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Educating for design character in higher education: Challenges in studio pedagogy

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Abstract: Some particular challenges in studio pedagogy arise from teaching for design character versus focusing solely on skills, knowledge or the cognitive processes of our students. In this paper, three authors with extensive combined experience in studio learning, teaching, and scholarship address these challenges via reflection on our own experiences of research and teaching and in-depth discussion with each other. We adopt a co/autoethnographic approach (Coia & Taylor, 2009), identifying a range of challenges we have faced ourselves across three established and emergent design disciplines. These challenges are grouped in relationship to students, to curriculum, to our colleagues, and to ourselves. In our experience these challenges affect instructors differently than—and in addition to—those presented by traditional studio, and we present opportunities to build on these articulated challenges to further studio pedagogy.

Keywords: design pedagogy; design character; studio pedagogy

1. Introduction

Within three studio settings in higher education, we address the pedagogical challenges of teaching from a philosophical perspective placing the students' character, rather than their cognition, at the center of design learning. Each of us has conducted studies embedded in studio teaching, at both the graduate and undergraduate level, over a combined 20+ years during which we were also mutually involved in reflection and discussion of studio teaching. We reviewed all these studies independently and jointly reflected on our own experiences via extended discussion through the lens of pedagogical challenge.

2. Education for design character

The cognitive perspective on teaching and practicing design emphasizes mental processes and the actions (design moves) to which they give rise (Cross, 2011; Lawson 2006; Lawson &

Dorst, 2009; Schön, 1983). In comparison—although not in full opposition to—the cognitive perspective, Nelson and Stolterman (2012) build a philosophical perspective which positions the full character of the designer, not just the designer's thinking, at the center of the activity of designing. They explain that designers' beliefs, experiences and faculties of judgment, in addition to cognitive knowledge and processes, are critical to designing and that "becoming a designer … means maturing as a whole person within larger webs of life—natural, social, and cultural … listening to the inner guidance of the seed of character pushing for full expression in a well-lived life" (p. 215). This perspective is by no means ubiquitous, or even widespread, in design education, where even discussions of future trends are notably focused on cognition and skills (Baynes, 2010; Davis; 2017; Ockman & Williamson, 2012; Salama & Wilkinson, 2007), although it does appear (McClean & Hourigan, 2015; McDonald &. Michela, 2019). As educators who have taught from this perspective in increasingly deliberate ways, our emergent realization is that the future of design practice depends on such a shift in design pedagogy (Boling, 2016; Boling & Smith, 2018).

Logically and experientially, this perspective carries implications for design teaching. When we set out to address the whole student, we have to begin with their "capacities, interests, and habits" (Dewey, 1925), not assuming they are simply non-designers (Siegel & Stolterman, 2008), but considering and valuing what they bring to the studio (Boling & Gray, 2015b; Boling, Gray, & Smith, 2017; Gray, 2013). From this starting point, we have to recognize the complex academic lives in which our students participate during their studies as well (Gray, 2014; Boling, 2016). Our concern for their individual development requires that we appreciate differences in the designers they will become, rather than assuming each will—or should—learn now, or later practice, in the same way as all the others (Nelson & Stolterman, 2012; Boling & Smith, 2014; Smith, 2015). Adopting a perspective that calls for educating the whole student—intentionally and systematically developing their design character—has been for each of us an individual matter linked to and informing our scholarship (Gray, 2014; Boling, 2016; Smith, 2016).

3. Method of this study: Co/autoethnography

We conducted this study as co/autoethnography (Coia & Taylor, 2009), a collaborative method elaborated as a means to "examine our teaching selves" (p.3). The method comprises a process of iterative writing, reflection, talking and feedback, interspersed with practice and followed by collaborative writing and editing of the research paper. This method suggested itself as appropriate for our exploration of the challenges we have encountered, and continue to encounter, as studio instructors who pursue education of the whole designer versus education as transmission of knowledge and skill. We recognized that the first elements of the method had been pursued between us over a period of a decade as we taught in higher education and discussed our teaching with each other, and as we conducted individual and co-authored studies within our individual classrooms, discussing those studies with each other repeatedly over time. At one point each of us has taught either single sessions or entire terms of the same studio class in the first author's program,

in which cases our discussions of teaching have focused on fully shared experiences and collaborative goals.

To carry out the final stages of this method, the authors reviewed our own previously published studies relevant to design pedagogy, some co-authored between us and some individually authored. We attended to explicit, and implicit, statements we had made in those studies regarding the challenges inherent in educating for design character. We brought these statements to multiple hours of culminating, in-depth discussion during which we shared our thoughts on the lens of the pedagogical challenges arising from emergent studio practice focused on development of design character and on the particulars of those challenges. Our discussion ranged beyond the formal studies any of us has conducted to include additional studio teaching experiences on which we had reflected together previously and were reflecting in the moment.

The flow of that discussion included points at which our streams of thought converged on certain challenges, and points at which they diverged, based primarily on differences in the fields where we teach. We questioned each other and ourselves regarding our perceptions and experiences, confirming some ideas and rendering others more complex. As long-time collaborators, we felt comfortable to challenge ourselves and one another during this discussion so that it was as rigorous as we could make it. The discussion yielded a dozen top level issues addressing the challenges of educating for design character, and over 50 related issues. Later, the extended list of topics we generated through our discussion was examined to discover repeated items, connected items, and items that were extensions of others, or explanations of others. We did not write the draft of our study together in real time, but shared it between ourselves for mutual review and revision.

4. Authors' backgrounds and contexts of teaching

The authors of this chapter hold degrees earned in studio-based programs including fine arts printmaking (Elizabeth), graphic design (Colin) and architectural studies (Kennon). These experiences enculturated us into what might be called traditional studio—classes held in big rooms with large windows, outfitted with specialized equipment and materials; long days and nights spent on individual projects; regular desk and wall critiques carried out with strong emphasis on competitive performance; with full aesthetic and technical authority vested in the instructors (Brandt et al., 2013).

As university faculty members, each of us has also taught in studio settings, some more and some less traditional. Elizabeth introduced, and is still teaching, a summer elective (Instructional Graphics Design) in the masters level curriculum in instructional design at Indiana University in 2009. Kennon also taught this course one summer, and Colin took the course several years ago. At the time of this writing Elizabeth is teaching and coordinating that same masters program, now in a studio-based format, revised together with colleagues two semesters previously.

Colin teaches user experience (UX) design and leads the UX Pedagogy and Practice Lab (UXP^2) at Purdue University in the Purdue Polytechnic Institute. He has co-developed one of the first undergraduate studio-based programs in UX design in the United States (Vorvoreanu, Gray, Parsons, & Rasche, 2017), building on his professional experiences as a graphic and instructional designer and academic experiences in graphic design, instructional design, and human-computer interaction. This program relies on an integrated model of studio education, bridging multiple disciplinary perspectives on which UX design relies, including psychology, anthropology, visual design, and development.

Kennon currently teaches in the Eskenazi School of Art, Architecture, and Design at Indiana University. Courses in the school include a mix of lecture- and studio-based formats, both of which she has taught. Specifically, she has taught a range lecture-based courses addressing topics such as construction methods, design materials, and design history, as well as approximately ten undergraduate design studios for interior design majors.

Each of us brings experience from practice to our studio teaching. Elizabeth spent five years illustrating and designing educational software, and five more managing graphics and animation design for digital in-box documentation at a Fortune 100 technology company before joining the faculty of Indiana University. Colin worked as an art director, contract designer, and trainer in South Carolina prior to beginning his doctoral study. Before joining the design faculty at IU, Kennon worked professionally at design firms in Utah and Arizona, and worked as an instructional systems designer in the Midwest United States, creating instructional and procedural materials associated with critical processes for one of the world's largest pharmaceutical companies.

5. Challenges

We addressed the challenges faced by instructors in the studio rather than any other stakeholders because instructors shape and drive the nature of each studio as a learning environment (Davis, 2017). We grouped these challenges according to the contexts in which instructors encounter and grapple with them.

5.1 Challenges in the context of students

Managing complex relationships influenced by power dynamics. The (incomplete) transformation of architectural studios, and those modeled after them, from overwhelmingly male, rigidly hierarchical and mercilessly competitive, to an increasingly open, collaborative and transparent format has been underway for well over half a century (Ockman & Williamson, 2012). In our experience, this means that relationships in general have gotten more complicated, while power relationships remain as a factor. Within the university structure we assess our students' progress and their performance, while within the modern studio structure we act as their guides, supporters and even collaborators (Boling, Siegel, Smith, & Parrish, 2013). Arguably this is more confusing for our students, and for us, than was true in the days of closed juries and competition-based progress through

educational programs. To complicate these relationships further, vertical integration of curricula and formal mentorship programs call upon students to attend to power dynamics in multiple ways, both towards instructors and their colleagues (Gray & Howard, 2015). When we are concerned with design character, we cannot view these dynamics simply as complications in teaching, but as forces to be negotiated for active, positive purposes.

Attending to dimensions of learning beyond knowledge and skill. Declarative and performative learning are clearly part of learning design (Cross, 2011; Davis, 2017; Brown, 2019), and they offer their own challenges. Lawson and Dorst (2009), speaking from a cognitive perspective and from observations of instructors (tutors) holding discussions in the studio, acknowledge that they "require enormous skill to manage" (p. 256), while Fleming's (1998) investigation of design talk between students and instructors observes that the instructor "... has to satisfy conflicting goals: responding to students' work without actually designing for them" (p. 62). Davis (2017), who also frames design education in terms of skills and knowledge, does observe that students learn the values of their design profession through critiques offered by faculty, whether these are explicitly stated or not. This process, as described, is more received than collaborative.

However, teaching from the perspective that design entails the whole person requires that we know the whole person, begging the question—how much do we need to know, and how much should we know? This is a challenge. While Nelson and Stolterman (2012) discuss core judgments of designers as being fundamental to their character, so basic that the designers themselves may not have access to them, do we, as the instructors of student designers, have to dig so deep? Should we? On a day to day basis in the studio, when we are not just modeling or explicating values, but engaging students in discussing and developing their professional character collaboratively, these decisions have to be made. We have to decide for ourselves when a personal revelation or confidence is rightly available to be used in learning, and when such use would be more exploitative than is warranted for potential gain. Even when we are well-intentioned, and when we may know, for example, that a students' private concerns are shaping their views and actions in design, do we have the right to probe those concerns—especially if we are leveraging our power positions to do so? And when, and how, do we communicate boundaries to our students when we do have those boundaries figured out? It can be difficult to present as a helpful partner in the hard, personal work of developing design character in one moment, and an education professional at arms' length the next.

A similar concern involves the inevitable and productive pain of learning (Adler, 1941; Mintz, 2008). Rather than distancing ourselves from our students' pain, addressing them as whole persons while they learn requires recognizing their pain, acknowledging that we have set up the circumstances for creating it, and constantly assessing how much of it is productive versus that which we could and should work to eliminate. This requires almost constant examination of what we are doing, what we expect to accomplish, and what assumptions we are making about the studio. Elkins' (2001) examination of critique practice in the arts offers

a detailed—and excruciating—deconstruction of the fine arts studio critique, illustrating multiple points at which pain is inflicted through the unexamined enactment of interchanges with which we are familiar from our own experiences, and to which we may even subscribe as necessary for learning. It can take some time to let go of practices, even with attention (Boling & Gray, 2015a; Boling & Smith, 2010).

Our perspective on teaching is supported by Austerlitz and Aravot's (2007) conclusion that "design students, not unlike others, learn with the whole range of their human capacities and not as intellectual beings only … [and therefore] it seems imperative to look into the role at emotions in their learning" (p. 235). Engaging the emotional energy of students in order to know them individually, support their development and help them navigate pain in learning, requires constant responsiveness to them. This, in turn, requires terrific energy on our part. Attoe & Mugerauer (1991) document vitality, energy and excitement as several of the hallmarks of excellent studio teaching; our observation is that these overlay the energy requirement involved in teaching for the development of design character. The load may not be doubled, but it is substantial. We do not ignore the influx of energy that comes to us from the students, but realize that sometimes it does not fully offset the outlay from us.

Seeing the individual within the patterns of students' learning. A commitment to educate the whole student designer entails an appreciation of the individual, and where the individual is at any given time, even though experience makes it clear that there are patterns—at least, cognitive patterns—in their learning (Crismond &. Adams, 2012; Dorst &. Reymen, 2004; Siegel & Stolterman, 2008). Close study of design students shows, however, that while they may operate within larger patterns of learning (Atman, Chimka, Bursic, & Nachtmann, 1999; Ozkan & Dogan, 2013), students can legitimately, not erroneously, differ in the clusters of activities they use to approach and complete their designs (Boling & Smith, 2010). In the developmental view, these differences foreshadow the designers of differing strengths and sensibilities that they will come to be (Nelson & Stolterman, 2012), and in our study of students, these patterns of individual becoming seems to be related to the knowledge and the qualities they bring with them to the studio (Boling & Gray, 2015; Boling et al., 2017; Gray, 2013) as well as their social ties in the studio (Boling, 2016; Gray & Howard, 2015). Knowing all this and remembering it are two different propositions, however. The longer we teach, the more evident certain patterns become and it can be a challenge not to anticipate, or assume, where—or who—any given student may be in the moment.

5.2 Challenges in the context of colleagues.

In different ways for each of us, challenges involving colleagues arise in the context of studio teaching for development of design character. Where everyone shares an educational background that includes studio, we have found that differing experiences of studio and resulting pedagogical beliefs and philosophies can exist. Where no one else shares a background that includes studio, differences are inevitable. And where studio instructors

come from multiple disciplinary backgrounds, negotiation of differences is equally inevitable. For example, the traditional view of studio "assumes the mastery of the studio instructor" (Salama & Wilkinson, 2007, p. 73), an assumption that fundamentally affects the roles and relationships of instructors and students—certainly making it difficult, or impossible, for an instructor to assume, say, a "mentor-companion" (Boling et al., 2013, p. 184), or a "squire riding alongside each [student]" (p. 186-7) role. When one instructor teaching part of a studio series holds a traditional view of studio and another holds a view oriented toward developing design character, a good deal of flexibility may be required on the part of those colleagues to adjust their roles to accommodate each other. Further, the colleague holding the less traditional view may have to explain more, offer more student support, and generally "make up the difference" between herself and colleagues. Similarly, an instructor enacting roles and practices from the perspective of both studio and teaching the whole designer in the design student (Boling et al., 2017) is likely to spend extra time with colleagues explaining both the perspective and the expectations to which it gives rise, and/or negotiating these with colleagues from other disciplines. Further, a negotiation with one or more colleagues from another discipline, or even those with colleagues in one's own, can be complicated by how variable the understandings of studio and its epistemological foundations are (Atman et al., 1999; Gray, 2016).

5.3 Challenges in the context of curriculum.

In a long-established field like architecture, where "a highly regulated regulatory scheme for ... state registration [of practitioners]" has its roots in the late 1800s (Ockman & Williamson, 2012), and interior design, where debates regarding legal regulation of the profession have been on-going for decades, there is "a real tension within the program's overall curriculum because there seems to be an ever-increasing body of content … which is necessary to meet accreditation standards … this eats into studio time where a "long" desk consultation between instructor and student may be 10-15 minutes, and these are difficult to accomplish for every student during a three-hour class session (Smith, 2016). Under these circumstances, finding the sheer time to know any individual student beyond the immediate concern of that student's work—as central to professional character as that work clearly is—can be difficult. However, developing such relationships may be equally critical to the educational endeavor as students report that their relationships with instructors, including a student's impression that the instructor does or does not have confidence in their abilities, may have significant impact on their developing design expertise (Boling, 2016) and on their perceptions of the validity of project assessments(Smith, 2013).

The challenge of a curriculum loaded with regulatory requirements is less problematic for instructional design where standards have existed for some time, but licensure (as in interior design where national criteria must be met by practitioners) does not (Koszalka, Russ-Eft, & Reiser, 2013). It is also less for user experience design where multiple entities promote standards but, again, there is no licensure and there have, in fact, only been specialized degree programs (e.g., Human Computer Interface (HCI), or UX (User Experience)) for less

than a decade (Vorvoreanu et al., 2017; Kou & Gray, 2018). Another challenge arises, however, because in an open curriculum it can be difficult to define what is "enough" learning—and particularly so when attending to individual students' development is a central goal over and above ticking off the skills they have gained. This open-endedness is also a challenge in emerging trans-disciplines, where skills and knowledge are expected of students, both in a discrete disciplinary sense, and also through the traversal between disciplinary spaces where knowledge boundaries are contested and chaotic (Gray & Fernandez, 2018).

Finding and keeping the resources necessary for studio teaching is a challenge usually discussed in terms of affording workspace sufficient for student projects and dedicated to studio work for an adequate number of hours a day. This includes, as well, tools and resources specific to each area in which design is taught (Boling, 2016; Boling & Smith, 2009). While the resources necessary for studio in traditional disciplines have, in some ways, been quite stable, new disciplinary areas require new methodological, physical, and practical supports which deserve further investigation. For instance, while fabrication and making are central to disciplines such as architecture, what might resources entail when addressing third and fourth order design disciplines where the outputs are more ephemeral, such as services and systems? Therefore, this challenge is grouped with curriculum.

5.4 Challenges in the context of ourselves.

Once we move to expand our responsibilities in studio teaching to encompass design character, our own character is called into play. Davis (2017) discusses pedagogical styles in the studio (art-direction, Socratic and coaching) with examples of interchanges between instructor and student in each style, with the last sounding much like a frame experiment as presented by Schön (1983). Other options are available. An earlier study by Webster (2004) found that students perceived three roles in their tutors (studio instructors): "'the entertainer', 'the hegemonic overlord' and 'the liminal servant,'" with only the last perceived to support them (p. 101).

In our discussions and some of our writing (Boling et al., 2013; Exter, Gray, & Fernandez, 2019), we explore the need to recognize and inhabit roles in studio teaching—these are flexible ways of interacting with students on a holistic basis, covering all communications, including talking about design. Part of the challenge of inhabiting a role can be recognizing what fits you versus what may have been appropriate for a past, perhaps greatly admired, studio instructor of your own, and to inhabit that role fully and comfortably.

The roles we inhabit are ideally consistent with our values in teaching the whole design student of course, but the challenge does not stop with identifying, forging or building a role and then maintaining it. In the face of many complexities, holding onto and enacting a role tied to our values can be difficult. Even the most natural role requires reflexivity, because multiple questions arise as we teach: "am I operating within my role as I understand it?";, "does this role support this student appropriately at this moment ?"; and, as suggested by

McDonald and Michela's 2019 study of critique in studio pedagogy, "is my understanding of the good I am trying to accomplish accurate?" and "how do I reconcile competing goods?"

As colleagues we agree that maintaining transparency with our students and keeping multiple options for studio interactions top of mind while we teach are essential when we are responding to the development of students, not just the improvement of their design cognition or moves. Both these responsibilities require a kind of fluid vigilance that traditional studio teaching, demanding enough in its own right, does not.

6. Conclusion

In this chapter we have built on years of shared and individual experiences, and on shared as well as individual scholarship in studio teaching, explored through joint discussion and analysis, to surface and examine the challenges that arise when studio instructors commit to developing design character in their students. We have recognized that the design learning experiences we had when we were students form a framework for the way we teach now, but that we have each been driven to reconsider those experiences in light of our changed and changing understanding of design teaching and learning.

Clearly, we have discussed challenges and raised questions here without presuming, or attempting, to offer resolution or answers. Each of us wrestles with these challenges more or less successfully—sometimes more, and sometimes much less, effectively. Knowlton (2016) has posited that, in the field of instructional design and technology, we need a "specific and meaningful prescription for pedagogy within [our] studios" (p. 352), which he points out is scant in the broader design literature as well. Possibly such prescriptions would make facing our challenges easier. As with prescriptive principles for design itself, however, it is doubtful that prescriptions can address the specific forms that challenges take in the "ultimate particular" of context without significant application of judgment on the part of instructors (Nelson & Stolterman, 2012)—particularly when those instructors are not simply teaching skills and knowledge while grappling with the bothersome social and emotional needs of students, but developing the professional character of those students as a primary goal of studio. As colleagues who have taught, learned, and conducted research together, we understand that the perspective we bring to studio teaching mandates that each of us finds our response to these challenges within our own professional character. It is fair to say that each of us has changed our own perspectives on studio and studio teaching as we have focused more explicitly on design character, and that we have therefore recognized our challenges differently than we did either early in our careers or when we were studio students ourselves. This has happened over time and "in the moment" as have any highly contextual efforts we have made to address them. We invite other studio instructors committed to a similar perspective to reflect continuously on their teaching practices (explicit and implicit), as a primary means of improving studio education—in their own studios and in their disciplines.

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