DEVELOPING A COLLABORATIVE DESIGN STUDIO:
TRANSFORMING MINDSETS FOR EMERGENT PRACTICES

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INTRODUCTION
“Epistemic modes …are being broken apart today as we address the large tasks of our time – sustainability, globalization, diversity, …Interdisciplinary approaches are needed for the practical application of disciplined understandings to the existing world” (Golsby-Smith, 2013). This paper summarizes a student-led, team-based studio course and how interdisciplinary exchange informs project trajectories, generates integrative learning and holistic design solutions. From local communities to regional environments to global settings, interdisciplinary teams are harnessing methodologies often employed in design processes to systematically address issues and confront the challenges we face. Because “the boundaries of design are being stretched beyond the traditional” (Golsby-Smith, 2013), educators are responsible for expanding learning opportunities for our students. Providing experiences in socially dynamic studio environments, and guiding students in self-discovery is crucial for their psychosocial development. As esteemed design practitioner Jim Couch states, “a new era is blooming, not only in the design community, but also in business, society, education and government.” Preparing students to be productive designers, effective communicators and thoughtful team members contributes significantly to the value of the design profession. Preparing students to be skilled (vocational trades), competent (integrating learning with experiences) and capable of taking on complex problems as leaders (attitude and will) – should they so desire – is imperative for today’s society. The studio environment provides an excellent arena to get such practices started and the learning process rolling. If, as design educator and author of Design Integration states, “innovation is often the result of collaborative work,” (Poggenpohl, 2009) questions still remain. How is it done effectively? What tools and methods work the best? Why should students practice these lessons and what effect does it have on participating faculty? These are some of the questions addressed in this narrative description, a case study that involves forty-seven junior level undergraduate students and the authors of this paper, three professors, each from one of the disciplines of the Department of Design: Industrial, Interior and Visual Communication Design.

CONTEXT
Framing the context of the Collaborative Studio is important to understand the significance of the endeavor. The Department of Design at the Ohio State University (OSU) is comprised of three distinct disciplines: Industrial Design, Interior Design and Visual Communications Design. Recently, two catalysts have prompted critical evaluation and program restructuring within the department. The first was a statewide academic calendar shift from an eleven-week quarter to a
fifteen-week semester system. The second catalytic change was initiated within the Department as design faculty opportunistically used the semester conversion process as an ideal time to analyze and integrate forward-looking program goals across the curriculum. The outcome was the creation of a Collaborative Design Studio, an experience for all junior-level students to learn to work synergistically across disciplines. Because each discipline has distinct epistemological perspectives, conceptual frameworks, terminology, and precedents, the faculty believe it is imperative that students benefit from this diversity. Integrating three disciplines into one studio provides students enhanced learning, broadens their epistemological perspectives and prepares them for professional interdisciplinary and transdisciplinary practices – a type of practice that is emergent across professional disciplines locally and globally.

**COURSE STRUCTURE**

As a pilot course, the type, scale and scope of design project appropriate for junior-level students had to be carefully considered. Logistics for a dynamic studio experience are complex and, therefore, needed to be skillfully managed. With this in mind, the course instructors chose a large, on-going redevelopment project at OSU. In an effort to provide excellence in living conditions and foster a culture of learning, the University started the planning and design of a new North Residential District. This multi-faceted redevelopment project served as the site for design investigation. Three phases – Design Intent and Opportunity, Design Conceptualization, and Design Prototyping – provided the overall structure for the 15-week course with each phase comprised of approximately 5 weeks. Course development efforts started during Fall Semester 2012 and continued over winter break as three professors collaboratively developed the course content. We worked closely to organize and integrate course teaching, learning components, assignments, instructions, and reviews. Additionally, the course was co-taught whenever possible to support the underlying pedagogical purpose. In Spring 2013, the Collaborative Studio was launched and student teams were formed. Each team represented a mix of majors with 4-5 students. They were randomly assigned to an instructor who was then responsible for approximately 15 undergraduate students. Two books served as invaluable resources: Kumar’s 101 Design Methods, A Structured Approach for Driving Innovation in Your Organization, and Stickdorn’s Principles of Service Design Thinking. The insights of these two texts provided the faculty a meaningful platform for instruction and an accessible series of approaches and methods for student learning.

**STUDENT TEAM ORGANIZATION**

Nine teams were randomly assigned one of three topic areas. Three teams focused on “learning and studying”, three teams reimagined students’ “living and social experiences”; and the other teams addressed “moving and transportation” on the North Residential District. The given conceptual framework provided students a visual representation of their primary topic, while the equilateral triangle indicated design considerations for: service, technology and objects(s) (Figure 1). Prior to launching the project, we used the informal PechaKucha model as a way for students
to introduce themselves to each other, present their disciplinary background and skillset. This event proved to be a critical starting point. The casual presentations enabled students to get to know each other in a fun and relaxed way before diving into the rigorous and challenging demands of the semester-long project.

Figure 1. Collaborative Design: Project Topics and Areas of Focus

**PHASE 1: DESIGN INTENT AND OPPORTUNITY**

Design Intent and Opportunity was structured with several activities or “modes” that were instrumental in defining criteria for the design projects. The modes during phase 1 included: sensing, reframing, understanding context and people, and finding opportunities (Figure 2). The first part of the process required students to gain an awareness of the “big picture”. We asked them to become familiar with current trends in campus living, technology, design and the culture of higher education. Generating the “big picture” was accomplished by dynamic exchanges among team members in brainstorming sessions and searching for the most current information through various forms of media. Along with this secondary research, students developed methods for primary research. They conducted observational studies of the North Residential District and collected results of survey questions. All of the information gathered on best practices in campus living, residential hall development and the direct feedback from university students provided them a wealth of data to organize and grasp. As a program that has historically emphasized design research as a precursor to design exploration and problem solving, students continue to be analytically challenged. While students have experience in applying research methods to collect data, faculty have observed that they lack necessary skills to critically analyze and systematically identify significant data to inform design decisions. In this regard, the Collaborative Studio was conceived as a way to close the gap between research and design, and build student
confidence in design decision-making based on informed analysis. For this reason, several weeks were dedicated to analyzing collected data and evaluating criteria. Students used clustering, matrices, and stakeholder journeys to discover design opportunities.

**PHASE 2: DESIGN CONCEPTUALIZATION**

Following the research and analysis exercises, students discovered emergent patterns. By mixing methodologies used across different disciplines, students were able to expand their knowledge to reveal latent patterns within the data collected. By sharing their different epistemes, students capitalized on their unique disciplinary approaches and perspectives, which contributed to a broader interpretation of emerging patterns. With the co-development of stakeholder journeys and narratives, students communicated relative pain points of a particular situation. The insights gleaned from these exercises helped students generate a general direction for concept development (Figure 3). The co-creation of scenarios was constructive in two ways. First, by drawing the scene together, teams envisioned the problem(s) together. Secondly, the process enabled students to integrate thinking across the given focus areas. Through story telling and picture making, the students saw the various ways that service, technology and objects impact different aspects of individual experiences. Students translated this emergent knowledge into guiding principles, which provided a common language for concept exploration and future decision-making. From this point, teams were guided to use an “integrative thinking approach” to mesh the three focus areas into the development of their designs. This holistic approach inspired students to immerse themselves in a co-creative, story-telling method from a user experience perspective.
PHASE 3: DESIGN PROTOTYPING

The final phase of the semester consisted of conceptual refinement, design development, prototyping and final presentations. Pain points identified during the conceptualization phase were identified as touch points in a stakeholders’ experience. From multiple perspectives, students coalesced their knowledge as to how and by what means an object, space or information could enhance experiences and, in the end, were able to capitalize on their strengths and actively integrate their ideas. To reiterate Sharon Poggenpohl, “collaboration is marked in its interactive working together … the give and take of ideas exchanged and explored, [and] the integration of multiple perspectives”. Students’ project success was achieved by their engagement in active listening, negotiation, and team-led project critiques. The final outcomes were wide and varied. Prototyping took many forms from short animated films, and digital models to architecturally detailed walk-throughs (Figure 4). While some design proposals were more product-based, others had well-defined spatial experiences. A common denominator across projects though was the development of a service design component. Nearly all projects demonstrated that good design required good service to enhance experiences of spaces, objects and information.
BREAKING THE RULES

Breaking the rules stimulates intellectual inquiry and, as such, begs closer scrutiny of a priori teaching modes and pedagogical methods. The concept of this course was to transform the mindset of each student, empower them to lead their own learning and resituate the traditional role of the design instructor to be a facilitator in the design process. This course tried to capitalize on breaking the rules of traditional design pedagogy by expanding the role of the instructor to facilitate the transformation of students’ mindset to think beyond disciplinary limitations. By expressing their knowledge in a dialogical exchange of ideas, students participated in metacognitive learning and expanded their episteme by integrating it with other disciplinary knowledge. Metacognitive learning can be understood as learning how to learn. For us, as the design faculty, this meant empowering each design student to be actively involved in the process of exchange, discovery and making, i.e., “meaning making”. Students in such an environment are meta-cognizant of their own learning. In traditional studio-based courses, faculty often provide individualized instruction and lead class discussions. In many regards, this educational model maintains hierarchical orders of power. Typically, the instructor is perceived to have knowledge that is transmitted to the student, and the student is conceived as a passive recipient. Overcoming such a model, this course aimed to provide students opportunities to develop metacognitive skills. The other aspect that helped support team efforts was the engagement of the faculty. The complex interactions between faculty and students were strategic and an integral part of the learning (Figure 5).
CONCLUSION AND REFLECTIONS

First and foremost the design and implementation of the Collaborative Studio experience was intended to advance design pedagogy to prepare students to be leaders and excellent collaborators in interdisciplinary environments, whether traditional design spaces or other forms of practice engaged with complex, multi-faceted problems. Applying design thinking strategies and learning how to implement integrative design solutions to address wicked problems effecting environment, economy and society are critical lessons for the 21st century.

“Robust applied knowledge demands an interdisciplinary holism, the broad epistemological engagement that is required simply to be able to deal with the complex contingencies of a really integrated universe” (Cope, Kalantzis, 2009). Conceived as a way to expand design methodologies beyond discipline specific episteme, this studio-based course explored ways to enhance student learning by empowering them to discover new processes to integrate knowledge across areas of study. The structure of the studio course provided a framework to collect data, explore concepts, and synthesize proposals through different prototyping strategies. The multiple dimensions of interactions – peer-to-peer, peer to instructor(s), and instructor-to-instructor – fostered learning and altered perceptions of the role of instructors. Teaching approaches must focus on elements relating to the processes of learning, rather than the accumulation of knowledge – to develop graduates with capabilities to improvise, adapt, innovate, and be creative. This course provided students with opportunities to learn to think, specifically “how to think” rather than “what to think”. In the context of discipline specific training, field specialization provides epistemological foundation and a depth of topical understanding, but does the time required to develop depth jeopardize breadth of knowledge that comes from integrative learning opportunities? The teaching approaches for this course were
structured to prepare students for emerging design fields, authentic collaboration and expanded learning through interdisciplinary exchange. Transformative pedagogy underlies the extent of change in the student.

While certainly there were tribulations during the semester, the course was well received by the junior class and many are eager to be a part of the planning process for next year's version. One team reflected, "as a team we felt most successful when we had solidified our concepts into an experience with more meaning than the sum of the components". In reflection, the authors concur that successful collaborative studios demand integration of collective knowledge, creation of team-based experiences that spawn trust and open-mindedness, and design opportunities that challenge discipline-specific epistemology and expand design processes by integrating methodologies. The ideas and teaching methods presented in this paper serve to illustrate the potential of transforming design students' mindsets as they learn to collaborate with others across multiple disciplines. This form of pedagogy is neither definite nor singular in its approach to designing, developing and implementing a Collaborative Studio. Rather, the content of the case study and its conceptual framework serve as examples for other design educators to learn from and adapt to their teaching methods.

REFERENCES


