THEORY by DESIGN

Architectural research made explicit in the design teaching studio

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rather than a language of means and materials. The Doppler shifts the understanding of disciplinary autonomy as discipline as performance or practice.

However broad, the Projective program remains linearly directed (or at most bi-dimensionally represented by waves in the Doppler tank), and therefore fundamentally limited, just as Critical postures in their autonomy and necessary “in-between-ness”.

On the contrary, the flexible nature of competition and collaboration within positive heuristics, together with a circular epistemological movement, generate a theoretical/practical model that is flexible enough to achieve depth. The manifold possibilities of an architectural event competing and collaborating simultaneously in space, time and positive heuristic fields, allow it to become an active compo- nent of threads, stems, grids, webs and rhizomes, among many other expressions of intra-unity and informality.

In doing so, the notion of intervention allows for architecture to remain bound within its own disciplinary limits, while staying fundamentally open to an almost infinite array of combinations, both in the realms of ideas and events. Such a practice is always related to the fundamental categories of aesthetics, use, stability and knowledge, enhanced by the constant practice of becoming and disappearing.

A student taking the Studio Public Realm is therefore free to choose and orient each exercise and its constituent parts with relative flexibility, according to specific aims and aspirations, while building strong connections between the elements of a profession that becomes discernible precisely because it is assumed as — we started saying this — fundamentally relational and experimental. Facing disparate expressions, different components of architecture make sense of the whole by performing with each other. Assuming it as an intervention within space, time, history and art as a whole, the spectator of Kousht’s chairs will not only get to know one particular chair, but comfortably drift into the realm of understanding. And this is where architecture happens.
interdisciplinary and transdisciplinary collaborations for instruction (Repko 2008, Snostak 2007, Klein and Newell 1996). We modeled the course on Stokols’ (2006) conceptual framework for transdisciplinary action research, which emphasizes community-based problem-solving strategies, and outlines three types of collaboration: 1) among participants in the same discipline, 2) between researchers and community practitioners, and 3) between organizations on multiple jurisdictional levels. These collaborative engagements foster distinct types of knowledge production that assist participants in generating outcomes that are generally agreeable to multiple engaged stakeholders. We used Stokols’ framework to foster inter/trans disciplinary collaborations among students and stakeholders, and between them to encourage “serendipitous” connections that may otherwise be missed (Dalke and McCormick 2007).

Stokols’ framework was applied to a course that posed design process as a research endeavor, also known as “design-research.” There is a growing body of literature on this topic that makes explicit the interrelation between the two (Neidderer, 2010, Bayazit, 2014, Laurel, 2003). In some design settings, research is commonly seen as a necessary prerequisite for responsible design development. (Kieran 2007) Although it is generally accepted that the process of design must be informed by research, less thought is given to the process of design itself as research. This studio accepted the premise outlined by Neidderer (2003) that design, as an organized inquiry, can generate new, experiential knowledge that unifies understanding from disparate disciplines. Design becomes a problem-solving exercise and generates its own practice-based research that is readily accessible to a wider population. This framework was put to use in the formation of the course, during the 2012 winter term at the University of Washington (UW), USA. As part of a student design competition sponsored by the Van Alen Institute and U.S. National Park Service (NPS) titled, Parks for the People, the course used the design-research methodology to test the merits of inter/trans disciplinary collaborations. Asked to explore the potential of design to inform NPS management strategies for the 21st century for a park site, the design-research methodology offered possibilities to generate a better understanding of current park strategies and practices to develop improved approaches for guiding future management.

The class comprised of 21 students from 7 programs in 6 different academic departments across UW (fig. 1). Within the collaborative framework, students were encouraged to examine and understand knowledge-production through their own disciplinary lenses, and assess their approach within an inter/trans disciplinary group. The class met three times a week for 4 hours at a time in a design studio setting, with 2-hours a week designated as a research seminar. As several students were from departments outside the design disciplines, the research seminar provided a familiar classroom setting emphasizing readings and discussion. In the seminar, faculty members and invited guests were able to communicate specific ideas and priorities to the students — ideas to be engaged in the studio work. Seminar topics ranged from conservation and preservation theory, to history and heritage, as well interpretation methods and visitor management strategies in the context of the NPS. The breadth of topics reinforced the collaborative framework and design-research methodology. The topics directly corresponded to studio assignments and field trips, intended to develop a richer understanding of topic and site. For example, by having a seminar discussion on interpretation, and then engaging with the display materials on site, the seminar-studio connection enabled the students to develop a nuanced understanding of the topic. (fig. 2)

The studio portion of the class was structured around a series of small, yet progressively growing, group assignments (one per week) that were developed to initially introduce the students to the project and site, and gain familiarity with their working groups. As the term advanced, the assignments increased in complexity requiring the teams to build on the information and discussions from the seminar to develop programmatic and conceptual strategies. Students were encouraged to build on their disciplinary strengths in research and/or design and to seek opportunities to clarify distinctions and embrace commonalities while using visual communication strategies in the development of their work. To promote more class-wide collaboration, students were also encouraged to join new groups for different assignments.

The integration of research seminar with studio work allowed the application of our design-research methodology, and allowed our course to benefit from both a design exploration of the site, and a critical review of literature. It was our goal to communicate the benefits of design-research as a pedagogical methodology, and encourage students to think and act in both design and research realms for their site explorations and design development.

The Project

As a selected team for the national student design competition “Parks for the People,” in association with the U.S. National Park Service (NPS) the course was tasked with using design as a catalyst to explore how the NPS can more effectively connect with the 21st century visitors. This exploration was framed though a set of specific design principles laid out by the National Park Service as guiding management strategies into the future. (fig. 3) More specifically, our task was to explore the design principles on the San Juan Island National Historical Park (SJI-NHP) located on an island in the far northwest corner of the continental U.S. (fig. 4). The 145 km² island is part of a larger archipelago known as the San Juan Islands containing a diverse ecological and rich cultural heritage. The park, founded in 1966, commemorates the peaceful arbitration between the

![Illustrated design principles guiding studio work](image)

![Map of project site](image)

![San Juan Island National Historical Park](image)

![Collage of site environments and activities](image)
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States and England over the Northwest boundary between the U.S. and Canada. For 12 years prior to the 1872 arbitration decision the island was jointly occupied by most countries. These camps, separated by 13 miles, form the primary lands of this 709 hectare national historical park. For 12 years prior to the 1872 arbitration decision the island was jointly occupied by most countries. These camps, separated by 13 miles, form the primary lands of this 709 hectare national historical park.

Involved stakeholders and the collaboration involved in the studio course.

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Assessment + Synthesis

To assess the student reception of the course, we developed two anonymous surveys with 12 questions each focusing on student experience and perceived learning. One survey was provided at midterm and the other at the end of the term. In general, the students responded positively to the class, the project, and the experience. When asked to assess their overall experience at the end of the term, the majority of students (77%) ranked their experience from good to excellent. While such response affirms the quality of topic and approach it does not tease apart the difference from traditional pedagogical approaches.

A primary benefit of our pedagogy, we found, was that the course produced a different type of knowledge in the minds of our students, where their own judgments and sentiments were valued, without direct ties to disciplinary instruction. We found that working in inter/trans disciplinary groups expanded the students’ field of engagement into multiple disciplines. Encumbered by a discipline-specific research methodology, the students were able to combine information and insights collected from their particular disciplinary approaches, and relate them through specific interventions on different park sites. These interdisciplinary interactions offered opportunities for generating new insights on the topic and the site (fig. 3). Collectively, this “new” knowledge was rooted in a “collective understanding”, and findings reinforced by a shared experience and priority.

Site studies and design development was guided by field explorations and seminar/ studio interactions and periodic feedback from faculty and invited reviewers. As it is with most studio instruction, design development was an experiential exercise where students were able to learn about experiences, develop iterations, prioritize interventions, and share the work with faculty and peers. As one student noted: “design work carries with it an experiential element. Good design often requires designers to step outside of the logical mind and engage in a more visceral approach to understanding place.” The first “step outside of the logical mind” was critical in developing a collaborative work relationship between participants with varying disciplinary backgrounds.

When asked what the greatest educational benefit of working in the studio was, 76% (16/21) students responded that it was the simple opportunity to work with people from a variety of academic disciplines. The exposure to how other academic disciplines view the world provided the largest benefit to the instruction — ranging from understanding diverse frameworks of inquiry, to representation and communication techniques. Many students felt unfamiliar with the “language of the studio.” For many, the design process offered a different way of seeing the world.

With a strong emphasis on dissemination of knowledge through periodic reviews and presentations to community groups, students were expected to communicate their research and designs to diverse groups of people. The visual and verbal presentations, coupled with innovative communication techniques helped students think from the start on how others would receive their work. One student noted that a major revelation was “realizing how easy it is to leap into design language and how important it is to be mindful of the words we choose when communicating ideas to a larger audience.” The visual material not only presents collected research, but itself becomes a research document— one that future research can utilize to generate additional knowledge.

The students’ knowledge was also enhanced by openness to uncertainty of the studio environment and the nature of the products. As a design exercise, the process of “envisioning something not yet in existence” forced students to project ideas and knowledge into the future. Whether planning for a future scenario (like global warming), or trying to promote certain values in the future (sustainability), the course encouraged extending knowledge beyond the documented and observed. One student stated that this course was unique in revealing the “intricacies of the NPS system and the real-life challenges that occur when making changes.” These student insights were evident in several design proposals that were developed in the course, one of which we would like to highlight in this paper. Several sites within the SH-NHP are considered sacred by local Native American tribes. Rooted in the traditions of fishing, hunting and living off the land, a particular stretch of shoreline is at the convergence of many different disciplinary (and management) concerns. From ecological vitality to the social justice concerns around Native American’s current disassociation with the site, to the conflict around Western and native historical understanding and interpretation. For example, by tracing the edge of an underlying shell midden, the project reveals hidden layers of the site— re-territorializing lost narratives, without eliminating current uses. (fig. 4) The quality of the proposal was enhanced by design research methodology and inter/trans disciplinary collaborations.

Several students found that participating in the course advanced their understanding of the parklands in multiple ways. The process of translating research and design ideas into spatial forms, guided by a shared experience, created a deeper understanding of the site in students’ minds. One student stated: “The ideas generated from research of the type we conducted need testing in the real world. Design plays these concepts out in that world and asks whether the ideas generated still resonate. When questions arise in the creative design process, one returns to research to ground the answers.” A combination of creativity and research is critical for the development of any original ideas.” Supported by an iterative design process, students were able to envision multiple scenarios for the future — weighing the merits of each on how they lend themselves to cultural and ecological resiliency of the Park enhanced respect for the place and people.

While the course was successful in integrating design and research within a inter/transdisciplinary framework, our course did face several challenges. First, we found that students felt uncertain in their own individual role in an inter/trans disciplinary enviroment, lacking of confidence to move ahead productively. Only 36% of students (8/21) thought they were able to contribute to the fullest extent of their abilities. Coming from their different disciplines, students did not feel they were putting everything they knew to use, despite 90% (19/21) feeling that they were well-prepared for the course. Some students expressed anxiety about the hybrid investigatory process, citing “lack of clear expectations” as a learning deterrent. These frustrations are not that uncommon in design studios, where expectations and results cannot always be clearly defined from the onset, but they can be even more pronounced in a design studio that engages a real site, community and students from non-design disciplines (Varnesil 2007).

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Alongside this military history emphasizing international diplomacy, the parklands maintain a rich cultural history (associated with the Native Americans groups), and ecological diversity. In addition the Park continues to play a contemporary role in the lives of the island residents and local economy. The SJH-NHP current interpretive efforts focus largely on sites associated with the Native Americans groups, and ecological diversity. In addition the Park continues to play a contemporary role in the lives of the island residents and local economy.

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The students explored the contextual intricacies of these issues and their design products demonstrated the value of such collaborations and methodology through a nuanced approach to design intervention and interpretation. For example, by tracing the edge of an underlying shell midden, the project reveals hidden layers of the site — repositioning lost narratives, without eliminating current uses. (fig. 4) The quality of the proposal was enhanced by design research methodology and inter/trans disciplinary collaborations.

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While the course was successful in integrating design and research within an inter/transdisciplinary framework, our course did face several challenges. First, we found that students felt uncertain in their own individual role in an inter/trans disciplinary enviroment, lacking of confidence to move ahead productively. Only 35% of students (8/21) thought they were able to contribute to the fullest extent of their abilities. Coming from their different disciplines, students did not feel they were putting everything they knew to use, despite 90% (19/21) feeling that they were well-prepared for the course. Some students expressed anxiety about the hybrid investigative process, citing “lack of clear expectations” as a learning deterrent. These frustrations are not that uncommon in design studios, where expectations and results cannot always be clearly defined from the onset, but they can be even more pronounced in a design studio that engages a real site, community and students from non-design disciplines (Varnelis 2007).

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The operative terms design and research function as both verb and noun. They reflect action through process and material in product. Whether tangibly constructed or empirically derived these constructs reveal the integrative and iterative nature of the process through which they are connected. Through this connection it is commonly understood that the products of research assist in informing the process of design, and yet through design actions we have the opportunity to generate new perspectives that specify and deepen research. In an instructional setting, the processes of each are as important as the products. Niederer et al. define the process design as “envision(ing) something not yet in existence” (2010, 7). The products of design are not wholly determined from the outset as “the systematic investigation into and application of knowledge-production, experiential learning and application” (USA). We use an established transdisciplinary framework to examine the process of integrative learning, which we then evaluate through participant responses. Finally, we reflect upon the implications and challenges of this integration to studio instruction.

Pedagogical Framework + Course Structure

Existing literature across multiple disciplines has established the benefits of designing and research in the design studio course at the University of Washington. We use an established transdisciplinary collaborative framework to examine the process of integrative learning, which we then evaluate through participant responses. Finally, we reflect upon the implications and challenges of this integration to studio instruction.

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