist to The Long Term Print Portfolio.

As one of the fifteen Chicago-area artists invited to create Risograph prints in response to assigned essays from the book, The Long Term: Resisting Life Sentences, Working for our Freedom, I was given a chapter dedicated to the Austin neighborhood located on Chicago's West Side, entitled Concentrating Punishment: Long-Term Consequences for Disadvantaged Places, written by Daniel Cooper and Ryan Lugalia-Hollon. The chapter puts into perspective the contrast, in regards to discrimination and disparity of arrests, the West Side Chicago community of Austin faces in comparison to its neighboring suburbs such as Oak Park, where I happened to be born-and-raised and currently reside in.

Alongside contributing to the series, I also designed the portfolio (covers, sleeves, and insert) and contributed to the print production, with a research grant provided by my institution Dominican University (DU) and printing by Matt Davis of Perfectly Acceptable. The portfolio eventually became a part of a larger show under the same name, The Long Term Exhibition, which sought to make visible how punitive policies and incarceration negatively shape communities, families, and ultimately, life-chances.

Working closely with DU's Gallery Director Karen Azarnia, we jumped on the opportunity to bring the exhibition to campus in the Fall of 2019. Hosting the exhibit on campus set the foundation for this paper's research but more importantly it led to the development of the course that accompanied the show, which put the theories of Restorative Justice into action. In preface, knowing that the exhibition was coming to campus at the beginning of the new school year I proposed and was granted to lead a section of the university's Liberal Arts and Sciences Senior seminar, LAS 420: Searching for the Good Life Through the Long Term. This course also had the distinction of being tagged as part of the Vocation Across the Academy (VAA) initiative. The work of this initiative was aimed to add a creative new element of theological reflection to the existing seminar model by incorporating the "peace circle" process, which I will explain in greater detail in the methodology portion of this paper.

Methodology

LAS 420 was an ambitious course that covered a wide spectrum of creative art mediums to give students an understanding of the subject of long-term sentencing and the impact the current criminal justice system has on people and their communities. This was executed by using the content of The Long Term Exhibition, budgeted programmatic offerings (i.e. visiting artist lectures and performances, workshops, and screenings), long-form peace circles and the university's senior seminar main text, Aristotle's The Nicomachean Ethics, as multiples

lenses for students to engage and grapple with the idea of the "good life." In turn, students were then asked to create dialogue, writings, and their own visual responses via Risograph printing and a final set of exhibition specific projects based on their exposure to the topic.

Given the complexity of the subject matter, the unfamiliarity of the main text (had read Aristotle, but had yet to implement any of his work and writings in my own coursework), and my inexperience in leading peace circles (I had been a participant in many) the course forced me in many ways to approach the syllabus as if I were a student myself. Like any successful group project, this was accomplished by trusting and working closely and collaboratively with my peers associated with the course. This included, but was not limited to, the Co-Directors of Art from P+NAP (Professor Sarah Ross of the School of the Art Institute Chicago and multimedia artist Damon Locks), my co-instructor John DeCostanza (DU's Director of Ministry), and commissioned visiting guest artists and activists involved in prison reform (artist Anna Martine Whitehead, artist Josh MacPhee, poet Tara Betts, and the Scrappers Film Group). In preparation, I had to implement empathy in a new way, not as a designer or an academic, but as a community partner. I'm carefully choosing the term partner instead of instructor because of the hierarchical, or more appropriately, non-hierarchical nature of Restorative Justice frameworks, in which peace circles are associated with.

Restorative Justice practices are a system of principles and processes that build and sustain a culture of respect, responsibility and accountability. I would argue that these same values also outline a healthy client/designer and student/instructor relationship. The principles are achieved through emphasizing the importance of trusting relationships as central to building community and repairing relationships when harm has occurred. And although my personal experience with peace circles had solely been through criminal justice reform activism (i.e. non-graphic design academic or professional settings) I, and the university, saw value in its process and could envision overlapping ideologies translating well in the classroom and in the design profession.

So what is a peace circle? "Circles" offer an alternative to contemporary meeting processes that often rely on hierarchy, win-lose positioning, and victim/rescuer approaches to relationships and problem solving. Derived from aboriginal and native traditions, circles bring people together in a way that creates trust, respect, intimacy, good will, belonging, generosity, mutuality and reciprocity. The process is never about "changing others", but rather is an invitation to change oneself and one's relationship with the community. Circles intentionally create a sacred space that lifts barriers between people, opening fresh possibilities for connection, collaboration and mutual understanding.

To properly utilize peace circles and unlock it's potential on campus, DU partnered with the non-profit Precious Blood Ministries of Reconciliation (PBMR) for formal training. Since its inception, PBMR has served young people and families most impacted by violence, incarceration, and structural inequity. PBMR focuses its work in Chicago's Back of the Yards and Englewood neighborhoods and also works with youth who are justice-involved, re-entering the community after incarceration, or actively incarcerated.

Through PBMR's training, we learned that circle structure is "simple but not easy," and must be experienced to be fully grasped and replicated. To conduct a circle, which is considered a ceremony or ritual, the following are required: a meeting space, circle keeper(s), a talking piece, and most importantly an agreement of consent. The space is arranged with chairs, usually, in a physical circle with only enough spots/seats for the exact amount of participants,

no more no less. This creates a place of belonging and safety, no obstructions and nowhere to drift or hide. The circle keeper, or keepers, are the facilitators of the ritual that literally chime in the session, followed by a poignant statement or quote that initiates the topic for the day. In addition to facilitating the session the ceremony keepers often revisit and reinforce the agreed upon values of the group before initiating the conversation with an opening question to the group. Response then begins, usually by the keepers sharing their own answer or experience first, with a talking piece in hand. The talking piece is a physical object the keeper introduces to the group that holds personal value. It is used as a symbol of respect between speakers and listeners as only the holder of the talking piece is allowed to speak. When the holder is done, silence/choosing to not share is also acceptable without judgment or consequence; they pass it onward to the left. The process of passing the talking piece around the circle may continue for a number of rounds giving participants the opportunity to respond to something shared in circle when their turn is up again. Since only one person speaks at a time, being present, patient, and truly engaged by listening is valued. The process is also important because it levels the learning environment. By equalizing the setting to a single voice, in which everyone can choose to participate, the classroom moves from an instructor as authority setting to one where all voices are valued and respected.

The Vocation Across the Academy initiative gave the faculty flexibility and choice on how often and for how long the circle practices would meet. In most cases, VAA courses would dedicate the circle practice for 1 of the 2 class meetings (approximately 75 minutes) per week to reflect on readings and content covered during assignments. However, to accommodate schedules of visiting artists, field trips, and screenings I chose to offer the class as a one night a week session that would meet for 3 hours. Approximately, circle would be on every third class meeting. This allowed the opportunity for students to engage fully with the mediums and content presented to them, which was heavy in nature and/or new to most students. This came to be a benefit as all of the events happened within the length each night's class without having to break and revisit.

Another realization was that the methodically slow duration of this circle iteration was well suited for longer, deeper, and more investigative conversations. Yielding and unearthing very personal revelations amongst the students and the instructors, shares that we did not necessarily ask for or expect. While in circle, Professor DeCostanza and I as keepers would utilize the full period to help set the proper tone for the evening, develop initial inquiries, follow-up inquiries, and even rounds of rebuttal or feedback amongst the class of 20. Most importantly 180-minute circles forced students to slow down, listen, breath, and truly reflect before they shared. As a designer that was the most rewarding benefit, so often in studio practice we are asked to make, present, and defend in time crunches with deadlines looming, somewhat in a performative manner. In critique settings, professional and academic alike, how often have we let the most domineering and loudest voice rule the conversation? Fairly often I would say pair that behavior with terminology such as "selling an idea" or "delivering a pitch" and quickly we move away from Human Centered Design principles to straight commerce and advertising. And although I do not see the "dog and pony show" going away from the field of graphic design overnight, I am far more personally conscious of falling prey to it when discussing work. The circle practice helped me come to the realization that as you rush to perform as a designer you become susceptible to sacrificing your sincerity and empathy.

In addition to creating a safe space for dialogue of heavy topics (violence, incarceration, forgiveness, racial and class bias, and Aristotle's Nicomachean Ethics), which inturn created

trust and stronger bonds amongst all participants in the course, circle practice also became an experimental pedagogical tool of graphic design instruction. Throughout the semester we witnessed the students become more versed in the content of the exhibition and thus more comfortable in sharing their opinions, questions, and ideas about long-term sentencing via circle practice.

Leveraging that comfort and familiarity we decided to experiment using the process as a means to share and give feedback on the course final, a series of self-authored art/design group projects that would be premiered at the exhibition closing. This included an initial proposal share and two work in progress critiques. Initially it was a challenge for myself, and many of my graphic design majors, as the format change of critique required a paradigm shift. Prior to the semester we had grown familiar conducting critiques in the typical salon fashion where I, as the instructor, would do more of the leading and questioning with ricochet responses usually following. The struggles of critiquing in circle included waiting your individual turn to give feedback, resisting to interrupt a peer's thought, fighting the urge to persuade an individual's opinion, and simmering the need to defend one's creative decision(s). However as we persisted to use circle in this fashion of critique the benefits eventually followed and the struggles listed above subsided as we, as a collective, became cognizant of our tendencies and how those tendencies can at times be counter productive. Students who had previously been non-engaged or silent in studio courses became empowered and embraced the opportunity to share and receive constructive criticism. Outspoken extroverts were reminded of the value of listening and grew to appreciate the allotted space and time to conduct silent reflections, a quality sometimes lost in studio critiques.

By semester's end participants in the course, instructors and students alike, were involved in a holistic approach to empathy. Through the exposure of the exhibition and the use of circle practice we were forced to immerse ourselves, as best we could without actually being incarcerated, in empathy. Then leading with this acquired empathy we were able to appropriately prototype, design, and make for the communities impacted by unjust long-term sentencing by giving voice and vision through work.

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06 Building Your Compass: Why and how a large university is placing "Life Design" concepts at the center of its curriculum.

Jenn Stucker
Bowling Green State University

Abstract

As we get closer to the precipice of the 2025 population decline of the traditional student enrollment pool, Universities must re-think the higher education experience and value. Additionally, pressure from the rising costs of education, a plethora of online instructional resources, and less significance placed on liberal arts education is also putting the squeeze on higher education institutions to redefine the meaning of student success. Our University is trying to tackle this problem through human (student)-centered design. In 2019 our University began its work in "Life Design" from Stanford's Life Design Studio and the Designing Your Life (DYL) book. The DYL book was widely distributed to administrators and program directors to kick off a variety of student pilot programs. Through this, the University is leveraging classroom and student-engagement experiences to expose students to DYL concepts of Curiosity, Bias to Action, Reframing, and Radical Collaboration.

As a graphic design associate professor in the School of Art, who also teaches design thinking courses and workshops in the College of Business and beyond, I have been enlisted and encouraged by the University to develop and prototype our own DYL content experiences. Building Your Compass, which included the making of physical buttons by participants, was a custom prototype project I developed and delivered through a University weekend experience to over 100 first-year students. Further, as a Faculty Associate in the Center for Faculty Excellence, I created and facilitated five custom DYL sessions to guide faculty in exploring and applying this content within their classrooms and in their own lives.

This presentation will share the outcomes of these early prototypes, how it is preparing students for meaningful and productive lives, and some of the lessons learned by the University as it embarks in
this new direction.

07 Coffee Bean, Carrot, or Egg

Libby Reimer
Sterling College

Abstract

Coffee bean, carrot, or egg. Which one would you want to be? This might be an odd question to ask a group of design students, but in the grand scheme of life, these three very different objects can be quite important. What if boiling water is added to the mix, what happens then? The boiling water represents what design students have to "swim" in: brutal critiques, a competitive job market, or difficult clients. In reality, when an egg is placed in the boiling water it becomes hard; a carrot becomes soft and mushy; a coffee bean though does not change its shape but rather changes the water around it. Recently, this theory was put to the test. The design students were matched with students from an entrepreneurship class for a project inspired by the popular TV show Shark Tank. A design student was "hired" by a group of entrepreneurs and were tasked with creating a full branding campaign, including….. Students had to present in front of judges brought from the areas of business, marketing, and graphic design. The question regarding the coffee bean, carrot, or egg became a vital lesson for these design students. This presentation will discuss the intricacies of this interdisciplinary project and survey the perspectives of the students as they swam in hot water.

Coffee Bean, Carrot, or Egg?

Libby Reimer
Sterling College

Being artists, we are all visual learners. In undergrad, professors used metaphors to explain life lessons, especially ones that we would be facing after college. I forgot about his particular life lesson until one professor reminded me of it during a heart to heart talk in my first semester. I was trying to balance the overflowing plate that I seemed to keep piling regardless of the amount. Hearing it again flipped a switch, and It set a staple for how I wanted to teach and design, along with what I should teach my students to strive to be. Coffee bean, carrot, or egg? I wanted to explain to my students where I was coming from with upcoming projects for the year since we were still new to the teaching relationship. My classes were presented with the question, "would you rather be a coffee bean, carrot, or egg?" I did not give them any pretext, and I wanted to know what they would say. There was a wide variety of responses and the reasons were interesting, but the majority of them had to do with the shape, color, and taste. Responses that were more surface-related than conceptually related, after the discussion, I asked a follow-up question, "what happens when they are placed in boiling water?"

During the faculty retreat at the beginning of the year, Professor of Business, Dr. Karen Baehler, approached me about doing a possible collaboration project with her entrepreneur class. She had thrown the idea of *Shark Tank*. Other university and college business courses had done similar projects, but she wanted to do something different with it, which was to include branding. I was on board right away, and the project *Shark Pool* was created. I presented to Dr. Baehler the idea that her students would higher my design students as their startup companies. Therefore, they could learn how to be a freelancer and go through the proper paperwork. At the end of the semester, we wanted to gather designers and personal business panel for the students to present their company and the designs. I thought this would be an excellent way to introduce the students to a real-life scenario. My class consisted of mostly seniors, and from what I gathered, they had never done a project in this nature. I wanted to have them go through the learning experience of the possible boiling water of graphic design, which at some point, all designers go through.

I was able to acquire successful business personnel for the entrepreneur panel. For my design students, I had two of my MFA classmates with incredible resumes and portfolios and a marketing director, who has done it all. All the judges had a different perspective in their specialty and brought excellent diverse expertise to bring to the panel.

Dr. Baehler's students worked on their part of the project all semester, which worked out great. Once my class joined her students, they had a good foundation for their company, which made it feasible for my students. Each entrepreneur group higher a design student to do their branding for their new startup company. In the first meeting, the students had a packet they had to fill out, to help the design students build a persona and create a SWOT analysis. They also had to ask questions concerning the client's needs and what attributes they thought set their company apart from the rest. The majority of the students are athletes. In return, all the companies had something related to sports and sports gear. The design students also had to fill out an estimate form and eventually involve comparing and contrast to see how they can work in a time frame.

After they gathered all the marketing documents, each student had to create style boards to present to their client to help visualize the direction they wanted to go. After the style was chosen, the students began on their sketches. They met with their client a least once a week to ensure changes were met, and a log was kept as if they were getting paid by the hour.

When it came to the presentation day, students had a 15 min window to pitch their idea and receive feedback, so each company got 30 min total to cover both design and business. 80%+ of our student body are athletes; therefore, we ran into the problem of getting everyone done promptly in the window we were given. The entrepreneur students went first, followed by the design students.

I thought the presentations we great! There were a few typical hiccups with students, but other than that, they all responded well and were respectful when they were put into the boiling water. Many business students, professionals, and professors commented on how they had no idea the work and thinking in branding a company. Each side of the panel all learned a little more about each other and found new interests and respect.

In conclusion, when coffee beans, carrots, and eggs are put into boiling water situations, they all react differently. If you are an egg, you become a hard-boiled egg, which can make an unhealthy environment to be around and difficult to work with others. If you are a carrot, you get all mushy and fall apart. You become unreliable and just all over the place. You want to be the coffee bean. When coffee beans are put into boiling water, what happens? Coffee is made! Although caffeine is essential, a coffee bean changes its surroundings without changing its form. As people, we want to be the coffee bean. How we handle situations, whether it be school, work, and personal all affect the people who surround us. Being a positive influence is hard under challenging situations, and you want to make sure you do not change who you are in the process. Be the change while not changing yourself.

The students learned areas that they need to work on, good and bad. There were a few that did not like the project due to the outcome and ones that enjoyed it. For a few of the students, it was like a light bulb went on, and having them second semester, I felt like they were more eager to learn and were not scared to step out of their comfort zones. As a first-year instructor is was humbling to witness the student's transformations.

08 Collaboration, Research, and Experiential Design in BFA Design Curriculum

Abby Guido
Temple University

Kelly Holohan
Temple University

Abstract

For over twenty years, students in the graphic and interactive design program spent their first semester as juniors designing a full restaurant brand identity. This project was traditionally print-focused. This past fall, the faculty teaching this course took on a new initiative, to rework the entire course curriculum to shift the project to embrace a more human centered design approach. Instead of a completely open brief, where students could select any restaurant they wanted to create, they were all assigned one of four locations in the Philadelphia area and were instructed to create a pop-up restaurant for that location. The students were divided into groups and visited their sites to engage in observational research and talk with the stakeholders on site. Next, in collaboration with their groups, they embarked on three weeks of research. This primary research helped them understand their audience and led them all to unique solutions. The students then began to work on their own, conducting independent secondary research and concepting their own pop up restaurant and building out the brand. Each student developed at least one user persona they would use to help them make their design decisions.

A challenge faculty often face is allowing the students to create unique deliverables that play into their own design interests. To address this, we created a deliverable grid, a sort of pick your own adventure. This allowed students who might be interested in user experience design to focus on those types of deliverables, and students interested in traditional print to focus on creating those branding elements. Most of the students chose to design the physical space of their pop-up restaurants and execute as an environmental mockup. They were encouraged to consider the entire physical experience.

Our paper and presentation will present this assignment, discuss why we made the changes we did, share some of the outcomes, and address successes and failures. We would also be seeking feedback on how to build and improve upon the new curriculum.

Collaboration, Research, and Experiential Design in BFA Design Curriculum

Tyler School of Art and Architecture, Temple University
Abby Guido, Assistant Professor of Graphic and Interactive Design
Kelly Holohan, Professor of Graphic and Interactive Design

For over twenty years, students in the Graphic and Interactive Design program at Tyler School of Art and Architecture, Temple University spent their first semester as juniors designing a full restaurant brand identity. This project was traditionally print-focused with specific deliverables required from each student. This past fall, the faculty teaching this course took on a new initiative, to rework the entire course curriculum to shift the project to embrace a more human-centered design approach. We saw a need to change the curriculum for the following reasons: to incorporate human-centered principles that include collaborative group work in the classroom, experiential learning and ethnographic research, encourage students to do a better job documenting that research and allow them to practice justifying why they made certain design decisions on the project.

Instead of a completely open brief, where students could select any restaurant they wanted to create, they were all assigned one of four locations in the Philadelphia area and were instructed to create a pop-up restaurant for that location. This new shift allows us to focus on real-world problems which inevitably incorporates human-centered design, focusing on the needs of a given audience and creating a solution with them in mind. This shift was extremely successful and created some of the best projects for this class to date.

The locations that were preselected for the students were: City Hall, The Philadelphia Zoo, Eastern State Penitentiary, and The Navy Yard. The students were divided into groups and visited their sites to engage in observational research and talk with the stakeholders on site. Each site tour was also led by a stakeholder from the given location, this person also served as a potential customer, answering questions as we toured the location. Next, in collaboration with their groups, they embarked on three weeks of research. This was a new approach for many who often jump quickly into the visual solution in place of spending time solely focused on research. This primary research helped them understand their audience and led them all to unique solutions. We had five sections of this course and within each section, a group of three to four students worked on research for a given location. We then came back together as a large group and shared our research. While there was often overlap, the groups often shared something new that another group did not discover themselves. This is one area we hope to improve in the future, possibly suggesting a research focus for each group in order to prevent as much overlap and allow the groups to take a deeper dive into a given area of study for the location.

Next, the students began to work on their own, conducting independent secondary research, and creating concepts for their own pop-up restaurant and building out the brand. Each student

developed at least one user persona they would use to help them make their design decisions. While the students used the same locations for their concepts, they often had a unique audience they were focusing on. For example, City Hall is located in the center of Philadelphia and is a transportation hub for many commuters to the city. The building itself also houses the staff of the government as well as part of the court system. Finally, the grounds around City Hall and the building itself are a tourist destination. After doing both ethnographic research as well as secondary research, the students all came to very unique decisions on the audience they would address.

A challenge faculty often face is allowing the students to create unique deliverables that play into their own design interests. To address this, we created a deliverable grid, a sort of pick your own adventure. This allowed students who might be interested in user experience design to focus on those types of deliverables, and students interested in traditional print to focus on creating those branding elements. Most of the students chose to design the physical space of their pop-up restaurants and execute as an environmental mockup. They were encouraged to consider the entire physical experience. This too was a way we transformed the entire project with human-centered design in mind. Not only was the project itself embracing this approach, we also used the same mindset when we designed the assignment, considering all of the interests of our diverse student body.

For the entire brand identity, students designed the following items: 1) Responsive logo; 2) Style Tile (Type System, Color Palette, Image Guidelines); 3) Menu (digital, environmental, or traditional); 4) Online Presence (website, app, social media, or Snapchat); 5) Three additional environmental or collateral items (Signage/placemaking, Interior layout, Textiles/wall covering/furniture, Floorplan, Lighting, Music, Outdoor Advertising, Employee Uniforms, Take Out Containers, Labels, Products, Custom Cutlery, Trays/Placemats, Condiments, Apparel, Pins/Buttons/Stickers); 6) Brand Identity Video Presentations; and 7) Exhibition Poster.

2 » Design Deliverables Matrix				
2.A Complete all	**2.B** Choose at least one	**2.C** Choose at least one	**2.D** Choose at least three	
Primary Branding Elements	**Menu / Ordering System**	**Online Presence**	**Environmental Design**	**Collateral / Packaging**
Responsive Logo	Traditional print menu	Adaptive / Responsive Website (Mobile first)	Signage and placemaking	Take out containers, labels
Style Tile: Type System, Color Palette, Image Guidelines (Illustration, Pattern, Photography, etc.)	Menu sign	App	Interior layout	Products
App icon / Favicon	Digital menu / ordering system / touch screen	Instagram + Facebook + Twitter	Textiles/wall covering/furniture	Custom cutlery
	Non-traditional menu	Snapchat	Floorplan	Trays/placemats
			Lighting	Condiments (salt + pepper, ketchup, hot sauce, etc)
			Music	Apparel
			Outdoor advertising	Pins/Buttons
			Employee uniforms	Stickers
				Business Card / Postcard / Poster

A change from the previous years was showing physical elements of the identity in the exhibition, the faculty decided the format of a poster would allow us to address a few issues. Our program had recently grown from 54 to 67 juniors, this growth would have made the physical exhibition with actual deliverables on pedestals impossible to show with our current resources. The variety of deliverables students could choose to design would not be possible to show in the old format. We also had always struggled to find a good solution to feature both the physical and digital work side-by-side. The poster approach allowed the student to decide what deliverable would be the main focus on their poster, thus giving them the ability to showcase the work in a unique way to tell their specific brand story. Posters in the exhibition were hung in groupings by location and we invited our site stakeholder contact for each location to come and jury their location's designs. The timing of the show was also pushed back, previously it was installed in November, before the end of the semester. The students would then spend the remainder of the semester working on a brand story and style guide. We decided to install the show at the conclusion of the semester, so the students had the entire semester to complete all of the deliverables for the project.

The brand presentations featured each pop-up restaurant and were storyboarded, scripted, and recorded. These presentations allowed students to talk about their research in context to the design decisions they made. It also served to help students be able to talk about the project outside of a school setting. These presentations were uploaded to vimeo and a website was designed that was viewable during the exhibition on a large screen monitor. Additionally, the posters featured a unique QR code at the bottom of each one that allowed for visitors to view the brand presentations on their smartphones.

In conclusion, the new curricular initiative had many strengths and some room for improvement. Students could save money on printing and constructing physical projects making the project much less of a financial burden. The students were introduced to 3D digital tools to help them design the space and some of the collateral. The poster format evened the playing field by providing a similar structure for all students. Group research allowed students to interact with each other and create a more collegial atmosphere in the classroom. Ethnographic research allowed students to make informed real world design decisions and not design based solely on their personal tastes. Finally, the brand presentations helped students to be able to talk about the work to a non-design audience.

We also see room for improvements to be made. In the group research portion of the project there was some redundancy in the information conveyed by each group within a given location. Assigning the groups different themes within the research was one idea to help avoid this in the future. Another issue was the enormous time commitment, in addition to in class work, that fell on the faculty. The additional work included: the design of the poster format, coordinating printing and making sure posters were uniform, devising a new 2-tier hanging system to accommodate all 67 posters, designing an interface and collecting and testing all the brand presentation videos. Parts of this might be able to be handled by a Graduate TA in the future. The social media promotion of the exhibition needs to be improved also. Our plan is to build

formats for the platforms into the deliverables supplied by each student. This would give us robust assets to use for promotion and could move our timeline up to be able to promote the show weeks before the opening.

09 Creating Socially Conscious Designers Through the Lens of Empathy

Kimberly Mitchell
Bradley University

Abstract

em-pa-thy; ***noun:*** the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experiences of another of either the past or present.

As a design educator, it is my responsibility that my students understand the needs, and wants of society. It is my goal that my students leave my classes knowing that they also need to understand just how influential their designs become; beyond printed matter and digital interfaces, we have the ability to assist people in remaining active, independent individuals in society.

Using several user-experience testing methods including attitudinal and behavioral testing and qualitative research, students in my ART 305 Editorial Design course completed a social impact project through the lens of empathy. The project topic was left up to the individual students – however, some requirements were that the topic needed to identify a need for change (change of view, delivery of message, new ideas), and it needed to be local to our community. Students began the project by doing a speed dating exercise, where they interviewed one another, identifying their strengths as designers, and passions as individuals.

Following this exercise, they paired with two or three peers who they felt they would work best with. They first considered key stakeholders and created a series of archetype cards based off of the bell curve, looking at two extremes keeping in mind that designers need to consider ALL when designing, not just the target audience. Looking at different perspectives from a wide range of people who might be touched (or not) by their topic, and considering their thoughts as potential insights was something I wanted my students to experience.

Through in-depth meetings and design research methods student teams developed a problem statement related to their chosen topic, which was used for the development of the brand and all other design decisions. Students produced and presented final concepts at the end of the course.

This presentation will show how the project unfolded– from the project development, learning outcomes, successes and challenges of group work, and project visuals.

10 Designing Convergence: A Collaborative Experience Across Curriculums

Kimberly Mitchell
Bradley University

Abstract

"Design is the bridge between theory and the way we actually live our lives. We need to spend more time teaching nondesigners design knowledge,"
- Author and Professor Richard Buchanan

As a subject, design seems to offer something unique- a tool for creating connections between ideas, information, people and objects, and it integrates and connects knowledge in new and useful ways.

Convergence is a big word on college campuses today, as many University's fight to keep their art and design programs afloat. Academics know that cross-disciplinary education offers an important educational experience. There is no question that designers benefit greatly when working with other disciplines.

For this presentation, I will discuss an interesting collaborative opportunity that students all across our University campus have had. Following several months of initial collaborations, faculty in Interactive Media, Art and Design, and Entrepreneurship & Innovation created and taught a "test flight" course utilizing an existing on-campus collaborative space called The Idea Factory.

The Idea Factory is a physical incubation space on our small University campus, where students can go to to develop an idea for a product, service, innovation, or solution to a social issue. The students are given free space and resources designed to help them launch their ventures. Students enrolled in the Entrepreneurship & Innovation program had identified business ventures the semester before, and had very detailed business proposals– yet no physical identity or brand – or digital presence. The graphic design students paired with the E&I students in creating a brand identity system, while the user experience students from Interactive Media built apps and website designs.

The finished business ventures then submitted their proposals to the Big Idea Competition, a University-wide competition, where student participants have the opportunity to present their entrepreneurial ideas to a panel of judges and potential investors.

My presentation explains how this collaboration across many different disciplines unfolded– from the project development, learning outcomes, successes and challenges of cross-disciplinary group work, and project visuals.

11 Design Facilitation: A Distinctive Skill for Human-Centered Design

Pamela Napier
Indiana University

Abstract

Human-centered design (or "People-centered Design" as well call it at (author's institution)) has become an essential approach in teaching creative, collaborative problem-solving in design education today.

This presentation will describe a project situated in the second year of a Visual Communication Design (VCD) MFA program, where the primary focus is on mastering the skills needed for Design Facilitation—a distinctive capacity necessary for driving and leading participatory design or co-design approaches that are fundamental in humancentered design.

This project was a semester-long engagement where a team of six VCD graduate students designed and facilitated a series of community sessions to gather vital input from citizens. The process was a multi-disciplinary, collaborative effort where the students worked with architects, urban planners, experiential designers, communitybased artists and community residents through an initial outreach session, as well as three focused community workshops.

The challenge (and opportunity) was to gather input for (author's city) new "urban village"—a walkable, bicycle-friendly, transit-orientated, mixed-use neighborhood that can provide both housing and jobs, as well as environmental and quality of life improvements for residents of the city and its surrounding region. The data that was collected would then inform the production of the "Urban Village Design Guidelines" for the area, which would be produced by a consultant team representing three local architecture firms. The consultant team and graduate students engaged community stakeholders to identify positive and negative features of the area, and determine the challenges and opportunities that would guide the development of the overall "Urban Village Plan."

This case study will highlight the process, successes, failures, and methods of a human-centered approach that focuses on designing with people, rather than for people.

12 Design for Complexity: Co-designing to address food insecurity with campus collaborators

Ali Place
University of Arkansas

Dajana Nedic
University of Arkansas

Abstract

In the Graphic Design program at the University of Arkansas, seniors in the studio course Design for Complexity addressed the issue of food insecurity in Northwest Arkansas. They partnered with the Jane B. Gearheart Full Circle Food Pantry on campus as well as a junior level ceramics class to conduct research around the issue and to create design interventions and artifacts. Throughout the semester, they interviewed and volunteered with several community organizations that address food insecurity, including a community farm and a waste management organization. Staff and student volunteers from the food pantry participated in design charrettes and prototype tests, with the students relying on the stakeholders' expertise and experiences to guide the outcomes. The semester culminated in a community fundraising event called Kiln to Table where both the design and ceramics students presented their research and artifacts, with proceeds benefiting the campus food pantry. Students in the course grappled with the complexity of food cycles, economic disparity and inequitable systems, while also managing the complexity of their relationships with multiple collaborators.

This project will be presented as a case study to explore opportunities for reflection and lessons learned when collaborating with multiple campus partners and organizations. How can design students partner mindfully across campus and in the community to foster communication, understanding and mutually beneficial outcomes? How can the creation of artifacts with non-designers enhance the process of human-centered design research? Allowing students to take on complex design problems and partnerships gives them the opportunity to see the importance of small, incremental change when working within complex systems, and to develop relationships that encourage them to keep going when the process gets messy. Through documentation and feedback from students and their collaborators, this presentation will demonstrate the potential for interdisciplinary collaboration and co-design to enhance learning outcomes and prepare students to confront complex problems in the world.

Introduction

Design for complexity means to design within tremendous uncertainty during events requiring one to shift and pivot continually. Teaching under such conditions can be unnerving for educators and overwhelming for students. Focusing on the wicked problem of Food Insecurity, senior-level undergraduate students taking the studio course Design for Complexity in the Graphic Design program at the University of Arkansas addressed this complex issue both on campus and in Northwest Arkansas. Partnering with the Jane B. Gearheart Full Circle Food Pantry on campus, students conducted research and created design interventions suggesting possible solutions. Throughout the semester, they interviewed stakeholders and volunteered with several community organizations that address food insecurity at various levels. These organizations include a community farm, an organization focusing on food accessibility, and a waste management organization.

While inquiring how design students can partner mindfully with non-designers across campus and in the community, they can embrace complex design problems to create artifacts and foster communication, understanding, and mutually beneficial outcomes. During the course, the food pantry staff and our students collaboratively participated in design charrettes and prototype tests where they relied on the stakeholder's expertise and experiences to guide the outcomes. As students grappled with the complexity of food cycles, economic disparity, and inequitable systems, they questioned the complexity of their relationships with multiple collaborators. Through documentation and feedback from students and their collaborators, this paper aims to demonstrate the potential for service-learning, interdisciplinary collaboration, and co-design, serving to enhance learning outcomes and prepare students to confront complex problems in the world.

REFLECTION 1: Embrace Complexity

During the planning phase of this course, we avoided setting strict rules and focused on a more responsive approach. We designed the course to allow for some murkiness—some complexity!—and for our students to embrace unknown factors that come with experiencing uncertainty and discomfort. We constructed this course around the research and making process of human-centered design, while leaving space for flexibility, pivoting, and critical reflection. During the course, we anticipated obstacles like poor communication with collaborators and mismanagement of multiple stakeholders; however, we did not expect a global pandemic. We later joked that the universe was handing us exactly what we deserved for creating a course called Design for Complexity. After all, this course was an opportunity for students to apply what they were learning and respond to significant shifts in real-time. This experience was also an opportunity for us as instructors to take stock and change in meaningful ways. Staying present within this moment was a reminder that, as educators, we should not shy away from addressing

complex social, political, economical issues in our design courses. We should continually evaluate our approaches in relation to current events, especially in times of crisis.

Given that all design problems are complex problems, we need to address them systemically by acknowledging the overlapping systems and their roots. To simplify or clean up these problems for students is a real disservice—it undermines their critical thinking skills and does not prepare them for what they will encounter in their daily lives. In design, we tend to focus on *solving* problems by providing solutions. However, when dealing with complex social, economic, and cultural issues, we must focus on *responding* to those problems and provide flexible interventions. Throughout this course, we channeled the thought of not knowing what is at the end of the path before starting the journey. We minimized the sense of control during the research and making process by observing, asking questions, and consciously responding to new information. In her critical feminist design manifesto, Marie Louise Juul Søndergaard calls this "Staying with trouble."

> *"As solutionism either invents problems or ignores the complexity of problems, and since today's solutions will be tomorrow's problems, the critical-feminist designer should not design solutions but rather respond to trouble. Responding to trouble includes caring for the other, shifting perspectives, and engaging in negotiations and argumentations. It includes not giving answers to open questions but engaging in conflict and conversations."*

As active participants in these conversations that are often rooted in complex economic, political, and social systems, we are better equipped to ask questions and unpack overarching concepts. The topic of food insecurity is one with many questions but few answers. In Northwest Arkansas, the rate of those who are food insecure is somewhere between 11 and 18%. On the University of Arkansas campus, that rate is over 30%. Rather than assigning students the impossible task of resolving the crisis, we positioned their role as investigators and advocates. Working in small groups, they developed "how might we" questions serving as the foundation for their research and investigation. We asked them to focus on the systemic origins of the problem, and most importantly, the human impact. No matter how complex a problem is, the most critical takeaway for students is that they can still intervene to impact people's lives positively. Allowing students to take on complex design problems enables them to see the importance of small, incremental change when working within complex systems, and to develop relationships that encourage them to keep going when the process gets messy.

REFLECTION 2: Engage with people, not problems

To gain insight into food insecurity at a broader scale, students in the course briefly conducted secondary research. Our partnership with the Jane B. Gearheart Full Circle Food Pantry on the University of Arkansas campus served as a vital resource during the semester. Initially, students relied on their

expertise and experience to understand the issue on the University of Arkansas's campus, and later partnered with them as co-designers to create impactful interventions for their patrons. In their initial meeting with the food pantry representatives, students worked to identify the food pantry's primary obstacles and pain points. Location and eligibility were top concerns as most students, staff, and faculty were not familiar with its presence or visitor requirements on campus. Other concerns stemmed from the stigma of frequenting a food pantry and fitting the definition of someone who is food insecure. In addition to research, much of the student's investigation centered on the relationships they built with community members. We invited several community organizations into these conversations to learn about the actions taken to combating food insecurity at the local level. We were fortunate to collaborate with organizations such as Food Loops; a food waste management company, Seeds That Feed; an organization that brings excess produce to communities in need, and Tri Cycle Farms; a community farm that focuses on food education and food recovery.

One of the primary ethical concerns raised in service-learning is that classes that engage with communities for one short semester seem to leave as quickly as they arrive. So how can students build trust and lasting relationships in one semester? The short answer is—they can't. However, as educators, we can structure projects and design interactions that allow for deeper engagement that fosters trust, no matter how limited we may be in our opportunities to do so. A key consideration for students to build sustainable relationships with community members is *cultural competence*—the ability to communicate and interact with people across different cultures. Many universities offer courses relating to cultural competence, and some even require it before students can engage in service-learning. While the University of Arkansas does not, we created space where students can develop their cultural competence through an ad hoc approach to discussions and self-reflection. Cultural competence requires more than just becoming culturally aware or practicing tolerance. It requires students to unpack their privilege and power, understand the histories, cultures, languages, and traditions of a community; and engage in ongoing reflection relating to their worldview. Without cultural competence, service-learning can be profoundly harmful and disrespectful to communities. It has the power to perpetuate the white savior stereotype where designers swoop into a community as the hero problem-solvers and then leave without returning. Building trust and lasting relationships mean entering communities with humility and grace, centering community members' experiences and voices, creating shared goals and mutually beneficial outcomes, and staying committed throughout the process.

REFLECTION 3: Get out of the studio (as much as possible)

When investigating complex systems, it's difficult for students to comprehend the myriad of nuanced experiences people have within those systems. While students are sitting in a white-walled studio full of cork boards and projectors, they can only make educated guesses about how one might "solve" a

problem. Real and lasting learning occurs at points of connection, where one can observe and build knowledge from personal experience, whether it be with people, in specific places, or in our case, among chickens. In collaboration with local community members, we spent a day volunteering at Tri Cycle Farms, cleaning up the property, digging irrigation ditches, and feeding chickens. Students had the opportunity to walk the grounds, understand the history of the farm, and contribute to the daily tasks of upkeep on this small farm. This experience gave students an immersive connection to their surroundings, and it was a great motivator for them to serve their community.

Taking on complexity as an overarching topic requires that you exit the comfort of your personal space, the studio, and your assumptions, to explore the specific systems that operate within that complexity. This exploration offers students critical points of reference, allowing them to connect the dots of complex issues personally and tangibly. When dealing with complexity, it is all too easy to get stuck in the realm of big picture ideas and abstractions. These immersive experiences helped students conduct their primary research and develop prototype tests. Through interviews and online surveys with campus stakeholders and food pantry clients, students observed daily activities at the food pantry and gained insights about various viewpoints across campus. With this information, they developed and administered prototype tests with target audience participants and the food pantry representatives. Getting out of the studio and immersing within the complex system serves to make the abstract tangible and the universal personal.

REFLECTION 4: Design with, not for

Service-learning that is ethical and mutually beneficial must inherently be rooted in principles and methods of co-design. Co-design is a natural antithesis to the so-called "designer as expert" problem. We may be experts in our craft, but as outsiders to a community, we can never be experts in someone else's experience. To center their voices and their experiences, community members must have agency and ownership in the design process. Early on in the process, we invited employees and student volunteers from the campus food pantry to participate in design charrettes with the students' small groups. Students led the charrettes, selecting research methods that supported their "how might we" research questions or designed their own methods in some cases.

The design charrettes achieved two essential objectives. First, they allowed students to listen. They engaged in deep and meaningful conversations with community stakeholders about how best to serve their target audiences and received critical feedback regarding their ideas. And second, they allowed students to explore the space where speculative design intersects with feasible design. Speculative design is a natural ally to designing for complexity because intervening in complex systems requires

planning for both present and future conditions. But for speculative design to be meaningful in service-learning, it must also be rooted in outcomes that are feasible for community members to adopt.

In addition to co-designing, designing for complexity requires methods that address the unpredictability and messiness of complex systems. In this course, we relied on traditional design and research methods, such as affinity diagramming and stakeholder mapping, as well as some new and non-traditional methods. Upon identifying a target audience, students created a spectrum of user personas based on David Rose's Audience Receptivity Gradient. This gradient identifies audiences along a spectrum from not ready to know, not ready to hold an opinion, ready to hold an opinion, ready to act, and ready to advocate. This method allows students to see nuances in their target audience and to design for them with more precision and empathy. Students also developed Dual Journey Maps where they outlined two opposing user journeys, one in which their design outcome was successful, and one in which it failed. This practice allowed students to anticipate problems that could arise and develop responsive interventions.

REFLECTION 5: Pause and reflect

Another critical component of service-learning is the essential act of self-reflection. Designing for complex systems means you must continuously be zooming in and out, bouncing from individual experiences to structural realities. In this course, zooming out also meant looking backward, forward, and inward. Students paused for reflection twice during the semester—once at the mid-point after conducting the design charrettes, and once at the end of the semester, after pitching their final design interventions. The midpoint reflection opened up space for students to pivot if they gained new knowledge through the design charettes and wished to implement it. We found that some students who decided early on to utilize a specific approach, ultimately reconsidered their strategy once they stopped to inquire about their process and the information gathered before moving forward. The end-of-semester reflection asked students to examine their assumptions about the project, opportunities for growth, and the impact of their work. Many reported this experience as eye-opening, confusing, and realistic to how they might encounter problems outside of the studio. We also asked our client to participate in this opportunity for reflection, to solicit feedback and learn what we could do better next time. They expressed their gratitude for the collaborative experience and were impressed by the various approaches presented by the students.

REFLECTION 6: Be ready to pivot + adapt

Finally, our last reflection relates to the complexities of service-learning and the challenges that arose in March 2020. When the university shut down due to COVID-19, our courses went fully remote. We had to cancel our plan for ending the semester with an in-person exhibition of the students' projects. As we

pivoted, the students' ideas for displaying their design prototypes and presenting their interventions had to change. What resulted was a shift towards showcasing their research on their portfolio websites. While this was not a preferable outcome, it allowed students to showcase their research and interventions in a more accessible format.

Global pandemic or not, co-designing with communities is not a linear process. What we continually reminded our students throughout the process is: when things get messy, keep going. Despite their confusion, frustration, and overwhelm, they stayed committed to their clients' needs and were responsive to the challenges that arose. By allowing them to practice resiliency, curiosity, and commitment in a classroom environment, we hoped to inspire them to take on messy and complicated social issues in their careers, rather than shy away from them because they feel ill-equipped. By pairing service learning with human-centered design in this course, students leveraged experiential learning to engage with complexity in their processes and outcomes and demonstrate their resilience as collaborators and creatives.

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13 Designing Cross-Cultural Awareness Through Typography : Understanding Heritage and Cultural Identity of China

Archana Shekara
Illinois State University

Abstract

Graphic Design is a human centered service-oriented profession where designers have a greater responsibility to be culturally aware, understand diversity, inclusion, and social constructs to create designs that are authentic and relevant to the multicultural community we serve. It is imperative that design education adopts new methodologies to address cross-cultural learning since we live in a global society. Our University has embraced Learning and Scholarship, Diversity and Inclusion, Respect, Collaboration, Individualized Attention, Civic Engagement, Integrity as its core values. Among them, Diversity and Inclusion, Respect and Integrity are much needed ethics in today's America. As the University welcomes more international students, it's critical that the campus community becomes educated and promotes cross-cultural education and understanding.

The design sequence at our school has established a 3+1 Program with a University in Shanghai. The cohort of students will study three years in Shanghai before completing a final year at our University. Selected students will be arriving to our campus this summer. How can we prepare our students to embrace Chinese students, their accent, language and cultural norms? How can we address stereotyping and marginalization of American and Chinese cultures?

I had the privilege to teach Typography, and Special Topics in Graphic Design in both countries. Students created Designing Authenticity, a typography based project which aimed to raise crosscultural awareness through the design of letter forms. The presentation will describe innovative teaching methodologies, share student research writing, images and learning outcomes. The project helped students in China to appreciate and reflect upon their cultural identity, while students in the U.S. acknowledged their biases and gained new understandings of another culture.

Before I start to talk about the Designing Authenticity Shanghai-Normal project, I would like to share some background about myself and my experimentation in finding innovative methods of teaching design.

Graphic Design is a human centered service-oriented profession where designers have a greater responsibility to be culturally aware, understand diversity, inclusion, and social constructs to create designs that are authentic and not just pretty pictures promoting client's campaigns. It is imperative that art and design education adopts new methodologies to address cross-cultural learning since we live in a global society.

Design is a philosophy of life in which designers have to empathize with and respect the diverse communities of people we serve. I have been teaching for eleven years at Illinois State University, prior to teaching, I have worked in several design studios as an Art Director and graphic designer, creating projects for diverse clients. I experienced that many clients are interested in showing ethnic diversity in their company's print and digital materials to be inclusive of a diverse ethnic population. It is easy and cost effective to download stock photos showcasing individuals of African or Asian descent.

Using these types of images in their campaigns, companies believe that they have succeeded in showcasing diversity. As I continued working, I began to question these assumptions. Was using such images truly speaking to a diverse ethnic audience? Was this effective? Did it communicate anything?

I have also observed these kinds of ads being promoted by international magazines and companies, but is this morally right? What are we really gaining by exotifying and stereotyping?

Living in the United States for 3 decades, I have witnessed the increasing influence of Asian culture and art in Western society. It's social culture is being influenced by the Eastern way of life in terms of food, home design and decor, and the eastern practice of wellness as in Tai-chi, Yoga and meditation. In home decor, we can see the sculptural objects of happy Buddha faces or the meditating Buddha in people's homes. We can also easily purchase bamboo plants in local stores like Target or Walmart. When a customer buys these types of objects, what does it really mean? Are they appreciating that culture or simply the superficial nature of the artifact to make their homes look eclectic and contemporary?

Professor of International Business Mary Yoko Brannen, in her book What Is Culture and Why Does It Matter? states that "the world as a global village is an expression used so often that the phrase itself has become a cliche...most of us take for granted much of the outcome of globalization. We navigate our lives daily through a panoply of cultural choices, such as, which nation's food to eat, what foreign film to watch, or what country's fashion to wear. Most of us even quite comfortably intermix foreign words in our daily vocabulary, like when we say something analogous to "its a Zen sort of a thing..." We do not pause and think that food, films, clothes or words might have a deeper meaning in its original culture. Since we have adopted these things and activities in our daily lives, we take them for granted and likely do not question knowing the original meaning.

I have been conducting research in cultural identity in design for the past thirteen years, and have been a design educator at Illinois State since eleven years. The University has embraced Learning and Scholarship, Diversity and Inclusion, Respect, Collaboration, Individualized Attention, Civic Engagement, and Integrity as its core values.

Among them, Diversity and Inclusion, Collaboration, Respect, Civic Engagement, and Integrity are much needed ethics in today's America. Our university promotes internationalizing the campus "to prepare students to be competent and competitive actors in a globally connected society. Comprehensive campus internationalization goes far beyond study-abroad trips and international student recruitment. It includes the expansion of internationally-oriented courses, campus wide programs, student organizations, student services, civic engagement opportunities...."

As the university welcomes international students, it's critical that the entire campus community is aware and educated about cross-cultural sensitivity to bring understanding, acceptance, appreciation and respect.

The graphic design sequence at the Wonsook Kim School of Art has established a 3+1 program with Shanghai Normal University Tianhua College of Art and Design. The cohort of students will study three years at Tianhua College and complete their final year at Illinois State. Selected students are expected to arrive this Fall if visas are granted.

This partnership is a wonderful opportunity for students from both countries to learn, connect, interact and collaborate. As a graphic design educator in a historically white institution, I question... How can we prepare our Mid-Western American students to embrace students from China, their accent, language and cultural norms? How do we address stereotyping and marginalization of both American and Chinese cultures?

In order to cognize and appreciate another nation's socio-culture we have to first familiarize ourselves with our own cultural identity — our behaviors, beliefs, values, and norms. Once we are comfortable with our own identity then we can understand, appreciate and respect the similarities and differences with other cultures.

I had the privilege to teach Typography course at Tianhua College in Shanghai last summer. Initially, the students were hesitant to converse with me and I found out that the hesitation was due to lack of practicing the English language. I told them that I would be non-judgemental since English is my second language and I learned it in elementary school just like them. After I revealed this information, students embraced their English language speaking skills, and were confident to actively engage in their project presentations and critiques. Students were familiar with European Art History through their survey classes, and our curriculum in Typography is Euro-centric. My lecture notes were based on Ellen Lupton's book *Thinking With Type* and Robert Bringhurst's book, *The Elements of Typographic Style*.

In the beginning of the course, students learned the history and design of traditional and modern page compostions, and later were ready to experiment and be challenged!

I taught Special Topics in Graphic Design last fall at Illinois State, and students researched and developed bodies of work based on their ancestral cultural background. After these projects, students were ready to learn about other cultural identities. I was interested in discovering how students can navigate and communicate between cultures through Typography.

How do we understand and respect other cultural identities? How can type design create cross-cultural awareness?

Students in both countries were asked to design a Roman letter form with researched cultural history and heritage based on one city/town/province in China. They cannot just download images and type, and make up a poster!

Illinois State students selected one city/town/province in China studied its cultural history, food, art/architecture and read articles and essays about the country. Before they began their project, students were asked to acknowledge their stereotypical and superficial understandings of China. Most students liked American-Chinese food, had Asian friends in school, learned about China in art and history classes, American media outlets or used Chinse made products at home, however, students accepted their limited understandings of Chinese culture and were curious to learn more.

I invited Dr. Miranda Lin, Professor in the Department of Teaching and Learning at Illinois State who introduced students to Chinese calligraphy. They experimented in creating the structure of the letter form using a grid, the hand movement, stroke weight and balance, and understood the respect of the discipline.

For students in Tianhua, I wanted them to learn about their own cultural identity, they could not choose their home city or town, and most of them were from Shanghai and its suburbs. They had to write the reason for choosing their city, and what their city is known for, for example, food/landmark/festival, etc and share this with their peers in class.

After doing these intial preparations and exercises, I asssigned Designing Authenticity : Shanghai–Normal, a typography based project enabling students from both institutions to become aware of the heritage and cultural identity of China, while exploring vernacular designs with Roman letter forms to create new meanings. This project helped students in China to appreciate and reflect upon their cultural identity, while our students in the U.S. gained new understandings and respect about Chinese culture by acknowledging their biases and creating designs that are authentic. Students also chose one significant element or aspect from their chosen city to create the entire alphabets.

ISU students shared their learning outcomes for this project. One student said, “Through this project I learned that just because we only hear of “China” as a whole place, we tend to lose the differences and uniqueness the individual cities hold within each other, and because of this we begin to group it all as one and thus continue stereotyping.”

Second student said, “The best learning point in the project was realizing how blind I was to culturally insensitive content. I feel now that I have the tools and knowledge to create designs that are inclusive to all and to make sure I do not contribute to the insensitivity.”

Students in Tianhua said “In this assignment, I learned about the cities of China that I am not familiar with, not only through words and pictures, but also with the feeling of being attached to them.” Second student, “Let me better understand the cultural and social background of the city.” Third student, “In our spare time, we can appreciate the great rivers and mountains of our motherland. I began to respect the local culture of the motherland. We should maintain respect for local customs. We should try to protect the traditional culture for our descendants.”

By adopting new research methodologies, students strove to understand the multiculturalism in graphic design without stereotyping, by a process of reasoning, reflection and respect. This project enhanced critical thinking, expanded their visual and design vocabulary, and above all, students found new respect for theirs as well as other cultural identities as they begin to see themselves as global citizens.

I was invited last fall to present this lecture for the Chinese Consul General Zhao Jian and his delegates at Illinois State’s International Seminar series focusing on China, where the consul general spoke about U.S.–China relationships.

It was an honor for me, and I’m delighted to share this presentation with you all, and thanks to UCDA for making it possible. Thank you all and have a wonderful and safe summer.

14 Designing for Inclusion: Identifying Design Challenges in the Community

Mark Willie
Drexel University/Westphal College

Alexandra Perry
Drexel University

Abstract

Our presentation describes a collaboration on a rebranding project between undergraduate graphic design students and an urban botanical site in an underserved community located in a major city. The project developed from a recognition of shared values between the institutions and ability of designers and stakeholders to work together in a comprehensive community-based collaboration. This collaboration is part of ongoing core curricular graphic design requirements in brand identity; each cycle faculty work to identify regional organizations that present unique, human-centered, community-focused design opportunities.

The arboretum seeks to preserve and interpret a historic house and grounds connecting a diverse urban community with nature and history and serve as an active learning center and context for place-based education.

The partnership acknowledged the shared institutional missions of the university's design program and arboretum's mission of community engagement. For our undergraduate students the project provided real-world professional experience, working through a creative process of discovery, ideation, design, presentation and realization. Students worked primarily in a studio/lab with faculty as well as on-site with the client's development team. Students engaged in meaningful conversations about the role and responsibility of the arboretum as it exists within an underserved community with historic, cultural relevance and economic challenges. Beginning with research interviews, participants worked in small groups in framing and ideation sessions, exploring visual language to communicate their ideas. The students focused on understanding the client's needs, listening and identifying a unique design vision.

This partnership exemplifies a commitment to engage students in meaningful and relevant design practices and to encourage design students to see their roles in utilizing design to effect interactions within a community in meaningful, authentic and compelling ways.

15 Designing the Interactive Design BFA: A principled approach towards pedagogy

Lisa Spitz
Lesley University

Heather Shaw
Lesley University

Abstract

This presentation will highlight a profound shift happening in an established undergraduate design program by holistically integrating user experience theory and practice into core curriculum. The new BFA in Interactive Design has fostered significant changes in the students' fluencies and competencies in designing for the human experience. This presentation proposes to showcase curricular structures, pedagogy and student outcomes as the result of major changes to what was once a more "generalist" focused Design BFA. The Interactive Design major is a professional degree-granting program, and is guided by the following core principles:

- ***Design is for humans.***
  Core requirements shift first-year student perspectives from the design of signs and symbols, to design of objects, services, and systems while also emphasizing the role of empathy in design.
- ***Interactions are not limited to the screen.***
  Students explore the relationships between physical and digital interfaces, translating physical interactions to a digital platform. In more advanced classes they explore immersive design experiences through AR/VR and tangible interfaces.
- ***Design outcomes are systems-driven and scalable.***
  Systems thinking is integrated into the first three semesters through the introduction of algorithmic and rule-based design projects. More advanced courses focus on scaling interfaces within a larger ecosystem.

The underlying curriculum is comprehensive; requiring students to conceptualize, design and build functional and simulated prototypes based on the needs and constraints of a specific user and/or audience. A highly iterative process of "making" is enforced in the design classroom, exploring several ideas before incorporating digital tools or technology. Projects emphasize core design principles, material skills, and craftsmanship for both physical and digital environments. Attendees of this talk will learn how the BFA in Interactive Design curriculum is structured, view pedagogy and project outcomes as evidence of the core principles, and be able to apply these constructs to their own teaching practice.

16 Empathy, History, and Design Fiction-Making

Gregory Turner-Rahman
University of Idaho

Abstract

Empathy is a word often bandied about as the key to human-centered design. To be empathetic, one has to attempt to understand the feelings and experiences of another. At times this can be a truly daunting task. It is difficult to motivate college-aged students to invest in and explore new topics through, say, an ethnographic study.

In this presentation, I will explain how the use of project work— primarily the production of visual designs and stories—can facilitate a type of abductive reasoning that allows designers to more profoundly explore concepts essential to making sense of complex issues and to better prepare one for emic (meaning: from within a culture) development of design concepts.

I describe a series of projects for a visual studies course catering to art and design students that is focused on the development of the modern clinical practice and contemporary medical patient experiences. The discussions, concept mapping, and project work—including design fiction making—circumscribed key topics and motivated students to reveal thoughtful critiques and personal stories about those topics. Ultimately, they could better understand the breadth and complexity of experiences.

Empathy, History, and Design Fiction-Making

ABSTRACT

Empathy is a word often bandied about as the key to human-centered design. To be empathetic, one has to attempt to understand the feelings and experiences of another. At times this can be a truly daunting task. It is difficult to motivate college-aged students to invest in and explore new topics through, say, an ethnographic study.

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INTRODUCTION

This paper describes the use of project work in a Visual Studies course as a method of encouraging empathy and the application and exploration of concepts potentially as an extension of the design studio. If done well, history and theory courses begin to reveal how interconnected events, ideas, and even objects truly are. A good historian will provide clues to the impact of design in addition to dates, socio-political factors and key moments. But often the lives of people in the past are still alien to our students. It is difficult for undergraduates to empathize with those who lived before them. Harder still is to glean some idea of how history and theory can be used to speculate about the future. In evaluations, students often comment on how they don't see the value of studying history or theory.

The Visual Studies course I have taught for the past decade has been an excellent vehicle for fostering active student exploration and experimentation. The course provides the opportunity to see how research (historical, ethnographic) can enhance their art and design practices and, at times, allow for a deeper understanding of other peoples' experiences.

VISUAL STUDIES

The class I describe here was designed to be an examination of the beginnings of modern clinical medical practice and the advancement of visualization technologies. Visual Studies at the University of Idaho has a very broad mission and description. The catalog description states:

> *The course is an analysis, evaluation, and critique of visual practices, technologies, and epistemological structures at the intersection of the sciences, medicine, technology, art and design.*

Each iteration of the class has had a different focus but all require an intensive investigation into interrelated phenomena: technology, scientific progress, visualization, visual representation, and socio-cultural and political change. The course has previously centered on the notion of prosthetics, data

visualization and storytelling, and, most recently, land art and ecological change. This is an upper division class that complements our required Visual Culture and New Media theory offerings. The iteration I am describing was taught in 2015. Initially, I was curious about the state of medical imaging. During preparation and design of the class, I discovered an interesting moment in the history of medicine, the late 18th Century. During this time, medicine loses its medieval nature and becomes a more rational practice. This corresponds to political changes (the French Revolution), scientific progress, and the subsequent development of new technologies to study the body. I decided this would be the starting point. I also wanted to talk about patient narratives as an aspect of modern medicine that resists an objectifying clinical approach. The challenge was getting students to research and learn about a topic they had some fear of studying.

ABDUCTIVE REASONING AND DESIGN THINKING

I often use image-making and project work as a significant part of my history and theory courses. Working with images contributes to a student's abductive reasoning skills. Abductive reasoning is simply a creative act of discovery (Nesher, 2001; Lu and Liu, 2012) shared by all disciplines. C.S. Peirce tells us that abductive reasoning relies on the most logical explanation or hypothesis (Peirce, 1958). It is a type of reasoning wherein one must use the data available in order to come to a conclusion. A medical diagnosis is a form abduction (Turner-Rahman, 2017).

For artists and designers, abductive reasoning happens as a natural aspect of design thinking. Designing within certain parameters and understanding the various influences on an outcome are fundamental to making logical conclusions about the efficacy of a concept. Sketching and model building are essential visual design thinking. Often a conclusion or solution will evolve from multiple iterations of exploratory sketches. Magnani calls this *manipulative abduction* and says that these are "extra-theoretical behavior" that communicate new experiences that integrate new ideas (Magnani, 2013, p. 304). This happens in the sciences as well as the arts. I liken this to a dialectical interaction between previous attained knowledge, mental and externalized imagery (sketches, for instance). The result, as Gabriela Goldschmidt tells us, is a sort of feedback loop from which new and sometimes unintended ideas and solutions emerge (Goldschimdt, 2003).

By having students work with images—collecting, analyzing, organizing, and making—they develop a fluid interaction with course content that supplements readings and discussions. The challenge was to develop a method to help them to understand the complexity of the subject while also fostering a genuine empathy for people—in the past and the present—navigating an illness and subsequent medical care. The history of medicine is a topic that most design students are hesitant to study but most, if not all, do either know someone who has been seriously ill or have been so themselves. This means there is an opportunity for them to draw from their own experiences.

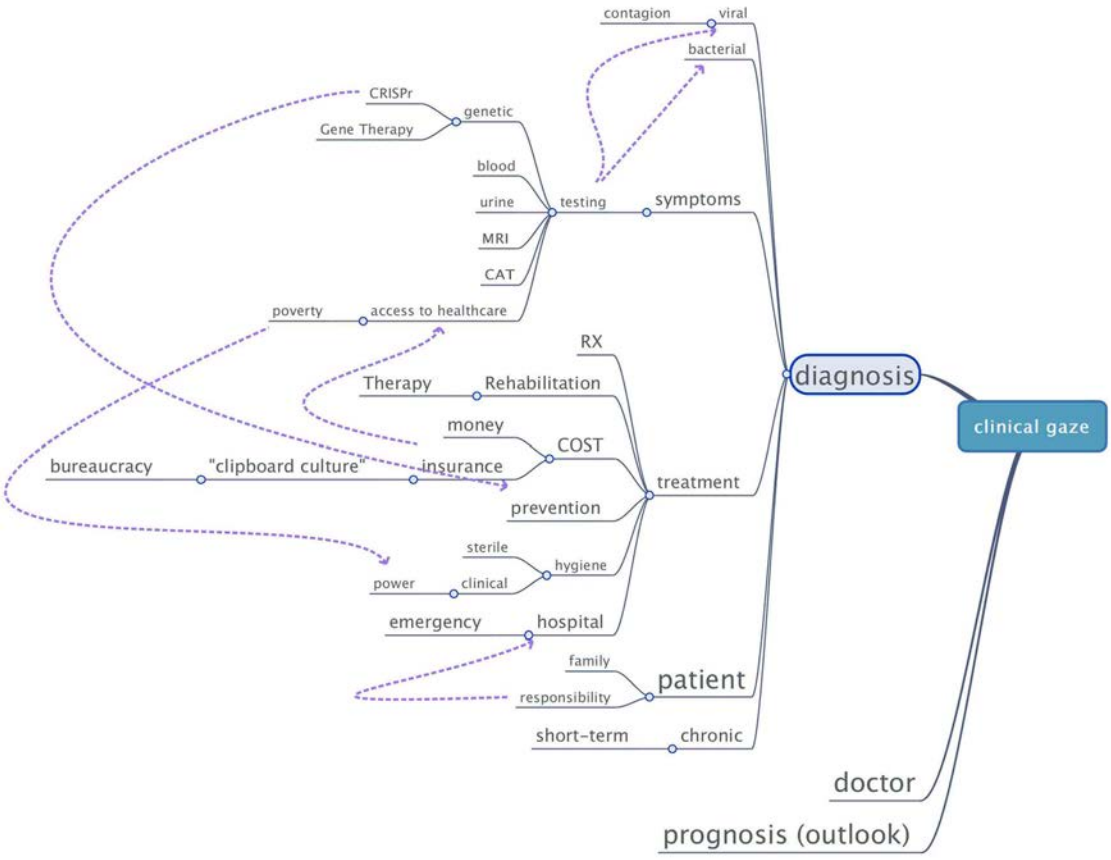
A BACKDOOR TO THE *EMIC* EXPERIENCE

Although ethnographic study is a common qualitative research methodology in Anthropology, it is used across the social sciences and in design research. Ethnographies require researchers to spend time in day-to-day situations observing study subjects. Good ethnographers spend significant time to truly understand the culture that informs personal decisions or even shared perspectives. For the designer, the ability to understand what motivates a decision or influence how a person uses a device, service or space, is sometimes key to the success of a project. I have, however, been more interested in the ability to use the *emic* perspective—or viewing a situation from the point of view of the study's participants—to envision empathetic speculative project work. To break that down: understanding how people have historically felt about an issue can give some clue to alternatives to seemingly traditional practices. For design students, this is a powerful tool and also make history and theory courses a logical extension of the studio.

For the 2015 iteration of Visual Studies, we explored the birth of modern medicine and the end of medieval practices. I was explicit in explaining the goals of the course:

> *Try to understand when we learned to study illness/the body in a significantly different way and learn what visualizing technologies had an impact on that change.*
>
> *Learn about more recent changes in medical technologies and their subsequent impact on the patient experience.*
>
> *Question how we discuss the body/illness now.*

To begin the class, I asked the students to collectively create visual or conceptual maps of broad topics, ideas, concerns and issues concerning contemporary medicine:



The diagrams began to ferret out key themes. A key term students fixated upon was *diagnosis*. They first had to figure out the difference between *diagnosis* and *prognosis*. Diagnosis was described by students as the use of an examination to determine the nature of a patient's condition. The term prognosis was defined as a forecast of probable outcome of a disease or illness. Students also highlighted the legal and bureaucratic dimensions of contemporary American medicine which ultimately led to many discussions about the quality of life and end-of-life issues. On the first day, students were already attempting to understand the current situation and patient experience.

CHANGES IN MEDICAL PRACTICE

The first assigned reading for the course was Michel Foucault's *Birth of the Clinic*. We broke the text down into reasonable chunks and students were responsible for writing questions that we would collectively try to answer. Most students found the text somewhat difficult. I explained to them:

> Foucault is the more difficult text of the two you will read but we will slowly work our way through it. The book is about the construction of knowledge. The practice of medicine is changing and has changed over time. The attitudes about the body and disease have changed along with our understanding.

I told students, if they struggled to read the book, to use a pdf or ebook (in lieu of physical versions) and to have the text-to-speech read the book to them. I also provided links to secondary resources such as the Stanford Encyclopedia of Philosophy. I wanted students to retain the ideas but not get fixated on their struggles with the text.

Foucault's text outlines the restructuring of medical practices after the French Revolution. Part of the effort to make medicine more rational was the investigation inside the body. Foucault tells that the evolution of the modern clinic is an amalgamation of political, economic factors beyond philosophical impetus. What results is a type of empirical analysis that leads to a medical or clinical gaze (Foucault, 1973). The practice of medicine then shifts away from patient narratives.

The second book, Arthur Frank's *The Wounded Storyteller*, describes illness as something that most, if not all, of us will experience. Frank outlines how we tell stories about our illnesses. Those narratives sometimes frame or define nothing less than our life experiences. I asked students to begin to think about the different narratives, who tells them, and how they are affected by newer technologies. Finally, I asked them to consider the internal narratives of recovery or chronic illness.

HOW TO EXPLORE

Throughout the semester, I asked students to collect images. Most often these were related to ideas or topics we had read about earlier. For instance, while we were reading Foucault's book, I asked students to collect images from the late 1500s and early 1800s. I asked them to find images of the body as a scientific subject and, later, to collect images of recent medical visualizing technologies such as microscopes, ultra-sound, otoscopes, and MRI machines.

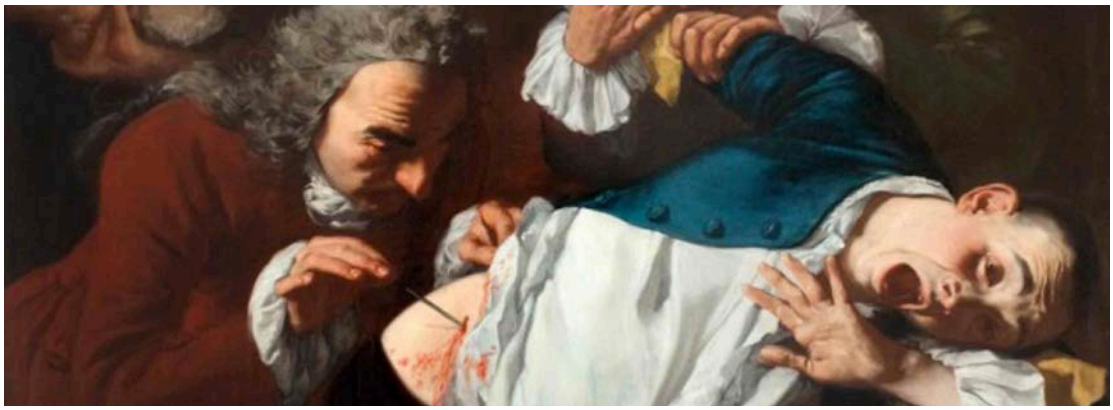
THEMATIC EXPLORATION AND ORGANIZATION

Students were to describe, categorize, and place the images in some sort of timeline. This process makes them familiar with certain tools and the date they were created.

In the example above, students struggled to get the dates when certain devices and practices happened in order. If this is a timeline from earliest to latest, the stethoscope is in its proper place. Often we had to question our biases or discuss how representation—in this instance, the slick photography—influences our understanding. The various processes of working with images have many different facets. Collecting and analyzing images always happens in unison with the readings and discussions. Thematic exploration can include the collection of images of pertinent technologies, artwork, historical imagery, and ephemera. Organizing necessitates that students carefully consider relationships between the objects and the broader themes.

IMAGE-BASED CONTEXTUALIZATION

Image-based contextualization is a more focused version of thematic exploration and conceptual mapping. Typically, I will narrow the parameters of their search. For this version of the class, I had students explore and collect images only from 1770 to 1830. The collection of images becomes more than a historical record. It should be a backdrop to the discussion and set a mood or feeling for an era. Fictional films—as opposed to documentaries—can often provide affective contextualization. Students studied these images and described



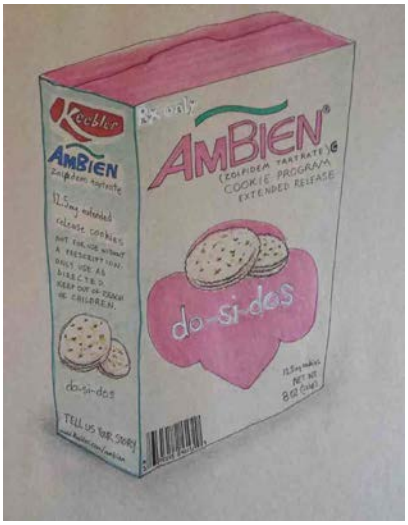
them as best they could. They described quite literally everything they could see. In the image above, we see something remarkable: the scientist or doctor inserting something into the body of a living human. Images give details to about the historical moment. Students can begin to craft a narrative or attempt to understand the era from the details. In the example above we can look beyond the treatment to see power relationships and the beginnings of the clinical gaze.

VISUAL STORYTELLING

Visual stories are an effective way to ask students to take imagery and their knowledge to synthesize something new. The stories should be short (1 minute video, 2 static images, 1 page comic) with the attention being paid to providing interesting and accurate detail. Sometimes I will provide a theme derived from class discussions but often the stories have to be something of interest to the student.

The two examples below show wildly different storytelling projects addressing the patient experience in contemporary medicine. These works were created later in the class and somewhat address the topic of

medical narratives. The first image is a self-portrait. The student documented his medicine-taking regime throughout the school week. The result is a project that reveals how often he has to consider his health. The second piece is a comment on how our illnesses come to define us. The student took images of individuals with certain diseases, found imagery representing said disease, and replaced the faces of the person represented. The resulting images make explicit how illness consumes identity.



DESIGN FICTION-MAKING

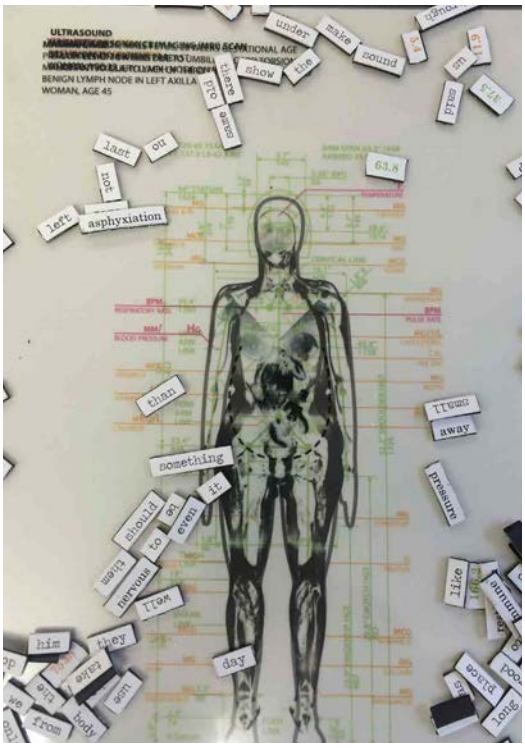
Design fiction-making is different from visual storytelling in that it requires a student to look to the future and design a speculative object. Students are asked to prognosticate and design using trends and ideas derived from the past. I often start by showing contemporary or historical examples and asking that they consider the conditions that influenced the production of the object.

Designing fictional objects necessitates that they synthesize their understanding of the socio-cultural, political, and economic aspects of design while also attempting to abandon presupposition and biases. I have found that this project allows for open creativity but the freedom to play is often subtly

nuanced by their appreciation of themes and ideas from prior discussions. For the design fiction project, I asked students to create a speculative device that would somehow alter the practice of medicine in the future. The example, on the bottom of the last page, is a smart commentary on the for-profit medicine in America. This student has created a fusion of cookie and prescription medication, essentially the cookie is a dystopic, over-branded drug delivery vehicle.

PLAYFUL, SPECULATIVE INVESTIGATION

Playful, speculative investigations come at the end of the semester are usually based on one of the prior exercises. If a project resonates with a student, I might ask them to expand upon it. More often than not, students will want to take on a project that allows them to find a personal connection to a course topic or say something that they have been eager to express. If they are creating something new, I ask that they write a brief that describes exactly what they hope to accomplish.



In the example on this page, the student questioned ergonomic data and how it often was based on the measurements of men. This designer not only overlays various data but then includes a series of affirmational words that can be formed into sentences. The viewer can participate and create their own narrative that obscures the data, in essence, wrestling control away from a clinical review by inserting a personal story.

DISCUSSION

As you can see in the examples, each student addresses the class topics in a unique way. Each approach is enhanced by a personal interest or is informed by the individual's understanding of the discussions and themes. This, to me, is evidence that they were able to use the *emic* perspective to not only learn about the past but to explore future scenarios as well. There are many moving pieces of this approach that might make this method of teaching history burdensome or more complicated for some. I have found that using at least one or more exercises benefits students tremendously but that speculative design (storytelling or design fiction-making) fosters play and certain open-mindedness that does—to some extent—encourage an *emic* understanding. Students have to think about the experiences of others, their own past experiences, and, then, put themselves in a more empathetic role.

CONCLUSION

Mark Blythe reminds us narrative is essential to both design and design fiction (Blythe, 2014). There is a growing body of research and writing about the use of design fiction as a research methodology and a way to cultivate empathy. As Blythe tells us, design produces exploration and discussion thus design fiction-making is a natural complement to other processes (Blythe, 2014). Designing for the future, however, does require some knowledge of the evolution of thinking. The use of imagery and project work is a simple method of engaging students thus the history or theory course can become a logical extension of the design studio.

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17 Engaging Stakeholders in the Design Process: A Participatory Approach to Studio Pedagogy

Tejas Dhadphale
Iowa State University

Brad Wicks
LHB

Abstract

Researchers, academics, and practitioners have highlighted the need to reform design pedagogy that incorporates diverse stakeholder perspectives, encourages community engagement and integrates human-centered participatory approach to design. As a result, several pedagogical models have emerged in design education that embrace participatory design (PD) methodology.

The goal of this paper is to describe and categorize student learning experiences in an architecture studio driven by participatory design (PD) methodology. The study addressed two key questions: 1) how does continuous engagement of future users and stakeholders in participatory activities affect student learning experiences in the design studio? 2) What are the benefits of employing participatory design activities in studio pedagogy? Students from a graduate-level integrated architectural studio participated in the study. Students lead a series of three participatory co-creation activities with diverse stakeholders planned in the front, middle and backend of the design process. Observations, questionnaires and interviews were used to describe and categorize student learning experiences and benefits of integrating participatory design methodology in a design studio.

The participatory design methodology practiced in the studio was demonstrably successful and positively contributed to students' learning experience. Student interactions with diverse stakeholders influenced their learning experiences in four key ways: 1) students learned to understand and explain social and morphological context of their designs, 2) students established visually identity for spaces, 3) students learned to integrate multiple stakeholder perspectives into building design, and 4) students developed a mutual language of spatial literacy with external stakeholders. The study shows that a human-centered participatory approach positively impact student learning experiences, greatly enhance student empathy for stakeholders, thus integrating social and technical aspects into design and learning to engage stakeholders in collective and creative co-design process. The study presents recommendations for educators interested in incorporating human-centered participatory design methodology in design studios.

18 Extending the human umwelt: Reframing our understanding of our environment via augmented reality and multi-sensory case studies.

Michael Castledine
Conestoga College

Abstract

"...a wish to perceive something that we think we can not perceive..."
Neil Harbisson

"In extending our senses, we can extend our knowledge."

This presentation details three graduate level case studies, highlighting conversations on designing human/computer-aided(AI) symposis, digital trespassing and multi-sensory environments for learning.

At the intersection of the digital and physical world, how can reframing and layering physical landscapes with digital information, educate, inform, delight, and elicit conversations about a world that has not been experienced before? What would it mean for a blind or deaf individual to experience and learn through these new parallel universes?

The word "umwelt" translates to "the world as it is experienced by a particular organism." What if we could see, feel and touch sound? It is through one's five senses that we experience, learn and understand the world around us. Can we extend these senses or overlap them in ways that have not been done before?

The first case study involves the use of capacitive touch technology and haptic sensors. While interacting with a tactile interface, music generates a visual response allowing a user to feel, see and hear a unique musical experience.

The second case study is titled "Feeling space: Music, Movement and Sensory Extension." This multi-sensory and generative environment deploys the use of haptics and camera depth mapping tracking technology, allowing the user to trigger and augment musical scores. While also using projection light as a medium, the immersive environment is ever morphing while mimicking the viewer / participant.

Case study three, titled 'Sound Graffiti', evokes conversations on digital real estate ownership, and trespassing. The creation of this AR mobile application hints at a conversation regarding a "mirrorworld" effort, designing for both our physical and digital selves.

Making reference to contemporary technology and documenting the creative /design process, the direction of these case studies highlight how a multi-sensory and generative human centered approach can create strong crossovers from one sense to inform and educate another

19 Fresh Press Agricultural Fiber Paper Lab: the Designer as a Material Science Engineer

Eric Benson
University of Illinois at Urbana-Champaign

Abstract

Design research historically has looked to locate new knowledge to help advance processes, methods, and tools that usually are applied by practitioners or academics within the design field. The work at Fresh Press, an interdisciplinary agricultural fiber research lab at the University of Illinois at Urbana-Champaign, is helping to reframe what a designer can produce as academic research. The research output generated at Fresh Press takes the forms of sustainable paper and building materials, recipes or formulas for manufacture, and data (disseminated in scientific articles) about the characteristics of the materials that can be further explored by connected disciplines. The creation of the sustainable materials is guided through research partnerships with Illinois' Materials Science Engineering and Architecture Departments to help test and explore the properties of the fibers and their applications. The collaboration has created interesting best practices to introduce the scientific method into design.

The theme of "human centered design" is an underlying principal in the work of Fresh Press and, as such, this proposal would like to contribute to a conversation at UCDA about how designers are reframing what design research can be. In the case of the work at Fresh Press, this lies in the complexity of integrating interdisciplinary collaboration with a systems thinking design process to make the materials from which objects are made rather than making objects and ephemera using said materials. Fresh Press works on a model of enacting design with a focus on our core values of promoting socially and environmentally responsible futures.

Fresh Press Agricultural Fiber Paper Lab: The Designer as a Material Science Engineer

Eric Benson, Associate Professor of Graphic Design, the University of Illinois at Urbana-Champaign

Abstract

Design research historically has looked to locate new knowledge to help advance processes, methods, and tools that usually are applied by practitioners or academics exclusively within the design field or to improve collaborations. The work at Fresh Press, an interdisciplinary agricultural fiber research lab at the University of Illinois at Urbana-Champaign, is helping to reframe what a designer can produce as academic research. The research output generated at Fresh Press takes the forms of sustainable paper, building materials, recipes or formulas for manufacture, and data (disseminated in scientific articles) about the characteristics of the materials that can be further explored by connected disciplines. The creation of the sustainable materials is guided through research partnerships at Illinois with the Mechanical Science Engineering Department, the Preservation & Conservation Lab at the Library, College of Agricultural, Consumer and Environmental Sciences, and the Architecture Department to help test and explore the properties of the fibers and their applications. These collaborations have created not only interesting best practices to introduce the scientific method into design but innovations in sustainable paper in general.

Collaborating with Plants[1]

The idea for Fresh Press was born in brief hallway conversations I had with Steve Kostell (now at the University of Vermont) as we passed one another heading to class or a meeting at the University of Illinois School of Art + Design. These quick discussions led to more formal meetings and consequently the idea to start a sustainability-based initiative on campus that embraced the natural landscape in East Central Illinois. Champaign-Urbana (or Urbana-Champaign depending on who you ask) are smallish twin-city college towns (with a combined population of around 130,000) surrounded by seemingly endless fields of corn and soy. To escape small town living to a big city is a two-hour drive north on highway I-57 to Chicago. The journey provides very similar views of Midwestern farm country with the addition of patches of prairie grasses growing wild in the highway median and ditches.

[1] Miner, Dylan AT. *Dylan AT Miner*. Visiting Artist Lecture Series, University of Illinois. In-Person.

As a creative research team, we wanted to not discount this ubiquitous landscape, but instead, embrace and celebrate it through the arts, engineering, and entrepreneurship. We hoped to collaborate with plants, where the Earth would be our client. Kostell is trained in various forms of printmaking, papermaking, and graphic design, while I am also a graphic designer with a focus on environmental activism and sustainability. In late December 2011, we met after reading the book *Caught in the Middle: America's Heartland in the Age of Globalism*[2] (about the fall of Midwestern manufacturing and the failed biofuels revolution) to write a sustainability-focused grant with the grandiose mission to help "change the paper supply chain from forest to farm."

In 2012 we were successfully awarded $42,130 with a grant from the University of Illinois Student Sustainability Committee (SSC) titled "Agri-fiber Paper Lab." The grant was co-written in collaboration with the Sustainable Student Farm (SSF) to buy papermaking and farming equipment. Initially our aim was to create a design studio and connected agri-fiber materials lab that contributes to improving quality of life for our local people, wildlife, water, air, and land on campus and community. Furthermore, we planned to create University of Illinois paper more responsibly and empower others in the community, campus and beyond to do so as well. We intended to develop agri-papers made from local crops (corn stover, rye, soybean waste, sunflower, and prairie grass) that could provide an alternative and better paper that could slow deforestation and reduce carbon emissions. Also, we believed that we could demonstrate that when agri-fiber waste papers are made they create an additional source of revenue for local farmers, reduce transportation carbon emissions, and prevent needless burning of crop residues that contribute to global warming.

In addition to these large goals, we wanted to (eventually) help return manufacturing to the Midwest by using what is already there (the farming industry and the geographic landscape) to create sustainable paper and paper products. Fresh Press wanted not to grow crops for paper, but instead capture the by-products from the regional harvests. The objective there was to experiment with different fibers in blend ratios to create repeatable recipes that could be licensed and scaled up to large-scale paper manufacturers in the Midwest and beyond.

Compared to tree fiber typically harvested in Northwestern Canada and shipped South, regional agri-fiber and consumer wastepaper emits significantly less carbon emissions since the transport of raw materials are localized. In a study I did in 2018 using Sustainable Minds life-cycle analysis (LCA) software[3] (Fig. 1), I found that prairie grass paper had a 66% smaller carbon

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[2] Longworth, Richard C. *Caught in the Middle: America's Heartland in the Age of Globalism*. New York, Bloomsbury, 2009.

[3] Minds, Sustainable. "Software." *Sustainable Minds*, www.sustainableminds.com/software. Accessed 10 June 2020.

footprint than traditional tree-fiber paper. If Fresh Press had been using renewable energy in all areas of paper production (including the harvest), prairie grass paper would have a climate positive outcome. Or in other words, we'd have no negative climate impact, and instead be drawing down greenhouse gas emissions through improving the soil with the fields of prairie grasses.

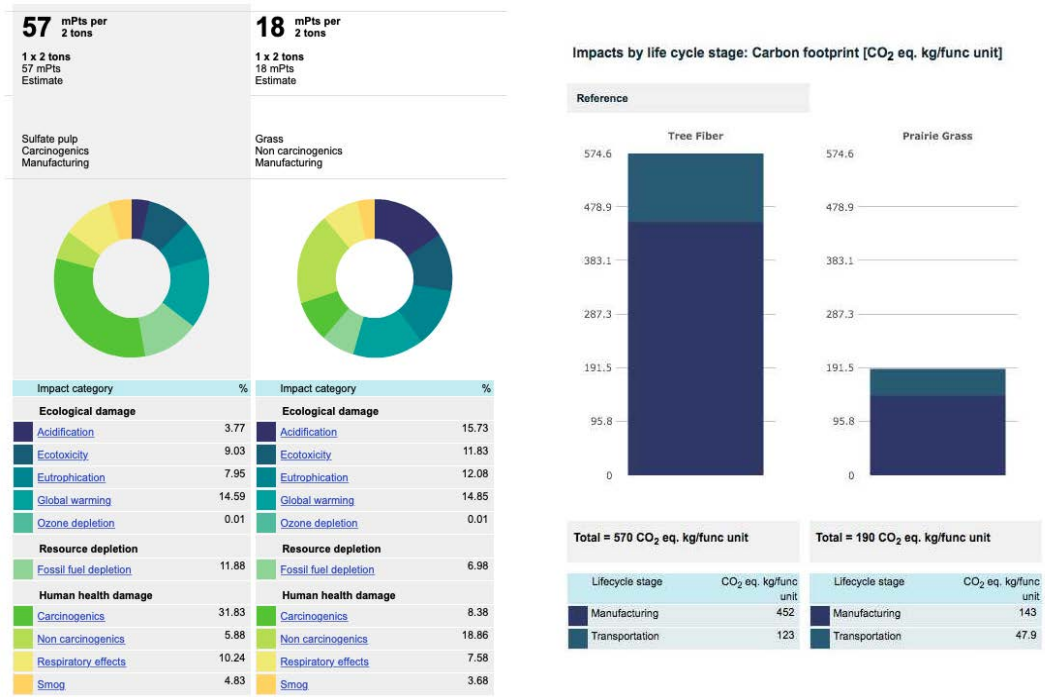

Figure 1 LCA of tree-fiber paper versus prairie grass paper created on www.sustainableminds.com

We had an inclination that agri-fiber papers would have a much smaller impact on the environment from the outset but needed the science and the data to prove this point. So, we set additional goals for Fresh Press that included finding ways to: reduce overall water use in manufacture, reuse water in manufacture, develop rainwater and grey water sources, develop and employ energy saving techniques, seek additional funding for renewable energy sources, and employ student workers via a co-operative (employee owned) model or through self-sustaining revenue from paper sales. We correctly predicted that this would require more funding and buy-in from the University and require additional research partners.

In late 2012, Fresh Press raised an additional $68,416 with a grant entitled "Dotting the I's and Crossing the Ts of Sustainability: Moving Toward a Greener Agri-Fiber Paper Lab on an Off-Grid Sustainable Farm," co-written with University of Illinois Architecture Professor Jeff Poss to build a Wash and Pack Pavilion (Fig. 2) with his graduate students from the class entitled "Small

Studio"[4] on land that the campus Sustainable Student Farm leased. Here the funding was aimed at helping the farmer, Zack Grant, increase his yields and store fibers for Fresh Press. It was a symbolic and pragmatic way to signal the start of a symbiotic partnership with the farm to begin our experiment of not only papermaking with agricultural byproducts, but also a cottage industry where unwanted harvest could be sold to Fresh Press and then, in turn, manufactured into paper and sold to consumers.

Figure 2 Wash and Pack Pavilion (photo by Jeff Poss)

This funding helped Fresh Press also secure two research assistants Megan Diddie (MFA Painting) and Eva Chertow (MS Library and Information Sciences) who were instrumental in the paper research and commissions. Despite originally only starting Fresh Press as a research facility, the paper garnered enough attention from many regional artists, (who ordered paper) that we began to rethink options to branch out as a business. We worked with the university to set-up a paper sales account to accept online purchases. This account helped us test the possibility of operating as a self-sufficient business (in addition to managing a research facility)

[4] Poss, Jeff. "Teach." *www.Jefferyspossarchitect.net*, www.jefferyspossarchitect.net/teach/. Accessed 10 June 2020.

selling paper and putting that revenue back into supplies, labor, and marketing.

These collaborations and material experiments were outside of the normal research activities for both of us. When the Fresh Press project started, we assumed that we would enter into new research territories as designers and artists, but it was unknown how or in what areas. As a designer, working with a farmer to help plan a growing season to best decide what fibers were interesting to form into paper, was a new and daunting challenge. Furthermore, knowing what fibers would make the strongest or best papers for writing or different forms of printing and art were a guessing game until they were made and tested. On top of this, it was possible that a blend of multiple different combinations of fibers was the answer and not just one.

As we didn't have a material science testing lab to determine what agricultural fibers worked the best, we sought wise counsel and reached out to more experienced hand papermakers and read scientific papers on Tencel strength and other plant properties to make our initial planting decisions. We urgently needed access to a scientific lab on campus or from beyond but didn't have the funding or connections to get started. We needed further guidance as we were not material science engineers (yet).

I-Corps™ 2014

In 2014, Fresh Press was invited to participate in the National Science Foundation's Innovation Corps (I-Corps™). This semester long "program uses experiential education to help researchers gain valuable insight into entrepreneurship, starting a business or industry requirements and challenges."[5] We were looking to better understand the market for our sustainable agri-fiber paper products (as we were in our infancy as a research lab) and the best way to tell our story to possible collaborators and consumers.

This intensive program tasked every invited participant to develop a "Business Model Canvas"[6], where the participants located their key partners, activities, resources, value propositions, channels, customer relations, and customer segments. This involved brainstorming amongst the team, deep industry and marketing research, and connecting in-person or over the phone with hundreds of experts and potential customers in the market sectors determined in the customer segment portion of the "Business Model Canvas". To assist with this, we invited both of our research assistants (Diddie and Chertow) to participate.

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[5] "US NSF - I-Corps." *Nsf.Gov*, 2015, www.nsf.gov/news/special_reports/i-corps/. Accessed 9 June 2020.

[6] Strategyzer AG. "Strategyzer | Business Model Canvas." *Strategyzer.Com*, 2019, www.strategyzer.com/canvas/business-model-canvas. Accessed 9 June 2020.

The program required a final presentation after the four-month deep dive. We learned some very important information about the potential market for our agri-fiber paper products, a snapshot of our most likely customers, and what it would take to reach these people. First, through close to fifty interviews with sustainability, paper and packaging experts, and companies, Fresh Press discovered that agri-fiber pulp packaging was the best area to focus on in our upcoming research (as it was highly desirable to fill a need in the marketplace). We found that our target demographic was called the Lifestyle of Health and Sustainability (LOHAS) market. These consumers and citizens see a strong connection between their personal health and that of our environment. They make their economic decisions to further improve the world we live on. The LOHAS consumer feels better as a citizen after purchasing a product they feel has a less negative impact on the planet and/or helps out a social cause. At the time of the I-Corps course, the LOHAS demographic was 21% of the US market or 50 million adults.[7] (That percentage remains relatively unchanged at the writing of this article.)

It was also learned that Fresh Press could also be effective in reaching new customers outside of the LOHAS market by creating messaging that explains how using and manufacturing agri-fiber products help the American farmer. (Everyone wants to help our farmers it was learned.) In order to achieve Fresh Press' mission of "changing the paper supply chain from forest to farm," we determined we had to prove (with scientific data acquired through engineering tests and life cycle analyses) that the sustainable paper products we created were actually better not only for the planet but superior than tree-fiber paper. This would require a whole new level of partnership and funding outside of what was common for an artist and graphic designer.

Typically, our collaborative research partnerships in the art and design fields were centered around how what we know can help other disciplines to create new knowledge or a better tool or method to work together. What we were challenged with after this experience, was to learn about what characteristics of our paper through scientific testing and locate an interested researcher who had the laboratory and skillsets to do so. This type of research was outside of our expertise and would be new to the graphic design field in regard to sustainable material development, testing, and manufacture. We were aware of graphic designers writing about explorations with sustainable materials (papers, adhesives, metals, etc.), but not any who were actually making these materials themselves.

The Scientific Method

[7] Fendrich, Mary. *U.S. Consumer Perspectives and Trends in Sustainability*. 2014. Accessed 9 June 2020.

In order to take the next steps in the project, we went back to the Sustainable Student Farm, Architecture Professor Jeff Poss and a new partner the Woody Perennial Polyculture site (from the College of Agricultural, Consumer and Environmental Sciences) to write a successful grant called “Farm and Fiber”. This funding provided $79,620 in 2014 to hire more student employees, buy better farming equipment to bale excess prairie grass (Fig. 3), increase the student farm and nearby Woody Perennial Polyculture crop production, take the wash and pack pavilion completely off-grid to become one hundred percent solar powered, and expand the cold storage capabilities for the farmer on site. These were needed advancements if there was ever the possibility to scale up the small production Fresh Press had started.

Figure 3 SSF Farm Manager Matt Turino collecting bales of prairie grass

Two years later in 2016 (after Steve Kostell left for the University of Vermont), I raised an additional $14,522 from the University of Illinois Campus Research Board with Associate Professor Mark Taylor (Architecture) and Mechanical Science Engineering Assistant Professor Sameh Tawfick through a grant entitled “3-D Pulp: Crop Residue At Small and Large Scales**.”** This grant was targeted at finally working with an engineer and their lab to collect data on the characteristics of our paper in two and three-dimensional forms. This grant idea came from the National Science Foundation I-Corps entrepreneurship class where we learned that pulp packaging with our agri-fibers was a big research and entrepreneurial opportunity for us.

This project took our studio into an entirely new way of working. To best collaborate with our engineering and architecture partners, we had to move away from functioning like an art studio and follow more strict protocols to keep weights and portions accurate every time we cooked and beat fiber, handmade and dried a sheet of paper, or created a fiber cube for testing (Fig. 4). With the help of a new student research assistant Lauren Kovanko (MS Mechanical Science Engineering) and Professor Tawfick, we created a system modeled after the scientific method of observation, hypothesis formation, testing, and retesting to produce different varieties of pulp to hand make paper and cubes the same each time. We also created a strategy to produce blends of various percentages of different fibers in pulp, sheet, and three-dimensional forms (cubes cast in molds) to determine the characteristics of each (Fig. 5). This took a great deal of time. We designed more detailed recipe sheets to document weights of materials used, time cooked, time beaten, scoops of pulp needed per sheet formed, and drying time so that anyone involved in the project could make a consistent sheet or cube each time. I transformed my art of papermaking into a science.

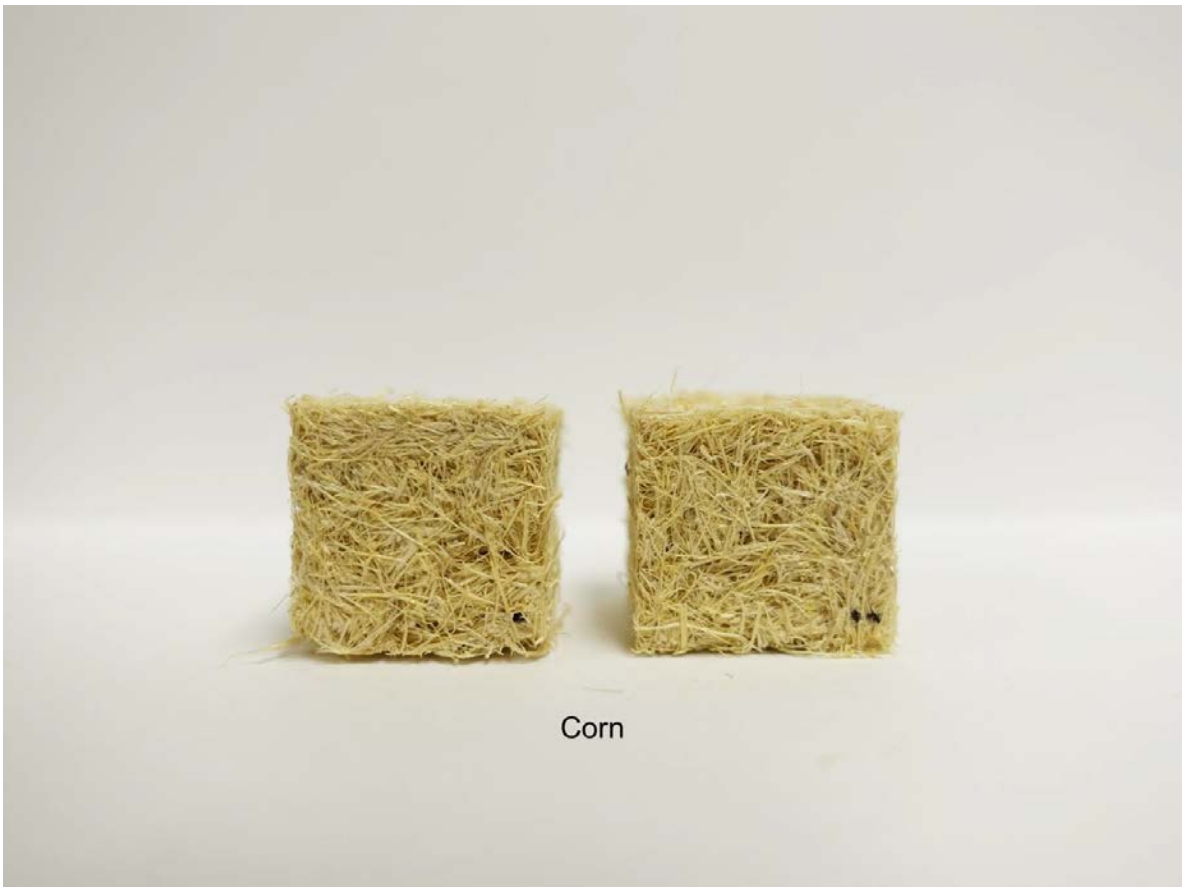

Figure 4 Corn fiber cubes (photo by Lauren Kovanko)

Figure 5 Flattened cubs of various agricultural fibers (photo by Lauren Kovanko)

In this research endeavor, we limited our fibers to hemp, rye, corn, and ash (using wood fiber as a baseline comparison). We also blended and tested each of these agricultural fibers with fifty percent of recycled cotton (except for the ash). In Professor Tawfick's lab, we measured length, width, mass, density, volume, stress, and stiffness. We further looked at each under a scanning electronic microscope (SEM) to analyze the fibers at different scales (x140, x180, x230, x500, x1200, and x4500) to possibly correlate data collected with the visual characteristics of each of the fibers. For instance, rye fibers look like zippers or sawtooth blades the closer you zoom in under a SEM. We theorized that possibly the good strength/stiffness numbers for rye (in comparison to other fibers) might be due to the individual fibers interlocking (like a zipper) when formed into a sheet of paper or three-dimensional form (Fig. 6).

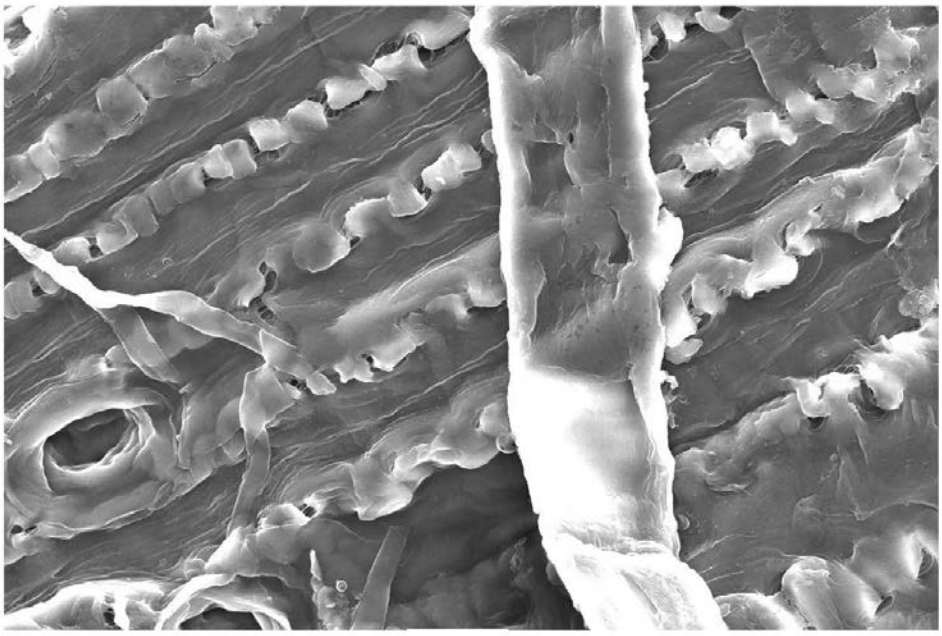

Figure 6 Scanning electronic microscope (SEM) image of rye paper.

Our collaboration with Architecture Professor Mark Taylor on this grant involved a different way of using fibers in three dimensions. With Professor Tawfick, each fiber cube was approximately two centimeters in length, width, and height. With Taylor, we scaled up our forms to pavers or brick sized blocks. The intention here was to see which fibers are best for commercial or residential building materials. The data collected from Prof. Tawfick's prior study with two-centimeter cube was used to choose which fibers should be used to create larger forms combined with environmentally friendly geo-polymers for thermal resistance testing. This is best described as the measure of resistance to heat flow through a given thickness of material (also known as R-value). Professor Taylor's goal was to build a set of full-scale walls from the material(s) that held the best R-value for insulation purposes.

Existing buildings currently account for 39 percent of energy-related carbon emissions[8] and the act of building a new structure globally generates 40 percent of our greenhouse gas emissions.[9]

[8] Towards a Zero-Emission, Efficient, and Resilient Buildings and Construction Sector GLOBAL STATUS REPORT 2017. Accessed 9 June 2020.

[9] "Why The Building Sector? – Architecture 2030." *Architecture2030.Org*, 2019, architecture2030.org/buildings_problem_why/. Accessed 9 June 2020.

The hope with this research was to also see if it was possible to use agricultural waste as a sustainable building material for current and future structures in a world where the population continues to grow. It is vital to continue to drawdown greenhouse gas emissions to curtail the worst of climate change, and architecture is a great place to start. This research from the “Agri-fibers in 3-Dimensions” grant was published in the proceedings of the “World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium,” (2018) held in Prague, Czech Republic.

Prairie Paper

As the “Agri-fibers in 3-Dimensions” project funding ran dry, the results pointed to rye, hemp, and corn as the most viable fibers to pursue going forward. I attempted writing grants to continue further collaborative research projects in the sciences but was unable to find many that matched in the art and design fields. This is most likely because the area of sustainable material development as a form of recognized research within the arts is a new one. As I continued to look for opportunities, I needed to rethink how Fresh Press would work as a lab going forward.

My idea was to build in an additional educational opportunity for campus and community (in addition to the research). I raised $37,695 from a grant entitled “A Campus Circular Economy – From Farm to Table & Desk” with the new student farm manager Matt Turino to launch a CSA (community supported agriculture) with handmade paper and art prints on the paper. This CSA was run almost entirely by university students from disciplines like painting, graphic design, landscape architecture, and advertising as their part-time employment. I used this project to teach them not only the art of handmade papermaking, but also business, land stewardship, and sustainability.

The students called the project "Fiber" (Fig. 7) and it reinvigorated the studio space with new faces and brought a more creative practice back into focus. This was a nice side venture as it showed the capabilities of the designer being able to move back and forth with some ease

between science and humanities-based collaborations.

Figure 7 Fiber by Fresh Press CSA announcement

Through this CSA, we gained a larger following and profile in the community and campus. We did sell paper, but mainly fielded questions about conducting workshops for schools, organizations, and individuals. One of the inquiries came from the University of Illinois Conservation Lab in the Library, who later became a collaborator. Our collective goals with this new partnership are to show proof of concept to create a new, locally sourced and produced

paper to be used in cultural heritage conservation, to test material and chemical characteristics to determine the best source and production details of a new paper, and to analyze the resulting materials in a conservation setting to ensure practical use in the field. The Conservation Lab usually purchases case papers from other vendors, but as those companies have slowed or stopped production, we have the opportunity through this interdisciplinary project to design and manufacture Illinois specific case paper with regional sustainable materials.

As of 2020, we have spent over a year testing different agricultural plant fiber blends in engineering and chemistry labs on campus to create the best case paper (Fig. 8) for the Library to mend old and damaged book covers and potentially sell to other libraries across the country. Currently, after all the data collection, we have determined a definitive fiber blend recipe and procedures to manufacture this paper. It has transformed our studio again away from an artist practice to a scientific lab. The chemist, Anneka Vetter, leading the testing side of the project has improved upon our past models with Tawfick and Taylor to one that also has completely reorganized the flow of the studio space to better accommodate the scientific method in a studio setting.

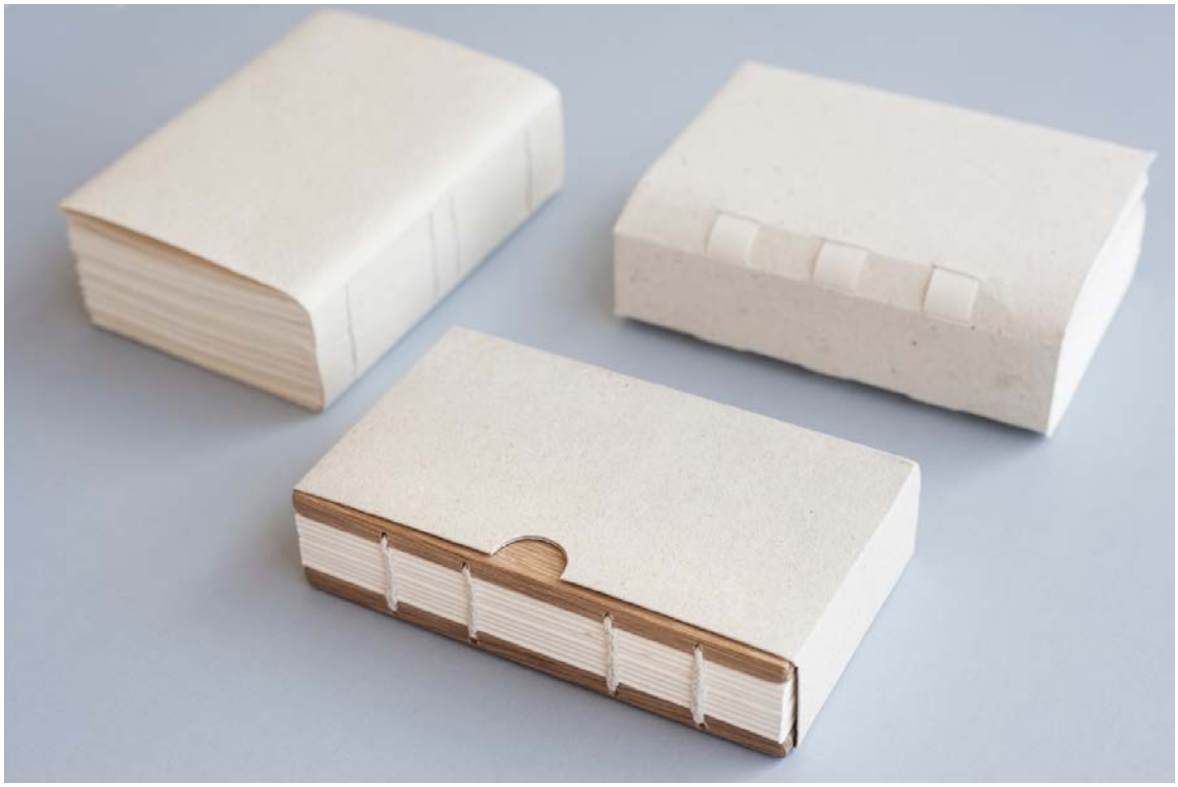

Figure 8 Historic case binding examples by Quinn Morgan Ferris

To help hire more staff and support the purchase of new supplies and equipment (including a rocket stove to cut down our carbon footprint even further), we wrote and received a $13,673 grant from the University of Illinois Library for our project called “A Case for a New Case Paper:

Co-engineering Library Conservation Materials from Locally Sourced Agricultural Waste.” This financial support helped us test the papers for pH, aging, color, flexibility, foldability, opacity, scorability, and fold burst/delamination. (Fig. 9) Combined with the data from previous research, we were able to locate a viable paper blend that we can make uniformly and at a larger scale for use in the University of Illinois Conservation Lab and possibly other libraries interested in purchasing the case paper. We called this product, Prairie Paper (Fig. 10).

Figure 9 Preparation for pH testing (photo by Anneka Vetter)


– est. 2020 –
PRAIRIE
PAPER

Figure 10 Prairie Paper marketing announcement

Conclusions

Fresh Press has been a new venture for me personally as an academic, but also unique as a research outcome in the field of graphic design. Typically, writing, presenting, developing new tools and methods, and making with materials are acceptable modes of research dissemination for promotion and tenure in academia. I am not only making with sustainable materials, but also creating those materials myself. Currently my lab is the only agri-fiber papermaking research facility operating out of an art and design school in the country. It has generated new knowledge on sustainable material manufacture and has very importantly opened up a new area for design research outcomes – sustainable material development. All of this work is interdisciplinary and has required institutional support through access to space and continued funding.

The mission Steve Kostell and I chose at the outset of Fresh Press is still the goal. To "change the paper supply chain from forest to farm" will take increased support from industry and the everyday consumer. This is a grand challenge. Our successes from the collaborations have shown that agri-fiber papers do indeed have a smaller carbon footprint than that of tree-fiber. In fact, prairie grass paper specifically made with renewable energy sources can be regenerative (or improve) for the soil to create a climate positive solution. Hopefully through the continued advancements in sustainable paper research at Fresh Press (and beyond), I can help open doors for new acceptable areas of design research outcomes and a better climate future.

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20 From Problem Finding to Prototyping: How human-centered design and activity-centered design are utilized to develop concepts for interactive products

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Abstract

This presentation will compare two approaches to interaction design—human-centered design and activity-centered design. Both have been used in an upper-level graphic design course for 18 consecutive semesters from 2011 to 2020. In addition to the educator's experience, artefacts were analyzed and feedback was gathered from students and alumni to achieve methodological triangulation.

The human-centered design project involves students developing the concept for a mobile phone app based on the findings from user research. Students conduct an in-depth, semistructured interview with a user, plus one other UX research method of their choice, to discover an opportunity for design. They translate the findings into a user-based concept, research similar apps, and craft a definition statement to ensure the app has a clear purpose. Students develop a paper prototype and conduct usability testing. Branding involves naming, designing an app icon, and writing an app store description. Style guides help to define the UI design. Students build a high-fidelity, interactive prototype of the mobile app and do another round of testing. The project culminates with a UX/UI case study that articulates their process, from problem finding to prototype testing.

For the activity-centered design project, students are asked to respond to a prompt. They select an activity, research the topic, and pitch an idea for interrelated interactive products, including a tablet application, in an effort to take a systems-level view. After analyzing the activity, students divide it into tasks and sub-tasks. They write a use-case scenario that explains how their personas perform tasks in a specific context. Branding involves naming, developing mood boards, and designing both an app icon and traditional logo. Students storyboard the iPad app and generate sketches to determine the specifications of the other product. After designing the interface and graphics for the additional product, students create a high-fidelity, interactive prototype of the app and product mockups. This project concludes with presentations.

For the 'final' in this course, students create an animation about one of their apps. The video, while somewhat promotional in nature, demonstrates how the app would function and/or benefit users.

FROM PROBLEM FINDING TO PROTOTYPING:

How human-centered design and activity-centered design are utilized to develop concepts for interactive products

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In recent literature about the future of design, Davis (2018) calls for design education to focus on the following seven areas that are shaping the field:

1. *Complex Problems:* Designers should be able to work collaboratively in multidisciplinary teams to address complex problems at the systems level.

2. *Aggregation and Curation:* Designers should be able to connect seemingly disparate content and services. They should be able to help people navigate information.

3. *Bridging Digital and Physical Experiences:* Designers should be able to make the journey through a product or service experience as seamless as possible for users. They should be able to design for interactions at touchpoints.

4. *Core Values Matter:* Designers should regard design as a force for social change and innovation. They should be able to develop strategies beyond the client model to sustain this type of work.

5. *Resilient Organizations:* Designers should be able to anticipate change, structure strategic conversations, create innovate business models, and synthesize research data.

6. *Making Sense in the Data Economy:* Designers should understand how technology is changing the world and be able to design for these shifting circumstances.

7. *Accountability for Anticipating Design Outcomes:* Designers should be able to conduct evidence-based design research throughout the design process, apply user-centered methods, and build awareness of the implications of design.

Davis not only identifies the skills and competencies that designers need, but she also articulates the rationale—to be prepared for the changing context of professional practice. A remaining question is: How can design education prepare students for the future? This paper explains how the conditions for students to develop competency in several of these areas have been created in ART 326 - Interactive Design Studio, an upper-level graphic design course at Flagler College.

RESEARCH METHODOLOGY

The researcher has taught interactive design for 18 consecutive semesters from 2011 to 2020. During that time, changes have been made to projects, new assignments have been added, and a variety of software has been used. In 2011, the course was an elective called Web II. In 2012, it became a required course called Interactive Design Studio. Then in 2018, it changed from a 400-level to a 300-level course in order for students to take it earlier in the program. Here is the course description for ART 326 - Interactive Design Studio (Flagler College, 2020):

> An advanced studio/lecture course that focuses on the principles of interaction design. The course will explore human-centered and activity-centered approaches to designing and developing concepts for interactive products. Projects involve problem finding, user research, concept creation, systems-level thinking, usability testing, and the presentation of high-fidelity prototypes. A variety of software applications will be utilized for interface design, prototyping, animation, audio, and video. Contemporary issues affecting user experience (UX) and user interface (UI) design will also be examined.

In addition to the researcher's observations as the educator, the research methodology involved artefact analysis and student feedback in an effort to achieve methodological triangulation.

THEORETICAL FRAMEWORK

In *Designing for Interaction*, the course textbook, Saffer (2010) discusses four approaches to interaction design: user-centered design, activity-centered design, systems design, and genius design. An overview of each approach can be found in Table 1, which also includes the roles that users and designers play in the process.

Approach	Overview	Users	Designer
User-Centered Design	Focuses on user needs and goals	Guide the design	Translates user needs and goals
Activity-Centered design	Focuses on the tasks and activities that need to be accomplished	Perform the activities	Creates tools for action
Systems Design	Focuses on the components of a system	Set the goals of the system	Makes sure all the parts of the system are in place
Genius Design	Relies on the skill and wisdom of designers to make products	Source of validation	Is the source of inspiration

Table 1: Four approaches to interaction design

One approach is not better than the other. There are pros and cons to each. Saffer (2010) believes that, "the best designers are those who can move between approaches, applying the best approach to the situation, and sometimes applying multiple approaches even within a single

project" (p. 32). In the course, students are given opportunities to apply multiple approaches, but that was not always the case. In 2015, the educator's bias towards human-centered design was identified. Student feedback indicated interest in trying the other approaches that are discussed in the book. As a result, more activity-centered design techniques and systems-level thinking were incorporated into the assignments.

THE ASSIGNMENTS

The assignments (slide 5) for this course include three studio projects:

- *Project 1:* Mobile App Design (mostly HCD with some ACD)
- *Project 2:* Interactive Edutainment (mostly ACD with some HCD and systems)
- *Project 3:* Animated App Demo (final)

The first two projects are the focus of this paper. They are intended to give students experience with two approaches to interaction design—human-centered design (HCD) and activity-centered design (ACD). Thus, they are framed and structured differently.

The third project is the 'final' in this course. For the final, students create an animation about one of their concepts from the first two projects. The video can either be like a commercial to promote the app, an app demo that demonstrates how the app would function if fully developed, or a use-case scenario that illustrates how the concept would benefit users.

Project 1: Mobile App Design

This human-centered design project involves students developing the concept for a mobile phone app based on the findings from user research.

Before kicking off the project, contemporary issues affecting UX/UI are discussed in class. Since new and existing technologies, like voice assistants, virtual and augmented reality, cloud computing, smart phones, and social media, are so rapidly integrated into our lives, it is necessary to pause for a moment to examine their benefits and pitfalls (Polgar, 2019). We need to reflect on experience, ask critical questions, have thoughtful discussions, anticipate consequences, and address the problems that have been overlooked with this rapidly changing technology. With mobile tech, for example, concerns include digital addiction, polarizing or adversarial debates, and negative effects on mental health. What can design do to change this? Through the lens of design thinking (Doorley et al., 2018), it seems possible to have a deeper understanding of the human experience, and thus, develop more humane products and services. But simply following a human-centered approach to design is not enough. In practice today, there exists a paradox of human-centered design (Sears, 2019). UX/UI is becoming increasingly quantitative (Davidson, 2020). If the design process reduces people to patterns of digital interactions and economic behaviors, then the resultant products may be easy to use, but at what cost? Are the products good for humanity? Or do they have harmful side effects? Has

technology overwhelmed human vulnerabilities (Thompson, 2019)? How can design put the 'human' back in human-centered design?

This builds the case for following a human-centered approach to design. HCD is explained as a problem-solving approach that involves trying to understand a user's experience and then developing ideas to meet their needs. It is an iterative process of creating prototypes, testing them, and refining based on feedback. The focus is on a user's needs and goals. The tool should be invisible (Saffer, 2010; Norman, 2005).

The prompt asks for students to select a person to be their user for this project. They are encouraged to choose someone that they have access to and someone who differs from them (i.e. different interests, views, age, major, etc.). They are to design an app that supports their user in one of the following areas (Center for Humane Technology, 2019):

- *Emotional* – calm, balance, safety, circadian rhythm
- *Attention* – be more focused and mindful
- *Sensemaking* – learn about a topic, build context, feel grounded
- *Decision-making* – helps them gain agency, purpose, mobilize intent
- *Social Reasoning* – to connect more authentically, deeply, safely with others
- *Group Dynamics* – develop a sense of belonging, community, cooperation

User research is framed as a way to discover an opportunity for design. Students conduct an in-depth, semi-structured interview with their user, plus one other user research method of their choice. They plan the methods in advance. Interview questions are critiqued in class. Then, they conduct research and produce outputs (slide 8). According to their case studies, this research helps students develop empathy with their users early in the process.

Students translate the findings from user research into a user-based app concept. Many students struggle to define the problem and discover an opportunity for design. They feel overwhelmed during this phase. The definition statement helps to translate research results into actionable findings and acts like a "solution-generating springboard" (Doorley et al., 2018). For the definition statement (slide 9), students write a user profile, brainstorm a range of possible features, consider which features would be most appealing to their user, research apps that deal with a similar topic, and craft a mission statement to ensure the app has a clear purpose.

Students develop a low-fidelity paper prototype with wireframes for at least 10 screens. This planning tool is intended to help students determine a navigation model and think through user flow, while also providing a big-picture view of the app, like a site map. Students conduct two rounds of usability testing—first, with classmates (slide 10), and then with their user. For testing, they employ the think-aloud protocol. As a result, the human-centered apps from this course tend to be very organized, logical and structured.

Branding involves naming the app and designing an app icon. Students generate a list of possible names for the app. They research names to check availability. After the name is finalized, they sketch a range of ideas for the app icon (slide 11).

Students make two style guides to define the UI design style for the app. Each style guide includes the app icon and complementary color swatches, typography, sample icons and imagery (slide 12). Once a design direction has been established, they set up their design file in Adobe Illustrator, Photoshop or InDesign. They start with the most complicated screen to test their wireframe pattern and styles, then proceed to design the remaining screens.

Students build a high-fidelity, interactive prototype of the mobile app in InVision and do another round of usability testing in class (slide 13). In addition to the prototype, students develop content for the product page in the App Store (slide 14). They write an app store description, craft the subtitle, and select key words. The project culminates with a UX/UI case study that articulates their process, from problem finding to prototype testing (slide 15).

Project 2: Interactive Edutainment

For this activity-centered design project, students design a suite of interrelated, interactive products in response to a prompt. The activity-centered approach is about understanding behaviors during activities and designing products to support the completion of the activity. An activity is seen as a coordinated, integrated set of tasks, comprised of subtasks. The focus is on completing an activity. The tool is the way; people will adapt (Saffer, 2010; Norman, 2005).

Students are given a prompt to respond to, but with enough flexibility to do some problem-finding. They are presented with research reports that claim that activity levels for kids drop after age eight and screen time and mobile usage increases (Rideout & Robb, 2019). The challenge is to design an activity for children between the ages of 8 and 13 that is both educational and entertaining (i.e. edutainment). We discuss the concept of stealth learning, where kids feel like they are just playing a game, but they are actually learning.

Students select an activity and research the topic. They are encouraged to take a systems-level view and think about products for the physical and digital environments. Designing for kids gets many students out of their comfort zone, which requires them to research the age group (e.g. developmental milestones). When selecting a topic/activity, students are encouraged to think back to when they were a kid: What did they like or dislike? This gives students a "point of view" on the project (Doorley et al., 2018). Students are encouraged to play games, use their imagination, be super creative, and ask 'what if' questions as their concept evolves. They pitch an idea for interrelated products, including a tablet application. The starburst method (a.k.a. six questions) is utilized for the pitch format (slide 17). The questions are:

1. What is the activity? (doing)
2. Why would someone do this activity? (learning)
3. Which products will you be designing? (tablet app, plus at least one other product)
4. How are they different from existing products? (competitive analysis)
5. Who is this for? (primary & secondary users)
6. Where could they use it? (context of use)

After the pitch, students are asked to analyze the activity to thoroughly understand the behaviors involved in doing it. They divide the activity into tasks and sub-tasks. Then, they are asked to visualize it by creating either a task analysis, flow chart, service blueprint, or user pathway (slide 18).

Personas are incorporated into the process to humanize the project. The educator provides a few examples, but students can create them as well, so long as they are based on real people (slide 19). Students write a use-case scenario that explains how their persona(s) use products to perform tasks in a specific context.

Branding involves mood boards, naming the activity, and designing both an app icon and traditional logo (slide 21). Mood boards are utilized to explore a variety of creative directions. Students make three mood boards (slide 20). Each board includes color swatches, typography, sample imagery, and UI elements. Through small group critiques, they narrow it down to one creative direction.

Students create a paper prototype of the iPad app, which should have at least three tasks. For the more immersive concepts, the paper prototypes resemble storyboards (slide 22). These apps utilize narrative to engage users in a story, thus the navigation models are hard to define. We do prototype testing in class, but not with actual users. Students also generate sketches to determine the specifications of the other product(s).

Students design the app interface and graphics for the additional product. The design direction is consistently applied to both products to ensure that a cohesive look is being established (slide 23). They build a high-fidelity, interactive prototype of the app in InVision Studio and mockups of the other products (slides 24 & 25). There is no usability testing.

This project concludes with presentations (slide 26), in which students are asked to explain their concept, discuss branding, articulate how the products are related, and demonstrate how the activity works by doing a walkthrough.

ANALYZING THE RESULTS

In ART 326 - Interactive Design Studio, the conditions have been created for students to develop competency in several areas mentioned in the research project, *AIGA Design Futures* (Davis, 2018). Table 2 explains how two projects from this course address each area.

	PROJECT 1	PROJECT 2
Complex Problems	Students work collaboratively to generate ideas and get feedback. They address complex problems regarding technology and ethics.	Students work collaboratively to generate ideas and get feedback. They address complex problems around technology usage and activity levels. They engage in systems-level thinking.
Aggregation & Curation	The app they design is intended to help users navigate information.	The activity is comprised of interrelated products.
Digital & Physical		Design for touchpoints. Connect the physical and digital experiences.
Core Values Matter	Design is regarded as an agent for change.	Design is regarded as an agent for change.
Resilient Organizations	Students synthesize data from user research and conduct a competitive analysis. They plan an in-depth, semi-structured interview.	Students synthesize research data about the topic and activity. They conduct a competitive analysis.
Making Sense in the Data Economy	There is in-class discussion about how technology is changing. Students discover an opportunity for design.	There is in-class discussion about how technology is changing.
Accountability for Anticipating Design Outcomes	The UX/UI Case Study is a collection of evidence-based research throughout the design process. Students apply HCD methods. There is discussion about the implications of existing technology.	There is discussion about the implications of existing technology.

Table 2: How the projects address the seven trends

While the assignments are considerate of many trends, they are lacking in the following areas:

- Multidisciplinary teams
- Developing strategies beyond the client model to sustain design
- Innovating business models

Since Interactive Design is a 300-level course, every student in the class is a graphic design major. One semester, we worked with a community partner, and invited students from other disciplines to participate in the project. Upper-level learning communities could be a way to encourage more multidisciplinary teamwork.

The assignments from this course have resulted in creative concepts and innovative products. While these projects are often included in senior portfolios and have been recognized with local and regional awards, the majority of the work never gets beyond the conceptual phase. In nine years, only two apps have been published. The biggest roadblock is back-end development, which is especially challenging at a liberal arts school. A few students have requested estimates for app development, but they did not have the funds to cover these expenses. A question for

future research is: How can design students create business models to turn innovative concepts into successful products and services?

SYNTHESIZED FINDINGS

Human-centered design and activity-centered design have associated benefits and risks.

Human-centered design focuses more on designing for or with users, which helps students develop empathy and be invested in the project. According to their case studies, students feel confident that their design solution is useful, usable and desirable after this approach. Since they are only designing for one user, we discuss the notion that designing for people with specific goals may result in a design that other people with similar needs will find satisfying (Cooper et al., 2014). While that sounds good in principle, it still leaves questions: Is the solution appropriate for others? Is it too customized and complex?

Compared to human-centered design, activity-centered design focuses more on the activity and the products, which helps students think about the use of tools and technology to mediate interactions. Their presentations are evidence that students can engage in systems-level thinking to design for touchpoints that bridge the digital and physical experiences. However, the activity-centered approach leaves a question around usability: How usable is the solution? The ACD philosophy is that the tool is the way and people will adapt. With that maxim comes some risk. Will users adapt? What if people don't want to adapt?

Both approaches are considerate of users, but in different ways. Human-centered design regards users as unique individuals who want to achieve a specific goal, whereas activity-centered design regards users as participants using tools to complete an activity.

CONCLUSION

In summary, there are pros and cons to the four approaches to interaction design. Designers need to know when to apply the best approach to the situation. Human-centered design can be utilized to discover and understand user needs and goals. Activity-centered design can be employed to develop tools that enable the completion of tasks. Systems design can be used to encourage systems-level thinking, and genius design can prevail when the designer's skill and expertise is needed. It is important that interaction designers know different approaches and how to move between them.

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21 How Can Art and Design Deliver on the Promise of Justice for All?

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Abstract
I would like to present on a collaborative class from the School of Art and the College of Law at a four-year public university. The focus of this class is on human rights, social justice and how design and visual communication can help make legal systems more accessible and navigable.

This community engaged human centered class discusses what are legal rights; how legal rights are communicated; and how legal processes are navigated. Our topics have included eviction where over 50,000 people in our state will receive an eviction notice this year. 96% of them will lose their homes without ever going to court. Students received an eviction notice and court date during the first class. We then met at the court house and observed eviction proceedings followed by Q+A with the circuit court judge. Students wrote a short reflection on the experience identifying flaws in visual communication materials such as the notice, forms, way-finding etc. Deliverables for this class included advocacy posters, legal notice form re-design, data visualization and tenants rights sheets. Students explored how design can empower people to understand and navigate a complex civil justice system and protect their right to housing.

This current Spring we will be addressing how to meet the needs of human trafficking survivors. Human trafficking is a form of modern-day slavery that subjects people to force, fraud, or coercion for the purpose of commercial sexual exploitation or forced labor. The second largest criminal industry in the world, human trafficking has been reported in all 50 states in the U.S. Victims of human trafficking include foreign nationals and U.S. citizens, adults and minors, all genders and identities. Students will meet with survivors, community organizations and law enforcement as they prepare to identify visual deliverables that will explore communicating survivor stories, the impact of visual data and more.

22 Going the shortest distance: designing research frameworks for reducing translation time in a multi-cultural, language tool

Sanda Katila
Kent State University

Abstract

As cities expand their municipal resources for incoming refugees, the area of translation in healthcare and emergency services presents new challenges for visual designer researchers. One such city, Akron, Ohio in the last decade became a home to 5,000 Nepali refugees (Huff Post, 2018). Though Dzongkha is the national language of Bhutan, there are 19 different languages and dialects spoken throughout the country (Little Bhutan, (n.d.). Healthcare agencies invest significant resources on translation, spending more than the "Medicaid reimbursement rate for medical services rendered." For many, it is difficult to distinguish what language is being spoken, or one dialect from another. Problems can arise when a healthcare worker identifies the incorrect language, resulting in the wrong translator being called, increasing the potential for harm, as it delays the time it takes for the non-English speaking refugee to receive the appropriate care.

This paper outlines the processes for design research framework for content development, methodologies, processes, collection of qualitative data and user testing by three colleagues from interrelated fields: Health Informatics, Communication Studies and Visual Communication Design. The paper discusses the design research for a language identification tool that can assist agencies working to address health, social and economic problems for refugees during resettlement. The final product, focusing on human-centered design, has the potential to save significant money and reduce time in resourcing the correct translators who decipher numerous Nepali dialects for refugees seeking hospital and emergency services in one community. Human-centered design principles can be leveraged to increase the accessibility of healthcare information for multiple constituents, including clinical staff, first responders, and even refugees as end users. We argue that only by engaging these constituents in the development and design of a language identifier tool for health and social initiatives can a workable and sustainable solution be implemented.

23 Graphic Design is White, How Might We Change That?

Zachary Frazier
Iowa State University

Abstract

Graphic Design as it is known contemporarily is a discipline with roots in 20th century, western Europe. Due to this, our understanding of graphic design history, education, and practitioners, often defaults to the white, Eurocentric gaze. As a black, African–American graphic designer it's become more apparent to me that the manner in which we perform the discipline of graphic design is deeply raced; raced meaning that the discipline of graphic design and the white race are inextricably linked throughout. The letters, tools, graphics, and aesthetics we cycle through across our careers were selected, employed, and refined by those in power then, and now. As shown in the American Institute of Graphic Artists (AIGA) 2019 Census1, white males dominate the discipline of graphic design. However, subsets of graphic designers did not need a survey to know this to be true. Within our own education and experiences as graphic designers, the group that has persistently been in power within our discipline is white, heterosexual, males. While this group has remained in power, dictating the history, education, and practice of Graphic Design, other groups were marginalized within the discipline along lines of gender and race. This marginalization has led to various instances of deficits throughout the discipline.

This presentation seeks to share instances of covert and overt white supremacy within Graphic Design practice, history, and education through the lens of the African-American Graphic designer. These instances will be both anecdotes-as-counterstorytelling, and will be substantiated by interviews with various African-American students, practitioners, and educators within the discipline of Graphic Design. Through this presentation I seek to pursue a singular question — Graphic Design is white, how might we change that?

Hi! I'm Zach Frazier, and I'm and Graphic Design MFA candidate at Iowa State University, and I'm here to talk to you today about the institution of Graphic Design and how it benefits from the institution of White Supremacy.

In this presentation, I'm using the term institution is to mean —

> a system with defined traits, traditions, and members.

Within the context of this presentation, white supremacy is understood to be —

> an institution, which exists to sustain the notion that whiteness and its creations are superior and of primary importance.

Therefore, creations by non-white individuals are inferior and of secondary importance, if any.[1]

When discussing issues relating to white supremacy, it is paramount that we not center the experiences of white individuals. White individuals are not being expressly harmed by the force that is white supremacy, non-white individuals, however, are. This is to mean that the objective of this presentation is *not* to explain how the relationship between white supremacy and graphic design benefits white designers and white stakeholders. The objective of this presentation is to explain now the relationship between white supremacy and graphic design *harms* non-white designers and non-white stakeholders.

In doing this, I will speak from the perspective of my own, as a black person, but I cannot and will not speak for all non-white people, or all black people. What I *can* do is speak about the relationship between the institution that oppresses me, White supremacy, and the institution in which I practice, Graphic Design.

What this means is that white supremacy is not only the KKK, MAGA supporters, and white people saying the n-word. These are instances of overt white supremacy.

Instances of covert white supremacy include things such as —

1. avoiding certain parts of your town,
2. prioritizing a Eurocentric narrative,
3. As well as curating and sustaining non-white, exclusionary policies, histories, and communities.

If this all seems like things that you know well, and that are obvious and evident in your practice — good! However, according to the state of our discipline, this is very few of you, so please continue to listen to what I have to say here.

There are a multitude of instances in which the institution of Graphic Design benefits from the institution of White Supremacy, but in this presentation I'm going to focus on just a few.

If you're not a graphic design practitioner, educator or whatever, I hope that you still find ways in which this presentation still applies to your practice, discipline, or institution which all have

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[1] D. Gillborn, G. Ladson-Billings, & E. Taylor & (Eds.), *Foundations of Critical Race Theory in Education.* (2nd. ed., pp. 223-50). Routledge.

their own canon or histories that are more likely than not, tied to white supremacy. As I am a graphic design student, practitioner, and educator, I'm speaking to issues of white supremacy's intrusion from such a perspective.

Let's begin.

1. What does white supremacy in graphic design look like?

In the discipline, white supremacy looks like many things. As found in a series of interviews that I've done with black graphic designers, as well as from various accounts by others it looks like

- Black design seen as "ghetto",
- the promotion of Eurocentric ideals throughout the discipline.
- The lack of black visibility within our history, within our canon.
- And the dumping of these two knowledge bases into our students.

2. How can we clarify how these instances are white supremacist in nature?

- What do we reference? What do they reference?
- Whose histories are we celebrating? Whose have we erased?
- The in the Modern and Postmodern sections of the textbook, Meggs' Graphic Design History, feature only 2 people of color in its 242 designers mentioned.
- Looking at the drawbacks of knowledge banking as described by Friere.
    - The more time we spend dumping knowledge into students, the less time students have to think about our history critically
- Compound this with the fact that we have not thought about our history critically in terms of race.

3. How do we combat White Supremacy in Graphic Design?

In his book, How to be an Anti-Racist, Kendi defines a racist as —

> someone who supports racist policies and institutions either through action or inaction.

He defines anti-racist as —

> someone who actively supports anti-racist policy through their actions.[2]

In this presentation so far I've outlined the ways in which Graphic Design has been sustained through acts of, racist, yes, white supremacy. Now, that that is addressed, let's talk about ways that we can actively oppose, or, combat white supremacy within Graphic Design.

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[2] Kendi, I. (2019). Culture. How to be an Anti-Racist. One World.

Audre Lorde once said, "*we can't dismantle the masters house with the masters tools,*" its going to take something new to do this work.

For starters, we can change who we reference, and when we reference them

1. Important work such as Jerome Harris' As, Not For has done great work at explaining the issue of black exclusion within the canon of graphic design, and he also offers a collection of about 30 works in the exhibition and booklet that show instances of great black graphic design work across the past roughly 100 years.

2. Why are we still referencing people who are self-declared fascists?

    There are more fascists than people of color in Meggs, we should not pretend that that isn't a problem. It is a racist act among other things.

We should be soliciting experiential knowledge from stakeholders such as —

- Students, clients, community leaders, as well as artists and designers of color[3]
- Elevate their experiences through counter-storytelling

Interrogate the construction of the graphic design classroom in terms of race. This can be done by understanding curriculum as a racial text — one that not only supports but is predicated upon the hierarchies associated with race[4].

We must be encouraging our students to generate knowledge about visual communication from their lived experience, not from a static, racially imbued text.

You might be asking at this point, Why does any of this matter?

I'm a good designer, my students like me, my clients recommend me, why upset a system that is working?

You're right! The system is working as designed, and non-white, non-male, non-christian students are paying the price for it.

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[3] Solorzano, D. G. & Yosso, T. J. (2002). *Critical Race Methodology: Counter-storytelling as an Analytical Framework for Educational Research."* In D. Gillborn, G. Ladson-Billings, & E. Taylor & (Eds.), *Foundations of Critical Race Theory in Education.* (2nd. ed., pp. 127-39). Routledge.

[4] Pinar, W. (Ed.). (1993). *Understanding curriculum as racial text: Representations of identity and difference in education*. State University of New York Press.

We must become actively opposed to Eurocentricity, racial exclusion, and other forms of white supremacy within the discipline of graphic design, and that is not going to happen if we only have good, anti-racist intentions.

We must also have good, anti-racist *actions*.

A common concern that the academy has with the line of thinking used in this presentation, one akin, but not similar to decolonization theories, is — *'what about the classics?'*

To address the importance of the classics such as, the bauhaus, maybe we should be asking *"what of the classics?"* Outside of the realm of graphic design, what relevance do these classics truly have to the everyday existence of the practice of visual communication?

Truthfully? Very little.

And while I'm on the topic of truth, I think its important to end by discussing truth as a replacement for objectivity.

Objectivity is something that we as designers search for throughout our practice. This is seen in terms of color theory, typographics, iconographic design, and on and on. The metrics with which we measure the efficacy of our discipline's created works are also influenced deeply by Eurocentricity, through white supremacy. The objectivity that we teach is nothing more than collective subjectivity.

Knowing this, how can we hope to find objectivity? More importantly, how can we expect a non-white student to do so at the same caliber as a white student? We cannot and it is a racist act to do so.

An anti-racist manner in which to alleviate this is to, as M. Asante says, seek truth.

As graphic designers we cannot hope to seek truth in ourselves and in our work if we continue with a discipline that is imbued with white supremacist ideology. We must dismantle and rebuild our canon and practice in an intercultural and liberatory manner that is fit for the world as it truly exists, not as it as recorded in our history books.

I'll leave you with this — Antoinette Carroll of the Creative Reaction Lab often says that inequities are designed, so they must be redesigned. I struggle to think of an instance relating to graphic design where that is more true than in terms of our canon and our duties as educators and designers.

24 How does VR fit into the core competencies of the graphic design pedagogy

David Gallop
Tennessee Tech University

Abstract

Graphic design is a field that is a perpetual state of flux. The designer, more times than not, will have to learn how to adapt and thrive in an environment that is changing by learning new technologies, software's and methodologies. Virtual Reality (VR), with its success in the marketplace and in educational practice, offers another technology that the designer and educator will learn to adapt with at some level. As professional practices develop with VR this will ultimately transition into our educational space.

So, how does VR fit into the core competencies of the graphic design pedagogy? Where does this device fall in line with the sketch book, drafting table, standard software's and the laptop? VR can be a very useful tool in several phases of the human centered design process. In the inspiration/ideation phase, VR can offer several options of immersive experiences and experiential learning to influence/inform the designer while making decisions during this stage. In the design development phase, VR offers a new digital tool/platform in the creation of design. In the iteration phase, VR offers the ability to place in working designs into the intended environmental space and fully immerse oneself/client to observe the design for evaluation. On the surface this tool appears to be a logically inclusive technology to this continuous flux narrative that designers continually face.

As David Thorburn posed, "Practices and practical design ambitions moderate the impulse to be first with something." In this paper I will discuss my own personal VR practices in the classroom and how this approach has created a new outlet for empathy in various ways for the designer and educator within the human centered design process. This paper will be of my own personal continuous journey of demystifying the practical application of VR into the graphic design studio.

25 Human Centered Designers as Key Collaborators In Scientific Research

Michael "Joe" Ford
Arkansas State University

Abstract
This paper explores the hypothesis that designers can be invaluable collaborators with science and technology researchers via a case study of an ongoing Human Centered Design research project attempting to find a solution to the problem of pollution from agricultural burning. What started as a practical attempt to resolve a local environmental and public health problem has developed into a large scale, interdisciplinary, and multi-institutional research project to study agricultural pollution from biological, atmospheric science, public health, and economic perspectives.

Through my practice of Human Centered Design (HCD), interdisciplinary collaboration, and creative problem solving, I've witnessed a deep connection between art/design and science at its edges. Both follow a similar method and proceed experimentally:

- Design research can be broken down into 5 cyclical steps - Observation/Synthesis/ Ideation/ Prototyping/ Evaluation...repeat...
- Similarly, scientific research is funneled through the scientific method - Observation and Measurement/ Experimentation/ Hypothesis formulation/ Testing/ Modification of hypotheses...repeat...

I've concluded that designers have a meaningful role in scientific and technological research by:

- Designing practical tools for testing and experimentation
- Ideating novel experimental scenarios
- Discovering practical applications for scientific research outcomes
- Visualizing scientific concepts
- Helping the scientist to read between the lines by illuminating inferred (but not explicit) ideas
- Connecting scientists with the layperson, helping to communicate knowledge to the general population

I'm currently working to bring this research-based practice into the classroom. The goal here is to broaden student understanding of what the design field is, and what their particular skill set can offer society. I've come to believe that creatives will have an invaluable role to fill in the 21st Century. I see it as my job to convince not only those in outside disciplines, but also my colleagues and students that this is true.

26 Human Centered Education: Aligning Design Student and Industry Needs

Andrea L. Quam
Iowa State University

Abstract

What will best prepare design students to become successful professionals and leaders in the design industry? This is the question every design instructor and program struggles to define and answer, with varied success.

This presentation will chronicle the curricular adjustments of one Midwestern University's graphic design program. These curricular changes were informed by faculty research, advisory council contributions, and industry projections determined via surveys and literature reviews. With this mix of cogent particulars, what could be missing?

Essential to the success of every designer —and design program— is a consideration for the audience using or receiving the information, product, or service. The research put into understanding the receiving parties for most design projects, is often a less considered aspect of curricular development. Shouldn't curriculum development focus on its user preferences and conventions as well? In trying to connect, communicate, and educate, shouldn't the emphasis be placed on the audience's needs and expectations over that of the creators and industry?

Students' typically come from a different generation and contrasting formative life experiences than those structuring and planning their education. Programs can have the best intentions when focusing on industry needs to educate students and prepare them for practice; however if there is not a sound connection and understanding of the audience they intend to identify with, the best preplanning and strategic efforts will fall short. This presentation will discuss how generational research, empathy, adaptability, and interdisciplinary opportunities can begin to address curricular development and classroom connections.

27 A Study on Learning Pressures for Undergraduate Design Students

Andrea L. Quam
Iowa State University

Abstract

Learning pressures influence students' academic performance and psychological well-being. Research has found every student experiences some level of pressure in the learning process, which negatively impacts their learning outcomes.

The purpose of this study was to build off existing research examining learning pressures experienced by undergraduate design students. Wenzhi Chen's initial research explored issues causing learning pressure and the pressure management strategies of undergraduate industrial design students in China. His initial research investigated what comprised academic learning pressure, what the main learning pressures were, and what pressure management strategies students utilized.

This presentation will share new research replicating key aspects of Chen's study at a Midwestern university housing eight design disciplines. It will reveal commonalities and divergences from the initial research conducted in China. In this most recent survey, a total of 17 questions measured peer pressure, self-expectation, time, financial pressure, and future career pressure on a Likert scale. Eight inquiries identified demographic information for additional evaluation and consideration. A total of 332 students participated in the study. Investigators found students felt pressure when they are not satisfied with their work, when their perception was they were not achieving their own goals. Indicators point to self-esteem as a key component of learning pressures. This paper also shows co-relationships, via learning pressure differences based on demographic information. Insights gained from this research will help instructors create a more empathetic and supportive classroom for students.

28 Human Centered: Our Design for Social Impact Course

Eve Faulkes
West Virginia University

Abstract

This presentation will tell the story of the Fall 2019 Semester of the senior Design for Social Impact course that combined a series of professional presentations, podcasts, vlogs and article readings to prepare twelve students in teams with empathic pre-conditioning prior to working with ve very different communities and one more typical client. While this model allowed for student choices so that each had three experiences, they could opt to spend more of their time with one community that really captured their heart or skill set. We followed what
we believed were best practices, from the learnings in Andrew Shea's Designing for Social Change, our textbook, to a presentation by Marc Rettig of FIT Associates on service design methods and active listening. For each different community, we prepared with different forms of hearing from that demographic, be it a researcher/songwriter who told his own experience of collaboration with a former coal camp, or the outrageously entertaining, honest and informative vlog, Contrapoints, of the trans woman, Natalie Wynn.

Communities we worked with included that former coal camp celebrating its integration of foreign born and black miners whose relationships continue to today, where we developed an interactive wall to help tell their stories; a newly formed LGBTQA+ organization with whom we co-created a brand, event materials, templates and a web site; a participatory community paint-by-color-dot mural inviting the Pride community, the NAACP, Muslim student association, homeless community, business community, and passers-by to paint together and share conversation (our most moving success); our peer community of our University whom we wished to engage on voter suppression through exhibits in the main library; and an organization of communities within the Monongalia National Forest with whom we designed interpretive trails. We concluded the course with a try at podcasts to share what was learned.

Human Centered: Our Design for Social Impact Course

Eve Faulkes, Professor of Graphic Design
West Virginia University

ABSTRACT

This presentation will tell the story of the Fall 2019 Semester of the WVU senior Design for Social Impact course. This combined a series of professional presentations, podcasts, vlogs and article readings to prepare twelve students with empathic preconditioning prior to working with five very different communities and one more typical client. While this model allowed for student choices so that each had three experiences, they could opt to spend more of their time with one community that really captured their heart or skill set. We followed what we believed were best practices, derived from the learnings in our textbook, Andrew Shea's Designing for Social Change, as well as a presentation by Marc Rettig of FIT Associates on service design methods and active listening. For each community, we prepared ourselves by listening to community members, and experts, be it a researcher/songwriter who told his own experience of collaboration with a former coal camp, or from the outrageously entertaining, honest and informative vlog, Contrapoints, of the trans woman Natalie Wynn.

December 8, 2019:

A community potluck dinner saw a gay rabbi joking with a Buddhist-if-anything local activist, an assortment of homeless and addicted citizens, the Mayor and several Morgantown city councilors (one of whom is the Rabbi's husband), the President of the West Virginia NAACP, the local Imam, members of the WVU Muslim Student Association, and black and white community members from Scotts Run (a neighboring unincorporated former coal camp). They were all chatting and eating side by side while live music played softly. Chris Haddox played guitar and sang some original songs that told stories about Scotts Run while his student fiddled. Later, Aristotle Jones, Creative Director for WestVirginia Radio Corporation played original Appalachian soul music of his own just one day after his grandfather died. His grandfather was a Scotts Run musician. What brought all of these folks together? Us, partly.

The WVU School of Art and Design's *Design for Social Impact* course had touched every one of these people in three of our six projects this semester. We not only connected to our client communities directly, but we also connected them to each other. Those relationships had in some cases been developing before this semester—some for almost a decade. But for my students, it was all a story told since August 12.

Clockwise:
Poster advertising free community dinner December 8, 2019.
Serving dinner with middle eastern, soul food, and 10 squash pies.
WVU Muslim Student Association member and pastor.
Rabbi and Greater Morgantown Interfaith Association member

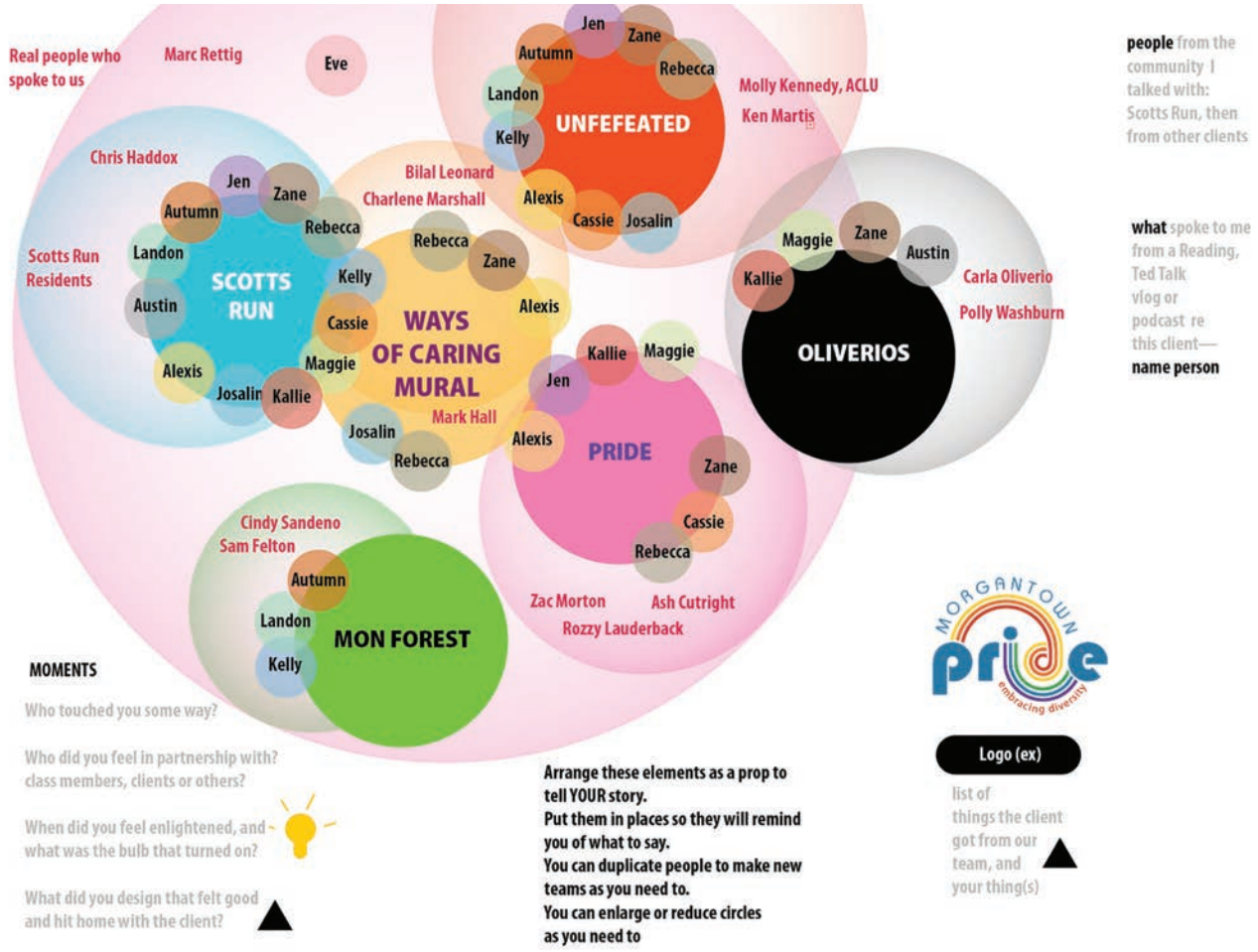
All photographs and diagram illustrations by Eve Faulkes, unless otherwise noted..

Communities we worked with included:

•**Scotts Run Museum and Trail**—representing that former coal camp who celebrates its integration of foreign-born and black miners whose relationships continue to today, and for whom we developed an interactive wall this time to help tell their stories;
•**Morgantown Pride**—a newly formed LGBTQA+ organization with whom we co-created a brand, event materials, templates, a children's book, and a web site;
•**Ways of Caring**—a participatory community paint-by-color-dot mural that invited the Pride community, the NAACP, Muslim student association, homeless community, business community, and passers-by to paint together and share conversation (our most moving success);
•**Undefeated: Canvassing the Politics of Voter Suppression Since Women's Suffrage**—an exhibit at the WVU main campus library for our peer community of our University whom we wished to engage in the history, current reasons to register and vote smart in the upcoming election
•**Oliverio's**—a local, third-generation familiy-orented Italian restaurant and its clientele, whom we wanted to to treat as a community and work with in a human-centered approach;
•**Mon Forest Towns**—an organization of communities within the Monongalia National Forest with whom we designed interpretive signage for two trails and a bike repair kiosk, helping with the goal of an increased recreational economy.
·**Design In Real Life podcast**—We concluded the course with a try at podcasts, or a section of the senior portfolio to share what was learned in their social impact projects.

Left column:
Al Anderson, Rock and Soul Review lead singer at 84, and young friend at the Scotts Run Museum and Trail Saturday coffee time.
Photo shoot at our client, Oliverio's deck on the Mon River Trail.

Right column:
One day's workforce of painters at the Ways of Caring mural—so diverse that we even included zombies.
Mon Forest Towns community member telling us that she decided to move to Marlinton, WV, from New Orleans after the hardware store owner told her to "take my truck loaded with a water tank, keys are already in it, and bring it back when you want" when she inquired where she might buy one. She was visiting and he had never met her before.
President of Morgantown Pride, pastor of First Presbyterian church using the new identity on banner and signs in a downtown parade.



Background and Our Context

I try in this course to give an experience of inhabiting the process of connecting to communities while balancing sensitivity to the dreams and worries of each individual, keeping eyes open for clues to the right messages as we co-design human-centered projects.

If the illustration of our projects above looks like a petri dish, it is not far off. We started our semester as organized and planned as we could, thinking there were four projects with client/communities and a wrap-up project of a portfolio or podcast option. Four of our 12 students were graduating in December and would miss our portfolio course, and so needed time to put this together. The podcast would be our first time and was planned to be a reflective teaching tool about the wins and losses of our semester experience. Knowing that was coming up was incentive to be reflective and to document all interactions and influences during the semester so that our individual stories could be put together.

It was a petri dish because of experimentation, but also because it was organic and required flexibility. One of the projects was dropped because of partners not being ready, and one evolved into three because that opportunity *was* ready. Several projects had to shift on the calendar because of weather or life circumstances of people or community emergencies. For instance, right off the gun, we started the semester with me missing the first day of class because of a death in my immediate family. My collaborator from several years in one of our communities, the songwriter and WVU Sustainable design faculty, Chris Haddox, filled in for me. He introduced Scotts Run, talking about his own research and working with the community, and played for the class the songs Scotts Run had commissioned from him. I missed a second class the following week to accept a Governor's and WV Human Rights Council Advocacy for Civil Rights Award presented at the state capital, partly for work in this course, and all due to the relationships I keep with community groups and organizations at the local, state, and international level. In the recognizing human condition, our own student cohort experienced engagements, family death, and a birth. One of our most organized students turned in her final portfolio in early stages of labor and held her new son December 7 of finals week!

Most Human-Centered Design courses happen on the graduate level. Ours has a particular set of goals intended for an undergraduate introduction. All of our experiences are about planting seeds and sampling the process. With each project, we try different tools to help develop empathy and relationships and track context, careful to stay humble about the dipping of our toes in this field.

Seeds I Hoped to Plant

•**Active Listening.** Many (though not all) undergraduate students struggle to be good listeners, and have short attention spans if they do not feel entertained by the speaker.
•**Design is service.** They may not have internalized that design is a service profession that will not necessarily reward their own idea of a personal visual style as one-size-fits-all.

Above:
Diagram of clients, students, speakers and prompts for our podcast

•**We design for the benefit of others.** Students can be reluctant to be excited about working for a client that does not fit their own demographic or values, though they are often aware of social justice, diversity and environmental issues as being important, and do generally want to make a difference in the world. They have been doing projects on these topics throughout their public school careers, but may associate them with work of other professions while they are more focused on what slick, cool or contemporary topics their Instagram feeds are promoting. Design may be whatever their job requires of them.

• **Design holds the possibility of empowerment.** My aim is to connect their moments of egalitarian thinking and turn it to empowerment, so that they believe in the possibility of helping in those streams of integrated sustainability for different kinds of folks beyond themselves. In other words, I want to jump start their Citizen Designer sense of responsibility through enough practice, hoping they can feel reward in small things like community body language or pleasure. I hope that multiple opportunities to touch communities convince students of the importance of this lessons.

•**Empathy is a high priority** and needs to be understood in a healthy way of not too much (toxic empathy of tribalism) or of pity, and not too little so as to avoid implicit bias. As students reflect on client interaction or speakers heard, I hope to hear a respect for the other in their language.

•**Respect for Research**. I also hope to teach respect for research enough to listen well to experts, notice what experts were brought in for, do more investigation through organizations or pertinent articles, blogs, vlogs, Ted Talks, etc. to support the stories told by clients and community members. They are too young and this course is too fast for literature reviews, but finding a healthy variety of sources to glean a perspective on how a community is similar and differentiated from a demographic or stereotype ought to become important in their process.

•**Humility and teamwork in iteration.** Prototyping means iteration. If we can mutually agree on priorities, the extra tries are about what the first try told us all and not about defeat.

•**Flexibility is the nature of maintaining a relationship**. Trust is the ultimate goal, under-girded with being responsible and honest. In this respect I try hard to model this behavior, including the "nobody's perfect" part, and being honest about that. This kind of endeavor cannot predict a calendar won't have to shift dates, or even clients, though student evaluations can imply that the course should.

•**Connecting with people is for introverts.** In fact, introverts make better listeners. I have more challenges with confident extroverts whose nature is to lead conversations.

How to Start

Ever since Don Koberg and Jim Bagnall produced their 70s design process diagrams that included Acceptance as the first step before even Research,[2] I have retained that bit of wisdom to remind myself that students don't automatically see what I introduce as a project to be significant to them. Just as we would do with a client, I try to build a relationship with them that includes their concerns, hopes and buy-in before I introduce them to a community.

My meeting with them the semester before the course starts is my first move. In this meeting, some wanted experience in identity and branding. Some actually wanted to work in a community and had seen our previous work. Several wanted a web site experience. Some have seen us do silkscreen, CNC routing, or bookbinding and want to "make things." One wanted to practice hand lettering.

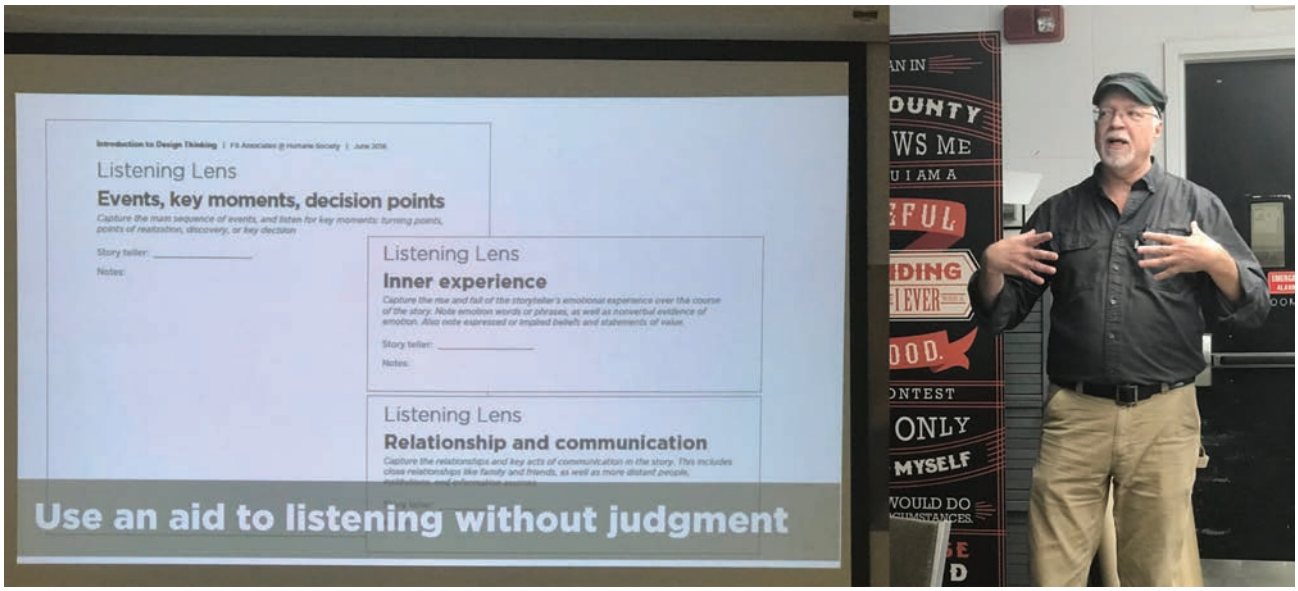
Showing them that I heard them when developing the syllabus is the second move.

My third move was this year to invite a professional, Marc Rettig of Fit Associates and also an adjunct faculty at the School of Visual Arts in NY and Carnegie-Mellon University's graduate design program. Fit Associates' mission is to equip change leaders with the capacity to create in social complexity. I wanted him to teach us about Active Listening before we went into our first set of interviews with Scotts Run community members.

Fourth, I also brought in real people for each project to set the context and pose questions, each time cognizant that someone from outside is more valid to them than anything I tell them. Chris Haddox, as mentioned, gave his perspective on the value of that community through his/our projects in community design. Students had conversations with 13 passionate adults who were not designers.

Below: Marc Rettig of Fit Associates speaking to our class.

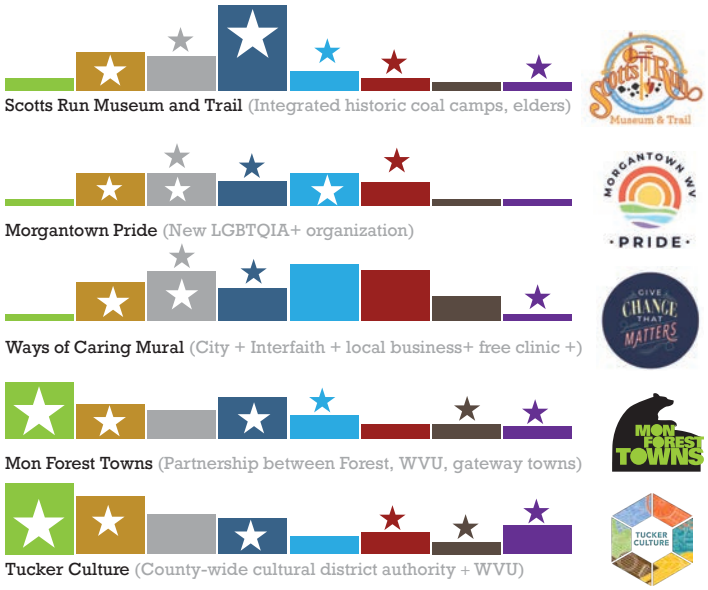
[2].See Bagnall, Jim (1995).



The bar height indicates perceived current strengths of the community (comparison to self, not others)

Star above the bar is where we want to grow through our collaborative efforts

A FEW OF OUR COMMUNITY COLLABORATIONS
and where our project goals come from



We were studying parts of design texts and the whole book of case studies from Andrew Shea's *Designing for Social Change*. Andrew had been a presenter at the conference we put on last March, *Designing Across Divides: Co-Creating Tools for Community Change*, where his talk, "Designing for Scarcity: Models of Cooperation," was also a resource.

I required viewings or readings of eight specific podcasts vlogs, blogs, TED Talks, or articles that were spokespeople for experiences in the demographics we would work with or pain points for them or things we would need to be aware of going in, such as white privilege or why facts don't change our minds. Reflections on these were required and helped students see what they were thinking at different points in the semester and if their opinions changed.

We used Slack as a project management software that allowed me to Direct message students or have shared channels for information or posting projects. Slack allowed our clients to join as well. This course has a Service Learning designation and I required 10 service hours helping with events for our first three communities (total) in addition to the service we provided as designers. This really did increase the buy-in and more relaxed conversation than the interviews provided.

Community Capitals

Over the years I have been in transdisciplinary projects in service design as well as in classes; there have been partnerships with other parts of the university that do community development. Dr. Margaret Stout and her grad students in Public Administration introduced me to the eight Community Capitals, which measure value beyond financial capital.[1] None of our clients had big financial wealth, but impoverished Scotts Run has had giant social relationships over generations, cultural values that are needed today and stories to tell. This chart allows us to locate name those assets, and we can star several goals they want to build up as we do projects together.

For example, Scotts Run Museum and Trail has great stories that prove their Cultural, Human and Social Capital. They have survived through acceptance and diversity that speak lessons for today. Our projects over the last nine years aimed to educate, growing Human Capital, Political clout, and ultimately increasing Built Capital for a permanent third place.

Morgantown Pride is new, but off to an exciting start with Cultural, Human and Organizational Capital as assets.
Our projects hope to educate, growing Human Capital, help them grow Social Capital to connect with one another, and create Political Capital for social justice and fairness toward their community.

[1]*Community Capitals diagram that we designed while working on a collaborative project, Fostering Fairmont, is adapted from Stout, Margaret. (2019)."Chapter 9: Pursuing Community Change Through Radically Democratic Practice" in* Reframing Nonprofit Management: Democracy, Inclusion, and Social Change. *Melvin & Leigh, Publishers. Printed with permission.*

Moments of Connection and Flow
Scotts Run

In Scott's Run, we have given so much to the community that is readily visible, that everyone knows us and trusts us. They are also a very welcoming community with all of the manners and hospitality habits that may exist in some student's great-grandparents generation at home, but is not expected from these strangers who are so different from their own upbringing and racial or socioeconomic demographic. The community always has fun with this, too, being more comfortable with knowing what will happen. Students leave feeling very loved and don't quite know what to do with it. They are further surprised when the whole several hundred people who show up at the Street Fair in September treat them the same way at our usual unveiling of whatever we have worked on with them. This year we created an interactive exhibit of a grid with all squares flipping to show two sides of a story in a metaphor of Recipes and a second interpretive sign with a twist.

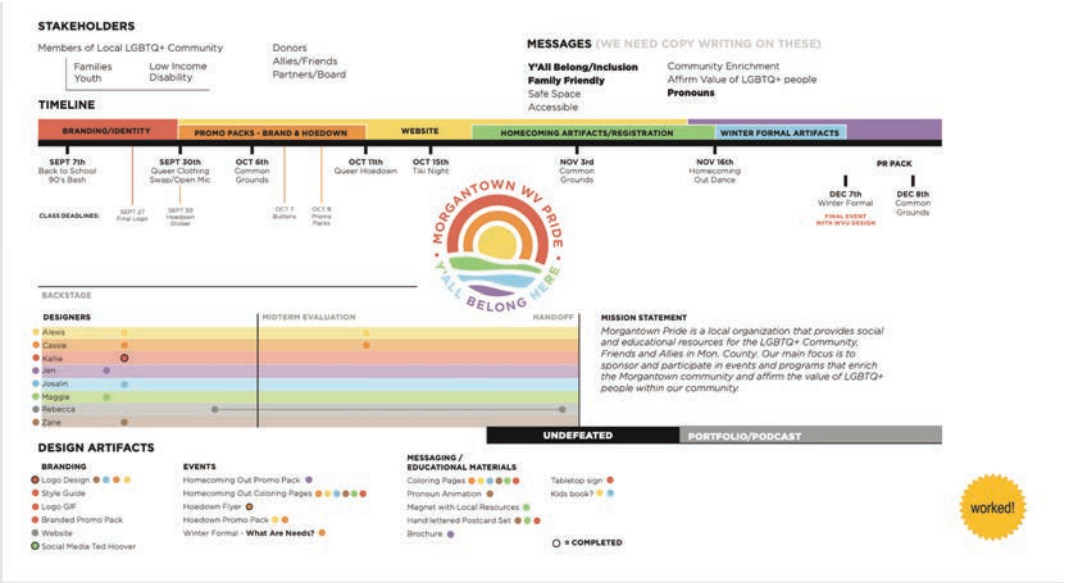
Recipes were both actual—from the community (and fitting because ethnic food at the Street Fair was the main attraction along with live music), and stories that described Scotts Run as having a Recipe for a Resilient Community. They have survived a massive mine explosion, the Great Depression, continuous mine closures and accidents, pollution, prejudice from nearby Morgantown, poverty, and the insults of being bypassed and cut in half when Interstate 79 needed a route of least powerful resistance for "progress." The community members boast of how they were there for one another, ensuring people made it through. Our exhibit was received as being dead-on, and delighted our partners and visitors. It also made use of some tag lines developed by earlier classes that have now become owned by the community as ways that talk about their memories.

A second project for the Scotts Run Museum would re-brand an empty building with an interpretive sign disguised as a window that invited viewers to have a look inside at the excitement people felt when it was a restaurant by day and dance hall by night. It was a place that might compel people from surrounding communities to hop a coal train in high heels to dance for a few hours to James Brown on the juke box.

Prototypes were given to the community in tabloid form before the large ones were made for the Street Fair as the ultimate user test before final aluminum signs would be made. The photo composite, made from a living room snapshot of a local couple, a dance hall interior and Wurlitzer jukebox in provenance, and a creative commons shot of dancers from the 50s, was so convincing that people discussed it as a genuine photo, even knowing how it was composited. We also created a logo for The Bunny Hop, which never had one, but it lent a period signage flair to marking the building rather than a heading for the interpretive photograph and Museum brand. It was particularly thrilling for 90 year-old Willa Harris, whose parents once owned it and who danced there.

A companion to the left window is a set of black board panels that invite stories of the Bunny Hop, invoking Candy Chang. We silkscreened the logo. The two students who worked on this project were the most changed by the reactions of the public, and would like to live in a community this kind and relaxed.

Top to bottom:
Members of Scotts Run looking at design proposals.
Front and back designs of interactive flipping board of Recipes for a Resilient Community.
The Resilient Community interactive board at the Street Fair.
Kelly Le silkscreening the chalk board for the Bunny Hop.
Willa Harris beside the Bunny Hop Interpretive sign in Scotts Run.

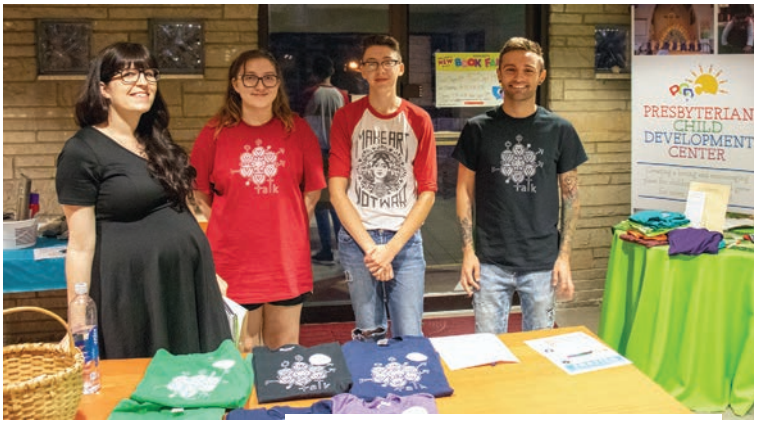


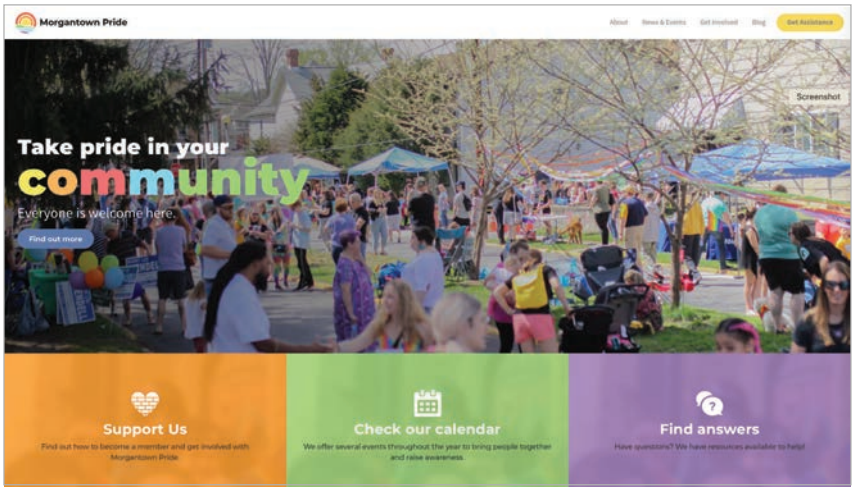
Morgantown Pride

In the summer before our semester started, the newly formed Morgantown Pride organization decided to hold a block party and got a permit for 50 people. As it began to appear that it would gather more people, they reapplied for a permit for 300 people. Over 1000 showed up. It was a happy celebration with kids and dogs and all generations, showing amazing support and driving the organizers to formalize their organization and get a web site. They had a brand, but it had some issues and they weren't married to it, so when our team talked with them, they were open to looking at a new one.

From the first meeting our class (that included three members of the LGBTQIA+ community) was excited. The client was fun and bringing very clear intentions to work with, and our team identified heavily with them. They were open to suggestions and we churned out a lot of directions that eventually all coalesced in color and fonts and became usable for different things. This gave everyone a product to help them get the message out, be it a book on pronouns, a children's coloring book with a story of diversity amongst personified woodland creatures, buttons galore, special event graphics and kits for publicity and templates...in addition to the web site for which they came to us. This was probably the happiest team project I have ever seen in a class and the closest I witnessed to Mihály Csíkszentmihályi's flow state in positive psychology. Everybody won, and in particular, such good trust was built, that when our students saw a problem with a title change to an event that the Pride Board had made to accommodate an extra tag-on of a clean needle exchange, changing the event from Queer Hoedown (all fun) to Harm Reduction Hoedown (what?), the Board listened to our team's reasoning for changing it back and we felt "listened to" like an equal partner.

Clockwise:
Morgantown Pride Queer Hoedown poster; Service Blueprint; Tee Party silkscreeners; stickers, web site front page; Pride pack with buttons giveaway for events





Ways of Caring Mural

The Ways of Caring Mural generated amazing positive experiences of actual community participation beyond my greatest hopes. Several years of building relationships helped things fall into place for a number of groups to realize this project that had been started when my student, Jessica Rush, presented it to the Morgantown Downtown Task force. We had never found a vacant wall.

Last year, when we held the *Designing Across Divides* conference, we gave free entry for homeless people and the Friendship House, a drop-in center for recovering addicts and people with mental illnesses. This built a relationship with that community. I am on the Steering Committee of the Greater Morgantown Interfaith Association that educates against xenophobia and advocates for Fairness legislation that was also part of our Conference last year and sponsor of this mural. The Arts Mon Murals group was looking for ways to put more murals in town and wrote a grant that was funded. The difference between this mural and their typical ones was that we wanted the most diverse members of our community to paint it. It was on the side of the building that houses the Mylan Puskar Health Right free clinic. We wanted community members from different walks of life and diversity to be on it along with ways that they contributed. The clinic board voted on the portraits to include the first black female mayor in West Virginia who grew up in in Scotts Run but was mayor of Morgantown, and later a House of Delegates member. A feisty Muslim woman who helped found the Greater Morgantown Interfaith Association was another candidate, and we had a great photo of her embracing the President of the Scotts Run Museum and Trail, herself a social justice advocate. The white guy on the left was a former bipolar patient whose life was changed positively after the invention of lithium, and who went on to be a national advocate for mental health, and for integration with the NAACP. He founded the Friendship Room, which became the Friendship House. The mural connected many parts of our community and was highly supported by the City Council, who had recently passed a welcoming resolution for all manner of diverse people, including refugees.

Clockwise:
Ways of Caring mural mockup for the side of the Mylan Puskar Health Right Clinic;
Mural painting in progress September 25, 2019;
Volunteer painters September 25, 2019.

The alley themural was on was well-lit so that we could work into the night when weather permitted. My students and I painted the face details and the rest had been outlined and dotted with the correct colors so that anyone could help paint. The beauty of it is that everyone did, from the mayor to the homeless, from members of our Pride client to the interfaith members, to passers-by. It was fun and lively, and deep and interesting conversations were recorded. It was the moment most remarked on by my students and folks who attended the celebration dinner of December 8. It was a moment where all felt important and listened to. We want to replicate it.

What we Learned and want to improve on

Our podcast that would have presented the semester in the students' words as project 7 generated a rough draft, but we ran out of time to edit it. My last required podcast reflection gave a prompt to generate the discussion of what they wanted it to be about. They decided the podcast was to be called IRL—a throwback to the In Real Life existing podcast, but ours also stands for *Design In Real Life : Impact, Relationships, Listening.* This is what they boiled the class experience down to. I am quite pleased with that. I had planned for every student to do one episode to have their own take on a moment that held meaning for them, but their idea was to make topics and have small group dialogues on them. From that raw footage, from Slack messages to me, reflections from the readings, and text from the Portfolio stories, I could see that seeds were planted in our journey together. They were also clear in pointing out how we could improve the course. I also loved their advice.

Make fewer, deeper projects.
Students are used to 3-week projects in other courses. They wanted portfolio pieces, and too often courses like this end up without those. A tendency is for students to procrastinate if it looks like there is a long time to complete the project and so they work on other coursework while the load seems to be research. Getting buy-in quickly with interviews and presentations was my approach to hooking them. I had tried to give three communities per person to keep interest up, but they felt rushed and would have liked to stay longer with a community. Doing fewer projects, but showing the importance of depth at each phase of the process would also be more sane on my part because of the reconnaissance and many meetings that more communities required.

Keep the external speakers and reflections.
Comparing student evaluations, the outside speakers were most helpful and the readings and viewings were also insights for most students. (Some who put them off found them less useful, or did not want to view those for other teams though it kept the conversation across project more informed).

Make sure students know what they are signing up for.
There is a difference in maturity among undergraduates. Moving to an application for this course might screen out those who are taking it without really knowing what it is about. Though this course really did change and open some minds that were not expecting such immersion in communities, the camaraderie can sometimes be ruined with one really uncaring and poorly-behaved person. We had no one like that this semester, but have in the past. Along with the meeting prior to leaving for the summer, this presentation can now give a more clear picture of the course experience. This was our intention fo the podcast as well. This group did feel that they became their own community with mutual interest in one another's contributions.

Try to stay more local
This is more about me. I have been stretched in maintaining long distance relationships because I have so many relationships to keep up with through regular organization meetings beyond our own projects. Travel is restricted for students because of other classes, so we can only manage one out of town visit per semester for a team. Last year we had an international client who flew two students and myself to MIT where we presented at a conference and participated in an IDEO workshop that I thought was an amazing experience, but it left the others out and made them feel uneasy about talking about it. This year our Mon Forest project was the least complete, but that may also have been the fast track it was on to finish.

A second community is always a good comparison .
I do believe that two communities will be important in a semester. The comparison will always show that there are differences to approaches and needs. Two projects lessen the risk that nothing can go forward if something goes awry with one or the other. The comparison also invites finding value in different ways and likely provides different formats for design solutions, as the portfolio is still an important draw for students. An infographic or beautifully designed service design tool and its packaging are, of course, portfolio pieces as well.

Left:
Sarah Little, portrayed on the wall, meets barbers of Classic Cutz from across the alley.
Homeless volunteer painters assist a smaller volunteer.

The podcast may still work.
I had mixed reactions to the podcast assignment, but may pursue it again giving it more time, or make a documentary video that can live on web sites we have created for some communities or on our WVU Public Interest Design page.

Final thoughts
This course is an investment in the future, trusting that at some point, these graduating students will think of human-centered methods as the natural ones. We almost claim them all when we talk of UX design, but sometimes we think of these methods in the context of business models more than the simple Placemaking reasons for helping out that might improve quality of life for a community. As I read this again during justified protests nationwide of historic and present racial injustice while in a pandemic that has no end date, I see the exigency of such work. It may not be is as close contact as we were able to do before, but that's just one more limitation to which design always responds. Please join me in any way you can.

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29 Human-Centered Design for Historical Buildings

Shantanu Suman
Ball State University

Abstract

Even with a large population of people with disabilities in the USA, inclusive and Human-Centered Design isn't extensively included in the undergraduate Graphic Design curriculum. There is a growing need for design programs to equip the next generation of designers with the information, education, and tools required to make inclusivity a key measure of success for our society. Designers need to learn the process of developing environments and systems that can be used by people with varied abilities.

With the passage of the Americans with Disabilities Act in 1990, access to properties open to the public is now a civil right. However, most historic buildings built in the earlier part of the last century did not hire experts who considered inclusive design while creating such structures. The Museum of Art, built-in 1935 and located on my University campus is one such example. Providing access to all its visitors while preserving the character of such historic buildings needs a lot of collaborative efforts and some creative problem-solving.

In 2016, during my first year teaching at my current University, I conducted research, collaborated with the Office of Disability Services and Architecture Library, and introduced an Accessible Design project for my senior Graphic Design class. Students were invited to conduct an on-site assessment of Museum of Art, identify the actual and potential barriers for the visitors with and without disabilities, and develop a Design System to provide a high level of access while minimizing changes to the historic materials and features of the building.

At the UCDA Design Education Summit 2020, I would like to share a presentation that includes proposed design solutions from this ongoing project as well as discusses and suggest ways to make the graphic design curriculum more inclusive.

30 Human-Centered Design Meets Community Block Party

Marty Maxwell Lane
University of Arkansas

Abstract

Springdale, Arkansas is like many communities that are undergoing gentrification. Springdale is located in Northwest Arkansas, which as a whole, is rapidly growing. Between 2010 and 2018, it was the 13th fastest growing area in the United States. Due to great economic opportunity for a variety of workers, Springdale has become one of the most diverse communities in the area, home to a vibrant Latinx and Marshallese community. However, many people from these communities lack representation and lack access to community decision making.

TASC (The Teen Action Support Center) was founded in 2009 and created 'The Station' a downtown Springdale "teen collaboratory" to empower teens to take action in their lives and communities. In 2018, I was introduced to Aron Shelton, Executive Director of The Station, and we discussed ways that my Human-Centered Design course could support a series of community block parties. We used the first block party as a prototype to gather data about community needs and desires in a way that would authentically engage the community. My design students worked closely with the teen interns from The Station throughout the project, co-creating the branding, the concept, and the block party itself. My students created trilingual activities such as Bingo and 'This or That' that collected qualitative and quantitative data about the community. The students compiled the findings into a book that now lives with The Station and functions as a guidebook for community activations. During my presentation, I would like to share the process of this project, both from a pedagogical standpoint as well as reflecting on the ways that using a human-centered approach to community engagement can increase inclusion and access to decision making.

31 Human-Centered Recruitment

Denise Anderson
Kean University

Abstract

Studies have shown that undergraduates who are given support, who access internship opportunities, and who build professional relationships through networking increase their odds of getting a job offer and a higher salary upon graduation. Public colleges and universities, however, often lack the resources necessary to acquire and implement technology tools that enable students to network with professionals in their target industries. To provide this kind of foundational support for students attending a highly diverse, four-year state institution, an Assistant Professor assembled a team of student researchers and led the development of a digital networking tool specifically created to provide design students with a platform to showcase their design projects, talents, skills, and other relevant information that communicates their overall value proposition. The Professor and her team will present the Phase II of the project which includes planned improvements based on the Phase I outcomes.

32 Incorporating User Centered Design Methodology and Emerging Technology into Pedagogical Practice

MiHyun Kim
Texas State University

Abstract

When we shift design methodology from one about features and functions to one about users and user outcomes, designers deliver more useful, usable, and desirable solutions. Through understanding audience and context, designers are able to work toward accountable outcomes that meet user needs more successfully. This user-centered design methodology enables designers to address a wide range of complex business, social and cultural issues. When combining this design thinking methodology with emerging technologies such as AR and VR, designers can create experience with both meaning and impact. And, by engaging burgeoning young design students with these perspectives and design skills, educators can best prepare the next generation of designers to fully engage with, and benefit, the needs of tomorrow.

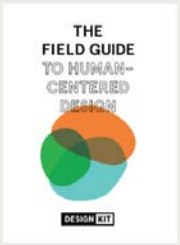
In my interactive design classes, students design screen-based solution for physical spaces like kiosks, mobile app design, and IOT (Internet of Things). They are asked to think about both User Interface design and the users' spatial relationship in physical real-world spaces. The proposed themes vary, ranging from school campus way-finding systems, to learning kiosks at children's museums, to city guides utilizing Augmented Reality (AR). In all these scenarios students must visit the actual location, to observe and interview their "users". They are also required to adopt a strong work-in-progress culture where everyone frequently shares ideas, concepts, sketches and all project resources to solicit feedback and discover feasibility.

This talk will share 1) hands-on activities for practicing collaboration and putting the diverse users at the center of interactive design project 2) how design students may implement emerging technologies like AR/VR in their Graphic Design methodology and showcase these classroom outcomes, and 3) how the full circle of research – design, prototyping, user-testing, and iteration – comes together in a classroom setting within the context of a design pedagogy.

1. User Centered Design Methodology

When I teach Interactive Design courses, there are few frameworks I introduce in classroom such as the IBM Design Thinking Field Guide, The Field Guide to Human-Centered Design by IDEO, The Design Sprint by GV (Google Venture), and Inclusive Design Toolkit by Microsoft. Each framework has slightly different approaches to user centered design.

1.



2.

3.

4.

1. IBM Design Thinking Field Guide
2. The Field Guide to Human-Centered Design by IDEO
3. The Design Sprint by GV
4. Inclusive Design Toolkit by Microsoft

IBM Design Thinking Field Guide is a framework for design thinking re-envisioned for modern enterprise. At the heart of its human-centered mission is Enterprise Design Thinking: a framework to solve our users' problems at the speed and scale of the modern enterprise.[1] **The Field Guide to Human-Centered Design by IDEO** is a design kit to offer problem solvers of any stripe a chance to design with communities, to deeply understand the people they are looking to serve, to dream up scores of ideas, and to create innovative new solutions rooted in people's actual needs.[2] **The Design Sprint by GV (Google Venture)** is a five-day process for answering critical business questions through design, prototyping, and testing ideas with users. It is developed for business strategy, innovation, behavior science, design thinking–packaged that any team can use.[3] Lastly, **Inclusive Design Toolkit by Microsoft** aims to create products that are physically, cognitively, and emotionally appropriate for the greatest number of people with a wider range of abilities. It is to see human diversity as a resource for better designs.[4]

In my interactive courses, I choose one of these design methodologies depending on a project. If a project is about creating a commercial driven product, IBM Design Thinking Field Guide or The Design Sprint are most suitable as their methodologies aim to build alignment across teams and put enterprise in design thinking. If a project is a community-based assignment that educates the community members, evokes a behavior change and creates positive impact in the community, The Field Guide to Human-Centered Design by IDEO fits better. The Inclusive Design toolkit can be used for any design project, as you'll see below when I describe *Project 2: Designing for Service or Wayfinding: A Digital Product in Physical Space.*

2. Research

Here I share two of my classroom projects as examples to guide you through the full circle of the design process– research, prototyping, design, user-testing, and iteration. The research process is often a group effort in order to motivate each student and to generate as many ideas as possible. Each group consists of 2 to 5 students, working as a group during the research process, but the team often design separately to create various solutions.

2-1: PROJECT ONE

A Mobile App for Storytelling, Mermaid Tales: A Mobile App using Augmented Reality (AR) to preserve San Marcos, Texas History

Mermaid tales is an interdisciplinary project creating a location-based mobile app using Augmented Reality (AR) and animation to engage visitors and local residents in exploring and preserving the history and culture of San Marcos, Texas. The project was in partnership with the City of San Marcos, Texas to digitally preserve the city's heritage

and quirky history of: "Ralph the Famous Swimming Pig," "Mermaid" performers, and being longest continuously inhabited site in North America. The entire class researched together, and designed individually. We used The Field Guide to Human-Centered Design by IDEO as it works best for community-based projects that create experiences, services, and education through digital products. I will highlight one student outcome for each below step so you can see the process in action.

1. **Interview with Experts:** In order to deeply understand the community members we are looking to serve, we started the project by interviewing the city officials and the underrepresented community groups such as Indigenous Cultures Institute, African-American Calaboose community, and Centro Cultural Hispano de San Marcos community. Interviews are to gather key insights into relevant history, context and recent innovations. We wanted to learn about both successes and failures and offer them an opportunity to share their perspectives while visiting the sites of ten newly installed mermaid statues around the town.
Key questions: *how do you preserve the history of your community? What story does each mermaid statue represent? Do you think your community is well-represented in history? What do you think would be the best way to utilize digital technology to empower your community?*

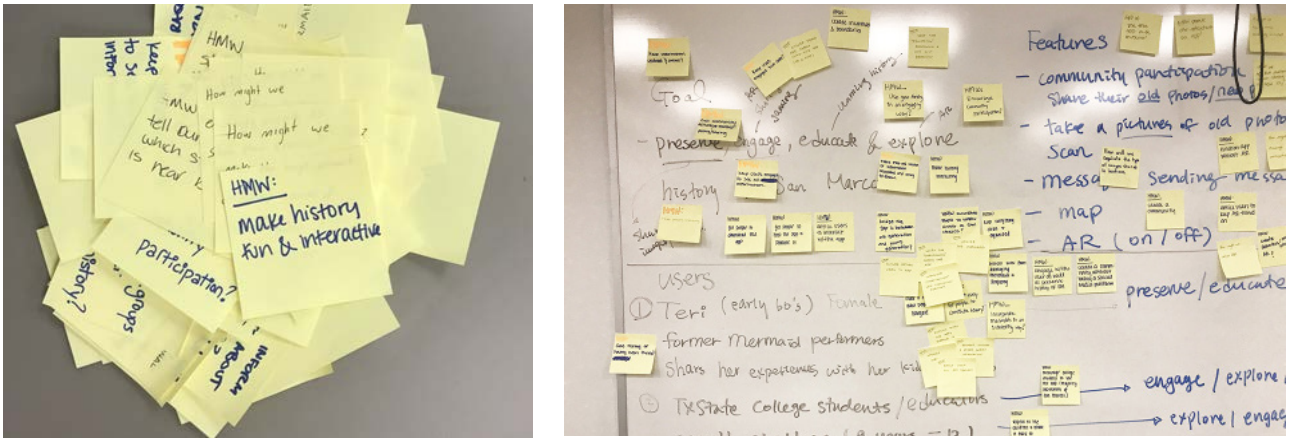
Group Research for *Mermaid Tales*

2. **Target Persona:** After the interviews and the site visits, we defined several personas to understand the target user's needs, contexts, and history that help us ensure our approach to the users are valid.

Personas: *former mermaid performers, Texas State University students/educators, Children (9–13 years old) who live in San Marcos, Texas, Tourists– mostly family, and under-represented community groups.*

3. **Goal Statement:** Write down a Goal statement. What problems do you plan to solve? Why do we create what we are about to create?
   Statement: *We need to preserve, engage, educate & explore history of San Marcos, Texas as we are losing its unique identity and recent flood have ruined historical artifacts.*

4. **"How Might We..." questions:** Convert the Goal Statement into "How Might We..." questions to find opportunities for design. HMW questions should generate a number of possible answers to brainstorm various ideas.
   HMW: *How might we keep the app educational and engaging, not just text based? How might we make map and location of information accessible and easy to follow? How might we get the community members actively involved in posting and sharing their own stories? How might we make history fun and interactive?*



How Might We (HMW) questions

5. **Brainstorm:** Brainstorm for Innovative ideas to energize the students, promote openness, generate lots of ideas, and focus on creativity over immediate feasibility. Generating as many as possible ideas with positive and optimistic views is the key.

Ideas: *Utilize Augmented Reality (AR) to create animation on/around each mermaid statue as each mermaid statue represents a part of San Marcos history, Create illustrative characters to guide through the app, Apply a scavenger hunt to allow the users to find each statue and earn points to redeem at local business etc.*

6. **Decide:** As a group, individual students, the city officials, and myself voted the top best three ideas.
   Chosen ideas: *AR, a gaming aspect of an app such as Scavenger hunt, and Illustrative characters*

2-2. PROJECT TWO
Designing for Service or Wayfinding: A Digital Product in Physical Space

This project requires students to create a kiosk design for a physical space in which the students can visit to study the surrounding environment and observe user behaviors. Physical spaces can range from hotels, museums, elderly care, hospitals, airports, restaurants, offices and stores.

Each group consisted of two-people. Each group researched and designed collaboratively working on the same vision and goals for their idea. One of the most important part of the project is to visit the actual physical space as a group, observe people's behaviors, and interview their potential users.

We used The IBM Design Thinking Field Guide and Inclusive Design Toolkit by Microsoft for the project since the end product should be marketable based on real problems they find. I selected the most relevant steps from the field guide and the students followed the below research process. The example that is used in each step is to design a kiosk at a Children's museum in Austin, Texas.

1. **Stakeholder map:** make sure your group has a clear understanding of who is relevant to your concept by

identifying anyone involved with and impacted by your project. Cluster the identified people into three main groups.
Stakeholders: *parents, kids, museum staff*

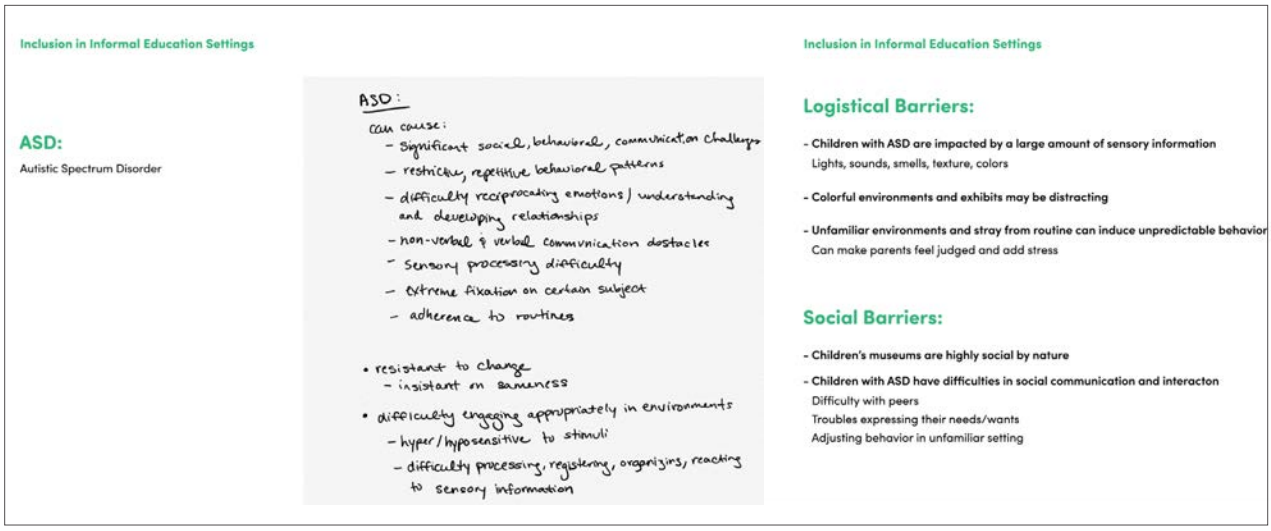
3. **Empathy map:** With the groups of people from the Stakeholder Map, create empathy maps to help synthesize the team's collective knowledge about the users as a team, bringing them closer to a common understanding of who the users are. Personalize each user as much as possible by giving names, education level, hobbies, personalities, daily life style etc.
   User personas: *1) Ellie Ramirez, 34 years old. Occupation: Elementary School Teacher, Interests: arts, gardening, baking, reading, Goals: Spend quality time with family, take kids to do fun activities like museums, parks and library, provide her kids with more engaging learning experiences they enjoy*
   2) Lea Ramirez, 6 years old. First grade student, Personality: curious, outgoing and playful. Interests: dancing, puzzles, science, mermaids, Disney, youtube, Play-doh, and slime. Favorite Subjects: science, reading, technology. Challenges: short attention span, wears glasses, easily frustrated, struggles with confidence, Autistic Spectrum Disorder (ASD)

4. **User flow map:** lay out the user's movement through the product, mapping out each and every step the user takes– from entry point right through to the final interaction.
   Userflows: *1) Entrance Kiosk: Welcome Screen > Scan E-ticket > Thank you > Welcome Screen. 2) Exhibit Kiosk: Title+ Description > Learn More Button > Informational Animation (video) > QR Code to scan > Thank you/Reward. 3) App: Log in/Sign up > Short survey for age range > App walkthrough (steps) > Home page > Open camera to scan QR code > Pop Quiz*

5. **Needs Statement:** each team is asked to outline what users need in order to achieve their goals. It looks like this. The user needs a way to do something that addresses their need, so that they benefit directly.

Statement: *Ellie needs a way to inspire Lea to seek knowledge through an educational space that nourishes curiosity, so that she continues engaged and believes she is the future leader.*

* **Inclusive Design by Microsoft** was introduced in the beginning of the project. Each student was asked to recognize exclusion on a certain group, learn from diversity and solve challenges they face and extend to other groups by focusing on what is universally important to all humans. I would like to bring the inclusive design study deeper next time when I teach the course again. Although the depth of research was not as deep as I intended due to class time constrains and to find right group of users, it was valuable concept to introduce to incorporate marginalized group in design.
Research: *kids with ASD (Autistic Spectrum Disorder), Neurodiversity, Logistical Barriers and social barriers, and UI/UX Solutions for their challenges.*

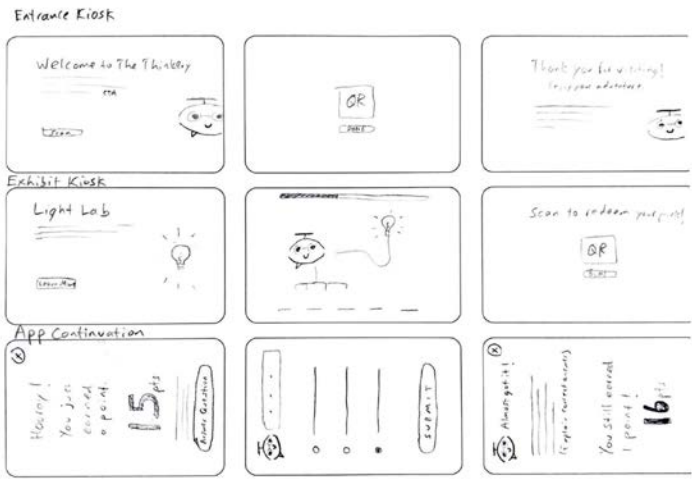


Research ASD (Austistic Spectrum Disorder) for Inclusion Design
by Isaiah Guzman, Communication Design Senior

3. Design

1. **Get Visual:** Low-fidelity prototype to visualize the ideas easily through sketches. Everyone can benefit from thinking visually and getting visual makes ideas more tangible and helps clarify their thoughts.

2. **Designing system**: Create repeating and reusable part of the interface such as a logo, buttons, colors, grid system, icons and typography.



Get Visual

Designing System

3. **Designing the Product**: Digitize the prototype in Adobe XD, InVision, Sketch or Figma. Create design systems that would be scalable, consistent, efficient and accessible when it expands to other platforms. Pay close attention to information architecture, and visual hierarchy.

4. **Get feedback**: Share the digitalized prototype link with your classmates, and conduct a silent process critique. Find patterns and revise.

5. **Get feedback**: Share the prototype link to the potential users to get feedback on what you have made for them. Soliciting feedback on the ideas and prototype helps keep the users you are designing for at the center of the project.

6. **Integrate feedback and iterate**: Let the feedback of the users you are designing for guide the next iteration of your solution. It is one of the essential elements of user-centered design.

4. Final Presentation

As a group conducted research together, they present their research process as a group. Students share a pdf, Keynote or Powerpoint presentation. For their visual design, they are asked to make a 3 to 4 minutes video with voice over explaining the process and design goals. The video has to walk through their design journey and showcase the final interactive prototype.

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33 Infusing Creative Energy to Encourage Civic Values and Action in Project-Based Learning and Community-Based Research

David Wang
James Madison University

Adrienne Hooker
James Madison University

Abstract

Social Cause in the classroom is a journey that will open the eyes of young designers to the world around them, and how they can take part in social reform within their profession. The voyage you take with your students can be full of pitfalls due to controversy, lack of interest, or limited personal horizons. Creating social cause posters ask students to understand reductive art, create a message that sells a point, and encourages them to explore a passion. To inspire a student to take flight on a personal journey that results in a passionate visual response can forever change them as people, and as designers. This presentation seeks to talk about some of the things I have learned during my twenty years of teaching social cause in the classroom.

34 Liking the Guests: Disney Theme Parks and the Origins of Human-Centered Experiential Design

Dave Gottwald
University of Idaho

Abstract

Many designers see Disney and immediately think Mickey Mouse , as in something not to be taken seriously. Yet the development of Disneyland park in the mid-1950s was an enormously ambitious human-centered design project, and its success has been refined and repeated all over the world. The core of Walt Disney's design philosophy was liking the guests . He had a genuine concern for his audience and, though paternalistic at times in his estimations of American middle class taste, strove with his Disneyland project to consider each and every element from the guests' point of view—something that has become a gold standard in the hospitality industry. However, little attention is paid to the actual design principles at work in the theme park model in which user experience, iteration, and user testing all play a crucial role.

Longtime Disney designer John Hench was often known to tell this story: during the park's development, there was the issue of using an expensive and authentic leather material on the stagecoaches of Frontierland. Hench suggested that the guests wouldn't notice a lesser material. Walt protested vigorously: "They will feel good about it, and they will understand that it was done for them. If you do something people don't respond to it, it's because you are a poor communicator. But if you really reach them and touch them, they will respond." Walt advocated for human-centered design, nothing less.

This presentation will describe the evolution of the Disney parks around the world in the context of human-centered experiential design. Although they've been trending for the last decade due to the UX industry, such principles have long been at work in the theme park model. By bringing these strategies to the design classroom, students can consider alternate perspectives on how to design for others first, and always.

Liking the Guests: *Disney Theme Parks and the Origins of Human-Centered Experiential Design*

Abstract

Many designers see *Disney* and immediately think *Mickey Mouse*, as in something not to be taken seriously. Yet the development of Disneyland park in the mid-1950s was an enormously ambitious human-centered design project, and its success has been refined and repeated all over the world. The core of Walt Disney's design philosophy was *liking the guests*.[1] He had a genuine concern for his audience and, though paternalistic at times in his estimations of American middle class taste, strove with his Disneyland project to consider each and every element from the guests' point of view—something that has become a gold standard in the hospitality industry. However, little attention is paid to the actual design principles at work in the theme park model in which user experience, iteration, and user testing all play a crucial role.

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"The key to Walt's approach to any kind of design was to consider the environment that was being created for people." — Marvin Davis, Disney designer and master site planner of Disneyland (Green & Green, 1999)

"Liking the guests is key to everything we do." — John Hench, Disney designer (Hench & Van Pelt, 2003)

In His Own Backyard

From the very beginning, Walt Disney was user testing. Over five decades before user experience became a buzzword in high technology sectors, Walt was carefully observing. Noting. Adjusting. There are many stories of the inspiration for his eponymous amusement park, Disneyland, sui generis of the contemporary theme park model. Some are no doubt apocryphal; corporate mythology. One thing is certain, however. When Walt supervised the first one-eighth scale railroad tracks being laid across the five-acre backyard of his Holmby Hills, California home in December of 1949, he knew exactly what he was doing. Walt Disney was—again in terms familiar to us today—prototyping.

He called it the *Carolwood Pacific*, after the posh Los Angeles neighborhood he and his family had recently moved to. Walt selected the lot specifically with room for his backyard railroad project in mind. The locomotive *Lilly Belle* was named for his wife Lillian, the first of two moves to sooth her reluctance to accommodate his overgrown toy train. The other was to leave the elaborate floral gardens Lilian was planning on the north side of the property undisturbed. To accomplish this, at the suggestion of studio construction supervisor Jack Rorex, Walt decided to have a 90-foot tunnel dug so that the train would pass completely beneath the flower beds, unseen and unheard. It was a fortuitous iteration, for this underpass route (christened the "Rorex Tunnel") also consisted of a dramatic double curved 'S' so that passengers couldn't see the end as they approached. Here, as proof of concept, Walt had developed the Disneyland "dark ride" experience which he would later employ to great effect

Scale model railroading was a personal hobby for Walt Disney. So in one sense his design aims were somewhat internal. Yet in another, his approach to the Carolwood Pacific was exactly as it had been for years as a Hollywood animation mogul; that of an entertainer and showman seeking to please an audience. Which is to say, his impulse was human-centered. Every weekend Walt Disney's Holmby Hills backyard was overflowing with guests, ranging from studio employees and their families, to fellow celebrities and occasionally the press, such as photographers from *LIFE* and *Look* magazine. Salvador Dalí himself rode atop the *Lilly Belle* and remarked that he was startled, even unsettled, by its verisimilitude. The renowned surrealist couldn't have known how accurate his apprehensions would be. After a few minor derailments, and a rebuilding of the

grounds with improved drainage after the railroad was damaged in the heavy winter storms of 1952, by the following spring the hazards of running the line proved to be too much for Walt. When a guest toppled the train over on its side, resulting in a five-year-old girl being painfully burned by the locomotive's steam, he ordered the *Lilly Belle* removed and stored at the studio machine shop. Walt's themed entertainment concept had been proved, yet the attraction prototype deemed too dangerous.

Disneyland: 1955–1965

Amid his backyard guests, for two years Walt Disney had been watching and planning something bigger, something grander. His Disneyland park would be the expansion of the *Carolwood* project into an elaborate diorama at human-scale. "[Walt] used his *Carolwood Pacific* railroad as an example of what he wanted to do next. There was a definite link between Walt's train at his home and what he went on to do at Disneyland," the man who was tasked with developing the park's master plan, Marvin Davis, observed (Janzen & Janzen, 1997).[3] An oversized toy retaining a sense of play and wonder which could be *inhabited as an experience* by children and adults alike. The park's origins have been told at length elsewhere, so here I will recount just a few particulars that serve to frame the design of Disneyland park as essentially a human-centered, experiential project. In a sense, it was a reactionary design. Walt Disney was (frankly) disgusted with what passed for most American amusement parks and fairs after World War II. They were usually ill-kept, disorganized, and poorly managed. Which is to say, badly designed. Walt felt that many were tawdry cauldrons of alcohol, filled with obnoxious barkers hocking rigged carnival games aimed to pick one's pocket. He told his wife that they were "dirty, phony places run by tough-looking people" (Marling 1997). Worst of all, Walt found that there were few rides (or "attractions" as he would come to call them) which family members of all ages could experience together. His only regret in taking his daughters on Saturdays to ride the merry-go-round in Griffith Park was it was *they* who rode. He had to sit and watch. Thus one of Walt's human-centered motivations was that he didn't think these establishments were meeting people's true needs. What he had in mind would surely be far better, he thought.

NO ARCHITECTS, ONLY STORYTELLERS

Even before his *Carolwood Pacific* railroad, Walt Disney had long wanted to develop a place in which the public could interact with characters and settings from his animated films. In 1952 (shortly before he closed his backyard attraction for good), Walt formed his own private company WED (for **W**alter **E**lias **D**isney) and financed the payroll himself. This gave him autonomy from the Disney studios and his older brother and business partner Roy, who was reluctant to sink funds into such a risky venture. Thus Walt commanded his own private design team, and he handpicked the staff from all over Hollywood. One group was pointedly excluded, however. Once again, Walt's position was somewhat reactionary to the status quo. Besides Ruth Shelhorn, who was retained at the final hour to integrate the landscaping on-site, neither licensed architects nor landscape architects worked on the Disneyland project. Walt was known to distrust them as a rule, and after retaining (then releasing) the firm of Pereira and Luckman for masterplan work, he took his friend and neighbor Welton Becket's advice instead. The famous architect told Walt that he should gather his "movie people" together to realize his vision, that it was the only way. Walt's exclusion of architects is noteworthy here because rather than having a rational plan imposed upon the public (which is to say, programmatically), the WED team approached Disneyland as an *experiential design project*, something akin to a three-dimensional film; a cinematic environment, a story told through a sequence of spaces. Walt was very direct in speaking about *experience*; he didn't use the terms architecture, or entertainment. Longtime Disney designer John Hench (1908–2004) observed in a 1991 interview that Walt Disney "wanted to simply step from motion pictures into *another kind of reality*. To do something that people could experience." Hench continued, "Walt was a firm believer in experience. He said that experiences were the only thing that you really own. They were yours. The example he would talk about was with apples...you could see pictures of apples, but you didn't know what an apple was until you sank your teeth into one. Then it was a matter of experience" (Janzen & Janzen, 1994). It's true that Walt's dislike of architects was his own, but his human-centered motivation was that he didn't think the profession met people's true needs (at least in terms of what he envisioned for his project). So although employing architectural forms, Disneyland was not conceived, planned, or executed as architecture. In fact, the park was designed more like an app.

AN ORDERLY, INTUITIVE, CONTROLLED EXPERIENCE

One key aspect of human-centered design is harmony through order and an intuitive, controlled experience. Usability expert Steve Krug's mantra for this is "don't make me think." In other words, the most human-centered design solutions

consider the end user at such a highly empathetic level that the experience and all its nuances are intuited rapidly, before the user even has time to think and consider the structure. This approach to software emerged during the mid-nineties due to the proliferation of web interfaces—a time in which personal computer use among ordinary people exploded—and is still preached widely by Krug and others today. The spatial organization of Disneyland as developed by Walt Disney and his team in the early fifties is just such a *user interface*.

Consider the layout of the park. First of all, there is only one entrance which funnels guests into a central corridor. Walt was advised strongly against this by every amusement park operator in the country; they all insisted that multiple entrances and exits were necessary for maximum profitability. His stubborn resistance was pure showmanship. As the "director" of Disneyland as a cinematic experience, Walt wanted to move his park guests through a series of environments, staged in sequence just as scenes in one of his films. The Entrance Plaza just past the ticket booths and turnstiles serves as a theater lobby of sorts. Lining the perimeter are posters promoting various rides and shows within the park, as "coming attractions." Guests then proceed to the left or right through two tunnels underneath the Disneyland Railroad, emerging onto Main Street U.S.A. as "scene one." All guests must pass through this small boulevard at least twice, a romanticized and nostalgic representation of Walt Disney's memories of his boyhood youth spent partially in Marceline, Missouri. True to its cinematic roots, the street even features opening and closing "credits" as the names of various WED designers and others are displayed on the windows of all the various storefronts, along with clever wordplay alluding to the roles they each played in Disneyland's creation. In funneling guests in an orderly, sequential presentation into what is essentially a lively and chaotic (and usually hot, and usually crowded) amusement environment, the design of Disneyland at once addresses human needs for security and order, while also playing the dramatist in building anticipation for the myriad of experiences and emotions to come. Naturally, Walt Disney was also interested in the operational management aspects of such order. Marvin Davis recalled, "The overall shape of the park, with its single entrance, was Walt's. And that was the key to the whole thing. Walt was very circulation conscious, and he wanted a single entrance, so that they could control the number of people that came in, and know the number that went out, and know [who's] in the park" (Janzen & Janzen, 1997).

Second, after walking the length of Main Street U.S.A. guests come to the Plaza Hub. The two features were designed in concert, as Walt's "theory of Main Street had people moving counterclockwise along the right, going up to the hub, through the spokes into different lands, and then back out along the left side of Main Street and out," Davis noted (Janzen & Janzen, 1997). Here Walt and his designers truly demonstrated true human-centered usability. At WED he had hired on three key personnel with architecture degrees (though none were licensed practitioners). Ken Anderson, Marvin Davis, and Bill Martin were all working at other Hollywood studios when Walt brought them on. Davis, trained at the University of California, oversaw the masterplan and was the lead of the drafting department, supervising all construction documents. His third "Preliminary Scheme" from 1953 features a central hub, and this was carried forth all the way to his final site plan in 1954 and Ruth Shellhorn's actual landscape and grading plan in 1955. True, Disney's people did not originate the concept. Indeed, such a "hub and spoke" or radial model is a common device to manage the flow of people, as employed by Baron Georges-Eugene Haussmann in his redesign of the streets of Paris, and Pierre Charles L'Enfant in his plan for the City of Washington (District of Columbia). The spatial benefits to the theme park model are clear enough; if you get separated from your party at Disneyland, return to the hub and wait. Yet this Disney version of the Hub is also *experiential design*, not just urban planning, because the device negotiates space as well as parses content. The hub model facilitates decision making, and this was entirely a human-centered design decision made empathetically by Walt Disney. In researching the Disneyland project, Walt and several members of the WED staff visited amusement parks throughout the United States and Europe. As John Hench noted, "Walt observed how families made decisions about what to do next. He concluded that they needed a lot of space, as they would stop and gather around with one child or two hanging outside the group. There would be pointing in different directions, turning and looking with the intention of deciding where to go, what to see… People bunch up when they have decisions to make… Hubs—open, essentially circular spaces that afford views—facilitate [this]" (Hench & Van Pelt, 2003). And no matter what the decision, the public had already been primed for what their choices were. On television. From quite early on, this nascent media technology was intertwined with the development of the park. Walt and his brother Roy contracted with the fledgling (and ratings third place) ABC network in April, 1954 and an agreement was reached which was mutually beneficial; ABC would get a weekly program called (naturally) *Disneyland* and an ownership stake in the venture, and Disney would get badly needed financing in the form of guaranteed bank loans. What presaged today's corporate "media synergy" was Walt's

pure savvy in advertising his Disneyland, fully branded for the public, for a year before it even opened its gates. The show's content blocks corresponded to the themed lands which the park debuted with: *Adventureland* (wildlife documentaries), *Frontierland* (Westerns), *Fantasyland* (animation), and *Tomorrowland* (space science). In the form of the Plaza Hub, the televised media frame for these narratives is strongly reinforced at the park itself. Guests literally use the Hub as a television dial and "turn the knob" to select a different themed land and thus "change programming." A family can explore a jungle safari in Adventureland and experience the Old West in Frontierland by turning left from the Plaza Hub, then return to it to take in some science fiction to the right via Tomorrowland. Naturally, straight ahead right over the moat and through the castle drawbridge is Fantasyland, home to the heart of the Disney enterprise, its animated films, and characters. The experiential design of Disneyland is human-centered in its stellar organization, both spatially and cognitively. The park is an immersive, interactive, and seamless blend of story and space within the built environment. Sequential in presentation yet episodic in navigation, the theme park model as developed by Disney is at once vigorously designed yet user-controlled; a completely three-dimensional world, yet also a mediated environment somewhere in a liminal experiential zone transecting animation, film, and television.

Third, as guests linger about the Plaza Hub contemplating their next move, they are sure to notice that Walt and his design team had the foresight to insist upon markers for them. The trail of crumbs actually began way out in the parking lot, with the Main Street station of the Disneyland Railroad signaling to arriving parties the location of the main entrance. This marker is the first of what Walt called "wienies" which he named after the small cocktail wieners he would use to treat the family dog, Dee Dee. Thus a "wienie" in Disney design parlance is a visual magnet, a "treat" which beckons guests forward, builds anticipation, and orients them in the immersive world of the theme park model. After entering Disneyland, the primary visual magnet, drawing guests steadily down the central corridor of Main Street U.S.A., is Sleeping Beauty Castle. More than just a wienie however, the castle is the icon for the park itself. For a year leading up to opening day, the castle served as the primary image for the opening titles of the *Disneyland* TV show, and a castle in one form or another has been used as the logo for Walt Disney Productions in the decades since. Again showing his media savvy, Walt named the castle after *Sleeping Beauty* which was in production as an animated feature but did not arrive in theaters until 1959. The castle was thus ingeniously a wienie wrapped in a logo inside a movie poster. In that first summer season of 1955, after a glance north at the castle, looking left to the west, guests would see the twin smokestacks of the *Mark Twain* riverboat in Frontierland, docked on the Rivers of America. Drawing guests eastward at the opposite side of the Hub was the *Moonliner*, towering seventy-six feet over the Rocket to the Moon attraction. Curiously, it was completely intentional that Adventureland, also on the west side of the park adjacent to Frontierland, boasts a titular sign but no iconic visual magnet. Walt and his designers felt that the exotic jungle would be better served by a more mysterious presentation that must be "discovered" by guests.

WALT DISNEY: USABILITY ENGINEER

What made Disneyland more attractive to Walt than all the awards and achievements in animation that his studio had garnered over the years was his ability to constantly iterate there. He frequently referred to Disneyland as a *laboratory*, as being alive, as opposed to one of his films, which once released to theaters was a static artifact. "The way I see it, [the park] will never be finished. It's something we can keep developing and adding to. A motion picture is different. Once it's wrapped up and sent out for processing, we're through with it. If there are things that could be improved, we can't do them anymore. I've always wanted to work on something alive, something that keeps growing. We've got that at Disneyland" (Bright 1987). Walt considered nothing at the park to be a permanent installation, and indeed the amount of removal, augmentation, and expansion during the single decade he personally ruled over his kingdom was staggering. Every possible dollar of profit earned was plowed back into the park, especially for what Walt called "plussing." This was a word he coined for what today we call *user experience enhancements*. In Walt's mind, he wanted a Disneyland v1.1, then a v1.2, and so on. In the first twelve months, the number of attractions nearly doubled. The first major "park-wide upgrade" to Disneyland was only four years after opening. This 1959 expansion of the Tomorrowland area added the now-famous Matterhorn Bobsleds (the world's first tubular steel roller coaster) and the Submarine Voyage. An entirely new themed area, New Orleans Square, was dedicated by Walt Disney in the summer of 1966. By the time of his passing some six months later, Tomorrowland was being completely rebuilt for a 1967 debut. Hench concedes that augmenting and thus altering the design of any Disney park has never been easy, due to how tightly their visual and spatial narratives were initially conceived. "The use of the step-by-step process of evolving a sequence (like in films), and to try to make a visual system out of all of the elements is hard to do. I mean, every time there was

something new or something added, over the years, we had to try and make it fit the system again" (Janzen & Janzen, 1994). Yet that's exactly the practice Walt established in the decade he oversaw his Disneyland laboratory, and he trained all his design staff at WED to do the same. Never let the park, later any Disney park, stand still.

Many of the changes Walt Disney made began from something he saw a guest do (or *not* do, or say, or *not* say). Even before Disneyland had opened to the public, Walt made a habit of touring the grounds every morning, taking notes and making lists. Checking and rechecking. He began to spend so much time on-site that nearly every night of those final months he slept in a small studio apartment built into the second story of the fire station on Main Street. Once the park was teeming with real, live guests, however, his obsession with observation increased tenfold, and the magnitude of his careful scrutiny was honed razor-sharp. In the early years he was often able to slip through the crowds, as John Hench remembered, "in disguise, wearing an old hat and dark glasses," as the public only recognized him from the *Disneyland* TV show, on which he always wore a tie and blazer (Hench & Van Pelt, 2003). As his celebrity grew this became more difficult, but he still insisted on wandering around relatively unescorted. Not only have formal company photos of him engaged in this design research survived, but also candid shots taken by guests during the fifties and sixties. Hench recalls that the WED staff got involved with this research into guest behavior quite soon that first summer of 1955, and Walt was adamant enough to lightly curse over it. "We embarked on an ongoing learning process about our guests and how they respond… Just after the park opened for business, we discovered that some guests had made a pathway through a flower bed. We were walking through the park one morning before opening when the gardeners came up to Walt and said, 'We need to have a fence to keep guests out of the flower bed.' Walt told them, 'No we must pave this pathway. *When guests make their own path, they probably have a damn good reason for doing it*'[emphasis added]" (Hench & Van Pelt, 2003). Such ad hoc routes across lawns or through hedges are called "desire paths" by planners. Today, on large public sites such as university campuses, it is common to pave them after they have been established. Yet back in the mid-fifties, Walt Disney was certainly ahead of his time in acknowledging their importance and modifying the design of his park to deliberately address and accommodate them. Formalizing desire paths is human-centered design at its most simple, yet also its most pure. As the park grew, it became practice at WED to leave new lawns unfenced until it was observed where guests walked and why.

Yet the usability research didn't just end with observation. Walt Disney was firm in his conviction that the only way to design for others was to employ what today traffics in human-centered design circles as *radical empathy*. As Walt repeatedly told his designers, there really wasn't anything radical about this at all. In order to be human-centered in their designs, he implored his team to not only observe the guests, but *be* the guests. This included waiting in queues for attractions and eating the food to evaluate the quality of the experiences. Remembered John Hench, "When Disneyland first opened, Walt told us to get down there at least twice a month. He said, 'Stand in line with people and for God's sake, don't go off the lot to eat like you guys have been doing. You eat at the park and listen to people!'" (Green & Green, 1999). Aside from it being the only place to experience the park as the guests did, Disneyland was where certain aspects of the design process were evaluated in situ. Walt insisted on getting out of the WED studios to do this. "I never select any color without testing it on location," Hench noted. "I make big swatches. I learned a long time ago that 40 feet of something is a different color than one inch of it. That was Walt's style" (Janzen & Janzen, 1994). *Beta testing* new attractions or improved experiences before they were unveiled to the public at large was also part of the process. As Betty Taylor, who played the role of "Sluefoot Sue" for three decades in Frontierland's *Golden Horseshoe Revue*, recalled vividly, "One day I was having breakfast at the park just before The Swiss Family Treehouse opened for the first time [November, 1962]. And there was Walt walking up three steps, then walking down. Then he would walk up four steps and walk back down again. He took the rope railing and shook it. He always tried out things before opening them to the public" (Green & Green, 1999). The designers at WED would test all throughout the development of an attraction, even in its rough form, what in interaction design today we would call a *mockup*. The most elaborate of these was constructed for the Pirates of Caribbean attraction in the mid-sixties. In order to optimally stage all of the characters and elements and to truly, empathetically understand the point of view of guests riding along in the boats, the Disney designers built large sections of the proposed sets at tabletop level. Marc Davis (no relation to Marvin Davis) was one of the lead creatives assigned to Pirates. "We made models, and put them at eye level so you could walk through. People...could walk through this model, almost like the boats" he recalled (Janzen & Janzen, 1989). "We did the whole darn set-up and it took a long time—it was the longest model we'd ever done," remembered Harriet Burns, another designer who worked on the project. "We did the model set by set, scene by scene. We knew the whole story line. It was forty feet long. We did it section by section and put it all up on sawhorses"

(Surrell, 2006). Still, just walking through all this wasn't enough for Walt. He wanted to ride along with his eyes directly where the guests would be riding; he wanted *greater empathy*. In order to accomplish this, according to Burns, the team "put Walt in a desk chair with rollers and we pushed him through the whole thing at eye level" so he could comment (ibid). It was the last attraction Walt would ever test for his guests.

After Walt

Walt Disney passed away in December of 1966. The "Florida Project" (as Walt Disney World was known during development) was already well underway. The resort's first phase—a park based on Disneyland—would be completed less than five years later by brother Roy and a team of designers who had worked directly with Walt. Still, in the decade which followed, Disney struggled to find a way through without its creative center, without its design maestro. Leadership in animation floundered at first through a variety of lackluster film efforts, and the designers at WED continually asked "What would Walt do?" as they wrestled with improving these two Magic Kingdoms and even developing new ones. Walt's philosophy of "plussing" continued, though it was challenging. Hench concedes that augmenting and thus altering the design of any Disney park has never been easy, due to how tightly their visual and spatial narratives were initially conceived. "The use of the step-by-step process of evolving a sequence (like in films), and to try to make a visual system out of all of the elements is hard to do. I mean, every time there was something new or something added, over the years, we had to try and make it fit the system again" (Janzen & Janzen, 1994). By the late seventies, due to the leadership of those who had cut their teeth on building Walt Disney World, these "Imagineers" (as the designers were now formally called by the company) had righted the ship and were poised for expansion. This massive Disney vessel still maintained vibrant home ports in both California and Florida, but would now sail from Asia to Europe and back again. Twice.

THE THEME PARK MODEL AS SOFTWARE

The key experiential design components of Disneyland have evolved through iterations at other parks the company has built around the world. Numbering twelve total (as of 2020), six of these are what the company calls its "Magic Kingdom" style parks; that is, these half-dozen destinations are modeled directly after Disneyland. However, they are not copies of that first park (as often claimed by detractors). Rather each new Magic Kingdom is an iterative design adaptation. Recalling the metaphor of a mobile app experience, they can be thought of as successive *versions* of the Disneyland theme park environmental and experiential *software*. Though the details vary widely, all six Magic Kingdom parks have singular entrance corridors and central hub-and-spoke layouts. And every Disney park—even the water parks—utilizes wienies as a system of visual magnets. The Magic Kingdom at Walt Disney World near Orlando, Florida opened in October of 1971 as the v2 model of Disneyland park. The improvements were largely infrastructural, such as the famous series of tunnels (called "utilidors") which snake through the basement level. They allow for even better control of "backstage" operations (in the theatrical vocabulary of the company, the "on-stage" elements face the guests, and the "backstage" ones are concealed). The Magic Kingdom is far larger than its California sister park, and a key improvement was made to the hub-and-spoke model there. As Walt conceived of it in working with Marvin Davis on the Disneyland masterplan, the idea was that each themed land was a dead-end or cul-de-sac. In order to explore a different area, guests always had to return to the Hub to "change channels." Yet the designers of the Florida Project realized that a more open plan, in which the Hub is still central yet guests can walk the entire perimeter without having to return to it, would be even more flexible and fluid for crowd flow. There were also far more paved walkways at the Magic Kingdom installed for opening day, likely due to the desire paths Walt and his team witnessed during Disneyland's early years. All Disney parks going forward were designed this new way; the hub still facilitates content navigation but does not constrain guest movement. *The version 2.0 park is literally a better user interface.*

HUMAN-CENTERED ADAPTATIONS AROUND THE WORLD

Beginning with the development of Tokyo Disneyland (v3), which opened as the first overseas Magic Kingdom park in April of 1983, the Disney company was not only iterating functionality. They also had to carefully consider cultural factors, and learn human-centered design for entirely new groups of people with different values, disparate tastes, and often radically opposed expectations. To be sure, the results over the years have been decidedly mixed. I will briefly note only some of the more successful design adaptations here. The Tokyo Disney Resort (TDR) is owned by the Oriental Land Company (OLC), which actually hires and licenses the design work for their parks from the Walt Disney Company. At the time of the Tokyo project's

conception in the late seventies, Disney was in the middle of building the EPCOT Center theme park in Orlando, and lacked sufficient investment capital. Thus the company receives only an annual royalty percentage of admissions, food, and merchandise sales. This costly, long-term mistake would not be repeated (all overseas parks built since are some kind of public and/or private joint-venture). However, outside ownership meant that for the first time the Disney designers were hired to provide services to an external client to build one of their *own* parks. So when the creative team began development charrettes with OLC, they took the idea of cultural advisory and stakeholder buy-in seriously. They had to, they had a client to please. Main Street U.S.A. was retooled as World Bazaar, a more generic design completely covered by an elaborate glass canopy, much like the Crystal Palace constructed for the 1851 London Great Exhibition. Also, according to sociologist Aviad E. Raz, the Japanese find the entire concept of a "frontier" unfamiliar. Theirs is a small island nation with few wide open spaces and densely packed cities, so the idea of a vast area out on the edge that is largely unsettled is rather strange. However westerns, on television and in film, and the whole idea of the Mythic American Old West, is beloved in Japan. Frontierland thus became Westernland for the park's guests.

When Disney opened their forth Magic Kingdom-style park outside Paris in 1992, many critics derided this "EuroDisney" resort as American imperialism; a "cultural Chernobyl." Though the park did indeed face resistance from the French (mostly local beet farmers, who had been displaced) and had a difficult first decade due to recession, it overcame debt restructuring to become the most popular destination on the continent, a title it holds to this day. Changing the name two years after opening to Disneyland Paris also helped a good deal, as research indicated that guests associated "Euro" with the currency (it had been like naming the resort "DollarWorld"). In designing their v4 park, Disney realized the stakes were high. Tony Baxter had begun scooping ice cream at Disneyland in the sixties, and after college went on to work at WED on Florida's Magic Kingdom. He designed some of Disneyland's most popular attractions in the seventies and eighties, and by the time of the Paris project risen to the rank of senior vice president of creative development. His view was that Disney was "building a resort next to one of the most sophisticated cultured cities in the world, and we're going to be competing with the great art and architecture of Europe. We have to do something unique" (Lainsbury, 2000). Sleeping Beauty had to compete with the real thing now. "The fact that castles exist just down the road from Disneyland Paris challenged us to think twice" recalled Baxter (ibid). So the Disney design team's approach was to go in an even more fantastical and storybook direction. The Paris park's castle, "Le Château de la Belle au Bois Dormant" was fashioned with an unreal quality which would actually makes it *more* real in the eyes of European guests, who would be coming from all over the continent. And how to make them all feel like uniquely treasured guests in a French park? The answer was in Fantasyland. By taking the various fairy tales which Disney had adopted in their animated films and heightening the national identities of each story in their environmental designs, each country got their own distinct slice of the themed area. The part of Fantasyland representing England houses *Alice and Wonderland*. France hosts *Sleeping Beauty*, Italy is home to *Pinocchio*, and so forth. Lastly, the Disney designers used the Paris project as an opportunity to address a design problem that vexed Walt Disney more than any other at his original kingdom; Tomorrowland. This area was the least finished on opening day (Walt hid it with balloons, signage, and landscaping) and wasn't fully redeveloped until the year after he died. The issue was conceptual. All the other themes of Disneyland connected to the past, even Fantasyland with its medieval castle. How do you represent the future? Walt lamented that Tomorrowland all too quickly became "Todayland." Although he never got to fix it himself, Baxter and the others re-imagined it for him. This part of Disneyland Paris became Discoveryland, a steam-punk, nineteenth-century tribute to the visionary science fiction of Jules Verne and H.G. Wells. This was not only a natural direction, as Disney had adapted *20,000 Leagues Under the Sea* (1954) into the studio's first live action smash hit, it also spoke directly to the literary history of the park's two largest audiences, the French and the English. Solving futurism by dipping it in Disney's tried and true formula of fantasy and nostalgia worked so well that the Magic Kingdom's Tomorrowland in Florida was redesigned in a similar way three years later. Fittingly, the tagline was "The Future that Never Was, Is Finally Here!"

The two most recent Magic Kingdom iterations are both in China, and together they represent the most evolved human-centered practices of the Disney company and its designers, the "Imagineers." Hong Kong Disneyland (v5) opened in September of 2005 and Shanghai Disneyland (v6) followed eleven years later. In consulting with their government investment and development partners, Disney saw that their park in Hong Kong would have to be designed to attract visitors from all over that region of the world—Africa, India, Southeast Asia, Australia—and not just the Chinese. Thus it was decided that a "more authentic" copy of the California original would work best (and also save money). This would also allow the park to be

developed in smaller, more manageable phases (much like Disneyland has grown over time) rather than overbuilding at the outset, which was the cause of the European project's unsteady financial footing. The Hong Kong Main Street U.S.A. is a near 1:1 replica of the California version to provide a more universal appeal, as was Sleeping Beauty Castle when the park opened. Otherwise, the other adaptations are tailored to the Chinese. The designers consulted with feng shui experts to ensure the entry gates were positioned for optimal prosperity (twelve degrees), and that the path from the transit station to the park entrance had the proper dogleg bend to ensure that positive chi did not bypass the park on its way out to the China Sea. These same consultants worked on all planning aspects of the resort, and also assisted with the development of a sizable topiary area at the rear of Fantasyland called Fantasy Gardens. Here guests are invited to stroll through meandering paths lined with lush foliage, trees, and flowers representing all of Southeast Asia. There are elegant pagodas, gazebos, and shrine-like structures where guests may queue up to get autographs and pose for photos with their favorite costumed Disney characters in an intimate setting. Lastly, the Tomorrowland here is an evolution of the Paris approach, and has more of a fantasy and science-fiction feel. Yet the land is also composed of futuristic architecture with fanciful traditional Chinese features such as upturned roof accents, here interpreted in modern steel and concrete.

Shanghai Disneyland opened in the summer of 2016 and is the largest Magic Kingdom-style park in Disney's global portfolio, by far. This sixth iteration of the Disneyland model is also the greatest departure from its source code, so to speak. This is due to specificities focused on an almost entirely mainland Chinese audience. Again, consultations with both their public government and private investment partners were detailed and lengthy, as they had been in Paris and in Hong Kong prior. Shanghai thus represented a philosophical crossroads for Disney. Like Japanese guests, the Chinese wanted to feel like they were being spared no expense in getting "the real thing" from America. But also, like the guests in Paris and Hong Kong before them, they still wanted to be reminded of the flavors of home. Thus the company position for the park's design was stated publicly as "Authentically Disney and Distinctly Chinese." Since Walt has been gone for some fifty years, this seem like mostly marketing and smart transnational PR. But actually, it isn't as hollow as it fist sounds. Commentators were quick to note that there is no railroad surrounding the park's perimeter at all, due to some perceptive social sensitivity. Chinese laborers, paid pennies and often treated terribly, laid railroad tracks across the American West for one. For another, the nineteenth century was not a pleasant time in much of China. So on two counts, there is no romance of the steam engine to appeal to. Nothing to be nostalgic about. However, Walt's concept of a theater lobby with "coming attractions" posters in which guests pass through a tunnel to another world is intact. The structure above even resembles Disney's other Magic Kingdom Main Street stations, there's just no train arriving. Upon entering the park, guests don't find a Main Street U.S.A. however. Instead, a fantasy collage of whimsical architecture drawn from seemingly every animated film in the Disney library forms Mickey Avenue. It's a pop surrealist take on the company's IP and is completely consistent with a Chinese view of the Disney company—an elaborate decoupage of images, settings, characters, and references from *Steamboat Willie* to Pixar. Though the palpable Americana of the other Magic Kingdoms is virtually stripped from every themed area, landscape design commands an even larger role than in Hong Kong. Here the Hub has been enlarged enough to become its own land, Gardens of Imagination. There are hedgerow mazes, fountains and other water features, and a special area called the Garden of the Twelve Friends which was conceived—again, as human-centered experiential design—specifically for the purpose of social media selfies. Here all signs of the Chinese zodiac have been whimsically interpreted as characters from the Disney canon; the Year of the Tiger is, naturally, Tigger from *Winnie the Pooh*, and the Year of the Pig is Hamm, the little ceramic bank from *Toy Story*. The attraction is a win-win, for Chinese guests see their culture honored yet also deeply connected to some of the more obscure Disney characters, making the interpretation feel all the more intimate and "insider."

CONCLUSION

As we've seen, terms like *usability*, *user experience*, *user interface*, and *radical empathy* might sound new, but they have been leveraged in the theme park model for over half a century. What Walt Disney called "liking the guests" was his way of practicing human-centered design. Yet Walt's way didn't stop at being merely sympathetic to people's true needs. Walt did *more* than like them. By not only observing and listening, but also prototyping, testing, revising, and iterating, Walt strove for true empathy for his guests—to walk in their shoes, stand in the same sunny heat, wait in the same lines, duck under the same obstacles, eat the same food, and ride the same attractions. As practiced by current company management, this commitment naturally varies. However, the designers, those "Imagineers" still largely believe in it. They observe, they test, they redesign, and they iterate. In 2012, Disney California Adventure (sitting on what used to be Disneyland's parking lot) reopened with a completely new entry

corridor that mirrored the Main Street U.S.A. approach. Why? The park's first entrance had been hastily designed to save money, and it was garish and unengaging as a result. Disney didn't *exactly* admit that they had made a huge mistake. But their designers fixed it. About a year after Walt Disney World had opened to the public, famed architect Robert Venturi (1925–2018) was asked by the New York Times what he thought of the Magic Kingdom. His comment bears remembering, as he, along with his wife and design partner Denise Scott Brown, would go on to rehabilitate the image of Las Vegas in critical circles. The design of the Disney parks, Venturi said, "is nearer to what people really want than anything architects have ever given them" Goldberger 1972). How much of getting "nearer to what people really want" is a result of being human-centered, of striving for empathy in our design solutions? I suspect perhaps just about all of it.

CODA: MICKEY'S TEN COMMANDMENTS

For further reading, here is a list of human-centered design principles as outlined by Martin "Marty" Sklar which he called "Mickey's Ten Commandments." Along with John Hench, Sklar (1934–2017) was one of WED's key leaders during the years after Walt. Upon his retirement in 2009, Marty had spent 53 years at the Disney company. He is the only Disney employee who has been present for the opening ceremonies of all twelve parks around the world, from Disneyland in 1955 to Shanghai Disneyland in 2016. Sklar was hired while still attending UCLA for Disneyland's first publicity department in 1955, and Walt's trust in him grew to be implicit and strong. Marty was distinguished for being the only person in the organization whom Walt permitted to write statements for him directly in his own voice. He later ascended the ranks of WED, renamed Walt Disney Imagineering (WDI) in 1986, throughout the seventies and eighties. Sklar rose steadily from vice president of creative development, to executive vice president, to finally president and vice chairman of WDI. And also like Hench, he was pointed and articulate in describing the design principles leveraged by the Disney organization and advocating for their use by other industries. In 1987, Marty gave a presentation to the American Association of Museums (AAM) Annual Meeting titled "Education vs. Entertainment: Competing for Audiences." In this talk he sought to enlighten museums and cultural institutions about how to take the Disney language of guests and apply it to their own, language of the visitor. As such, the principles he outlined are solidly human-centered. Some of them I have touched upon in this overview of Disney theme park design. As these are Marty's points and not my own, I'll simply list them for consideration in your own design practices and studio classrooms. I highly recommend referring to Sklar's excellent *One Little Spark! Mickey's Ten Commandments and The Road to Imagineering* (2015) to delve deeper into Marty's examples and anecdotes from his lifelong career with Disney.

1. Know Your Audience: *Identify the prime audience for your attraction or show before you begin your design.*

2. Wear Your Guest's Shoes: *Insist that your team members experience your creation just the way guests do.*

3. Organize the Flow of People and Ideas: *Make sure there is a logic and sequence in your stories and in the way guests experience them.*

4. Create a Wienie (Visual Magnet): *Create visual "targets" that lead visitors clearly and logically through the experience you've built.*

5. Communicate with Visual Literacy: *Make good use of color, shape, form, texture—all the nonverbal ways of communication.*

6. Avoid Overload—Create Turn-Ons: *Resist the temptation to overload your audience with too much information and too many objects.*

7. Tell One Story at a Time: *Stick to the storyline; good stories are clear, logical, and consistent.*

8. Avoid Contradictions—Maintain Identity: *Details in design or content that contradict one another confuse an audience about your story and its time period.*

9. For Every Ounce of Treatment, Provide a Ton of Treat: *In our business, Walt Disney said, you can educate people—but don't tell them you're doing it! Make it fun!*

10. Keep it Up (Maintain it)! *In a Disney park or resort, everything must work. Poor maintenance is poor show!*

Endnotes

1. "Guest" is the term commonly preferred for "visitor" in the themed entertainment industry, and was pioneered by the Disney organization.

2. "Walt" and "Walt Disney" are used interchangeably. This is not meant to suggest informality or intimacy; it's simply the easiest way of distinguishing Disney the man from the various Disney companies.

3. This and many other interview quotes are taken from *The "E" Ticket*, published 1986–2009. The magazine is an invaluable independent primary source due to the number of conversations with Disney's artists and designers.

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35 Live Journey Mapping: A Lesson in Trust, Empathy, Creativity and Spontaneity

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Abstract
In my User Experience course, students are tasked with learning the UX process while designing a mobile app prototype born out of a student-identified problem that can be improved or solved with the use of their app.

The UX course is basically divided into two parts: One part serves as a literal playground for spontaneity, experimentation, creativity, and idea generation. The other part of the course revolves around research methods and practices, data gathering and shaping the humancentered problem that students identify. Both parts periodically intersect during the semester in order to maintain a balance between the creative and practical.

While observing professional improv troops perform and later, participating in improvisation classes, I recognized the similarities between the art of improv and the spontaneous, creative, no holds barred idea generation methods used in design thinking and UX. Always in search of new ways to inspire and facilitate students' creativity, I began to add elements of improv to the course in the form of live action journey maps. "Journey maps" are essentially step-by-step storyboards that visualize the journey a user takes in order to accomplish a goal. Additionally, journey maps indicate the thoughts, questions, and decisions a user makes during their journey. In the context of the UX class, the "testers" are given a task to complete and improvise a scenario with a paper prototype of an app while researchers record their observations.

My presentation shares the methods my students and I have used that have brought a unique clarity, understanding, and self-realization to their work. I also explore case studies where improvisation has been successfully used to inspire creativity and force connections in corporate and non-profit organizations.

Live Journey Mapping: A Lesson in Trust, Empathy, Creativity and Spontaneity

Bonnie Blake, Ramapo College of New Jersey

In the Visual Communication Design program at Ramapo College, Idea Development is the first course where interaction design students learn to apply the principles of human centered design to a project. By their second year, the classroom space is different from others because it's collaborative, structured, experimental, forgiving, and creative. Idea Development frequently converges and diverges; however, it is also purpose-driven. Students leave the course with a project and skillset that include a deeper understanding of, and compassion for humans, their needs and designing for
the people.

Activities, exercises, and theory testing are a frequent occurrence in this course, with trust and acceptance established among students early in the semester as they engage in collaborative pursuits and practices. The safe space that emerges provides team members the freedom and confidence they need to generate ideas without judgment.

During the course of the semester, students follow the human centered design process to identify challenges, solve a problem and improve an experience.

Identifying Connections

My daughter is a member of a professional improv troupe and when watching them perform one evening I began to observe their process. From three unrelated prompts they coaxed from the audience, the five troupe members spontaneously contrived characters, plot, setting, and tension.

Making a connection between the impromptu nature of creative brainstorming and idea generation that students engage in while innovating and my newfound respect for improv, I invited troupe members to do a beginner's improv workshop with my Idea Development

students. Prior to the improv actors doing their workshop, I did some research to determine whether there were any other faculty introducing forms of improv into their design classes. If there were any case studies, I wanted to learn from them in order to better inform my own lesson plan. I found one professor at Dartmouth's Thayer School of Engineering, Peter Robbie, who was experimenting with improv in his design thinking course. The article and his methods were not informative so I was determined to forge my own way in discovering new connections between improv and human centered design. I also had the added benefit of a daughter who is a professional improv actor. She and her colleagues were invaluable sources of knowledge regarding the art of improvisation and all things related to it.

Teaching Improv

During their class visit, two improv members engaged students in "short-form" games. These activities are quick, self-contained exercises with static rules that the students played in groups of four or five. To play the games successfully, players have to think quickly, trust themselves and their fellow group members, support one another, allow for spontaneity, maintain a non-judgmental attitude, and have fun. The conditions that make for a successful improv game are similar, and in many cases, identical, to those required to ensure a successful brainstorming session in human centered design.

While improv doesn't require rehearsal in a traditional sense -- there are no lines to be memorized or movement to be rehearsed -- there is a rehearsal process that exists. Improv troupes need to spend a great deal of time getting into the proper headspace so they can generate off-the-cuff ideas and accept and work with their team members' ideas. This notion of readying oneself to "perform" also closely parallels design-thinking methods.

Some examples of improv rehearsal games or "warm-ups" (drills and games practiced before a performance or at the beginning of a workshop) that help generate ideas and free-thinking include Yes, And, Word Association, Gift Giving, and What Are You Doing Later? I explain below how two of these warm ups work:

Yes, And

For the purpose of idea generation, improv has many tenets that serve to produce and develop new ideas in a group setting. One in particular is the exercise known as "Yes, And," which also serves as the most important "rule" of improv.

Yes, And example:

"Yes, And," refers to the concept that, when performing improv, in order to maintain the momentum of the performance, you must always agree with the reality set forth by your partner (Yes,) and add information to flesh out that reality (And). Because improv is an art form without props or sets, the entire "universe" of the performance needs to be created by the players.

If you only *agree with the reality* without adding information, then you are just being an echo chamber and not really participating in the "universe generation" part of the performance. If you only *add information* without first agreeing with the reality put forth, you run the risk of creating a performance that is disjointed, with disparate parts all competing with each other.

Bad example of "Yes, And"
Two Players begin a scene.

Player One: *Hey, we have math next period. Can I copy your homework?*
Player Two: *We have science next period. Math is on Thursdays!*

This is an example of a dismissal. Player Two did not agree with the reality that Player One set forth – math is next period.

Good example of "Yes, And"
Two Players begin a scene.

Player One: *Hey, we have math next period. Can I copy your homework?*
Player Two: *Sure you can. But, I don't know how you're going to pass the math exam if you keep copying my homework!*

This is a perfect example of "Yes, And." Player Two acknowledges and agrees with the reality set forth by Player One, which is that math is next period. Player Two also adds information by revealing that this is a chronic issue and there is an exam coming up.

For the sake of idea generation, the concept of "Yes, And," is incredibly useful as the "Yes" part of "Yes, And," allows idea generators to accept all ideas that come forth without commentary on their quality or usefulness - *if an idea bubbles up, it is worth exploring.* The "And" portion puts idea generators in the mindset to build on specific concepts that are laid out - to add information to their ideas without focusing on problems, roadblocks, or logistical blockades to their ideas.

These concepts work best in groups - as we learn in Word Association, where everyone has different reference points that they're pulling information from, so the more participants, the more "Yesses" are put forth and the more "Ands" are revealed.

Word Association
During Word Association, players first get in a circle. The game starts with a prompt word - Player One says a word that they thought of in response to the prompt word. The next player in the circle, Player Two, says the word that they thought of in response to the previous word. The circle continues, with players responding *only to the previous word said*. This is called "A

to the B" thinking, where players verbalize their thoughts out loud to explain how they got from point A (the prompt word) to point B (their response).

Example: Word Association-A to the B

Prompt Word: Bird
Player One: *You said Bird. Bird makes me think of Flight. The new word is Flight.*
Player Two: *You said Flight. Flight makes me think of Airplanes. The new word is Airplanes.*

You can expand the parameters by having players thinking in terms of "A to the C" or "A to the D." To do so, players simply need to make more connections out loud before the new word is generated.

Example: Word Association-A to the C

Prompt Word: Bird
Player One: *You said Bird. Bird makes me think of Eggs. Eggs make me think of Breakfast. The new word is Breakfast*.
Player Two: *You said Breakfast. Breakfast makes me think of Family. Family makes me think of Vacation. The new word is Vacation.*

The idea is to have players *fully* in the moment of creating, and not thinking about the concepts that existed in the distant past, only the immediate past, and trusting. It also allows participants see how it is more valuable to have more people working on a concept, as everyone's reference point will be different. The larger variety of references for association, the more expansive and diverse the associations will become.

Student Response
With the exception of a couple of students who felt uncomfortable, all other students indicated they had fun, found the lessons enjoyable and understood how the exercise connected with the techniques (idea generation, ideation, brainstorming) they were learning in class. After this course, I began to wonder how I might use some form of improv in User Experience Design, the next course in the interaction design sequence. However, for the UX course, I wanted students to apply improv techniques, not just for general idea generation but also, for a more specific purpose.

Improv and User Experience
While I was planning the UX design course that students from Idea Development would be taking this past spring, I decided to experiment with improv in conjunction with the journey-mapping phase of students' research.

In the UX design course, students collaborate in teams to research, identify, and produce a working app prototype that effectively solves or improves an aspect of a person's life. Students actively learn the steps involved in the UX process, from design research, interviewing, affinity mapping, parsing data and idea shaping, and then they design the user interface from wireframes, and user flow to the final prototype.

I consider journey mapping a significant step in the UX process. It represents a turning point in a student's project because it's a testament to their research and it brings their persona character's story to life in narrative form. Like rapid prototyping, journey maps provide valuable opportunities for designers to spot minor flaws and make improvements in order to correct course and ensure a more successful outcome.

As the Nielson Norman group states. "Journey mapping combines two powerful instruments: storytelling and visualization."[1] In a nutshell, improv also combines storytelling and visualization. The objective in improv is to entertain and delight an audience by acting out stories. The positive outcome for improv audience members is an improved mood and/or a happy state of mind. Journey mapping, on the other hand, tells a story about a situation where an app was used in order to improve someone's life and ensure a positive outcome. So once again, there is an opportunity to use improv in order to see the user's experience from yet another perspective. It made sense that in user experience design, having a student create a journey map and then watching others act it out with only minor cues could yield some unexpected and valuable insights. I challenged students to come up with a name for the acting out of a journey map. Students agreed to call it "live journey mapping."

The Journey Map "Journey"

Most students in the spring UX course had some knowledge of improv and were prepared to have other students improvise their journey maps once they were complete. However, on March 12, 2020, the campus closed down and courses had to be delivered remotely. By the time students completed their journey maps, they were at home, sheltered in place due to the COVID-19 pandemic.

Rather than eliminate the experiment, I challenged students to exercise their creative thinking skills. We brainstormed as a team and came up with a plan. We would recruit professional improv actors to act out students' journey maps while each team observed via the teleconferencing platform Zoom. Two improv actors agreed to participate and we were ready to give this experiment a try.

Filming

With the help of the improv actors, a safe space was set up in their improv theater, Rhino Comedy, which was and is still closed to the public. Students collaborating on an app design "Zoom" dialed in at their assigned time to avoid the chaos of too many zoom students present simultaneously. In total, there were five sets of app collaborators. A few minutes prior to

filming, the improv actors were shown rough drafts of the journey maps and were able to ask the designers a few questions. The designers explained what their app was, its purpose, and the improv actors got into character and went to work. We had to stop filming a few times as someone would begin to laugh and others would follow. But the laughter helped create a relaxed environment that balanced the serious with the creative. As students and actors finally focused, we were able to film each journey map in one take. My presentation includes two of the live journey maps that were filmed on this day.

Post-Filming

Student collaborators were asked to informally assess their live journey map sessions so I could determine their usefulness in future classes. Rather than detail the survey questions and responses in this paper, I've chosen to share a few of the insights and to summarize them in my own words.

Most students concurred that the inclusion of a live journey map was a helpful step in their app prototype creation. Some felt the journey map and subsequent filming should have been done earlier in the semester so they had more time to add features they realized were needed for their app prototypes after seeing the video. Others agreed that the film gave their project a heightened sense of reality, which in turn, made them feel more responsible for its outcome. One student added that they were energized after seeing the video and it confirmed their resolve to pursue a career in interaction design.

As their instructor, I was very happy with the final app prototypes that students virtually presented during finals week. In addition to submitting an animation and a link to their interactive prototypes, they also submitted a digital case study, which included a link to their live journey maps. As they interview for internships or entry-level positions as interaction designers, they vowed to provide me with feedback on prospective employers' reactions to the live journey maps. Will students find the inclusion of the live journey map in their digital portfolios a conversation starter while on an interview? Will prospective employers react negatively or positively to the video or not care at all? Regardless of the response from the outside world, it won't stop me from connecting disparate forms of expression in order to create new experiences.

Final Reflection

As a result of the UX course, the spring 2020 semester and the unforeseen and sudden disruption of all aspects of college life, I have come to realize that classroom space is not necessarily a physical place. Rather, the students, instructors, their mindsets and imaginations create the space, and the location is inconsequential.

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Kelly Blake, Heather Gonci, and Maria Vail, Professor of Theater, Ramapo College of New Jersey

36 Lost on the Trail: Investigating Hiking Wayfinding and Trail Navigation within the National Parks

Sara Mitschke
Texas State University

Abstract

Every year, thousands of search and rescue (SAR) operations are performed to locate and save lost hikers within our national parks. Yosemite National Park has approximately 250 rescues per year with nearly 70% designated to rescuing lost, missing, or injured hikers. The primary factors contributing to hikers becoming lost include losing the trail accidentally, taking the wrong trail, and miscalculating the time or distance of the planned route. In addition, inadequate signage placement, poor typographic design, and lack of signage at decision points are among the many wayfinding issues identified throughout the park. The purpose of this study is to investigate Yosemite's hiking trail wayfinding system to design a better user experience in order to reduce the amount of SAR operations for lost or missing hikers.

Primary research includes examining trail wayfinding and trail navigation to identify shortcomings with hiking trail wayfinding within our national parks. Nearly half of the hikers surveyed for this study admit to hiking in the dark at Yosemite or another national park, therefore, the research will measure how darkness impacts navigating trails at night. The practice of biomimicry will influence the overall design outcome through the analysis of nature's navigational processes and bioluminescence. Multidisciplinary collaboration with the natural sciences will be necessary in order to design a nature-inspired and sustainable solution.

Yosemite National Park has an ideal research environment for this study because observational research has identified multiple areas for hiking wayfinding improvements. The study will conclude with a proposed nature-inspired solution to reduce the amount of SAR operations for lost or missing hikers.

37 Mash Maker: Using improvisation-based design processes in student studios

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Abstract

As professional designers interested in the relationship between time and form, we created The Mash Maker project to begin experimenting with time as a medium and studio culture. Music provided a logical framework for exploring this relationship, in particular, hip-hop uses time-based characteristics for structuring sound (Caswell). In many ways, a beat mimics "the grid", a principle of basic design strategy. Inspired by these relationships, we asked a group of first-year graphic design students to investigate the interplay of music and visual expression with constraint-based prompts that encouraged improvisation, iteration, and collaboration within the student studio.

The resulting outcomes revealed the potential for this design charette, we call Mash Maker, to become a framework for project prompts presented at all levels. Developed through personal investigations, we designed a system that students used to explore the principles of design through rapid iteration, concept development, and elements of play. This process also created lasting relationships between students who will be working together until graduation. Students began with analog exercises and moved to digital, "designing songs" in real-time, connecting the auditory and the visual to create unexpected results. Furthermore, they worked within specific constraints, most notably time and uncertainty. Constraints were incorporated to mimic the limitations encountered in professional practice, and encourage design students to explore working within the confines of specific boundaries and the potential for solutions to evolve unexpectedly.

The outcomes of this project revealed to students the value of improvisation, conceptual design, and community-based collaboration. Students learned to avoid fixation, something designers — especially novices — often struggle to overcome (Cross 2010). In learning principles of improvisation, students experienced their potential to "increase creativity by encouraging positive evaluation of deviant ideas" (Kleinmintz, Goldstein, Abecasis, Shamay- Tsoory, 2014). And in fostering community, they built a studio culture of solidarity, collaboration, and participation.

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Mash Maker: Using improvisation-based design processes in student studios

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INTRODUCTION

As the role of design changes within contemporary culture, especially in the midst of a global pandemic, design educators must take initiative to prepare students for the wicked problems of the 21st century. Specifically, *Design Futures*, the briefing papers released by AIGA in 2018, anticipates a complex future where design solutions must be increasingly open-ended to accommodate many layers of uncertainty. Ezio Manzini uses the term *emerging design*, the practice of designing tools and methods rather than product or service-based solutions (2016). This approach allows for design to become a much more participatory practice, rather than one obsessed with solutions to narrowly scoped problems.

In our pursuit of more participatory design culture, we were interested in how we might rotate our students' thinking, and shift perspectives of their chosen degree paths. We often observe our students be more concerned with learning software skills rather than design processes. Meredith Davis references this in her book, *Teaching Design* (2017), noting the importance to adapt to the changing nature of the design profession and discipline. To do this, students must learn to rely not on their software skills but rather the flexibility of their thinking and their willingness to adapt.

THE DESIGN PROCESS + THE CULTURE OF STUDENT STUDIOS

When you consider the history of design education and the traditional Bauhaus model, the landscape has changed. Digital tools for design have become widely available as both subscriptions and through open-source platforms. While this contributes positively to accessibility, it can make the design student feel irrelevant, or even "creatively constipated" (Lynam, 2019). We wanted to design a process that encouraged students to design in "real-time" rather than a more passive experience. We believe the real-time lends itself to a more participatory activity. Much like improv acting, when a participant lacks the time to reflect or change course, often resulting in unexpected outcomes.

We consider the traditional, Bauhaus-derived, design process no longer critical to the education of design students. As students move from component and product-based solutions to processes and systems, we are concerned with also redesigning the process of learning as well. Borrowing from other disciplines, we applied learning and pedagogical theory and practices to disrupt traditional processes, anticipating a shift in our students' learning, personal methods, and designed outcomes. In order to effectively disrupt the familiar process of design education, we used principles of defamiliarization to present familiar things to students in unexpected ways. Defamiliarization is a popular artistic technique especially in Russian literature but can also

be observed in the Dada movement. Recently, it's sometimes known as “culture jamming”.

Improvisation can also be used to disrupt the designer in “auto-pilot”. All designers struggle with fixation, especially novices (Cross, 2010). While not always an impediment, fixation can cause “blind adherence to a set of ideas or concepts limiting the output of conceptual design (Jansson & Smith, 1991). Students stuck in this type of rut, are prone to overuse cliches, tropes, or mimick work they’ve seen before. Improvisation is a direct contrast to fixation and can promote creativity, and positively encourage “deviant ideas” (Kleinmintz, Goldstenin Abecasis & Shamay-Tsoory, 2014).

The design studio is not always the epitome of creativity and collaboration. One might often observe students working in “co-acting groups”, physically close yet still working individually (Lawson, Schon, and Hackman). Dr. Derek Ham, an educator at North Carolina State University, incorporates rules or constraints to the design process, resulting in exploration as a form of “gameplay”. Students become more mindful of their decision making, but also are reassured in their risk-taking. A set of rules or processes creates a sense of direction, especially for students new to design.

THE MASH MAKER PROJECT

As active designers and educators, our investigation surrounding these principles inevitably led us to create the *Mash Maker Project* – a nod to a mash-up of oppositional elements, commonly found in music. In this constraint-led system, we “designed songs” in real-time while working within a set of three specific parameters: time (the song’s duration), image (the top Google image search of the song’s title), and type (Times New Roman). These ubiquitous constraints were designed to provoke improvisation and introduce a disruptive and participatory design process.

Songs designed within the Mash Maker project drew heavily from one specific musical genre: hip-hop. Perhaps more than any other musical genre, hip-hop celebrates spontaneous lyrical improvisation while being foundationally rooted in “time-based sound structures” (Caswell, 2016). Rap, after all, is primarily composed of bars (the method in which a song is measured) and beats. The act of being in the flow, or “freestyling” as it’s commonly referred to, can be aptly described as “a subject’s complete immersion in creative activity, typified by focused self-motivation, positive emotional valence, and loss of self-consciousness” (Abrams, 2012). Mash Maker pulled from this precedent by championing the act of immersion and the unexpected chance outcomes that arise from such a methodology, all within the confines of time.

Central to our set of constraints was the need for open-sourced accessibility. The Google image result of the song’s title delivered a widely referenced visual artifact, while the inclusion of Times New Roman connotes a sense of universal “defaultness” – an omnipresent typeface readily available to anyone.

Both components of applied content – imagery and typography – carried forth a degree of an implicit commonplace, further provoking improvisational design decisions. These constraints, or rules, "sharpen the perspective of the process and stimulate play within the limitations" (Conditional Design, 2010). Such seriality allowed for transformation and variability within a set of controlled rules. "Before I give control away," Luna Maurer of Conditional Design states, "I must first develop a system that will take over the decisions of design. I make decisions on which factors will influence the design, but also what kind of rules and properties this system will follow."

PRECEDENTS

As designers and educators, our investigation was driven by our interest in current precedents. In particular, the conditional design method. Devised by Luna Maurer, Jonathan Puckey, Roel Wouters, and Edo Paulus, conditional design uses *conditions* and *rules of play* to encourage participation. By "regulating" the process, the goal is that creativity can be found in uncertainty, leading to an unpredictable result. Conditional design "focuses on processes rather than products or things that adapt to their environment, emphasize change, and show a difference." In devising a process rather than a product and concurrently placing emphasis on a process, we wanted students to shift value away from final artifacts and forms. We hoped they would notice unexpected patterns, and find significance in time, relationships, and change.

Our interest in conditional design is closely related to the characteristics of improvisation. In place of a script, improv actors work with two conditions; a rough structure and a common belief. This process absolves actors of the responsibility to "figure things out"; instead, it requires trust in the process while encouraging exploration, risk-taking, and even failure. Anaïs Nin puts it best; "It is a sign of great inner insecurity to be hostile with the unfamiliar, unwilling to explore the unfamiliar. Design educators Denise Gonzales Crisp and Nida Abdullah have previously published material related to using improv in the design classroom as a way to ready students for "the uncertainties inherent in design processes". In particular, they use improvised critique methods such as the 'I Wish Critique,' and the 'Ok, Go! Critique."

Other precedents included *Designercize*, an online, random prompt generator that facilitates design charrettes. This platform encourages improvisational design and "whiteboard" practice at all levels. Brian Eno and Peter Schmidt, devised a musical prompt generator in 1975 called *Oblique Strategies*. Presented as a deck of cards, the intent was to force musicians out of creative roadblocks.

STUDENT PROJECT ADAPTATION

The Mash Maker project was designed to invite unpredictable outcomes through constraint-driven processes while mashing together sonic and visual entities.

As we progressed in our research, we questioned if this system would apply to our students. As educators interested in the transferability of these explorations, we decided to adapt this project to the design classroom for further research.

We began with an in-class design charette in which first-year design students responded visually to songs in real-time. In an effort to create a diverse sonic experience, songs for this workshop were chosen based on their specific qualities and as such, ventured between instrumental scores to 70's-era punk rock. Specific constraints were allocated to each song in a mix of familiar, analog-based tools customarily found in a studio setting: Highlighters, Sharpies, tape, Post-it notes, glue-sick, and Exacto knives. As the workshop progressed, the constraints became more challenging and collaborative. In one exercise, students were blindfolded throughout the duration of the song. In another, students demonstrated a collaborative response when they were partnered together with their hands bound and prompted to create with only one tool, a Sharpie.

Once students were familiar with the general premise of our constraint-based music visualization process, we introduced the project scope. To begin, we asked that each student select a song of their choosing. From that collection of crowd-sourced tracks, we then created a shared Spotify playlist for the class to use as a subject matter. Next, we introduced a set of constraints that would dictate their making. Each student was directed to choose one fixed condition – a connotative visual – and two flexible conditions – a variety of software-based tools. The fixed conditions were generally tied to the subject matter of the song, such as "the top Google image result of the song's artist." The flexible conditions ranged from, "any use of the Pen tool" in Adobe InDesign, to a specific Pantone color swatch. For each of the sixteen tracks, students designed a square-based visual in Adobe Indesign using a mixture of conditions. When complete, each student created a family of visuals to their studio's playlist.

Designing in real-time to music was a foundational component of Mash Maker, but we understood that students might feel some anxiety around designing under such a short amount of time. As such, it was important to us as educators that we encouraged process over product in this scenario. In an effort to encourage improvisation in the face of uncertainty and time, we imparted a series of rules for the project: (1) *Don't worry about what it looks like*; (2) *Allow yourself to have fun and take risks*; and (3) *There will be no critique*. Additionally, we asked that they reflect on their observations, fears, accomplishments, process journey, and visual outcomes through reflective writing immediately following each visualization.

In an ever-changing demonstration of their output, students assembled their printed artifacts into a grid on the studio wall as they progressed throughout the project. When finished, the studio collection of over 250 visualizations showcased their collective efforts. Each student then compiled their

individual visuals and reflective writing into a process book that synthesized their output in a final artifact.

STUDENT OUTCOMES

Through the reflective writing responses, we observed that students were generally well-aware of their design decision making throughout the duration of the making process – most certainly due to the limited time constraints. As such, it became undeniable that design improvisational techniques were implemented. Students often remarked that the lack of time to achieve a certain "look" resulted in them abandoning their preconceived notions of what they envisioned, and instead, allowed for chance opportunities. Students were forced out of comfortable "fixated" thinking. Such fixation can become detrimental to developing surprising design outcomes (Anderson, 2019).

Additionally, we discovered that the majority students demonstrated empathetic listening skills by connecting the sonic qualities of the music to their visualizations – transferable qualities such as the song's rhythm and its influence on visual cadence, musical tonality as it relates to color, and lyrics with their direct relationship to typographic nuances. Or, in one instance of deviant thinking, a student reconsidered the tools altogether in her approach to a melancholic pop song. By aligning periods and spaces to the rhythm of the song, the student tapped to the beat of the track as it played, creating a visual cadence of lines and dots that mirrored her direct connection to the music. This type of flexible and adaptive thinking will be needed for design students to address 21st centuries wicked problems.

FUTURE CONTEXTS + APPLICATION

As we adapt our pedagogy during a time of social distancing amidst a global pandemic, we are curious how this workshop-based learning process might be applied in future contexts. First, we have considered accessibility, and how we might replace the music component with other time-based experiences. This could include memories of conversations, prose, live performances, or theater. We also considered how replacing music with other sonic-based (or noise) disruptors might change student output and understanding. The idea of disruption is not limited to physical (external) noise, but there is also psychological (internal) noise and semantic (linguistic) noise. We're curious how a student could incorporate these factors into the Mash Maker experience.

We are particularly concerned with the designer as a speculator and dreamer. We often associate the design process with tangible output and making. Our students enter our program with this assumption, and we'd like to continue using this learning experience to encourage speculation and future thinking as well as building empathy. We see the potential for this workshop to break down power structures in the design student and professional studio.

Overall, the outcomes of this project revealed to students the value of improvisation, conceptual design, and community-based collaboration. Students were introduced to the design process through participatory methods, which allowed them to increase their creative output and feel positive toward "deviant ideas" (Kleinmintz, Goldstein, Abecasis, Shamay-Tsoory, 2014). Most importantly, we found that for first-year design students, this experience encouraged a studio culture of solidarity, collaboration, and low-stakes participation.

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39 Michael Graves Residence VR Project

Ed Johnston
Kean University

Abstract

Our collaborative design team recently gained access to "The Warehouse," the private residence of Michael Graves in Princeton, New Jersey. "[The Warehouse] is a perfect expression of Michael's humanistic design philosophy, with its thoughtful integration of architecture, interiors, furniture, artifacts, artwork and landscape," Linda Kinsey, a principal at Michael Graves Architecture & Design, said in a statement quoted in a recent New York Times article. The intent is for the residence to become a resource center for learning about the famous architect, as well as a space for studio work and lectures.

After connecting with various stakeholders, a clear design challenge and opportunity for the residence emerged: How might we empower the public and classrooms to be able to experience the residence immersively and learn about the significance of its various rooms and artifacts without visiting the property physically?

Our research team initially created a virtual reality prototype of a walkthrough of the residence using the VIAR360 platform. Prototypes of virtual reality scenes were captured with a 360-degree camera. Our team created a voiceover experience to accompany audiences as they virtually travel through the different spaces. For the current iteration, we decided to leverage the 360-degree capabilities of YouTube to be able to share the content broadly with the public and classrooms off-site. A visual identity was created for the project using inspiration from Michael Graves' postmodern and humanistic design.

Audiences can now experience representations of the rooms inside the residence and spaces surrounding the residence through mobile devices and extended reality headsets. They have the opportunity to be immersed in experiences that connect with historical information about Michael Graves and his residence.

This presentation will share our design process. Access to the virtual reality content will be provided to experience portions of the project.

Michael Graves Residence VR Experience

Prof. Ed Johnston, Prof. Henry Stankiewicz, Jacqueline O'Connor, Liam Elias, Daniella Almoneda, Ray Hogrelius and Tiffany Thebodeau
Special Contributions: Dean David Mohney and Associate Dean Rose Gonnella
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KEYWORDS: Experience design, virtual reality, immersive storytelling, 360-degree imaging, prototyping, virtual tours

360° VR Experience: https://bit.ly/graves360

INTRODUCTION

The focus of this immersive VR experience is "The Warehouse," the private residence of world-renowned architect and designer Michael Graves in Princeton, New Jersey. "[The Warehouse] is a perfect expression of Michael's humanistic design philosophy, with its thoughtful integration of architecture, interiors, furniture, artifacts, artwork and landscape," Linda Kinsey, a principal at Michael Graves Architecture & Design, said in a statement quoted in a New York Times article. Kean University was invited to purchase the property soon after Michael Graves passed away in 2015. The intent is for the residence to become a resource center for learning about the famous architect and designer, as well as a space for studio work and lectures.[1]

[1] Joshua Barone, "Michael Graves's Residence, Rejected by Princeton, Is to Be Sold to Kean University," *New York Times*, June 28, 2016. https://www.nytimes.com/2016/06/28/arts/design/michael-gravess-residence-rejected-by-princeton-set-for-sale-to-kean-university.html

DESIGN CHALLENGE

After connecting with various stakeholders, a clear design challenge and opportunity for the residence emerged: How might we empower the public and classrooms to be able to experience the residence immersively and learn about the significance of its various rooms and artifacts without physically visiting the property?

SOLUTION

Our research team created a virtual reality tour of the residence. Virtual reality scenes were captured with a 360-degree camera. Our team created a voiceover experience to accompany audiences as they virtually travel through the different spaces. For the current iteration, we decided to leverage the 360-degree capabilities of YouTube to be able to share the content broadly with the public and classrooms off-site. Please visit the following link to experience the project: https://bit.ly/graves360

PROCESS OVERVIEW

This project was realized in several stages. First, the team discussed the scope of the project. We established a clear understanding of the project goals in consultation with different university stakeholders. Then, we did fieldwork on site. The research team visited the residence in Princeton, NJ multiple times. 360-degree photographs were captured of the various rooms and spaces of the residence using a GoPro Fusion camera. The next step involved generating user flows and storyboards to establish an intentional sequence of experiences for the virtual visitor. In the last stage of this project, the design research team focused on building and publishing the experience.

HARDWARE AND SOFTWARE

We used the following hardware and software in order to accomplish the design solution:

- **GoPro Fusion camera**: Used to capture the 360° photographs on-site.
- **Macbook Pro**: Used to leverage software to create the digital immersive experience.
- **Fusion Studio** (the GoPro companion app): Used to stitch and render the photographs.
- **Adobe Photoshop and Lightroom**: Used to color correct and clean up the images.
- **Adobe Audition**: Used to edit the voiceover and sound tracks used throughout the video.
- **Adobe Premiere Pro**: Used to organize 360-degree photographs into a timeline and synchronize the edited voiceover with the photographs.
- **YouTube Studio**: Used to upload and publish the 360 video.

PHASE ONE: SHOOTING IN 360°

One challenge when shooting 360° footage is determining where to place the camera. In this specific project, we wanted to make sure that we were not in any of the shots. So, we used the Bluetooth capabilities of the GoPro camera and connected it to an iPhone. The iPhone acted as the remote control for the camera. Then, we needed to hide out of view to capture the desired shots while still being in range to control the camera.

In order to provide an optimal experience moving from image to image, it was important to maintain consistency of the exposure, vertical height, depth of field, and grain quality of the outputted 360-degree images. Achieving this consistency was challenging. Each room of the residence was carefully and purposefully designed, including the quality and amount of natural light and artificial light in each space. While it results in a wonderful physical experience, the 360-degree images needed to express the same quality via a single camera. This required multiple takes, analyzing each captured frame, making adjustments in one part of the image while balancing those changes in other areas of the capture.

PHASE TWO: PREPARING THE PHOTOGRAPHS

After capturing the footage on site, we organized 104 folders of interior photographs and 14 folders of exterior photographs. It was important that we carefully organized all of our files in order to be able to process, edit and optimize them correctly. Each shot involved several files.

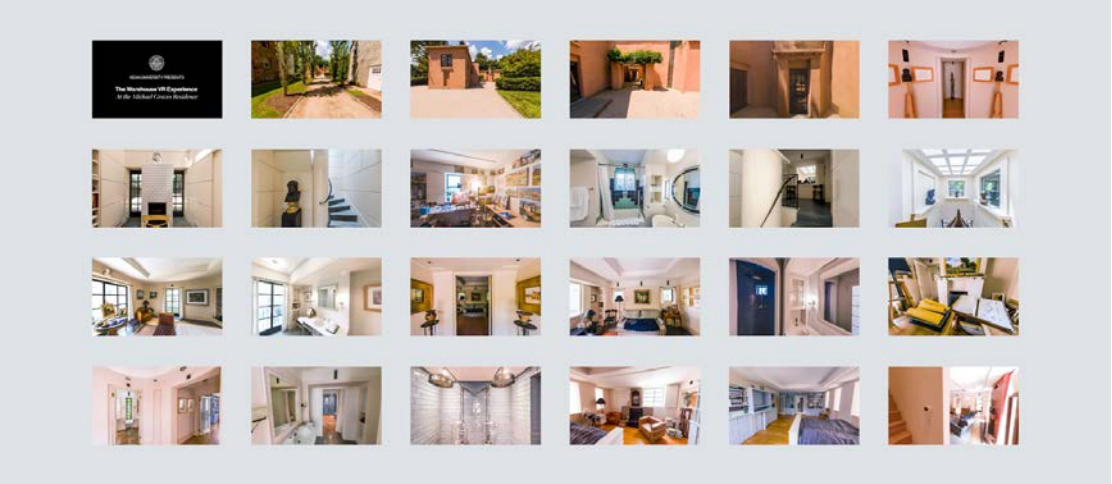
PHASE THREE: STITCHING THE PHOTOGRAPHS

For each 360° monoscopic photograph, we had to stitch together two fish-eye photographs, one being the front view of the image and the other being the back view. To get 360-degree monoscopic photographs for each shot taken on the GoPro, we imported both fisheye shots into Fusion Studio and processed them.

PHASE FOUR: MAPPING THE EXPERIENCE

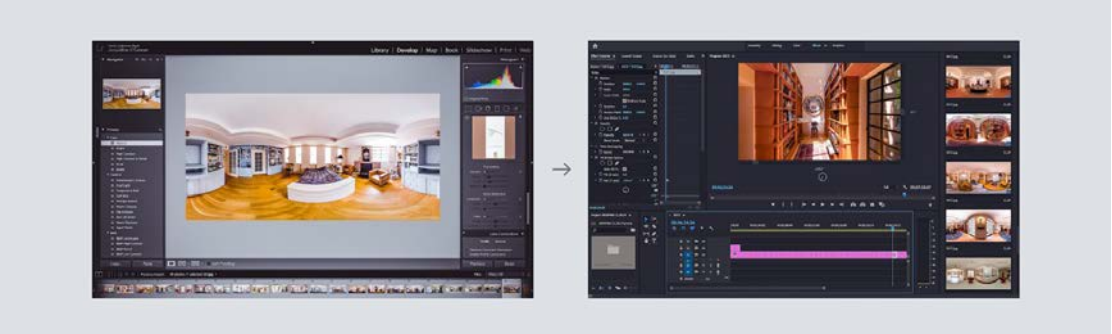
One important challenge that we faced was deciding how we wanted to take the user through the house. We used floor plans of the house in order to establish the intended flow through the different rooms and spaces.

PHASE FIVE: EXPERIENCE STORYBOARDING



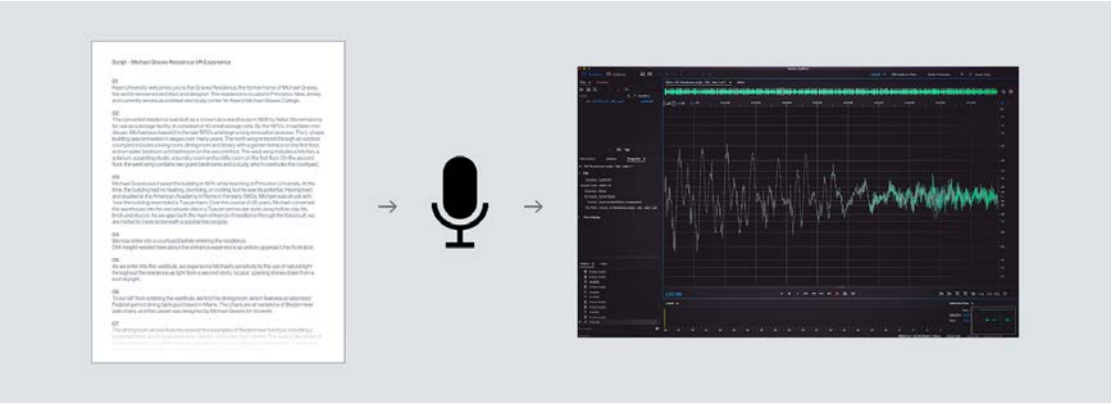
After identifying the intended flow, we created an experience storyboard, which was essential for determining the needed copy for the voiceover script.

PHASE SIX: EDITING THE PHOTOS AND VIDEO

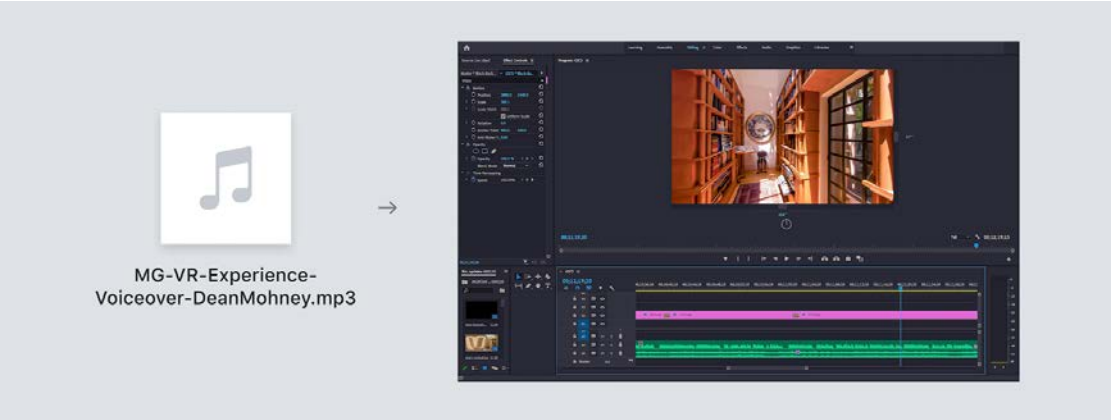


As mentioned above, the design team used Adobe Photoshop and Lightroom to edit and optimize the various images. Then, these edited image files were imported and organized in the intended order within a sequence in Adobe Premiere Pro.

PHASE SEVEN: DRAFTING, EDITING & RECORDING THE VOICEOVER



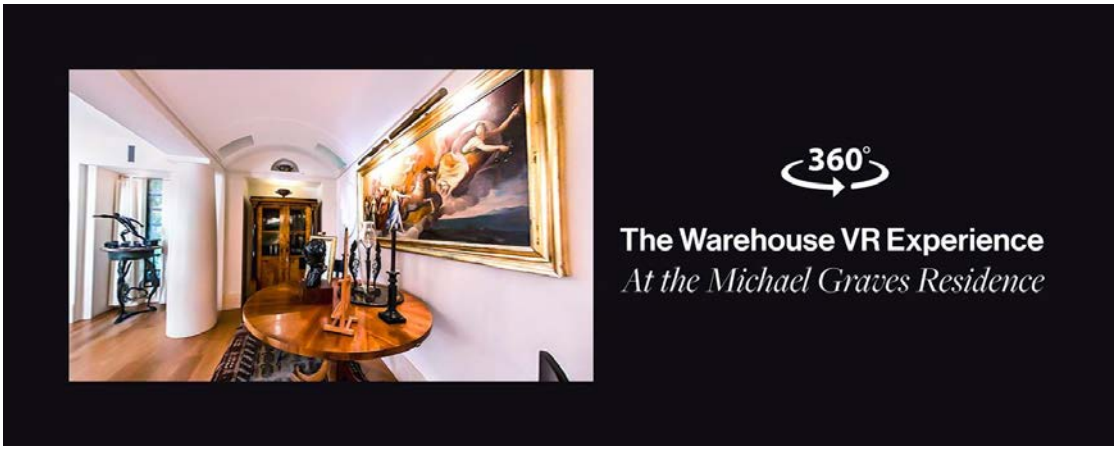
Once we had a script established from various sources and stakeholders, we enlisted Dean David Mohney's assistance in recording the voiceover. Voiceover edits were made in Adobe Audition. Then, we took the voiceover and added it to the main project file in Premiere Pro.



We synchronized the 360-degree photographs with the narration of the virtual walkthrough.

RESULTS

The *Michael Graves Residence VR Experience* is a YouTube 360° VR experience that we are proud to share with Kean University and the public. We also designed the experience for viewing on an Oculus headset for an upcoming exhibit at the China Design Museum in Hangzhou, China. We are grateful to have had the opportunity to work on this project, especially during the uncertain times of COVID-19. We are excited how a project like this can make a historical building more accessible during these unique times, allowing people to visit the property virtually. Additionally, by using YouTube as our platform, this enabled us to make the project more accessible through closed captioning.



360° VR Experience: https://bit.ly/graves360

ACKNOWLEDGMENTS

The Michael Graves Residence VR Experience is a project supported by the Students Partnering with Faculty Summer Research Grant at Kean University through Kean ORSP.

Thank you Dr. Farahi, Dr. Toney and Dr. Bousquet for your continuing support of our research.

A special thanks goes to Dean David Mohney and Associate Dean Rose Gonnella for their support and contributions to the project.

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40 Liberty Hall 360 VR Project

Ed Johnston
Kean University

Abstract

Over the past several years, our design team has worked with Liberty Hall Museum to design engaging experiences for museumgoers. Liberty Hall Museum is an 18th-century American historic site built in 1772 by William Livingston, New Jersey's first elected governor and a signer of the Constitution of the United States. The museum has received prestigious visitors, including Alexander Hamilton and George and Martha Washington.

In planning meetings with museum stakeholders, three priorities were established: public engagement, content access, and site accessibility. Our team has designed experiences to respond to these needs. While designing tablet-based experiences for the visitor center, our team discovered a historic event, which happened in the museum's Great Hall. In April of 1774, in the Great Hall of the museum, John Jay, one of the Founding Fathers and the first Chief Justice of the United States, married Sarah Livingston, the governor's daughter.

Upon learning this, we formulated an experience design challenge: How might we give audiences and museumgoers the exciting experience of feeling like they were actually there on this historic occasion? Our solution is a film experience in two formats: ultra-widescreen digital HD and immersive 360° Virtual Reality. A colorful cast of characters leads the audience on an adventure around the mansion and grounds, as they experience the story through the eyes of Lucius Horatio, a rambunctious young guest at the wedding. The experience was created through the collaboration of students, faculty, staff, university alumni and neighbors across multiple disciplines.

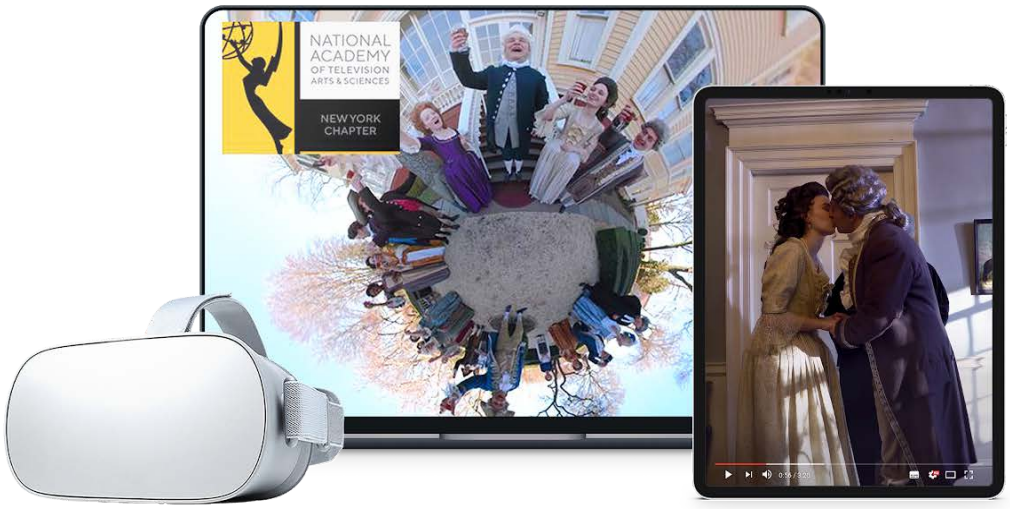
This project has been funded by multiple internal grants, supports an external NEH grant and has received an international 2019 MarCom Platinum Award in the category Digital Video Creation: Virtual/Augmented/Mixed Reality.

This presentation will share our design process and project development. Access to the virtual reality content will be provided to experience portions of the project.

Liberty Hall 360 Immersive Experience

**Prof. Ed Johnston, Emmanuel Vozos, Prof. Henry Stankiewicz,
Dr. Elizabeth Hyde, Dr. Jonathan Mercantini**

KEYWORDS: Experience design, immersive storytelling, 360-degree film, virtual reality, immersive film



Immersive Film Experience: www.libertyhall360.com

INTRODUCTION

Liberty Hall 360 is an immersive, interdisciplinary project designed to take viewers back in time at the historic Liberty Hall in Union, NJ. Over the past several years, our design team has worked with Liberty Hall Museum to design engaging experiences for museumgoers. Liberty Hall Museum is an 18th-century American historic site built in 1772 by William Livingston, New Jersey's first elected governor and a signer of the Constitution of the United States. During its time as a residence, the museum received prestigious visitors, including Alexander Hamilton and George and Martha Washington.

While designing tablet-based experiences for the visitor center, our team discovered a historic event that took place in the museum. In April of 1774, in the Great Hall of the museum, John Jay, one of the Founding Fathers and the first Chief Justice of the United States, married Sarah Livingston, the governor's daughter. This event served as the catalyst for a unique project using state of the art VR technologies and the historical and creative resources within Kean University.

DESIGN CHALLENGE

Our collaborative team including museum stakeholders formulated an experience design challenge: How might we give audiences and museumgoers the exciting experience of feeling like they were actually in attendance at this historic event?

SOLUTION

Our solution is a film experience in two formats: widescreen digital HD and immersive 360° virtual reality. A talented cast of characters leads the audience on a journey, as they experience the story through the eyes of Lucius, an adventurous child who roams around the well-appointed manor and grounds catching a glimpse of the pomp and politics of the celebratory day. The experience was created through the collaboration of students, faculty, staff, university alumni and neighbors across multiple disciplines. Please visit the following link to experience the project: www.libertyhall360.com

DESIGN PROCESS

Phase 1: Organize & Research

Initial project stakeholders organized and defined initial goals. Different funding mechanisms were established to drive the work. Students collaborated with faculty to begin research and production tests.

Juliana Reents, Honors History student states, “In my Honors History class, we looked at first hand documents over at the museum and on campus to recreate the events surrounding the wedding. We used John Jay and Sarah Livingston’s love letters and other artifacts from the time period to write the script...It’s really exciting to work on a project that goes beyond our historical research working together with the different departments at Kean is really cool because we are recreating something that happened on Kean campus in the 18th century. It’s really going to bring history alive to the modern audience.”

Phase 2: Define & Plan

A collaborative team was formulated from that initial activity, and project goals were further clarified. Script and screenplay drafts went through several iterations. Considerations for storytelling in immersive 360° were established. The collaborative team grew.

Co-Director Emmanuel Vozos elaborates, “One of the most enjoyable aspects of this project was that we were able to involve so many different groups. The project began with the students of the History Department doing their research. Once it was taken to our design school and Professor Johnston, it started to take shape as a potential film project. Once it came across my

desk, it seemed to become something that would not only represent an exciting, new student-driven filmmaking project, but also something that would be helpful to the museum, helpful for all the different academic departments, and a really fun, exciting and worthy application of new technology, new resources, and creative energy to create something that would benefit a lot of different people, especially guests to the museum, the students that were involved in the making of it, and ideally the people of New Jersey who would learn more about the history of the state once they saw the project. Having members of the Third Brigade of the American Revolution, the reenactment community, come on board was really exciting. They were actors. They were our historical experts and consultants. They helped track down props and costumes and instructed our cast on how to wear things, how different parts of their costumes worked. Having those historical reenactors was a huge advantage and it allowed our project to have so much more authenticity, and this sort of bedrock this baseline of historical accuracy that we could build on top to tell the story that we wanted to tell."

He continues, "360-degree virtual reality creates an interesting storytelling challenge when trying to identify the point of view of the viewer. You can create a neutral, omniscient point of view and drop the audience into the center of a room. But you can also use an in-story character to be your point of view. And we thought for this project that would be the right way to go. We decided on this character of Lucius Horatio Stockton, a young child who would have been in attendance with his parents at this wedding. This child-like point of view would be a great way to facilitate moving around the house and getting to see as many rooms as possible as well as getting a look at all the different personalities and different characters that would have been around the wedding. We established in the beginning that this character is rambunctious, energetic and adventurous, and that sets up the wandering camera that goes throughout the mansion..."

Phase 3: Production

Coordination with the museum and across the various team members was essential for successful days of production. Important considerations were made for both immersive video and audio recording.

Vozos explains, "We organized the days of shooting very efficiently trying to maximize our time in the location, our natural light, as well as make the most of the time dedicated to the project by our students, crew, guests, neighbors...myself and a number of crew members have experience working on professional film production, and we adapted what is essentially a best practice for a Hollywood production to an educational project. We went about it really efficiently because of that."

Because of the unique filming environment required for 360° VR production, the filmmakers faced all the usual challenges of producing a short film (lighting, sound, costumes, props) and some challenges typically reserved for live theatre, as the scenes had to unfold in full, without cuts, and all lighting and equipment had to be hidden.

Working with the audio for Liberty Hall 360 was a research project in itself, as unique challenges arose during every phase of production. While planning for audio and video capture, the notion of directional audio that is variable and relative to the viewer's specific and changing field of view was an immediate concern. One of the main goals of this virtual reality production was immersion, which requires multiple senses receiving the same signals, in unison, from perceivably the same source locations.

For this project, recording directional audio was not an option with the technology available, nor was the ability to reliably design directional audio in post. Recording a cast of 30 on a low production budget and in a historical house built in 1772 with rudimentary sound isolation created many opportunities to design creative solutions.

For scenes in which there was a small speaking contingent, like the opening welcome scene, each speaking actor was directly fitted with a wireless lavalier microphone. This was the easiest and most straightforward solution. Complications arose as the number of speaking roles per scene increased. For some actors, costumes were not conducive to directly mounting a lavalier microphone. For some scenes, actors were too close in proximity and their feeds were muddled together, creating poor capture quality. In other scenes, the number of speaking parts exceeded the number of individual lavalier microphones on hand. Each of these challenges were handled differently, and each scene was shot using its own audio strategy.

In scenes where close proximity was creating feedback and other noise-related issues, lavaliers were placed strategically on cast members that were central to the different areas where speaking roles were performed. Behind closed doors and away from the action, students and faculty on the audio team were tasked with adjusting microphone gain while live action was taking place in order to effectively pick up the different actions near the centralized lavalier.

In other scenes, like the kitchen scene where costumes were not conducive to running lavaliers, shotgun microphones were hidden directly in the scene to cover wide portions of the room. The gain levels for these microphones were also mixed live, while the action was taking place.

In the bride's room scene, where shotgun microphones could not be hidden, costumes were not conducive, and proximity of actors created multiple issues, a single shotgun microphone was set on a boom pole into the center of the room and above all of the actors. This boom setup would later be painstakingly healed out of the scene in post-production.

All of these solutions worked fairly well during the limited production days, but eventually the decision was made in post to bring all of the actors with speaking roles back into the studio to record ADR takes of their parts. Automated Dialog Replacement is a process by which actors watch playbacks of their scenes, and then capture clean voice recordings that match up to the original take. These clean recordings are then used to replace the ones captured in production to provide a clean, uniform audio experience. Despite the added scheduling, organizational, and

post-production work needed, ADR was by far the best solution for the final render, and will likely be planned for and leveraged on future productions.

The experience our students received included working as a part of a team in a high-stress environment, working directly with complex audio scenarios, and working to design solutions to obstacles and issues as they arose in a time-sensitive environment. Watching our students jump directly into and work successfully in roles they had no prior knowledge of and accept and perform their responsibilities with enthusiasm and professionalism was easily the most memorable part of working on Liberty Hall 360. This aspect of the project will certainly be motivation for developing similar projects in the future.

Phase 4: Post-production

Using a variety of editing software, both an immersive 360° experience and a widescreen HD film were created, screened and published to YouTube.

The post-production process was expansive, as the film was shot in two ways: VR and traditional widescreen formats, each requiring different methodology and software to complete. The staff and student crew color corrected the footage (which was shot with mostly natural light and a few modern lighting instruments), digitally "erased" cables and equipment, re-recorded dialogue and added in music and sound effects to complete the immersive experience.

RESULTS

The resulting immersive film represents a new frontier of museum experiences that transport the guests to a different time and place. We invite you to visit www.libertyhall360.com to view the experience in its entirety.

This project is the result of many people's hard work. Students, Historians, Designers, Filmmakers (both traditional and new media), Actors, Editors, Marketers, Costumers, Historical Re-Enactors, Stuntmen and more. The details were painstakingly overseen by the stellar crew at Liberty Hall Museum. Under the leadership of now-executive Director Rachael Goldberg, every prop and set dressing was placed with care where the camera would find it.

The current Covid-19 pandemic has not just demanded innovation on the part of museums and cultural organizations in order to continue to serve their visitors, but it has also revealed an existing inconsistency to the levels of access many historical institutions are able to provide. Virtual reality projects like Liberty Hall 360 will not only make in-person visits to the space more accessible and transformative, they will also amplify the fascinating stories held within Liberty Hall's walls to a much broader audience, able to be experienced instantaneously from anywhere.

Additionally, by using YouTube as our platform, this enabled us to make the project accessible through closed captioning.

The project was nominated for a 2020 New York Emmy Award in the category of 'Nostalgia Program'.

In addition, the project was awarded the highest honors, Platinum, in the category of Virtual Reality for the 2019 International MarCom Awards.

ACKNOWLEDGMENTS

The Liberty Hall 360 project was supported by the Students Partnering with Faculty Summer Research Grant and Release Time for Research at Kean University through Kean ORSP. In addition, the project was part of the MakeHISTORY@Kean Grant through the National Endowment for the Humanities.

Thank you Dr. Farahi, Dr. Toney and Dr. Bousquet for your continuing support of our research.

Thank you Professor Karen Hart and your team for all of your support and guidance in creating the needed costumes and props for the film!

A special thanks goes to Dean David Mohney and Associate Dean Rose Gonnella for their support of the project.

Thank you to all of the cast, crew and contributors to the project!

41 New Community, New Culture: Welcoming Refugee Arrivals through User-Centered Design

Lisa Fontaine
Iowa State University

Abstract
This presentation will describe a recent user-centered design initiative that addresses the immediate needs of recent refugee arrivals to a mid-sized American city. Using simplified graphic imagery, students create wordless visual narratives and instructional diagrams that help refugees (with limited or no English skills) to understand American customs in their newly adopted community.

Our community has refugees from 9 countries, with one country speaking 11 distinct languages. This means we cannot expect to provide effective instructional materials by integrating visual and verbal elements. We must rely only on imagery. Within these images, we have a limited set of tricks to help us convey our messages: we can manipulate hierarchy, focal point, scale, proximity and sequence to convey/clarify specific messages.

It is impossible to directly interview the users of our visual narratives to ask them about their challenges. With dozens of languages among them and very few translators available, as well as an almost universal distrust of strangers, the refugees remain at arm's length from us. Fortunately, we work with local professional liaisons – from the US Committee on Refugees and Immigrants, Catholic Charities, and our state's Human Services department – with exhaustive knowledge of the challenges that face recently arrived immigrants. Serving as our cultural consultants, they help us develop user personas from each ethnic group, and have identified the areas of greatest consequence, and have further prioritized what need to be immediately understood if one wants to get and keep a job, get along with neighbors, and avoid misunderstandings with Immigration and the law.

One of the biggest challenges of the project is the diversity within the user group: with users from so many different cultures it seems their comprehension of images will not be universal. Do extremely simplified images help or hinder the user's understanding?

42 Nothing About Me Without Me: Applying User-Centered Design to Create Assistive Devices for People with Physical Disabilities

Ashley Pigford
University of Delaware

Abstract

People with physical disabilities must navigate a world that is not designed for them and everyday is a constant struggle between getting their needs met and maintaining independence. Many design educators attempt to appease their own philanthropic ideals by applying textbook user-centered design methods to help these people with special needs. However many of these good-willed designers are not employing the truly user-centered approach, nothing about me without me .

For the last three years, in collaboration with orthopedic surgeons and therapists at Nemours A.I. duPont Hospital for Children in Wilmington, Delaware, I have been developing assistive devices for children and adults with physical limitations including Arthrogryposis Multiplex Congenita (AMC) and other limb differences, including Amelia . AMC is a debilitating muscular condition involving congenital joint contractures and Amelia includes a broad range of birth defects involving one or more limbs. The children and adults I work with have either no arms, no hands or arms and hands that do not function properly. As you can imagine, these arm differences cause extreme difficulty in performing everyday tasks - including feeding oneself.

In working with individuals with specific differences I have learned that not only is every situation unique, but that a truly user-centered approach requires the engagement of a designer's full arsenal of creative tools. My toolkit includes electro-mechanics, robotics, digital fabrication and engineering, which is an evolution of my creative practice as applied research originating thirty years ago in graphic design. I now consider my practice-based research in the field of tangible interaction design and enjoy working directly with users for whom I can make an actual difference in their lives.

This presentation will showcase a few of the more successful devices I have developed and will emphasis the need for creative people to employ a truly user-centered design process.

43 Optimized for Web: Using the Community of Inquiry Framework as a Model for Decentralized, Human-Centered Design Education

Lisa Hammershaimb
Independence University

Abstract

Design education traditionally embraces a geographically proximate paradigm. In this paradigm, an apprentice learns by being in close proximity to a more experienced master. Design education is human centered because of this proximity. When graphic design was primarily about physical product output, this paradigm mirrored place-based culture.

In recent years, culture has blurred blur between physical/digital. With technology, presence is extended far beyond physical location. However, the delivery method of design education has remained largely static and gone almost unchanged since the first commercial design training. Decentralized delivery methods are inconceivable.

This is in direct contrast to professional design practice where technology is the design bridge that connects humans in disparate places.

Why are we still primarily operating in place-based paradigms that increasingly are so very far removed from professional practice? Are we choosing ignorance/isolationism, or have we just been too long siloed and forgotten we exist in a larger educational narrative?

This presentation will show how Community of Inquiry (CoI), a seminal framework for learning in an online format, can be used to extend studio pedagogy into spaces that are both online and still fully human centered.

This presentation will begin with an overview of the three presences (teaching, social, and cognitive), which make up Community of Inquiry Framework (CoI). It will then move into a discussion of how the traditional pillars of studio pedagogy (master, apprentice, proximity) can map into each of these presences. Finally, this presentation will conclude with several practical application case studies examining how a few educators in assorted undergraduate and graduate design programs are using the internet create human centered studios even as all participants are decentralized in physical location.

44 Sarmiento y Libertador

Alejandra Silva
University of Florida

Abstract

Sarmiento y Libertador is an independent non-profit storytelling project developed in San Juan, Argentina, during December 2018. This case study aims to share the experience and challenges of using digital resources as a way to capture, communicate, and archive analog experiences, while also exploring ways to build confidence and pride within a local community.

The project explored ways to respond to a feeling residents of San Juan often experience towards their city, that of being eclipsed by larger cities such as Mendoza, Córdoba, and Buenos Aires. While economically San Juan is still not as wealthy as leading manufacturing or urban centers, when it comes to cultural identity, this province has its own traditions, history, and local color, which are just as valuable as those of a larger city. Still, this idea does not feel so obvious when speaking with many Sanjuaninians, who frequently make comparisons between their city and major urban centers.

To highlight the beauty of living in San Juan, this urban/digital storytelling project collected stories at a critical downtown intersection: Sarmiento Street and Libertador Avenue. The rationale for this location in the city are numerous, including its historical importance to San Juan and the nation—marked by a historical building and museum—, the many visitors in the area attracted to the museum and the tourist information office across the street, the pedestrian street in between the museum and the office that attracts locals—teenagers who hang out with friends, artisans and local farmers who place pop-up shops every week—and people who come and go from the many bus stops located nearby. The collected stories, memories, and observations were then shared through a Facebook and Instagram campaign and on a website, which offers possibilities to expand the project through collaborations with artists and historians.

45 Stepping Back to Step Forward: Human-Centered Design with a Twist

Kimberly Hopkins
Towson University

Abstract

There are powerful stories in the community not always known or heard — stories from people who have much to say, but may lack the opportunity to connect. Traditional graphic design methods bring these diverse stories to light by designing specific deliverables derived from client input and research, while human-centered design takes a step further, inviting users to participate in the design process. Both processes are valuable, but the results are still predominantly the designer's interpretation. What if a designer took human-centered design a step further, modifying their role to a facilitator, finding opportunities for people to tell their own stories, to speak for themselves?

My scholarship in 2019 explored one such opportunity: working with an established partnership, I facilitated art/design workshops with foster care youth ages 13–21 residing in a group home; ultimately curating and culminating their work into a four-week gallery exhibition in summer 2019. The goal: to offer a platform for residents to build connections with the community by highlighting our common humanity.

This presentation will discuss:

- the origins, outcomes, and outreach of the partnership and exhibition;
- design pedagogy used to facilitate the process of making with the residents;
- the lessons learned and how they translate into my design courses;
- the possibilities and constraints of implementing a similar practicum experience within a graphic design program; and
- assessing the successes and limitations of human-centered design in this context and its relevance in developing student designers.

In 2019, I worked with The Children's Home (TCH), a nonprofit caring for foster care youth ages "13 to 21 who have experienced abuse, neglect, violence, abandonment, and/or are in need of supervised care."[1] The art + design workshops I created and facilitated with TCH youth resulted in an exhibition titled ~~*mis*~~*perception,* held at the TU Holtzman MFA Gallery from July 13–August 10, 2019. This paper discusses its origins, process, and outcomes; not to promote any single design method or solution, but to contribute to the broader conversation on social practice in the design field and design curriculum.

OVERVIEW + ORIGINS

~~*mis*~~*perception* developed from a series of connections. TCH and I began working together in 2013, when I was hired to design their annual gala collateral. In 2017 they asked if I would create and teach a photography workshop to the residents that summer. The TCH residents identities are protected, but their work spoke volumes. I began to seek a space to celebrate their talent. The exhibition *not.so.simple* opened in January 2018 in the Storage Space Gallery at Towson University (TU) and led to an offer to exhibit in a larger space in TU's Holtzman MFA Gallery. This was the beginning of ~~*mis*~~*perception.*

PROCESS

Social practice takes many forms. ~~*mis*~~*perception* sought ways for TCH residents to build connections to the community and *speak for themselves*. To accomplish this, my design skills needed to be

re-utilized to facilitate. It required me to know when to step back, so they could step forward, and determine when I should step in. I was not there to speak on behalf of these youth, I was there to facilitate opportunities for them to speak out. *~~mis~~perception* was human-centered, but did not use human-centered design theory. The project did more than just involve the youth's input, their works were the outcome. *~~mis~~perception* didn't seek a solution based in product, but rather sought to socially engage. The engagement worked both ways. The residents' work engaged and connected to gallery guests. Guests could engage and connect back by writing/drawing messages on paper leaves, and adding them to the TCH "tree," a component of their logo, printed on removable wallpaper. To support *~~mis~~perception's* outreach and impact during and after it closed, I stepped into my role as a designer, producing a brochure, exhibition catalogue, and website. Lastly, *~~mis~~perception* was collaborative. A team of people from TCH and TU worked together to bring this exhibition to fruition; from the funding through and beyond the closing day of the show. *~~mis~~perception* included pieces from workshops I facilitated from 2017–2019, and a painted car hood from workshops led by Michael Whitehead and Aaron Maybin. All of this was possible because of two key social practice foundations: trust and flexibility.

Trust. I cannot emphasize enough the role of trust in community-based social practice. In this case, what began as a project-level partnership developed into a deeper level of engagement as I got to know the staff, visited their campus, and participated in their events. In 2017 when asked to create and facilitate that first workshop, I had no specific experience teaching photography, but had shown a willingness to become part of their community beyond the design projects themselves.

The photography workshops held in summers 2017 and 2018 further extended our trust and partnership. The TCH staff and I communicated on curriculum content, the appropriate length for the workshops, and various logistical needs. Thus when the opportunities arose to create the exhibitions *not.so.simple* and then *~~mis~~perception*, the existing trust and partnership were crucial in embracing these new avenues.

The workshops also required me to build trust with the residents. The first workshop for *~~mis~~perception* was devoted to it. In many ways I structured that first day as I would for my undergraduate classes. Introductions, ice breakers, and a paper folding exercise set a foundation for working together. Being open about the exhibition, its purpose, and the curation continued that trust; as did explaining the agency they had over their work. I believe reserving the first day to get to know one another, share examples, and answer questions contributed to the success of the workshops.

Flexibility. Social practice also requires flexibility. As in studio practice, things can change; and when they do, meeting the needs of the community is the priority. With *~~mis~~perception*, the needs of the participants dictated the workshop structure and curation of the exhibition. I embraced graphic

design analog processes, utilizing paste-ups to facilitate the participants making, as computer access was limited. Projects were structured so residents could vary their participation as needed.
As curator I suggested including the process work of participants from the poster project as prints, transferred onto ceramic tiles; to highlight the importance of process and fulfill the goal of representing as many of the participants as possible. Over time, new projects were added, and the workshops closed with three outcomes: multi-layered posters, photography, and figure/ground compositions from laser-cut paper type. I facilitated the digitization of the work, matching the paste-ups exactly. When necessary, proofs were given to the participants to review, approve, or provide edits. In some cases, they observed edits on a laptop using industry-standard graphic design software.

While the workshops strived to give participants complete agency over their work, some exceptions existed. In order to compile budgets for funding and provide structure to the workshops, a certain amount of pre-determined sizes, materials, and formats had to be developed, namely the photography and the 30″ x 50″ multi-layered posters. The remaining projects, the typography and the tiles, were pitched to a portion of the participants for their input and approval beforehand. Printing and then hanging the works in the exhibition involved myself, and a BFA graphic design undergraduate student in collaboration with colleagues in my department, and external vendors.

OUTCOMES + OUTREACH

Quantitatively the project included:

- Participation by over 45 TCH residents;
- Fourteen workshops, from January–May 2019, plus the summer 2017 and 2018 photography workshops; and those led by Michael Whitehead and Aaron Maybin;
- Seven, 30″ × 50″ multi-layered posters printed on clear film;
- Ten photos, either 8″ × 10″ or 18″ × 12″, matted and framed;
- 20 type compositions, either 12″ × 12″ or 11″ × 14″, printed on removable adhesive paper;
- ~ 25 process drawings, printed and transferred onto 4″ × 4″ ceramic tiles;
- One painted car hood;
- 200 prints of a tri-fold, square, full-color brochure, on 80# gloss cover; and
- 120 prints of a 32-page plus cover, full-color exhibition catalogue on 100# text and cover.

Qualitatively, there was evidence that community building was met. It was exciting to see the interactive

piece fill with responses back to the residents from gallery guests — a good sign of engagement. Once the exhibition closed, community building continued, as the works and brochures returned to TCH to utilize and distribute as they wished. The exhibition catalogue, finalized more recently, will go to TCH as well, and the website remains active. In combination, the awareness of the exhibition and TCH will extend well into the future.

TAKEAWAYS FOR UNDERGRADUATE PRACTICUM EXPERIENCES

- This project strived to promote empathy, equity, agency, community building, and co-creation. The theories and practices that support these goals need further discussion and application across design curriculum, not just in specific classes.
- While this project due to its timing, only involved one undergraduate student, it did provide a framework for future applications with larger student involvement.
- Because design can positively and negatively affect communities, design students need community experiences within and outside the classroom. Doing so is an opportunity to practice building relationships with people and understanding how others are affected by design decisions. Experiences like *~~mis~~perception* may not easily fit logistically into existing classroom structures. Adjusting community projects to run over multiple semesters or holding a class over the summer may be viable options.

BRINGING COMMUNITY TO THE CLASSROOM

Up until this project, my design pedagogy with my undergraduate design students was focused primarily on making; with discussion of community building and social practice mainly reserved for teaching sections of graphic design social issues. Even within graphic design social issues, I originally relied on the traditional designer-client model, asking students to work as teams with a single community partner. They gained confidence in meeting with the clients, creating briefs, and executing and presenting design solutions across print and digital deliverables. They immersed themselves in the community through service-learning projects. But one important component was missing: there was no direct connection to the people who would interact and use their solutions. As I began facilitating *~~mis~~perception*, my pedagogy changed across all my courses. My graphic design social issues pedagogy now specifically utilizes human-centered design theory and experiential learning. Students now partner with individuals in their community who are directly affected by their solutions, receiving their input throughout the project. The traditional designer-client process and human-centered

design theory both provide valuable practicum experiences to students; however, working directly with the end user added additional perspective to students' design education and projects.

Throughout my undergraduate courses the pedagogy now focuses more deeply on community and people. Students explore and question systems, discuss ethics, learn empathy, build community, and begin to define and practice their own form of design citizenship. Through theory, projects and exercises, they practice building trust and flexibility. Students reflect on their self-awareness, acknowledge their own bias and privilege, and use that awareness to evaluate and improve design solutions. These conversations require a strong classroom community to be successful. I utilize the framework of Intergroup Dialogue (IGR) founded in the 1980s at the University of Michigan,[2] which "encourages collaborative action for change in order to carry out difficult conversations in the classroom."[3] I find this to be an excellent resource for the creation of safe spaces with student agency.

CONCLUSION

~~*mis*~~*perception* was a collaborative project built from a longstanding partnership. It demonstrated success in facilitating opportunities for people to build connections and speak for themselves through art and design. While its multiple facets may be too much to implement within a single semester; a variation of this experience has potential within a undergraduate design program. It was an honor to be involved in this project, and I look forward to continuing this line of research.

~~*mis*~~*perception* was supported by the Faculty Development and Research Committee of Towson University (FDRC). BTU — Partnerships at Work for Greater Baltimore of Towson University, The Children's Home, the TU College of Fine Arts and Communication, and the TU Department of Art + Design, Art History, Art Education. Photo by Kimberly Hopkins / Hayley Furman.

ENDNOTES

1. "About our Home." *The Children's Home*. http://thechildrenshome.net.
2. Zuniga, Ximena, Biren A. Nagda, Mark Chesler, and Adena Cytron-Walker. "Intergroup Dialogue in Higher Education: Meaningful Learning about Social Justice. *ASHE Higher Education Report, Volume 32*, Number 4." ASHE Higher Education Report 32, no. 4 (January 1, 2007): 1–128. http://search.ebscohost.com.proxy-tu.researchport.umd.edu/login.aspx?direct=true&db=eric&AN=EJ791633&site=eds-live&scope=site.
3. "Insight Handout No. 1: What is Intergroup Dialogue?" The Program on Intergroup Relations. University of Michigan. https://drive.google.com/file/d/1eSwYKUS4bSaBrfrBpumGK9mH6wlP7fvS/view.

46 Teach Students How to Connect with People: A Foundation for Human-Centered Design Across Curriculum

Kimberly Hopkins
Towson University

Abstract

The design profession shares a common thread across specializations: people. Designers are people striving to meet the needs of other people. Therefore, when preparing students, not only to implement human-centered design methods but implement any design deliverable, we first need to ask: how do we prepare students to connect with people? As technological advances and cultural norms are questioned and redefined in our field and beyond, designers need more than skills as makers, they need skills to be empathetic, informed design citizens who can communicate inside global business models.

Thus it is critical to utilize processes and theories from within and outside of graphic design to develop students as thinkers; well-versed in interpersonal skills, research-based experiences, and design foundations, while actively questioning systems and visual culture. Building understanding and knowledge for reflection is key.

This interactive presentation shares activities and resources utilized in my courses to build the people skills necessary for human-centered design, and all of design:

- applying exercises and tenets of education and business to build class community, trust, and safe spaces for open conversation;
- integrating design theory and history to discuss accessibility, usability, designer responsibility, design psychology, and removing barriers;
- critiquing the design field itself, what needs to improve, and discussing the role and influence of a designer in visual culture; and
- field research and practicum: getting students out of the classroom to experience and immerse themselves in the topics and communities they seek to design with.

Attendees will practice techniques during the presentation. The overall aim is to generate an open dialogue on these methodologies and their outcomes for use in any graphic design course.

47 The Kids Are Alright with Voting: A Case Study in Using Mobile Devices as Ethnographic Research Tools

Johnathon Strube
University of Nebraska Omaha

Abstract

According to the United States Census Bureau, American youth (ages 18–29) are the least engaged voting bloc in the U.S. election process. This democratic election process can be seen as simple, yet complex, and it can be difficult to find a single factor that determines action or inaction. In reality, it is a web of interrelated issues, each needing to be addressed and targeted for change. With so many issues, it's not about finding one big idea, but finding incremental solutions that can chip away at the problem.

This project and resulting research is meant to instigate design students to employ their personal design agency. As members of this demographic set, design students acknowledge that their abilities can directly address this social paradigm. That they are readily equipped with dynamic tools that can re-frame this problem and the design process. That these tools can also directly connect them with users to conduct and capture research. And, in-turn, that these tools can lead to authorship and innovation as a communication medium.

Using these dynamic tools, or their mobile devices, design students conducted human-centered research methods by recording ethnographic interviews to discredit assumptions, understand demographic perspectives and produce measurable data relative to motivations and participation. Design students collectively analyzed their data to define trends and identify areas that could be targeted with communication methods. And, design students summarized their findings to serve as the basis for their proposed design solutions.

The Kids Are Alright with Voting is both a research project and a call for participation. It is an examination of a shared, yet, disconnected, demographic experience. An experience that is presenting design students with new opportunities to use human-centered methods to investigate, create and affect their democratic future.

The Kids Are Alright with Voting: A Case Study in Using Mobile Devices as Ethnographic Research Tools

Johnathon Strube, MFA
Assistant Professor, Graphic Design, University of Nebraska Omaha

ABSTRACT

According to the United States Census Bureau, American youth (ages 18–29) are the least engaged voting bloc in the U.S. election process. This democratic election process can be seen as simple, yet complex, and it can be difficult to find a single factor that determines action or inaction. In reality, it is a web of interrelated issues, each needing to be addressed and targeted for change. With so many issues, it's not about finding one big idea, but finding incremental solutions that can chip away at the problem.

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BACKGROUND

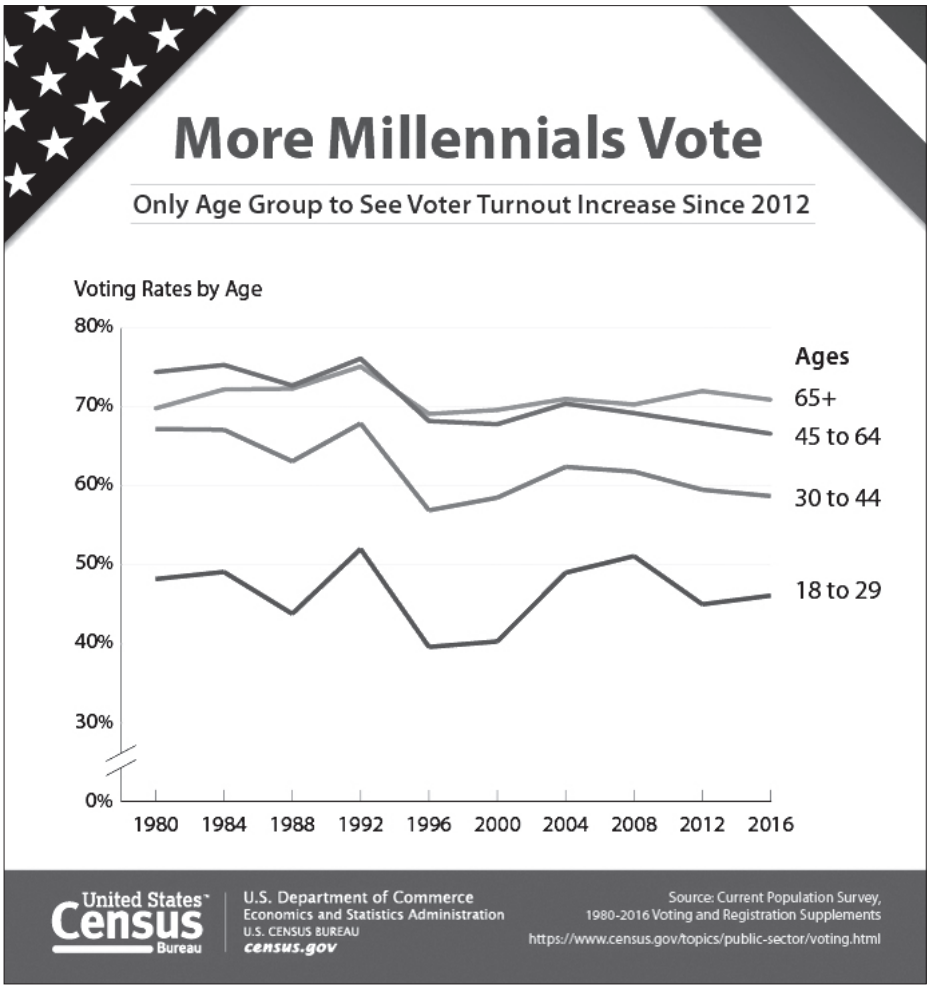
In Fall 2018, students in an advanced Visual Communication course at Northern Illinois University were asked what type of project they wanted to work on. Often students in this course would work on a long form branding project or campaign with an emphasis on research, strategy and poly-modal application.

Given my pedagogical focus on using humanities-centered research methods to develop designer agency, I asked students if they would be interested in working on a socially-driven topic and project. I was met with a unanimous "YES". All students in the class were open to and wanted to participate in a project that they felt was "socially relevant" and dealt with "real life" content.[1]

As 2018 was a mid-term election year, and one perceived of having great consequence, I presented students data from the United States Census Bureau.[2] This data clearly displayed that their social demographic, voters age 18–29, were the least likely to participate in the upcoming election. I asked them a simple question—WHY?

PROCESS

The process of this project exposed students to human-centered research methods used to craft and design a social campaign. The audience for this campaign were NIU students, or local contemporaries, in the age range 18–29. The objective for the campaign was to



An upward trend? The graphic shown to students is a bit misleading, as this chart indicates that their is increased participation, although, the overall rate is still lower than all other demographic areas.

create communication that would educate, motivate, instigate or promote 18–29 year-old voters to participate in national, democratic elections. To do this, students followed a process that included: assumptive research; problem prioritization; ethnographic interviews; data analysis; hypothesis creation; and solution prototyping.

METHODS

Assumptive Research

To start the design process, students did assumptive research. As group, and as part of the subject demographic, students worked together to brainstorm reasons they believed were causing the rate of voter participation. Through this process, students completed simple Google searches, read news reports, talked with friends and drew from their own personal experience to clarify their assumptions. The main goal of this exercise was to get all pre-conceived factors on the table relative to the identified problem.

Problem Prioritization

Students outlined trends in their assumptions and created thematic areas from which to develop interview questions. The themes that were identified as areas of focus were: personal problems, social/cultural factors, the voting process, the act of voting, ideology, philosophy or party identification, physical limitations and the media.

Within these areas, students categorized specific questions that composed a universal questionnaire from which they conducted their individual interviews.

QUESTIONS

In conducting the ethnographic interviews, students intentionally created a series of binary questions, YES/NO, that would produce measurable data to be shared and interpreted.

Demographics

1. How old are you? (#)
2. Where are you from? (Suburban, Urban, Rural, Other, Prefer not to answer)
3. What is your gender identity? (Female, Male, Other, Prefer not to answer)
4. What is your ethnicity? (White/Caucasian, Latinx, African-American, Asian, Native American, Other, Prefer not to answer)
5. Have you voted in a past election? (Mid-terms, Primaries, Regional, Local, All of the above)

Personal Problems

6. Does your schedule impact your ability to vote? (Y/N)
   If yes, will it prevent you from casting a ballot?

Social/Cultural

7. Do you think your vote makes a difference? (Y/N)
8. Does your family or friends influence your voting habits? (Y/N)
9. Are you aware of the upcoming election? (Y/N)
10. Do you know the date of the upcoming election? (Y/N)
    If yes when is it?

Process

11. Are you registered to vote? (Y/N)
12. Do you know how to register? (Y/N)
13. Do you know where to cast your vote? (Y/N)
14. Are there any technical reasons preventing you from voting? (Y/N)
    (ex: legal, citizenship, etc.)

Act

15. Would you participate more if remote or mail-in voting was used nation-wide?
    Have you used remote or mail-in voting? (Y/N)

Ideology/Philosophy/Party

16. Do you think the two party system is effective? (Y/N)
    Why?
17. Do you think the government is functioning effectively and accurately represents the population? (Y/N)
    If no, why?

Physical Limitations

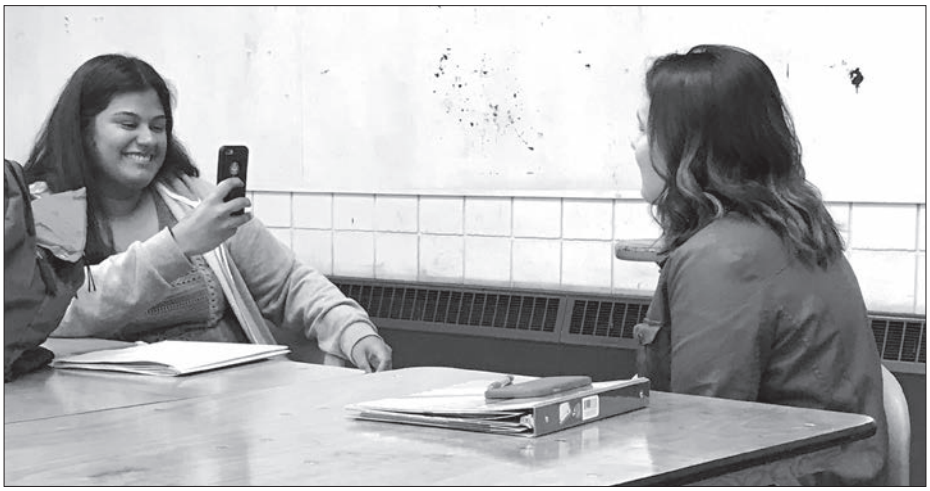
18. Is there anything physically preventing you from making it to the polling location? (Y/N)
    If yes, what?

Media

19. Does media, celebrity or social media memes influence your participation? (Y/N)

Conducting Ethnographic Interviews

With questions defined, students conducted ethnographic research to test their assumptions and develop the case study that could be applied to the larger collective issue. These interviews were classified as ethnographic, and not just qualitative research, because they were comprised of one-on-one interviews that looked to understand the behaviors and rituals of a specific social group.



Mobile device or research tool? Students engage in the ethnographic interview process. Students activated their personal mobile devices to capture individual interviews through video media and inform their design process.

Students were provided and referenced readings on conducting enthographic interviews from *Doing Oral History* by Donald A. Ritchie. As a collaborative discussion, students outlined the necesssary goals when performing their interviews. These included both theoretical and practical considerations to connect with those that designers were looking to serve.

INTERVIEW CRITERIA

Students were guided to prepare for the interview process to ensure that questions and interactions probed directly at the topic:

- **Identify the specific group of people.** Through the concept of ethnography, the interviewee is determined by the outlined demographic or social factors. This specifically identifies the groups to be interviewed, but more importantly identifies who is not to be interviewed.
- **Conduct interviews on neutral ground or in subject's own space.** Students discussed how important it was, if possible, to observe the person, their body-language and personal space. This allowed student interviewers to also employ observational research. Being aware of the contextual symbols and messages that often reveal a more detailed understanding of the subject.
- **Open up the interview with questions general to the topic.** Students used this tactic to make the interviewee comfortable with the process. In this case, the students started with basic demographic questions that serve this purpose, but also established important data markers for their research.
- **Questions are prepared ahead of time.** Referencing their shared questionnaire, students were able to ensure that they did not forget questions and gathered all the required data for analysis.
- **Ask questions, notate and video answers.** To do this, students completed this task with the use of their personal mobile devices. This is an important factor that allowed students to observe their personal designer agency. By using their personal mobile devices, students were able to observe these objects differently. Students now saw these devices as a research tools and not merely a passive object that created an extension of their personal identity.
- **Notes should be exact, not interpretations.** Students were also tasked with transcribing their interviews. These transcriptions were typed and saved with each video to ensure that the captured data would not be lost due to technical failure.

- **Always get permission first.** Students also functioned with industry best practices. Students were required to complete a Photo/Video Release Form for each interview subject. These documents were signed, gathered, scanned and posted to a shared drive ensuring proper documentation was captured.
- **All media should be backed up.** Students collected and cataloged all interview information in a central, shared drive. This shared drive served as a course depository and a secondary file back-up system.

Data Analysis

At the completion of the interview process, each student analyzed specific interview questions and visualized the data in two separate ways. The first visualization focused on holistic data and presented the percentage of Y/N responses relative to the number of total responses and the corresponding percentages. Then each student took a thematic question and cross-referenced it with demographic data captured in questions one through four. This second visualization was a segmented chart that visualizes the relationship between demographic factors and the relative question. This process allowed the class to share the workload and speed up the analysis process. These visualizations served as a research narrative for each student's final campaign strategy book.

FINDINGS OF NOTE

The following are highlights from the students findings. They show some important trends in the data gathered from more than 150 interviews.

- 56% of respondents did not know the date of the 2018 election
- 56% of respondents would participate more with remote or mail-in ballots
- 67% of respondents do not think the two party system is effective
- 76% of respondents do not think the government represents them accurately

Hypothesis Creation

After data anaylsis, students created a hypothesis question. This question was created after each student identified, what they believed to be, the most pressing factor. This factor served as the primary premise for the creation of their social campaign and supporting artifacts.

Solution Prototyping

Each student created a conceptual solution to engage the identified demographic, that presented a strategic campaign name with supporting graphic and artifact material. Solutions were constrained to be multi-dimensional, consisting of an analog, a digital and three-dimensional component. These strategic campaigns and conceptual solutions were presented in a formal presentation that clearly explained and visualized outcomes.

FINDINGS

The findings of this project are anecdotal in nature, but speak to support a pedagogical approach that can engage students in socially-focused projects.

- Design students preferred a project that had a holistically collaborative process. Through each phase of the process students worked directly with their colleagues to brainstorm, workshop, identify and create possible solutions. Through each phase of the design process, students were dependent on eachother.
- Design students want to be involved and use their education in real-time to relate to larger systemic issues. They do not want to see their time in the classroom as idle and spent on abstract exercises, but rather as tangible experiences that are applicable to their future.
- Design students were engaged by information that was real, accessible and that could serve them as a design student, but importantly as a human—even if their project was not a "success".

- Design students are capable of doing ethnographic research and investigative work. Initially, students were apprehensive about conducting one-on-one interviews. Specifically, they were apprehensive about the effort and engagement necessary to capture a critical mass of feedback. Although, once students gained momentum in the interview process, they found it to be enlightening in understanding the problem and the resulting design work.
- Design students saw that they could be empowered by their personal mobile devices. They were empowered by the concept that they were equipped with "tools" to conduct and record interviews. It also changed the way that they perceived the application of media produced by their device. They saw that the device could help them record and produced thematic content to support their overall design process.

REFLECTIONS

In Spring 2020, advanced Graphic Design students at the University of Nebraska Omaha were to participate in this project. Their participation would have provided a second demographic case-study and data set from a different location. The hope was that this data would have been used to widen the research. But, due to the Covid-19 pandemic, students were not able to reliably complete the ethnographic interviews. The uncertainty of the virus, social interactions, participation and schedules were barriers to participation.

Strangely, though, there is validation in the solutions proposed by students. As social distancing has questioned why or how in-person voting takes place, our country is being forced to respond. States, such as Wisconsin and Texas are ruling against mail-in ballots for absentee voting, while states such as Colorado, Hawaii, Oregon, Utah and Washington allow state-wide mail-in voting for all registered voters.[3] The point is that our current standard for registering, voting and participating in our democracy must evolve.

The youth get it and ultimately, *The Kids are Alright with Voting.* In fact, they want to be engaged and participate in their democratic process. These students found that all parts of the voting process need to evolve. I am hopeful that students like these can help to design a more equitable systems for our democracy.

ENDNOTES

1. Anecdotal feedback given from students at completion of project. Students complete a Project Reflection Sheet, allowing them to assess their activity and participation in the project.
2. "Voting Rates by Age." United States Census Bureau. May 10, 2017. https://www.census.gov/library/visualizations/2017/comm/voting-rates-age.html
3. "All-Mail Elections (aka Vote-By-Mail)." National Conference of State Legislatures. March 24, 2020. https://www.ncsl.org/research/elections-and-campaigns/all-mail-elections.aspx

48 The Role of User Storytelling in Designing for the Near-Future

Miguel Cardona
Rochester Institute of Technology

Abstract

To keep in step with the design of future technological advancements, we must listen carefully and understand the needs and problems of humans in the present. In my Interaction Design class, we frequently partner with industry "clients" to help identify design opportunities and solve prospective problems detailing near-future interactive systems. We take client prompts and requests and overhaul them to focus more on the experience of the human user, focusing on notions of usability, accessibility, and emotion with outputs that tell more of a collective story.

This presentation will detail one such project, a partnership with a local hospital technology team looking to explore the role of Augmented Reality wayfinding in the hospital space. The client, looking for "arrowson- the-ground smartphone mockups," were given much more. As a class, we delivered several solutions from student groups that considered accessibility, privacy, security, stress, and compassion for the end-user.

In this nine-week project, students brainstormed, mapped, engaged in participatory observation, performed site research, and interviews to identify more deeply the needs of a near-future user. Their outcomes considered the role that AR technology would play in the user's story while also considering the absence and fail states of that technology. This questions the appropriateness of the technology at every step, making sure we stay away from the "hammer-first" approach to problem-solving where everything is a nail— to strive for real utility.

Skills like graphical user interface design, motion graphics, and 3D compositing were employed to produce testable prototypes and promotional videos. The results are a collection of presentations and scenarios that brought perspectives and ideas to the client that they had not yet considered.

This presentation will emphasize how the process is managed from inception to iteration to completion and the critical role that user-storytelling can play throughout any project.

49 There's (too many) apps for that.

Patrick Finley
Virginia Tech

Abstract

Over the past two decades, Americans have used their smartphones for a variety of nontraditional phone activities, such as looking for a job, finding a date, or reading a book. These activities have been made possible through third-party software applications (apps) housed in Apple's App Store – a digital library that's inaugural 2009 marketing campaign claimed that no matter the user's interest, "there's an app for that." To date, the App Store has over two million apps. Yet, original concepts are rarely introduced due to what seems to be an impossible task of developing innovative products unique to the current market. This has been especially problematic for Interaction Design curriculum in higher education which has continued to churn out app projects for such topics as plant growth tracking, refrigeration inventory, campus budgets, and pet profiles. Take, for example, the 2019 Adobe Design Achievement Awards student competition where over twenty-five percent of the Digital Media and Experience (interactive) entries included those of the aforementioned app categories. This percentage of reoccurring projects indicates the need for implementing new topics and project briefs to Interaction Design curricula.

This presentation offers solutions to the redundancies observed in student work by discussing three case studies of Interaction Design project briefs, including 1.) annual events, 2.) digitation of physical tasks, and 3.) digital components to physical product. Each case study, which includes work from introductory and advanced Interaction Design courses over the past seven years, will include an overview of the assignment, project parameters, process, research, and outcomes. These works have been recognized by companies such as Amazon, ESPN, and NASA, and aim to inspire a framework for design educators to implement into their Interaction Design curricula.

50 Transforming Graphic Design and Elevating Human Lives

Gareth Fry
Utah Valley University

Abstract

Although early modernist designers originally had the grand vision of centering their work on helping people, during the 20th-century graphic design was systematically co-opted by industry and cast in the role of a subservient accomplice in the advancement of commercialism. As part of this system, products were imbued with magical emotional properties that promised to provide results they were incapable of delivering, and promotions of one sort or another blanketed the earth and created inescapable visual clutter. We are largely oblivious to the effects of this system, but they do, nonetheless, include widespread consumerism, health issues related to the consumption of harmful products, and a variety of mental and emotional disorders.

This presentation seeks to challenge this system. It will urge designers to consider making better use of their time and talents, and propose that the bedrock on which we should rest graphic design in the future is not merely the creation of more thoughtfully-developed products and services, but to support the literal fulfillment of fundamental human needs.

This will clearly require a significant transformation of perceptions, attitudes, and relationships. In its simplest form, this might include the abandonment of officious terms such as "target market," but on a much deeper level, it should encompass a conscientious study of fundamental human needs and a determination to place their fulfillment at the center of our work. Turning the ship around might appear to be a seemingly unachievable task, but the means for success are already within us, woven into the very fabric of our humanity.

By re-coding our thinking, tapping into our human endowments, infusing design education with deeper meaning and purpose, and changing our professional practices, we can collectively build a framework that can both transform graphic design and elevate the lives of the humans for whom it is intended.

51 Trust and the Design of Information

Abstract

Trust is built on relationships and "trust is at play whenever people exchange information."[1]

People assess the quality of the information they encounter – how does it respond to my information needs and abilities? – to determine the trustworthiness of the information and thus the value of the information. Therefore, trust is at the heart of information design and is embodied in the relationship between the individual user of information and the information itself. Successful user-centered information design connects the story of the individual to the "story" of the information.[2] As a result, the individual user can rely on the information and confidently make decisions based on that information.

This paper discusses the issues surrounding trust in the design of information and, using examples in the areas of wayfinding and health care, how the personalization of information through storytelling can influence design choices that reinforce trust.

Judith Moldenhauer
Wayne State University

1 Hertzum, M., Andersen, H., Andersen, V., and Hansen, C. "Trust in information sources: seeking information from people, documents, and virtual agents." *Interacting with Computers,* 14 (2002) 575–599; p. 577

2 Moldenhauer, J. "Storytelling and the personalization of information: A way to teach user-based information design." *Information Design Journal,* 11, no. 2/3 (2002/2003) 230–242

52 Website Accessibility: Teaching Inclusivity With a Human-Centered Approach

John O'Neill
University of Minnesota Duluth

Abstract

Teaching web accessibility in interactive design courses is essential as our work environments become more diverse. A broad range of disabilities significantly impacts access to digital environments, which affects how we obtain information or complete everyday tasks that we have become so accustomed to in our society.

Microsoft has steered the ideas of designing for disabilities with its comprehensive Inclusive Design Tool Kit, which has provided more perspectives on redefining disability. According to the Kit, there are three kinds of disabilities that people can experience: permanent (e.g., a person with Cerebral Palsy), temporary (e.g., a person with a broken arm), situational (e.g., lack of traction on an icy sidewalk). This perspective gives insight into the line of thinking that everyone has disabilities.

Using the Microsoft Inclusive Design Kit as a starting point, I will discuss a project that I assigned to teach students how web accessibility might impact all people. I gave students the challenge to reimagine the design of an online news site by incorporating the Web Content Accessibility Guidelines (WCAG). Students took on a human-centered design process by interviewing members of the local low-vision community to learn about their challenges accessing the web and their use of assistive technology.

The project was influenced by an ADA Title III News & Insights blog on Seyfarth.com, which stated that the number of website accessibility lawsuits rose 177% during the 2018 calendar year. More and more lawsuits will occur if designers do not understand accessibility. Therefore, design education programs have a responsibility to teach web accessibility.

Presenting the project as a case study provides an opportunity to have the audience think about how the teaching of WCAG can directly help the designers of tomorrow to be more inclusive, as they design solutions that will be experienced in the digital realm.

53 Winners by Design: Visualizing the Student Athlete

Marius Valdes
University of South Carolina

Abstract

The ultimate goal of a recent teaching/research project was to provide a mutually creative experience for art studio/graphic design seniors and women student athletes (soccer) by having them work together to create a unique design project that was exhibited at one of the top five soccer venues in college sports this past Fall. The students explored the topic of "student athlete" in a project called "Winners By Design".

Both design students and players worked together using a human centered design creative process by visualizing players' perspective on what it takes to be a successful student athlete. The final design came as a direct result of the athlete's valuable input and personal relationship established with the designers. Learning took place in the classroom, in an art studio, on a soccer field, and at a soccer stadium. Students left the classroom to interview, photograph, and present to soccer players. Athletes got their hands dirty in a workshop led by our students where they silkscreened graphic t-shirts that were handed out at a soccer game.

Art students were tasked with creating motion posters or animated graphics that utilized both original imagery in a variety of styles and experimental typography that were exhibited on a large monitor at a crowded game last soccer season (estimated attendance of 3500).

This presentation will recap the process and results of our unique collaboration bridging sports and art. This projected was presented as a poster at UCDA Summit 2019 as the project was in progress so this presentation provide a look at the final outcome.

54 Teaching and Learning through Digital Archives

CHAIR
Dori Griffin
University of Florida

PANELISTS
Samira Shiridevich
University of Florida

Megan McCormick
Ohio University

Bree McMahon
University of Arkansas

Melanie Griffin
University of Arkansas Libraries

Panel

In this panel, educators, a librarian, and students explore diverse encounters with original source materials and artifacts from design history, primarily through the digital tools and environments. Pedagogically, these encounters were designed to inform the contexts in which emergent practitioners conceptualize their disciplinary studio making practices. In conversation, we'll reflect on the following questions:

- How does a "primarily digital" process complement and complicate physical experiences with designed objects and images?
- What are brief examples from your praxis showing how we use digital tools to experience, interpret, and critically re-present the material of design and its history?
- How do digital archives connect research and practice?

Highlighting the rewards of cross-disciplinary collaboration, a special collections librarian and a design educator discuss their work with design students. As research for an information design project, students visited the archives to see physical examples of data visualization and learn about digital tools for archiving data and objects. They explored Rowher Reconstructed, an online environment designed for experiencing 3D renderings of Japanese-American internment camp buildings in Arkansas, and leveraged their insights to develop a conceptual framework for ethical design engagement with marginalized communities.

Reflecting on their work with a design history professor, two MFA students with prior professional experience discuss their archival research and its connections to their studio practice. As part of an educational research fellowship, a nascent letterpress printer sourced, digitally captured, and cataloged open-source images from printers' manuals, type specimens, and histories of printing, produced 1683-1924. These images will be used to construct a graphic timeline for a book on the type specimen's history, underway by the supervising professor. During a semester-long project on creating "recuperative parallel narratives" of graphic design history, the second student researched the artifacts of feminist design, interrogating the differences between traditional archives (rich in metadata) and informal digital repositories (housing frequently-excluded designs and designers).

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55 Student Perspective on Research and Creative Endeavor, a year later…

CHAIR
Rion Huffman
Pittsburg State University

PANELISTS
Audrey Dainty
Pittsburg State University

Grace Haworth
Pittsburg State University

Josh Tegarden
Pittsburg State University

Panel

At the 2019 UCDA Education Summit, a panel on student perspective on research and creative endeavor was held. Since then, the course responsible for that panel has undergone changes and lessons have been learned. The panel was wellreceived last year, and educators expressed interest for more information in the future.

This discussion will explore strategies to include students in research efforts from the perspective of an educator and a panel of new students engaged in research projects, just as the previous panel discussion did. This discussion will also cover lessons learned during the past year in an effort to help educators engage undergraduate and graduate students in research and creative endeavor. And finally, a showing of the curriculum used for the course will be available if participants desire to see/use it.

Questions the panel will address:

1. What strategies are effective to get undergraduates to engage in the research and creative endeavor process?
2. What role does faculty mentorship play in effective research?
3. From a student's perspective, how does the perception compare to the reality of working on a research project?
4. What are the benefits of undergraduate research?
5. What is the difference between research and creative endeavor?
6. What lessons have been learned in the past year by the professor?
7. What is the structure of the curriculum for such a course?

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56 Thoughts and Observations: Teaching American students from an Asian perspective; Teaching Asian students from an American perspective; Teaching in two separate institutions simultaneously: Asian and American.

CHAIR
Randy Clark
Wenzhou-Kean University

PANELISTS
Yvonne Cao
Texas Christian University

Jeff Poon
Wenzhou-Kean University

Panel

In spite of the current political climate between Washington and Beijing, Sino-American cooperation and exchanges are well and thriving between the two countries, cultures, and ideologies. More Asian students are seeking education in the United States/United Kingdom/ Australia, either for their bachelor or graduate degrees.

This unique panel discussion, coupled with a short presentation from each panel member, will present and discuss the unique environments each educator face.

Each professor on the panel teaches in an environment foreign to his/her own. An American expat teaching graphic design in China, a Chinese National teaching graphic design in Texas, a Chinese National teaching at both an American and a Chinese University commuting between the two institutions in distant cities each week.

Can stereotypes be challenged: Are Chinese students are better at craft, and American students are better creatively? Do culture, political climate and tradition suppress good design? Which culture is more resourceful? Do the Chinese have the same access to contemporary influences in culture, museums, and historical sites as their American counterparts? Are the Americans students overly provincial and biased visually?

Insights shared are the opportunities, the challenges, successes and failures of this unique hybrid of distinctly opposite cultures and expectations: Asian and Western.

57 From Human-centered Design to Culture-Centered Design: A Methodological Framework for Designing Culturally Meaningful Experiences

Tejas Dhadphale
Iowa State University

Workshop Description

Designers and design researchers developing products for new cultural market needs to understand consumption within the social and cultural context. Consumers interacting with products and services need to be studied as a part of a cultural process where consumption of certain products is a reflection of deliberate social and cultural choices. Culturally appropriate design will ensure that those objects have higher life-span, emotionally connect with users, last longer and end up in landfills much later than other comparable global products.

The integration of culture into design has been a subject of research for several decades. Designers of the new global era are agents of cultural change and must be cognizant of the impact their products have on local markets. The workshops address the following questions: How can designer develop products and services that are culturally appropriate? How can designers integrate diverse cultural aspects into the product development process? This workshop will present a step-by-step guide to identify and incorporate diverse cultural dimensions into design. The workshop intends to expand the scope of human-centered design to culture-centered design. Culture-centered design (CCD) is much like human-centered design (HCD). This workshop digs deep into the similarities and differences in the two approaches and how shows how attributes of HCD carry over to CCD.

Purpose and relevance of workshop

Products initially designed to serve only the local market are now reaching across international boundaries. As a consequence, there is an emerging interest in the impact of cultural dimensions on the interaction between people and products. Cultural appropriate design can be a leverage to achieve higher environmentally sustainable consumption. Cultural appropriateness of objects will ensure that those objects have higher life-span, emotionally connect with users, last longer and end up in landfills much later than other comparable products. This workshop will provide a methodological approach for integrating the material, behavioral and symbolic aspects of culture for developing culturally suitable products.

Session structure

This workshop will start with a presentation and discussion on the importance of designing for cultural context (10 min). This will provide the necessary background for the subsequent hands-on activities. Each group will be given a task for design a product or service for a particular cultural group of their choice. To understand and design for a cultural group, participants will be engaged in the following steps:

Participants will be introduced to the theoretical construct of 'situated difference' outlined by Arjun Appadurai (1996). Participants will use 'situated cultural differences' as tool to conduct research into the four quadrants of cultural research (40 min). For each quadrant, groups will be provided with cultural research cards (prepared by the presenter) to guide them through the exercise.

57 From Human-centered Design to Culture-Centered Design: A Methodological Framework for Designing Culturally Meaningful Experiences
...continued

Tejas Dhadphale
Iowa State University

Quadrant #1 Materials, aesthetics and manufacturing processes: The first research quadrant focuses on understanding the embedded meanings of products themselves- "in the forms and materials and finishes which embody design attributes" (Cross, 1999, p. 6).

Quadrant #2: Behaviors and interactions: Cultural meanings are a result of day-to-day interaction of products with their users. Meanings are constantly produced and shared as a result of social interaction and practices.

Quadrant #3 Symbolic meaning of interaction: Sociologists, anthropologists, social scientists and cultural studies scholars have encouraged researchers to look beyond the instrumental needs of consumption and understand it as a reflection of identity (self) and social status.

Quadrant #4 Symbolic meaning of products: The symbolic study of products includes understanding product personality and brand identity that are shared among people within a cultural group.

Reflection (10 min): Groups will reflect on the activities and the framework for culturally relevant design.

Materials needed

Participants are not required to bring anything. No advanced preparation is required.

- Project and screen for presenter to show slides.
- Easel pads (25" x 30", White), Masking tape, Post-its (3" x 3" Super Sticky Notes, Assorted Colors). I am happy to bring the materials if they cannot be arranged by the organizers.

References

The design of this workshop is guided by the following publications:

Appadurai, A. (1996). *Modernity at Large: Cultural Dimension of Globalization.* Minneapolis: University of Minnesota Press.
Cross, N. (1999). Design Research: A Disciplined Conversation. *Design Issues*, 15 (2), 5-10.
Dolan, P. (2002). The Sustainability of "Sustainable Consumption". *Journal of Macromarketing*, 22 (2), 170-181.
McCracken, G. (1988). Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities. Bloomington: Indiana University Press.

58 First Day of Class with Figma Design

Miguel Cardona
Rochester Institute of Technology

Workshop Description

Design tools are becoming more collaborative and changing the way we develop ideas and solve problems. Figma, a collaborative design tool, has reimagined the design workspace as a web-based multi-user pseudo-game, a lot of potential for interpretation. Frequently dismissed as just a user interface prototyping tool, the scope and potential for Figma's capabilities are limitless.

In this workshop, I will demonstrate ways to develop and foster community through collaborative prompts and activities in the classroom with Figma. Using shareable and ready-made components and in-context instruction, I will explain how Figma can be used as a workspace to document, share, and showcase design work and process. I will walk through some best practices, show examples from previous classes, and as a group, we will build towards a single, collective output while working in the same document.

The central aspect of the workshop will be my "first day of class" demonstration, which is a mix of introduction to design principles, Figma's layout tools, and serves as an icebreaker activity for students to make their profiles. Students are then encouraged to make components to share and remix with each other in this virtual space. The result is a utility that can be exported to help the instructor learn everyone's names and interests.

I will require a projector and internet access to give the workshop. This workshop will require from the users: a personal email, and free figma.com account login.

59 Inclusive Design: A Workshop to Brainstorm Web Accessibility

John O'Neill
University of Minnesota Duluth

Workshop Description

I am proposing a workshop to explore the design process that aims to meet the needs of people with disabilities, a population that continues to encounter barriers. The workshop will specifically address how design educators may install projects and pedagogy methods that will teach students why designing for a diverse population of abilities will broaden the impact of design.

The adoption of a human-centered design process is the first step in meeting the needs of people with disabilities, which will impact how they may have access to information. According to the Centers for Disease Control and Prevention, 26 million people have a disability. Despite the installment of the American Disability Act (ADA) over 25 years ago, problems still exist for the disability community, many of which cause barriers to information. The ADA Title III News & Insights blog on Seyfarth.com states that the number of website accessibility lawsuits in the United States rose 177% during the 2018 calendar year. Therefore, design education programs have a responsibility to teach inclusive design.

The workshop will discuss the Microsoft Inclusive Design Kit because it has a broad view of how disability is defined. According to the Kit, there are three kinds of disabilities that people can experience: permanent (e.g., a person with Cerebral Palsy), temporary (e.g., a person with a broken arm), situational (e.g., lack of traction on an icy sidewalk). This perspective gives insight into the line of thinking that everyone has disabilities, which works to eliminates the idea of "other." It will lead to a brainstorming session on how all people benefit from the Web Content Accessibility Guidelines (WCAG), the international standards for web accessibility. Inclusive design principles will serve as the means to evaluate the ideas from the brainstorming session.

60 Creating Augmented Reality Experiences with Spark AR

Eugene Park
University of Minnesota, Twin Cities

Workshop Description

Augmented Reality (AR) is an immersive technology that enables computer graphics to be superimposed onto the physical world. When implemented into smartphone experiences, its applications can range from interactive storytelling to enhanced retail experiences. The workshop leader will offer a tutorial on one of the most recent AR toolkits available to the public, Spark AR. Published by Facebook, this developer software is used to create facial filters for its social media app. We will cover how to use Spark AR to map 2d/3d graphics onto a human face and program user-activated effects that are triggered by specific facial actions (blink, nod, etc.). By the session's end, participants will know how to create interactive AR filters for Facebook and Instagram. No prior programming experience is required.

Technical instructions aside, the intent of this workshop is to acquaint its participants to the creative potential behind immersive technologies and impress them to think about how its tools can be used to create designs that go beyond conventional industry outcomes. After the software tutorial, the remaining time will be spent discussing possible Spark AR applications in design education and creative practice. Such ideas can include in-class activities and projects for motion graphics, 3d kinetic typography, interactive installations, and prototyping/testing gesture-based user interfaces. Regardless of its use, AR is a powerful tool for designers to take advantage of the immersive technologies that bring together facial recognition and tracking, 2d/3d graphics, and computer programming into their practices and research.

Required materials:

- Laptop (Macintosh or Windows) with Photoshop
- Spark AR: Download at https://sparkar.facebook.com/ar-studio/
- Blender: Download at https://www.blender.org
- Facebook account: Needed to activate Spark AR for use. A workaround will be provided to participants without an account.

61 Psychology for Designers: Evidence-based Design Thinking

Zhi-fang Li
Kutztown University

Celeste Sangiorgio
St. John's University

Workshop

Short Description

This workshop is an education and psychological testing seminar moderated by established designers and mental health professionals that will culminate in collective bargaining and an UX/UI re-design of a popular mobile application. This workshop will also showcase how to integrate basic psychological education and data-driven techniques into an UX curriculum; designers and design students will learn how to add psychological understandings of humanity to their approach to human centered design.

Long Description

Mental filters, called schema or heuristics, function as filters on the large amount of information presented to individuals on a daily basis. Schemas can also be defined as the tendencies or biases that individuals use to filter and sometimes perpetuate ideas about the world or others. User experience design often relies on algorithms as similar mechanisms that bottleneck the wide range of information available online. Individuals' tendencies towards emotions and thoughts can be perpetuated or changed by immersive designs like video games, visual stories, music. User experience design evokes designers' schemas in filtering what is presented to audiences, and thereby perpetuated or challenged, for users immersed in their design. Intentional design takes into account and potentially disrupts interactions among individual designers' biases and systematic biases in user experience design.

This workshop will present a mixture of psychological testing and design/psychology education to equip attendees in examining how they are affected by intersections of group dynamics and individual identities. Workshop designers will assist attendees in applying insights gained within the workshop to explore the liminal spaces within digital systems through interactive storytelling, immersive experiences, and user experience design. Ultimately, curated teams will work together to produce a rapid prototype redesigning a popular mobile application. Attendees will need to bring a laptop with their preferred design/prototyping software installed, e.g. Adobe XD, InVision, Sketch, or etc.

This workshop is part of a research-driven interdisciplinary collaboration targeting intersections of capitalism, algorithmic manipulation, and social and self-conception. We are specialists from different fields, including design, psychology and communications, unified in our mission to understand and critique the context and mechanisms that drive social learning and experiences in digital media. We believe collaboration and cross-discipline discussion can only break from perpetuating biases through recognizing and responding to patterns over time and settings

Poster 01 Graphic Design is White, How Might We Change That?

Zachary Frazier
Iowa State University

Poster Abstract

Graphic Design as it is known contemporarily is a discipline with roots in 20th century, western Europe. Due to this, our understanding of graphic design history, education, and practitioners, often defaults to the white, Eurocentric gaze. As a black, African–American graphic designer it's become more apparent to me that the manner in which we perform the discipline of graphic design is deeply raced; raced meaning that the discipline of graphic design and the white race are inextricably linked throughout. The letters, tools, graphics, and aesthetics we cycle through across our careers were selected, employed, and refined by those in power then, and now. As shown in the American Institute of Graphic Artists (AIGA) 2019 Census[1], white males dominate the discipline of graphic design. However, subsets of graphic designers did not need a survey to know this to be true. Within our own education and experiences as graphic designers, the group that has persistently been in power within our discipline is white, heterosexual, males. While this group has remained in power, dictating the history, education, and practice of Graphic Design, other groups were marginalized within the discipline along lines of gender and race. This marginalization has led to various instances of deficits throughout the discipline. This research seeks to investigate these instances as they relate to African–American graphic designers, through the a convergent mixed-methods approach. This will consist of a series of interviews with African-American graphic designers in conjunction with a survey which will go out publicly to any graphic designers who wish to participate. In combining and analyzing these two pieces of original research along with a literature review of issues relating to a lack of diversity in other fields I aim to answer the question: Graphic Design is white, how might we change that?

1American Institute of Graphic Artists (AIGA), & Google, Inc. (n.d.). Design Census 2019. Retrieved September 23, 2019, from Design Census 2019 website: https://designcensus.org

Poster 02 Nourish: a system to identify nutritious foods with educational materials to support behavioral change and improve health.

David Wang
James Madison University

Poster Abstract
A community partnership between a regional food bank and a 4-year, public undergraduate university gave rise to a practical design solution that helps define and track the nutritional quality of everyday food items. Initiated by organizational need to support procedures and policies with technology, nouris h highlights a stop-light approach for recognizing foods to encourage with use of a visual aid to help make decisions at a glance, while maintaining an empirically validated analysis of nutrient density.

Nouris h (http://nourish.us.org), an integrated web application released in April 2019, represents a 4-year progression of academic research and integrative learning. The overall impact of this community-based project aims to inform decisions about food purchasing in a food bank environment and provide opportunities to educate the public. The design process for nourish is highly collaborative. Collaborators include students, faculty, researchers, alumni, and community partners with expertise within a variety of professional disciplines, including dietetics, health sciences, media art and design, and computer information systems.

Iterations of this award-winning, grant-funded research have been presented to key stakeholders, including Feeding America, the largest hunger-relief organization in the United States, as part of ongoing efforts to increase access to nutritious foods through the use of technology. Our partnership maintains an open dialogue with public audiences as a tenet of this valuable community-based project. This poster presentation will demonstrate how collaboration and problem solving can be applied to areas of informatics and design for society.

This poster session will exhibit the primary features to search food databases, evaluate a food's nutritional density, and display results through a variety of visual methods. An outcome of this session could also include live demonstrations and access to complete a survey to allow the audience to provide feedback and guide improvements for the nouris h system and the supporting educational materials.

Poster 03 Abstract: Form + Function, Inspirations from Advances in Biotechnology

Eric Wold
Clarke University

Poster Abstract

This poster presentation is a case study of inter-departmental collaborations over the academic years of 2016–2019. Biochemistry students collaborate with Art+Design students in a group project titled Form Exposes Function to explore one protein in depth culminating in a visual and verbal group presentation. Biochem students need a firm 3-dimensional understanding of protein structure. Likewise, Art+Design students are professionally responsible for illustrating complex subject matter across various cultural and technological contexts. A comprehensive scheme has been developed to introduce, reinforce and emphasize both protein structure visualization and strengthen practices of visual research. Three-dimensional representations from Jmol software are further manipulated in Adobe Illustrator and Photoshop to create dynamic visualizations of processes, diagrammatic functionality, and explicit form through color, composition, and arrangement of slide deck imagery.

The second part of this project results in implicit representations or artistic impressions that are highly influenced by the introduction of an entirely new visual language in the context of biogenetic modification. Art+Design students are responsible for illustrating some form of genetically modified/hybrid agricultural, medical, biological, pharmaceutical, or experimental products being manufactured or developed through genetic engineering today. In many cases, these "Biological Artifacts" take the form of hybrid combinations of vegetables, fruits, or perhaps even humans, animals, or insects. The objective is to incorporate and align research to support new visual amalgamations. As a collage of ideas, influences, and scholarly articles these unique forms reflect the multiplicity and fragmentation of each new life form. Students explore a variety of processes: drawings, sketches, photocopies, gel transfers, and computer aided manipulation—the mixing of traditional techniques with digital techniques is a requirement.

The poster presentation will focus on the overall schema developed, results of student collaborations as well as amalgamations in response to new visual research introduced through inter-departmental collaboration

Poster 04 Applying Multi-Dimensional Mixed Media in Advertisement

Josh Tegarden
Pittsburg State University

Poster Abstract

With consumer markets becoming increasingly saturated with a variety of brands, styles, and presentations, unique and recognizable advertisements are the hallmarks of successful businesses. Multi-Dimensional Mixed Media applies a designer's variety of skills – concept design, traditional drawing, Photoshop, color, studio photography, and composition – into one compelling print advertisement. This poster presents the following information:

1. Details the materials and methods used in Multi-Dimensional Mixed Media through a tutorial and an example piece.
2. Determines the effectiveness of the technique as compared to a traditional magazine advertisement through a focus group.

Applying Multi-Dimensional Mixed Media in Advertisement

Josh Tegarden, Graphic Communications, Pittsburg State University

Purpose:

This research was performed with the goal to: provide a tutorial for a unique artstyle that uses 2D and 3D components as well as to apply that method towards advertising to determine its consumer appeal.

MDMM Tutorial:

I began designing the example piece through a concept sketch – laying out the figures, scenery, and the intended message of the advertisement. Once I provided myself with a road map, I took the following steps to complete the piece:

1. Constructing a reusable platform comprised of numerous cardboard strips pressed together within a wooden frame to facilitate the placement of paper figures between the strips
2. Painting the platform black to allow for easier editing in post-production
3. Designing each figure that would be in the final advertisement image
4. Sketching, inking and water-coloring each figure using traditional methods
5. Retouching each figure in Photoshop until satisfied
6. Water-coloring the foreground and background
7. Printing each of the individual elements (three figures, foreground, background and tree) on medium-weight cardstock
8. Cutting out each of the above elements, leaving a ~1-inch tab at the base to enable the figure to stand upright in the platform
9. Assembling the piece according to the original concept design, making adjustments for camera angles as necessary
    - *9a.* In this example, the printed elements were placed around the product, making it the centerpiece
10. Photographing the assembled piece on the platform using natural light or other light sources to the desired effect
    - *10a.* I used a 55 mm camera lens to photograph my example piece
11. Adjusting any exposure elements in post-production until the desired effect is achieved

FIGURE 1:
This is a behind the scenes shot of the platform, each of the 2D figures I made, the 3D product in the middle, and the makeshift light flag.

Application:

The advantage of MDMM in this product market is that it can show how D&D games can be brought to life around WizKids miniatures. The MDMM process has an imaginative, artistic quality about it, so it is best used for products that strike that same tone. Since Dungeons & Dragons is centered around telling a story with a group of friends, I felt that I could show the product enhancing the storytelling portion of the game.

Focus Group:

After designing the example piece, I printed it and a comparison advertisement: a product shot of another miniature by WizKids. I then showed the two pieces to three focus groups, each between five and nine people. Each person was given the two printed pieces – MDMM and the official product shot – and then was asked the following question: "Based on the quality of the ad, not the product itself, which image attracts you the most and why?" After everyone was given time to consider their decisions, I collected the results.

FIGURE 2:
Image #1
This is an official product ad from WizKids for one of their Dungeons & Dragons products. It was my control piece.

FIGURE 3:
Image #2
My example of Multi-Dimensional Mixed Media

	Official Shot *(Image #1)*	MDMM Shot *(Image #2)*	Group Analysis
Group 1 (green)	2 votes	6 votes	Individuals who knew the products they were viewing and had all played Dungeons & Dragons before.
Group 2 (orange)	4 votes	1 vote	Individuals who did not know and were not interested in the products. They had never played Dungeons & Dragons before.
Group 3 (pink)	6 votes	2 votes	Individuals unfamiliar with the subject matter, but some had interests that were adjacent to the product.

Analysis:

According to the results, MDMM does not create a stronger appeal in new consumers, and overall, performs worse than the existing method of advertisement for WizKids. However, Group 1 preferred MDMM substantially more than the comparison product shot. Several members cited the unique qualities of the product MDMM offers as the cause for this preference. Below are the most detailed majority responses from each focus group:

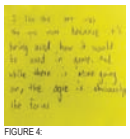

FIGURE 4:
Group 1: Vote for MDMM (Image 2)
"I like the one with the ogre more because it's being used how it would be used in game. And while there is more going on, the ogre is obviously the focus"

FIGURE 5:
Group 2: Vote for Control (Image 1)
"There's more contrast in the lighting"

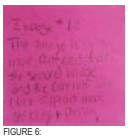

FIGURE 6:
Group 3: Vote for Control (Image 1)
"The image is more centered tha[n] the second image and the contrast with black appears more striking and pleasing"

While I performed this research to the best of my ability, there are a few potential issues in its design. First and foremost, I might not have created a piece that fully demonstrated the strengths of MDMM. This is my first example of the process, I freely admit that I am not the best artist, nor the best photographer. Secondly, individuals might have felt that my example piece was the "correct" choice because it looked homemade and was therefore the subject matter being tested. I also chose a niche market to test, which could mean that I tested poor focus groups, skewing the data. Finally, individuals might have selected which product they preferred, rather than which ad they preferred.

Challenges:

While working on this project I struggled the most with the practical aspects of it, constructing the platform, resizing images of the 2D figures to be the appropriate printed size, and taking the actual picture of the entire piece once it was arranged. I used three different lenses: a standard camera lens, a 50 mm lens, and a telephoto lens trying to get the appropriate depth of field and the perfect framing. I ended up also using a makeshift flag to block some of the natural light from reaching the right side of the final image. While I could have fixed all of these practical issues in post, I felt that doing so would undermine the point of MDMM.

Conclusion:

I researched comparable art processes and created my own tutorial for my method of photographing 3D objects in a 2D studio. I created a small-scale studio via the platform as a way to facilitate this process. I worked through concept design, sketching, inking, water-coloring, editing, and printing figures and background elements. I created an example of what this Multi-Dimensional Mixed Media can do and compared it to a standard product shot. In focus groups, only the people that were already familiar with the product preferred MDMM to the status quo. According to my research, applying MDMM to the marketplace of Dungeons & Dragons miniatures (i.e. Toys; Gaming) is only successful in attracting existing customers, and not successful in attracting new customers.

Poster 05 Bringing the Human Back to Center: Connecting Students to Place and Each Other Through the Collaborative Creation of a Labyrinth on Campus

Mary Donahue
Chadron State College

Poster Abstract

Could a quiet walk in nature be a balm for anxiety-ridden college students? A way to center themselves and their intense emotions? According to a 2018 report from the American College Health Association, more than 60% of college students said they had experienced "overwhelming anxiety" in the past year while over 40% said they felt so depressed they had difficulty functioning. Has the constant use of and "connection" to digital devices disconnected us from what it means to be human? And has this obsession with electronic media affected human health? A May 2019 article in Outside magazine, "Ask Your Doctor if Nature is Right for You," details a new movement where doctors prescribe nature and outdoor activity as a prescription for our modern-day ills. The concepts of labyrinths have a long human connection beginning with carvings dating to the Neolithic and Bronze Age periods. They were found in Greek mythology and popular in the Roman Empire. A more developed form of the labyrinth occurred in medieval times, the most famous being at Chartres Cathedral and is still in use today. In North America, Native American medicine wheels and Robert Smithson's 1973 earthwork, Spiral Jetty, echo this idea.

Our collaborative campus project proposes building a labyrinth on a hill above campus in an abandoned water cistern used for the town's water in the early 1900s. The project will involve students from across disciplines starting with design students who will help with concepting and initial design of the site. They will also contribute work in signage and collateral materials and help with the physical aspects of building the labyrinth along with students in art appreciation, sculpture, ceramics, science, communications and public relations and other classes. The project will also become a job site for the annual campus-wide volunteer day.

Bringing the Human Back to Center:

Connecting students to place & each other through the collaborative creation of a labyrinth on campus

Mary P. Donahue, Professor of Art
& Art 422/Graphic Design Practicum class -
Jennifer Boyer, Shania Macomber, Christopher Wright
Chadron State College, Chadron, Nebraska

Photo: Karla Powell

Watercolor sketch by Christopher Wright

Abstract:

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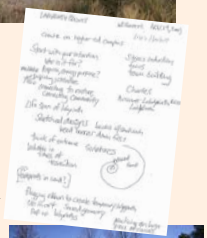

Beginnings:

As an art and design professor, I have noticed the changes in students over the years as their lives become more digital. And frenzied and anxiety-ridden. The multi-tasking, the overwhelming amount of stimuli, the distractions have affected all of us in negative ways. I have also watched the students when we take trips outside the classroom and out in nature. I have watched them delight in skipping rocks on Yellowstone Lake. I watched them get lost in walking the sand and rock of the Spiral Jetty in Utah. I have watched them concentrate on the path of a labyrinth on Museum Hill in Santa Fe, New Mexico.

This project started as a discussion among campus members brought together by Teaching & Learning Center Instructional Tech & Design Specialist, Elizabeth Ledbetter. Our art/design professor, 3-D/sculpture professor, instructional technology and design specialist, campus horticulturist/ grounds supervisor, public services librarian and community members who are artists and clergy members gathered as small informal groups to view selected parts of *Labyrinths in Higher Education* via Veriditas, a non-profit organization that inspires transformation through the labyrinth experience. https://www.veriditas.org/higher-ed

The other place we started from was just that—the place. Our campus is set against part of the geographical features that define where we live—the Pine Ridge escarpments of northwest Nebraska, representing the edge of the High Plains. Within the hills that climb to the ridges on the south edge of campus is a historic cistern that was once used as the water supply for the town of Chadron. It is a circular crater in the hill with the remains of brick support walls on the north rim. The cistern is a short fifteen minute hike from campus and trails through native grasses and yucca plants. From the top of the cistern's walls is a panoramic view of campus and beyond to the Black Hills of South Dakota. Walking down into the cistern, one's focus becomes the circular space and the sky above.

CSC students walk a labyrinth on Museum Hill, Santa Fe, New Mexico.

Photo: Cassie Anderson

CSC students walk the Spiral Jetty, Utah.

CSC students skip rocks on Yellowstone Lake, Wyoming.

Beginning the Design Process:

This past spring semester 2020, I brought in my ART 422/Graphic Design Practicum students (Jennifer Boyer, Shania Macomber, and Christopher Wright) on the beginnings of the Design Process for creating a labyrinth on our campus. We began with research—the human history of labyrinths, the use of labyrinths in healing in places like hospitals and in higher education. We discussed the ideas of mental health and stress reduction. I also had them look at land art and earthwork.

Jennifer Boyer

Shania Macomber

"Labyrinths can be useful for those who find it hard to sit still for a long period, they can help reduce stress, calm the mind, centering the body, and developing personal space.

"Walking a labyrinth is highly effective for reducing anxiety and producing what's called the relaxation response," says Dr. Herbert Benson, professor of medicine at Harvard Medical School."

Christopher Wright

Labyrinths on campuses have been used for teaching, service learning, relaxation, faith services, open walks, community building, counseling, and many other uses.

Some universities have used labyrinths for weekly walks to promote reflection and personal and professional growth for faculty, staff and students. Some have been used to offer walks as a part of a wellness program for stress reduction and self-care. Others have been used in the course curriculum for first year students and transfer students for making a successful academic and social transition. Even building or creating a labyrinth can help students learn how to work together with others.

"A study in 2006 shares that 58% of people (there in no count of the number of people who took part in this experiment) felt less agitated after a labyrinth walk.

A study for anxiety shares that 63% of participants felt less anxious. 59% of participants felt clearer after a labyrinth walk when having been in a "hectic circumstance and felt energized afterwards."

JANUARY 2020...We took a field trip to the proposed site, walking there together directly from our classroom. We took photos and measurements of the cistern. We looked at the views and discussed how an entry way might be designed.

Photo: Karla Powell

Jean-Luc Bayer

FEBRUARY 2020... Our campus landscape planner/horticulturist/ grounds supervisor, Lucinda Mayo, met with the students in class and discussed how to think about a site and its materials. She talked with them on how to use tissue sketches over photos of the site, create drawn plans and showed examples. She explained how a "Front Elevation Sketch" sells the idea to the client and the "Bird's Eye View Sketch" explains the idea to the client.

Our campus landscape planner/horticulturist/grounds supervisor, Lucinda Mayo, was able to share a tip from our geology professor, Michael Leite, on a way to measure something in the landscape from Google maps.

NEXT STEPS... Our in-class meetings for the semester ended abruptly in March. As I tell students with many assignments, this is an experiment. We hope to present these ideas to our administration and the CSC Foundation so we may get permission to move ahead on working at the site. We'll need to figure out how to actually build the labyrinth at this site, what materials might be used and how to fund the materials. But once we can solve these parts of the design problem, the ways the campus and community can benefit from the project are many. We see this as a way to engage students across campus and across disciplines. History and literature students can use the labyrinth to explore its use throughout culture and history. Students in art appreciation, art history, and 3-D design/sculpture can relate this to land art and participate in the making of a land art piece with the physical placement of materials and building of the labyrinth. Graphic design students have and will participate in the research, measuring, planning, sketching, and mapping of the design as well as the design of signage and brochures, and other materials. Ceramics and 3-D design/sculpture classes can create earth-friendly sculptural pieces to enhance the site. We also see this as a job site for the annual campus day of volunteering, The Big Event.

We can create a place of art, of history, of wonder, of contemplation, and of peace. A refuge to connect us to nature and to each other in unsettling times.

Contact info:
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Special thanks to Elizabeth Ledbetter, Lucinda Mayo, Karla Powell, and Daniel Rinkord/CSC College Relations.

15th annual
University and College Designers Association's Design Education Summit:
HUMAN CENTERED JUNE 2020

Poster 06 Creative Crosswalk Project: The Role of Public Art in the Community

Matthew Donaldson
University of South Carolina Upstate

Poster Abstract

Street art can be found throughout many stages of history ranging from prehistoric cave graffiti to inscriptions and adornments in ancient Roman cities. Today, it is often linked to graffiti and unsanctioned works of art within the urban environment. However, modern-day street art is also being used to beautify urban landscapes and add safety to city streets, with government officials and cultural planning committees becoming more willing to accommodate public art. One such example of street art is the design and implementation of crosswalk murals. There are always concerns about pedestrian safety at crosswalks, and crosswalk murals are being created to make city streets safer and more aesthetically pleasing. Crosswalk murals are just one of the many public art forms that cities around the world are successfully using to transform some of the most public, but often ignored, spaces into beautiful, creative, and interactive works of public art.

As part of a Research Initiative for Summer Engagement (RISE) grant via the University of South Carolina, I collaborated with the City of Spartanburg, the Spartanburg Area Chamber of Commerce, and Chapman Cultural Center on the Creative Crosswalk Project. I invited three graphic design students to join myself and three other local artists and designers in this public art initiative that involved converting eight crosswalks, in Spartanburg's Downtown Cultural District, into murals. The project allowed us to translate digital designs from the classroom to the physical realm of a public space. The Creative Crosswalk Project provided an opportunity to explore the role and interactivity of design in public art, research and analyze feedback from the local community, grow Spartanburg's public art inventory, and provide pedestrians, cyclists, and drivers with clearer and safer pathways through Spartanburg's increasingly active downtown area

Creative Crosswalk Project

THE ROLE OF PUBLIC ART IN THE COMMUNITY

Matthew Donaldson // University of South Carolina Upstate

Abstract

Numerous cities around the world are embracing public art in the form of murals, sculpture, architecture, and various other art forms, as a means of beautifying the area, creating unique visual appeal, and promoting a sense of community amongst the locals. Spartanburg, South Carolina is one such city. In 2015, Spartanburg was officially designated as a cultural district, which is defined as an area in which collaboration is established between art and the local community. Thus, Spartanburg has seen an increase in its public art initiatives, with various artwork being used to revitalize the area. The city also sees heavy foot traffic, as shops, restaurants, and events regularly attract pedestrians to the downtown area. The Creative Crosswalk Project seeks to build upon the city's ongoing public art initiatives, and enhance driver and pedestrian safety, via the implementation of a series of crosswalk murals created by local artists and designers.

Methods

The goal of the Creative Crosswalk Project was not only to create a series of crosswalk murals in the downtown area but also to involve the local community in the project. The challenge in such a goal lies within determining how to involve the community in the creative thought process yet not in the actual physical implementation of the crosswalk murals. One method for accomplishing such a task was to poll the community on topics such as the pros and cons of being a pedestrian and/or driver in Spartanburg, the qualities of Spartanburg that instill a sense of community, imagery that symbolizes Spartanburg, thoughts on using art to enhance crosswalks, and preferred color palettes and design styles. A series of questions about the aforementioned topics were used to create an online poll via Google Forms. Chapman Cultural Center then utilized email and social media platforms to connect with the Spartanburg community and received feedback on the Creative Crosswalk Project. A total of 85 responses were received for the poll. The poll data was then analyzed and served as an aid in determining the need for more public art in Spartanburg and establishing the overall design concepts for the crosswalk murals.

SPARTANBURG DOWNTOWN CULTURAL DISTRICT

Murals | Architecture | Sculpture

4,414 deaths in 2008 → 5,977 deaths in 2017

35%

Increase over 10 years

*statistics from *Pedestrian Traffic Fatalities by State*. Governors Highway Safety Association

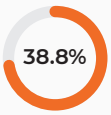
1 Faculty Member

3 Design Students

4 Crosswalks

$6,000 Research Initiative for Summer Engagement (RISE) Grant through USC Upstate

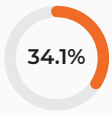
find Spartanburg to be easily navigable due to crosswalks and walking access



say too many drivers are endangering pedestrian lives

say art and murals build a stronger connection to the city

say murals add uniqueness to the city



say murals would aid in getting the attention of pedestrians and drivers

Poster 07 Digging Deeper into the User-Centered Design Strategy for the Non-Designer

Sara Rosenstock
Marietta College

Poster Abstract

"Design Thinking" and "User-Centered (Human-Centered)" design strategies are becoming more familiar terms to non-designers. However, teaching user-centered design strategies to non-designers can often become a sped up and shallow experience, resulting in a skill set that is not fully developed. This poster will discuss the subject of teaching the problem-framing, empathizing and brainstorming stages of the Design Thinking process to non-designers, specifically students from a variety of disciplines at a liberal arts college.

Additionally, the poster will compare the experiences and results of teaching the Design Thinking process as a full set of stages, as well as concentrating on the earlier stages in two different classes, with two different approaches. Insights, experiments and anecdotes will be shared to facilitate a more effective way to develop future design "thinkers" in the classroom.

Poster 08 Education of Web Accessibility Laws in Kansas

Lydia Winters
Pittsburg State University

Poster Abstract
The American Disability Association has standards on website accessibility. Although students should be learning about the laws and regulations in professional development or their core web design classes, there are still major lawsuits against websites that are not compliant to the ADA standards. This poster will focus on the education of web accessibility standards of college students in Kansas who attend a regent school and are majoring in a web or web related field. The research will provide data to conclude whether these students are obtaining an education in the laws and regulations of web accessibility.

Poster 09 Forged in Fire: Using photography to measure self-perception of men attempting reintegration.

Lauren Bryan
Pittsburg State University

Poster Abstract
Forge is a 13 to 15-month program that helps struggling men develop virtue and a strong work ethic, empowering them to be fully employed and contributing members of their communities. Students advance through five phases during the program, building discipline, habits, and skills to go from being jobless and dependent to self-supporting and responsible.

This poster will document one undergraduate students' journey to take portrait photographs of the existing graduates of the Forge program. The student will then use nominal group testing to measure the self-perception of men currently in each phase of the program based on their responses to questions about the portraits.

Poster 10 Foundational Font Guide Poster: A comprehensive approach to creating a font making guide

Grace Haworth
Pittsburg State University

Poster Abstract
An undergraduate's interest in typography lead to an interest in font making. While trying to create a font on their own, the need for a comprehensive guide became apparent.

This poster will showcase the process used to create a guide to font making and the contents of the guide. The Foundational Font Guide is the synthesis of one-on-one communication with typography professionals and authors as well as techniques from typography textbooks that will lead the reader to create their own font. It's intent is to be a concise how-to guide to benefit both beginners and experienced designers by covering the basics of typography and the key steps to font making.

Poster 11 Graphic Design Students as End-Users

Christopher Cote
University of Tennessee Knoxville

Poster Abstract
Typography is one of the distinguishing factors that separates graphic design from other disciplines. Teaching expressive typography to first-year graphic design students is valuable because it affords the students the space to learn the fundamental principles and systems of graphic design, while also enabling students to communicate a feeling through experimentation with letterforms bound only by legibility. IDEO defines the human centered design (HCD) process as a six-phase cycle: observation, ideation, rapid prototyping, user feedback, iteration, and implementation (User Testing Blog, 2018). One assignment of the first-year graphic design studio class, will be planned within the HCD framework. As a result, over the course of the semester, students will participate in expressive letter workshops allowing for the application and adaption of the HCD cycle on the students' understandings and physical work before the summative expressive word assignment. This proposal seeks to answer what happens when an expressive typography assignment is developed through the lens of the HCD design process, situating first-year graphic design students as the "end-users"?

References:
User Testing Blog. (2018, December 5) IDEO's Human Centered Design Process: How to Make Things People Love [blog post]. Retrieved from https://www.usertesting.com/blog/how-ideo-uses-customer-insights-to-design-innovative-products-users-love/

GRAPHIC DESIGN STUDENTS AS END-USERS

ABSTRACT

Typography is one of the distinguishing factors that separates graphic design from other disciplines. Teaching expressive typography to first-year graphic design students is valuable because it affords the students the space to learn the fundamental principles and systems of graphic design, while also enabling students to communicate a feeling through experimentation with letterforms bound only by legibility. IDEO defines the human centered design (HCD) process as a six-phase cycle: observation, ideation, rapid prototyping, user feedback, iteration, and implementation (User Testing Blog, 2018). One assignment of the first-year graphic design studio class was planned within the HCD framework. As a result, over the course of the semester, students participated in expressive letter workshops allowing for the application and adaption of the HCD cycle on the students' understandings and physical work before the summative expressive word assignment. This proposal seeks to answer what happens when an expressive typography assignment is developed through the lens of the HCD design process, situating first-year graphic design students as the "end-users"?

References:
User Testing Blog. (2018, December 5) *IDEO's Human Centered Design Process: How to Make Things People Love* [blog post]. Retrieved from https://www.usertesting.com/blog/how-ideo-uses-customer-insights-to-design-innovative-products-users-love/

HCD APPROACH AND BENEFITS

According to the Human Centered Design Society:
Human-centered design is an approach to interactive services, products and systems, research, design, development and management that aims to make them usable and useful by focusing on all the users, their needs and requirements, and by applying human factors/ergonomics and usability knowledge and techniques.

Many articles and studies have been written on how the HCD approach benefits end-users. Some examples of benefits using human-centered design methods improve quality by:

- increasing the productivity of users and the operational efficiency of organizations;
- being easier to understand and use, thus reducing training and support costs;
- increasing usability for people with a wider range of capabilities and thus increasing accessibility;
- improving user experience;
- reducing discomfort and stress;
- providing a competitive advantage, for example by improving brand image;
- contributing towards sustainability objectives

PROBLEM STATEMENT

HCD is often considered when designing products for clients, but less often when designing instruction of graphic design. Using IDEO's design cycle, the human-centered design process, I introduced typographic instruction that applied the cycle to three two-hour workshops, and one three-week summative assignment. The workshops and assignment introduced foundation students to fundamental principles of graphic design and provided their encounter with expressive and modular typography.

LETTER TO WORD WORKSHOPS

In order to prepare students for a final assignment, Letter to Word Workshops were conducted throughout the Fall 2020 semester. The two-hour workshops were framed by the HCD cycle and introduced typographic concepts and principles of design. As such, students' design processes were defined by the HCD process. Each workshop included a historical precedent lecture, followed by a prompt. Students in all three workshops began by working by hand and transitioned to the computer to iterate while creating a word.

The workshop objectives were for students to observe letters as forms, express emotion through a single letter's form, observation of objects through photography as letterforms, explore challenge legibility in order to understand letterform's essential parts, and finally extension of a single letter's characteristics into a set of letters (systematically).

BITMAP:
Observe the assigned lowercase Helvetica letter on the wall. Using a black marker fill in the squares of the gridded paper to translate the letter into a bitmap letter preserving its integrity as best as possible. Letter 1 on a 16 pixel-high grid, Letter 2 on an 8 pixel-high grid, Letter 3 open to create your own on a 16 pixel-high grid. Choose one of the three letters and create two more letters to create a three-letter word using Adobe Illustrator. The two other letters should share features of the selected letter (it should fit in its system). Print it in black and white on 8.5 x 11 inch paper.

EXPRESSIVE LOWERCASE "A":
Observe the lowercase double decker 'a'. Using black paper and scissors/an Xacto knife, create four As. One should feel sassy, happy, strong, and shy. Express these emotions through the form of the letter. Next create four letters of your choice, expressing emotions through the form of the letter alone. Choose your favorite A and create a three-letter word. The other two characters should share features of your original "a". The resulting word should feel like a family of letters.

QUARANTINE OBJECT ALPHABET:
Part 1: Each student has been assigned a letter of the alphabet. Observe the objects that occupy your space during quarantine. Can any object forms both express how you're feeling and become letters? Can they express or represent what you desire, your frustration, etc.? Photograph this object and translate it to solid black and white only. Embrace the unexpected and imperfect. Part 2: Make a one word composition from the letters you and your classmates made in class (attached .ai file). It should be something you're thinking, feeling, or noticing based on quarantine, and these times.

FINAL ASSIGNMENT: MODULAR & EXPRESSIVE WORD

GOAL:
Explore the meaning of a word through an exploration of its structure.

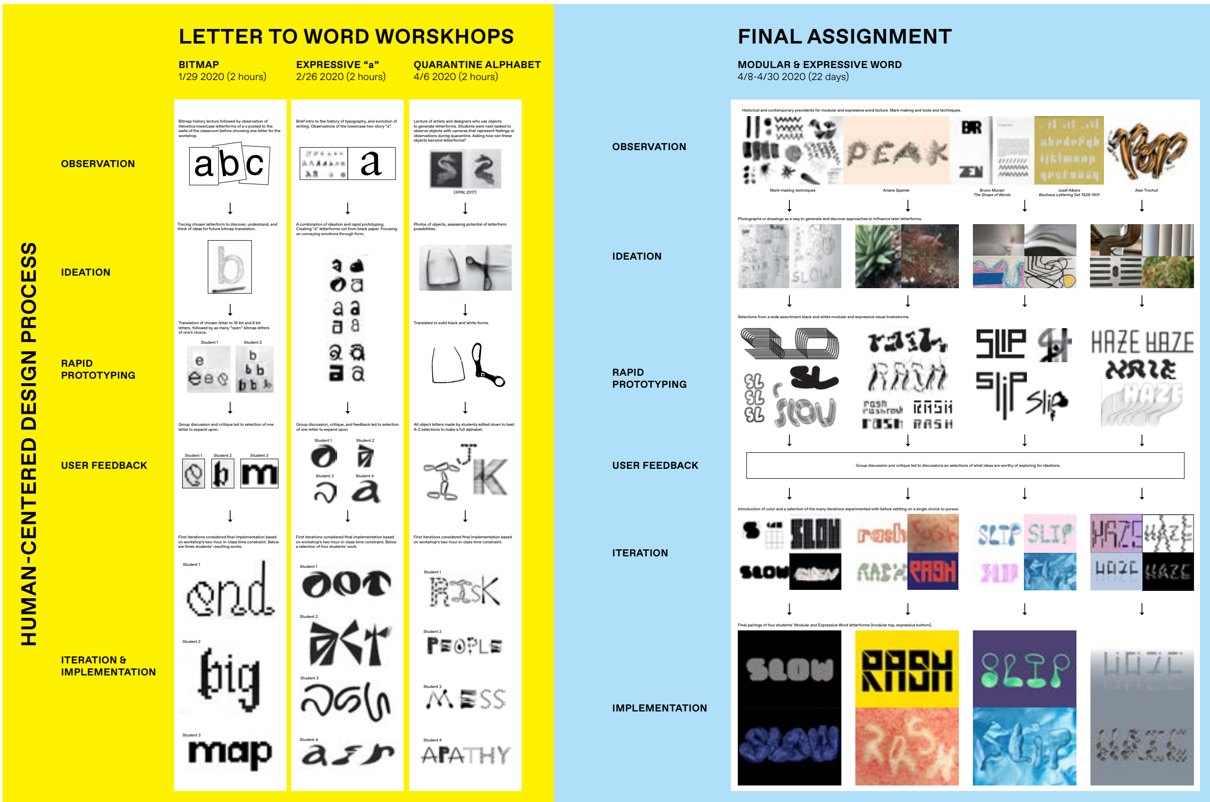
DESCRIPTION:
In this project you will be challenged to explore the underlying structure of letterforms as well as the impact of specific letterforms on meaning. Think about the letterforms, as well as the relationships of the letterforms to each other as a carrier of meaning.

For this assignment you will choose one four-letter word. You will explore this word in two ways, once using a modular system to create letterforms and once using random materials, experiments, and observations to "write" the word and refine it by pulling your "drawings" into Illustrator. Final 24" x 18" (horizontal only), must be legible, 2 colors + B+W.

OBJECTIVES:

- To design two coherent, yet unique typographic layouts which reinforce your word's meaning.
- To employ a process that indicates a willingness to explore many different tools and materials before resting on final outcomes.
- To demonstrate an improved ability to create visual relationships between the various elements of a composition.
- To explore experimentation outside of the computer and transfer it into the computer for visual and technical refinement as well as appropriately strengthen your word's meaning.
- To demonstrate excellent craft in project execution both digital (through illustrator) and by hand (craft).

Previous design research that argues products founded by HCD benefit the end-user. Here, I am arguing that graphic design instruction framed by HCD also benefits the end-users, students, to have a stronger understanding of the design process and designed products.



Poster 12 Human-Centered Design and Academic Programs in Digital Media

William Gibbs
Duquesne University

Poster Abstract
Over the past 25 years colleges and universities worldwide created academic degree programs in areas of study commonly referred to as new media or digital media, and a host of other titles. New media involves a wide-ranging array of approaches and disciplines, including psychology, information and computer science, art, design, human factors/human-computer interaction and communications. Degree programs originate from different schools and colleges including Arts and Architecture, Business, Communications, Engineering, Information Sciences and Technology.

The relatively recent emergence of the digital media field, its ambiguous identity, the ubiquity of media, and rapid and persistent technological change and innovation pose inimitable challenges for faculty and program directors engaged in defining or justifying programs, program assessment, curricular design, recruiting faculty, articulating program purpose and value to increasingly discerning target audiences. These factors are particularly noteworthy today as universities face much competition for students and, at the same time, they must increasingly demonstrate their value to students and ability to prepare them for professional life.

In this poster session, I will first discuss the digitization of media as an underlying impetus for today's innovation, which, in many ways, compels academic programs to re-examine themselves to keep pace. Secondly, digital innovation has spurred renewed awareness of design as a human-centered methodology to solve ill-structured problems. As such, I will review how an academic program in Digital media and Design at a four year university assessed its curriculum and how a design thinking framework may aid in program assessment and re-designs of this type.

Poster 13 Integrating Accessible Design into Graphic Design Curriculum

Christine Lhowe
Seton Hall University

Poster Abstract
Accessible design is the law. The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination based on disabilities. Accessible design is also good design. Preventing access to information because of poor design decisions in unethical. According to World Health Organization (WHO), there are at least 2.2 billion people globally that have a vision impairment. Designers are responsible for a large amount of information that those individuals come into contact with. Yet, design education regularly leaves this discussion out of the classroom.

This poster is a case study on integrating accessible design topics into existing graphic design curriculum. In a variety of projects, students will take a human-centered approach to understanding vision impairments and the role design has in hindering or promoting quality of life. Classes included in the case study will range from introductory to advanced, working with print and screen-based design.

My hypothesis is that with regular reinforcement in classes throughout a student's education, accessible design will become part of their design process.

INTEGRATING ACCESSIBLE DESIGN INTO GRAPHIC DESIGN CURRICULUM

Christine Lhowe
Assistant Professor of Art & Design, Seton Hall University
UCDA Design Education Summit 2020: Human Centered

Accessible design is design in which the needs of people with disabilities are specifically considered.
—University of Washington

OVERVIEW

- **Accessible design is the law.**
  The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination based on disabilities.
- **Accessible design is good design.**
  Preventing access to information because of poor design decisions in unethical.
- **Design education regularly leaves accessible design out of curriculum.**
  According to World Health Organization (WHO), there are at least 2.2 billion people globally that have a vision impairment. Failing to teach accessible design perpetuates the cycle of exclusion.

QUESTION

Will accessible design become an integral part of a designer's process if it's reinforced throughout a student's education?

Accessible design was embedded into lessons within five graphic design courses. The courses ranged from introductory to advanced levels with projects in digital and print design.

Sample Topics

Typography

- **Clear typographic hierarchies** help people scan for the most critical information.
- **Typeface selections.** Use legible and readable typefaces. High stroke contrast, small x-heights, and extra condensed fonts can be difficult to read.
- **Alignments.** Left aligned and justified alignments are most accessible, especially with large amounts of copy. They ensure users are easily able to find the next line of text when reading left to right.

User Interface Design

- **Usability.** Information is easier to discover when it's placed in a location that is familiar and expected. Have a consistent navigation and follow common mental models.
- **Cognitive Load.** Be cognizant of how much information a user can take in at once before becoming overwhelmed.
- **Forms.** Label forms with clear descriptions of what a user should enter, not with sample content.

Color

- **Don't rely on color for critical information.** People with low vision or color blindness will have difficulty understanding the content.
- **High color contrast.** The closer colors are on the color wheel, the less legible they will be when placed on top of one another. Use color contrast checkers to ensure your colors are accessible.

Courses & Projects


Web Design II
Jay'ci Chevalier

Typography I
Sarah Avery


Typography I
Tyler Cevetello


Graphic Design & Advertising II
Amanda Valinoti


Web Design II
Haley Thimmel


Web Design I
Renee Nunez, Isabelle Engel, Jay'ci Chevalier


Social Impact Design
Haley Thimmel


Web Design I
Haley Thimmel


Web Design I
Brittany Hull, Dante Cassano, Alexandra Gale

CONCLUSION

As a result of embedding accessible design throughout various topics and courses, students became knowledgeable about fundamental concepts and began to make design decisions based on accessibility. Accessible terminology became a part of class critiques and students have effectively assisted one another in creating more accessible design solutions.

Poster 14 Like Gods: A posing guide inspired by Greek Gods and Goddesses

Poster Abstract
As design educators, most of us are in our element teaching project-based courses in the s

Anne Wood
Pittsburgh State University

Poster 15 Seeing Songs: Capturing Music Visually with Light Painting

Kalyn Deal
Pittsburg State University

Poster Abstract

Music and photography do not seem to share much in common. Music is typically thought of as an audible experience, whereas photography is thought of as a visual experience. This study seeks to explore the ways in which the two art forms are similar by mapping musical expression with light painting.

This poster will outline the process of using complex light painting techniques to showcase the visual dimension of music.

Poster 16 Sensory Design Analysis and Proposal: Café Diem – Ames, Iowa

Vitoria Faccin-Herman
Iowa State University

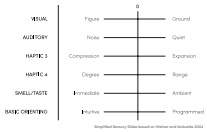
Poster Abstract

This project focused on redesign an existing coffee shop (Cafe Diem - in Ames, Iowa), using Malnar & Vadvarka sensory slider methods. The main objective of the redesign was to heighten customers' sensory experience as design that focuses on all the senses has positive effects; it celebrates qualities of place (Lupton & Lipps, 2018, p. 17) and enhances brand interaction (Wheeler, 2018). To start the project, the group visited the location and analyzed the different characteristics outlined by the sensory sliders. Currently the space has an interesting assortment of textures that creates a dynamic atmosphere and the choice of decoration creates a homey feeling. However, some senses are underrepresented in the current layout: smell, haptic (temperature), and auditory. From these results, changes were proposed to solve the weak points using new materials, different colors, and reorganizing the space. Overall, the proposed design modernizes the space without losing its main characteristics of homey and comfortable and it unifies the different textures and materials used. By focusing on sensory design to develop a space the customer experience gets the priority it deserves, therefore, the whole experience is enhanced creating a unique environment to engage with brands.

Sensory Design Analysis and Proposal

Cafe Diem, Ames, IA

The main objective of the project is to redesign Cafe Diem in Ames, Iowa to develop a full sensory experience for their customers. Design that focuses on all the senses has many positive effects; it celebrates qualities of place (Lupton & Lipps, 2018, p. 17) and enhances brand interaction (Wheeler, 2018). By visiting the location in Ames, Iowa the group was able to analyze the space based on Malnar & Vodvarka Sensory Sliders. Currently the space has an interesting assortment of textures, that creates a dynamic atmosphere. However, some senses are underrepresented in the current layout: smell, haptic (temperature), and auditory. These senses will be the focal point of this project.



Simplified Sensory Slides based on Malnar and Vodvarka 2004

Ye Jin Chang - Vitoria Faccin - Eliza Malloy
DSN 551A - Sensory Design - Fall 2019

CURRENT DESIGN

hard & cold materials
it bounces sounds creating a noisy environment and diminishes comfort.

different textures
enhance figure visual aspects than ground.

visual clutter + lack of unity
the ammount of different objects, textures, and different signage creates noise and detracts from the overall atmosphere.

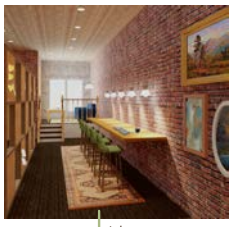
light glare
it is very distracting and ditracts from the atmosphere.

PROPOSED DESIGN

new branding
keeping with a hand written quality, adding more color and movement.

point of sale
different textures, more organization for cohesiveness. Choices to enhance the showcased art .

lounge area
an area for casual meetings, playing games, and relaxing. Change of railing for more natural light into the space. Pop of color over the warm materials and lighting.



study area
divider to enhance privacy, control sound, but also host community boards to share events happening downtown. Controled lighting for reduced glare.

Lupton, E., & Lipps, A. (2018). The Senses: Design Beyond vision. New York: Princeton Architectural Press.

Malnar, J. M. (2004). Sensory design / Joy Monice Malnar and Frank Vodvarka. Minneapolis : Minneapolis : University of Minnesota Press.

Wheeler, A. (2018). Designing brand identity: An essential guide for the whole branding team. (. West Sussex: John Wiley & Sons.

Poster 17 Teaching Immersive Design: how traditional graphic design principles translate to extended reality experiences with both physical and digital components.

Laura Huisinga
California State University—Fresno

Poster Abstract

Augmented reality (AR), virtual reality (VR), extended reality (XR), as technology continues to evolve; people are becoming increasingly familiar with these terms. Additionally, more people have access to AR and VR through cellphones. With the advances in web-based AR and VR, more content will be available and accessible to mainstream viewers. However, for there to be content, it first must be designed. These XR experiences cross over and tie together a verity of design methods and mediums. Understanding and designing the total user experience (UX) of an XR experience requires the design of three main aspects, 1) physical artifacts, 2) digital layer, 3) human-centered design (HCD) of the user experience interacting with both physical and digital.

These three aspects of the HCD UX of an XR experience can expand to include: printed content or physical artifacts, digital layers including motiongraphics, sound design, digital graphics, websites, and 3D models or virtual environments and the experience of how to scaffold the physical and digital content into a streamlined, consumable tired content. Immersive design needs to look at the total user experience to design experiences that cross over multiple mediums. Most importantly, HCD of XR leverages the technology to design for the human, not just designing for the technology.

This poster takes a look at four semesters of immersive design classes and how the class has evolved. I will first discuss how the class combines traditional print design methods and UX methods for digital content — followed by the student outcomes from the four semesters and how each semester inspired adjustments for the next. Finally, I will end with a discussion of future plans for teaching XR design that crosses over both physical and digital content.

TEACHING IMMERSIVE DESIGN:

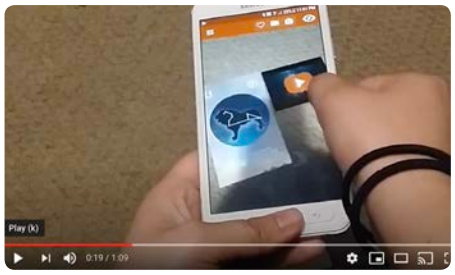
how traditional graphic design principles translate to extended reality experiences with both physical and digital components.

Dr. Laura Huisinga • Department of Art and Design • California State University – Fresno

Designing for Extended Reality (XR) covers designing for a variety of immersive reality experiences along the mixed reality spectrum from basic augmentation to detailed virtual environments. As the spacial web grows and we move to 5G, the use of smart glasses and immersive headsets will increase drastically. We have seen a rise in the use of hand-held devices for augmented reality (AR) and less expensive head-mounted displays (HMD), and WebVR has increased current access to XR content in the last few years. As design educators, we need to start preparing our students to design for XR and the spacial web. Thoughtful, user experience design methods will help create ethical, human-centered XR designs. Looking at different combinations of physical and digital content, how do we design experiences that feel seamless and can be accessed on multiple levels to have a verity of experiences from the same content. Future design may well rely on the seamless integration of XR experiences, so it is essential to start preparing young designers to think about the crossover and integrating physical and digital design into one XR experience.

Combines traditional Print and UX methods

The first lesson in designing for XR is that many of the typography and design principles we use for printed content still apply. Robust print design is our foundation for understanding the language of design. Students need to build from these foundations and principles layering in UX methods from the conception of the design to focus not on what the technology can do, but what does the human using the technology need? Getting creative with the development of prototypes and user testing is essential early on in the design process. While students may need to use "the wizard of Oz" approach to testing more frequently rather than building basic "functioning" prototypes we have come to expect with web or app design, they still learn many valuable lessons about their design.



Each class lead to adjustments for the next

The first three times the class was taught as an experimental topics course and then after going through the various curriculum committees was made into a required course for our Interaction Multimedia track graphic design BFA students. The first year this class was taught was unique, as about half the class was non-art majors. The student enrollment required some quick pivoting as the class assumed a basic understanding of design principles and experience with the Adobe suite. The first class was a little overwhelming for some as there was a very step digital literacy learning curve for those not used to using a range of programs to create a final outcome. By the end of the class, all the students, regardless of major, had created very creative and unique outcomes and feel a strong sense of accomplishment.

The second time the class had all graphic design or studio art majors. While all students had a basic understanding of design principles and the Adobe suite, some lacked understanding or prior experience with UX principles and methods.

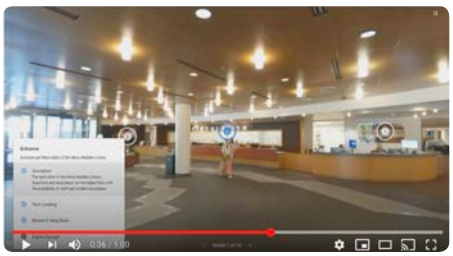
By the third time, the class had all graphic design majors, and most were from the interactive multimedia track. The class's original intent was to be an advanced class in the multimedia track but had to be modified to accommodate a range from novice to advanced. This time more emphasis was placed on UX methods and testing when creating AR and VR experiences. Students were encouraged to push their comfort zone and experiment with unfamiliar technologies and programs.

Last Fall, this class was taught again with advanced Design BFA students mostly form the Interactive Multimedia track. In addition to a heavy emphasis on UX methods and experimentation, students documented their XR creation in a variety of ways to showcase their work better.

This class has evolved from an introductory generalist class about XR to a more in-depth class that focuses more on the use of UX methods to create Human-Centered XR designs. Ethics in design is an essential component of the course. This coming Fall, students will be exposed to a wide range of Ar and VR creation tools that offer a low entry barrier just like other years; however, they will also be moving into learning and creating with Unity. Previously the use of Unity had been optional but will now become a requirement in the class. A continued emphasis on UX methods and ethics will be a driving component though out the course. The Immersive Design class builds off of another advanced interactive multimedia course (GD 155 Designing for Interactions) that focuses of UX design methods and prototyping for complex multi peace experimental design solutions. Many designs include designing for wearables, the Internet of things, and XR. This course prepares students to push their boundaries and experiment with new technologies as well as builds a strong foundation in UX methods and creative prototyping for immersive XR designs.

Future plans for teaching XR both physical and digital content with a HCD approach

Future plans include working more with various 3D scanning technology to allow students to focus less on the creation of assets and more on the design of the XR experience. A collaboration with the Special Collections at our library allows students to create XR exhibits to showcase some of the Special Collections artifacts. It is our hope that this will be a collaboration that continues year after year to not only document and showcases the special collections but to allow students to explore the creation of advanced XR experiences that will be used on our campus. Design ethics and HCD will continue to be the cornerstone of this course. Immersive design needs to look at the total user experience to design experiences that cross over multiple mediums. Most importantly, HCD of XR leverages the technology to design for the human, not just designing for the technology.



Poster 18 The Future is Inclusive

C.J. Yeh
Fashion Institute of Technology (FIT), The State University of New York

Christie Shin
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Poster Abstract
Augmented reality (AR), virtual reality (VR), extended reality (XR), as technology continues to evolve; people are becoming increasingly familiar with these terms. Additionally, more people have access to AR and VR through cellphones. With the advances in web-based AR and VR, more content will be available and accessible to mainstream viewers. However, for there to be content, it first must be designed. These XR experiences cross over and tie together a verity of design methods and mediums. Understanding and designing the total user experience (UX) of an XR experience requires the design of three main aspects, 1) physical artifacts, 2) digital layer, 3) human-centered design (HCD) of the user experience interacting with both physical and digital.

These three aspects of the HCD UX of an XR experience can expand to include: printed content or physical artifacts, digital layers including motiongraphics, sound design, digital graphics, websites, and 3D models or virtual environments and the experience of how to scaffold the physical and digital content into a streamlined, consumable tired content. Immersive design needs to look at the total user experience to design experiences that cross over multiple mediums. Most importantly, HCD of XR leverages the technology to design for the human, not just designing for the technology.

This poster takes a look at four semesters of immersive design classes and how the class has evolved. I will first discuss how the class combines traditional print design methods and UX methods for digital content — followed by the student outcomes from the four semesters and how each semester inspired adjustments for the next. Finally, I will end with a discussion of future plans for teaching XR design that crosses over both physical and digital content.

Poster 19 Through a New Lens: Promoting Art and Inspiration through a Downtown Photographic Mural

Audrey Dainty
Pittsburg State University

Poster Abstract

The application of art in local communities is a version of beautification that is seen in a positive light and is most commonly done through the use of painted murals, statues, and sculptures. This has not only spread the importance of art, but also allowed for self expression of many artists as well as promoting engagement and interaction within the community. With the above in mind, this project aims to implement the use of photography as a mural in order to inspire and promote art in an underserved, semi-rural downtown. This poster will outline the following:

1. The process of gaining the necessary approval for the printing, placement, and application of the mural.
2. The research required for determining proper materials and print processes for such a large scale photographic print.
3. The creative process completed to capture and edit the images and use an appropriate layout for print output.

Poster 20 To Publish or Not to Publish: A Fresh Look at Faculty Scholarship Requirements

Cam Davis
Cedarville University

Poster Abstract
This poster presentation takes a look at various scholarship requirements from a variety of universities. Standards vary in both the quantitative and qualitative nature of the work. Is all scholarly and creative work created equal? How should value be assigned to varying works produced by the faculty member? The department for the creative disciplines for this university recently examined the standards of scholarship for its own faculty with the intent to both educate and assist the department and university tenure and promotion committees in knowing what progressively advancing scholarship should look like. The new scholarship model shows a unique method for evaluation of the work produced by its faculty. It is simple, practical and streamlined. The newly created model will be highlighted along with a look at other college scholarship models.

TO PUBLISH OR NOT TO PUBLISH: A FRESH LOOK AT FACULTY SCHOLARSHIP REQUIREMENTS

AUTHORS

Research and poster: Cam Davis

Scholarship Rubric: Aaron Huffman and Cam Davis

Cedarville University

ABSTRACT

This poster presentation takes a look at various scholarship requirements from a variety of universities. Standards vary in both the quantitative and qualitative nature of the work. Is all scholarly and creative work created equal? How should value be assigned to varying works produced by the faculty member? The department for the creative disciplines for this university recently examined the standards of scholarship for its own faculty with the intent to both educate and assist the department and university tenure and promotion committees in knowing what progressively advancing scholarship should look like. The new scholarship model shows a unique method for evaluation of the work produced by its faculty. It is simple, practical and streamlined. The newly created model will be highlighted along with a look at other college scholarship models.

5% DID NOT OFFER TENURE OR PROMOTION

RESEARCH

This research entails a comparison of the criteria for scholarship for full professor required for advancement across a variety of higher education institutions. The questions to be answered were; How succinctly do colleges and universities define the requirements for scholarship? Are there included both quantitative as well as qualitative requirements? Are the definitions broadly interpreted or are the requirements specific?

METHODS

In order to have data from a variety of sources, information was collected from four different categories of institutions:

1) Four year public (large, > 25K)
2) Four year public (small, < 25K)
4) Four year private
5) Four year Art and Design

There were four schools chosen from each category to compare ... 16 total.

The data was compared and analyzed as to the quantitative and qualitative content, to detect similarities as well as differences.

This researcher, along with a colleague, produced a redesigned model/rubric for scholarship which would apply to the Department of Art, Design and Theater at Cedarville University. The model is not a university-wide model. It is to be used within the department to provide guidance for tenure-seeking faculty. It will be presented to the tenure committee at large to educate that body on requirements for our discipline so as to fairly and objectively evaluate tenure candidates.

95% DO NOT DEFINE QUANTITATIVE VALUES

SCHOLARLY ACTIVITY	CATEGORY	Degree of PEER REVIEW	Prestige	Significance of WORK OUTPUT	Level of role/responsibility/ activity/INVOLVEMENT	Total Points
	Discovery	1: Client or non-expert	1: Local scope or equivalent	1: Low	1: Assistant	
	Application	2: Professional or Academic	2: Regional scope or equivalent	2: Medium	2: Primary	
	Teaching	3: Highest form for category	3: National/Intnl. scope or equiv.	3: High	3: Manager	
	Integration					
Traditional Academic Activity:						
Published, authored book or chapter within one's discipline or pedagogy						
Published journal article, critique, essay, or book review						
Conference presentation/poster	D	2	3	2	2	9
Published compilation of professional work (visual art/design, visual theatre) in publications related to one's discipline						
Grants/Awards						
Creative Works:						
National recognition for directing, dramaturgy, performance, or design						
Regional recognition for directing, dramaturgy, performance, or design (LORT)						
Professional/Commissioned work	A	1	2	2	2	7
Guest lecture, seminar, or workshop within one's discipline or pedagogy						
Community or summer stock direct, performance, or design						
Guest director, designer, artist, or residency						
Academic/Professional Support:						
Coordinate/plan event						
Panelist, consultant, critic, or adjudicator for professional, educational, or arts organization						
Publication support requiring professional expertise—e.g. editing a professional publication or book						
Office in professional or educational organization	A	2	3	1	1	7
Leadership or significant visibility in Internet-based forums with a significant level/quality of interaction from the professional community (e.g., blogs, podcasts, webinars, etc.)						
Conference paper or panel reviewer						
Total						23
Note: All scholarly activity should relate to one's discipline, pedagogy, and/or biblical integration.						

RUBRIC EXPLAINED

The Davis Huffman Rubric takes into account five areas of evaluation; Category, Degree of Peer Review, Prestige/Scope, Work Output, and Level of Involvement. Except for the Category, the work produced will be given a value from one to three according to the level of achievement or scope. A numeric value is then totaled. Each work produced is evaluated in this way.

The tenure-track candidate is evaluated every two years in a six-year track. There will be a minimum of points required for each two-year cycle, and progresses and accumulates toward the final sixth year evaluation.

The expectations for point accumulation are as follows:

- 2 year - 30 points
- 4 year - 70 points
- 6 year - 100 points

RUBRIC EXAMPLE

The example shown on the rubric shows how it might be used for planning by a tenure candidate.

Candidate A has the following:

1. A paper was accepted and presented at a national forum. It was peer reviewed. The amount of work involved was significant but not extensive. The person was the primary researcher but did not need to lead a team. Total points were 9.

2. Being a designer, Candidate A landed a branding job for a regional store or chain. He was hired by the client. There was a fair amount of work involved which they did themselves. The total point value assigned to this project was 7.

3. An office on a committee for a national organization was obtained. The activity level was low and would be considered as assisting others. There were 7 points given for this work.

As this person was up for a two-year review, this would be useful for planning, as the total of 23 points would fall short of the expected 30 points. Other work could be sought out to fill out the requirements.

CONCLUSIONS

Every institution rightfully wants to see it's faculty progress to a place of prominence in their field, to produce new knowledge about the discipline, and impact a broad audience nationally or internationally from their work.

There was a wide variety of expectations expressed for promotion and/or tenure advancement. The range extended from an expectation of quality engagement through the attainment of national and international prominence and recognition in the design community.

All institutions outlined suggested areas of involvement and activity such as publication, consulting, independent design work, grants and research. All of the schools offered promotion and/or tenure except one.

There were two specific questions this researcher wanted to examine. The first question was how much subjectivity versus objectivity would be included in the evaluations. There is the potential for a wide range of subjectivity when determining "eminence," "authoritative," "increasing reputation," etc. So, the conclusion is that the level of subjectivity was fairly high across the board.

Another question to examine is whether any work created on a more localized or regional scale could obtain a positive assessment according to examined materials. Are the works created for a national audience the only ones to be considered?

Most institutions focused almost solely on creative work done for clients with national or international prominence. Occasionally, the term "regional," describing scope or prestige, was mentioned. It is certainly a worthwhile to set lofty goals for scholarship.

This researcher believes that worthwhile contributions can be made to the discipline even if the scale is not as far-reaching and should receive some consideration.

RUBRIC CONCLUSIONS

The Davis Huffman Rubric shown here attempts to take into account a variety of efforts from local/regional through international, and assigns appropriate value through that range. The rubric gives consideration to both quality as well as quantity of creative, scholarly activity. Additionally, there is a balance between concrete, objective definitions with subjective evaluations of the significance of the work.

The rubric is designed to serve as a guide to help in a practical manner for tenure-seeking faculty.

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