Disciplinary Leadership through Critical Thinking and Engagement

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While it is difficult to reduce a school's identity to just a handful of descriptors, the University of Minnesota School of Architecture can roughly be understood through its investment in two particular areas. First, we focus on design grounded in critical representation (materials and media literacy, or drawing and making as a way of thinking), and second, in social engagement (ethically motivated work that strives to make the world a better place). These two areas grow from the strong reputation of the school as a place where students learn how to beautifully draw and build, and from the state of Minnesota's history of social progressiveness and humanitarianism.

Architectural design, with a particular emphasis on design process, is the elemental competency uniting our school's diverse research agendas, approaches to teaching, and visions for the future. For us, process is intrinsically bound to ethical decision-making. Our students are aware of the interconnectedness of their choices and understand that those choices have consequences for the people and communities they serve and the environments within which they design.

The school aims to prepare students for leadership in the rapidly changing field of architecture. We value inquisitive, curious, and adaptable thinkers, those who engage the fundamental disciplinary provisions of architectural practice while challenging its boundaries. To this end, we focus on learning experiences that imbue particular ways of thinking, with an emphasis on lateral, synthetic, and discursive approaches. We focus on the "why" as much as the "how." We encourage questioning, risk-taking, and embracing failure. We believe that these are the qualities common to all leaders. They are not about skills or technical knowledge, but rather about a particular disposition - a way of being in, and seeing, the world.

The three examples below illustrate how we are developing not just exceptional architects, but also the future leaders of the discipline.

For a recent panel discussion at the AIA Minnesota Convention, I was asked to speak on digital parametric technologies and how they influence our studio curriculum and culture. Knowing my background, I think the audience was surprised to hear that while our school is generally quite invested in digital technologies, we only promote them in as far as they scaffold particular habits of mind in our students. We are not interested in technology for its own sake - in teaching software so that students can simply check it off of their list of required skills to secure a job. At Minnesota, we actually frame the benefits of parametric software in terms of how they build an ability to think parametrically, or in a rule-based, disciplined, and interconnected way. For this reason, we teach parametric thinking, as distinct from parametric software, through both digital and analog methodologies. In our first year graduate studio, for example, our students document the use of a hand tool through photography and film, then analyze it through hand drawing. Progressively, they move away from pictorially accurate depictions and towards abstraction. They then develop instructions, or rules, that they use to generate drawings by hand. This is their first introduction to parameters. If a dot is placed here on the paper, then a line is extended from that dot in this way, which leads to second dot, and so on. The students do not know what their drawings will look like until they actually produce them. Rule-based formal generation is then similarly used to make a physical model. Not until they are familiar with this kind of rule-based thinking do students actually crack open software to learn digital parametric techniques. Close observation, thinking, and questioning are privileged over techniques and skills (although the resultant drawings and models are quite beautiful).

What is vitally important to us about emerging software and technology is that it promotes, in the students, an ability to understand the interconnectedness of their decisions - that a choice they make over here has a consequence way over there, where they may never have imagined. This foregrounds for the students, the importance of critical decision making and judgment as essential qualities for not just an architect, but also for a disciplinary leader.

A similar focus on disciplinary leadership can be seen in our school's Masters of Science in Research Practice (MS RP) degree program. This relatively new program is so exciting to us because it provides a platform for students to work on applied research projects in collaboration with both an architecture firm and a faculty member. First, firms identify research topics that interest them. The program then matches the firm with a graduate student and faculty member who have overlapping interests and expertise. What distinguishes this program from others is that as the student spends time in the firm conducting research, he or she is also enrolled in school, consulting with a faculty member on campus. This tight link between practice and academy yields surprising and novel solutions to persistent, professional challenges. In some cases, however, it also opens new opportunities within firm's existing business models. After graduation, students who have been leading the research often transition into professional leadership positions in these newly identified areas of research practice. The program is mutually beneficial to firms and students alike. Firms venture into new, untapped territories that expand and challenge their existing business models. Often these new areas of development represent current topics, about which young, emerging, and talented architects feel especially passionate (climate change, resilience, social engagement, good design accessible to all). When firms demonstrate genuine investment in these topics, they are better positioned to recruit top talent. Students emerge as thought leaders in these new territories, benefiting, along the way from close partnership with a faculty member and developing an expertise in his or her area of research. In 2016, the MS RP program was recognized with a National AIA/ACSA Practice and Leadership Award.

Like the development of critical thinking skills in the first year graduate studio experience, the MS RP program positions our graduates to take on leadership roles in the discipline. Students are simultaneously introduced to the culture of professional practice and asked to challenge that very culture. They represent a catalyst for change within the discipline and are looked to for leading the charge into new areas of research and practice. This is remarkably empowering.

Finally, we are further developing future professional leaders by cultivating in our students a passion for community-engaged, interdisciplinary design work. One shining example of this is our third year Design Duluth project. It is a collaborative, interdisciplinary graduate studio offered in the third year of the M. Arch and MLA programs. Funded by the Bush Foundation's Community Innovation Grant program, and internally by the University of Minnesota, the design studio challenges norms of academic autonomy by emphasizing the best in community design practices. Partnered with non-profit organizations in Duluth, Minnesota, the studio has developed extensive links with local government, state agencies, non-profits, public and private stakeholders, and community activists.

The studio is a multi-year initiative that was organized loosely around former Mayor Don Ness' "90 by 20" initiative, which calls for establishing the economic and cultural conditions to attract 4,000 new residents to Duluth by the year 2020. Motivated in part by catastrophic flooding in June 2012, the studio now works with a network of over 30 partners to propose resilient, multi-scalar solutions to long-term problems (climate resilience, economic instability, social paradigm shifts, and massive infrastructural reconstruction). The current studio process links architecture, landscape architecture, and urban planning graduate students with surrogate clients, local experts, and stakeholders throughout the design process. In a departure from the service design model, the students, while intensely engaged with the community stakeholders, generate forward-looking speculative design projects that address community issues from a deep base of analysis.

The studio was recognized by the ACSA with a Community Design Practice Honor in 2015. At present, the studio is led by faculty from Architecture and Landscape Architecture, and benefits from the extensive expertise of local practitioners, designers, and researchers. It imbues in our students a deep passion for architecture that benefits everyone and strives to make the world a better place. Students feel emboldened to go out into the community and to effect real change. As they graduate and accept positions in firms, they take with them this appetite for community engagement and thus shape the future direction of practice.

These are just three curricular areas where we are, at the University of Minnesota, preparing our students for professional leadership. While technologies and ways of producing architecture change rapidly, and we cannot comprehensively, or with any degree of accuracy, anticipate specific shifts in software, building technology, construction, or project delivery, we can, and will continue to, inspire our students to think critically and cultivate their capacities for self-learning and reflection. We believe that this is what a university education does best.