

## “This Uncertain Space of Teaching”: How Design Studio Instructors Talk About Design Critiques Along with Themselves when Giving Critiques

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*Abstract: In this study we explored how design studio instructors depicted the design critique, themselves as people offering critiques, and what can be learned from their depictions about improving instructors' abilities to offer critiques. To investigate these issues, we conducted a case study of studio instructors from design programs at a university in the United States. Our data consisted of three semi-structured interviews and one class observation each with six instructors from different programs, organized into a thematic structure that revealed insights into participants' self-interpretations. We found that our participants depicted critiques as being a complex challenge, often placing competing demands upon them that they were required to reconcile. They depicted themselves as meeting these challenges through their cultivation of four dispositions that helped them balance tensions they experienced. We report these challenges and dispositions using our participants own words as much as possible. We also discuss implications of these findings for helping studio instructors improve their ability to offer critiques; assistance should take into account the inescapable need instructors will face to balance challenges that arise during critiques and should also help them cultivate affective dispositions that will help them successfully respond to critique situations.*

*Keywords: design critique; design studio; case study research; philosophy of design.*

The purpose of design studio pedagogy is to prepare students to take up the habits and skills of professional design practice. Characterized by structures like assigning students realistic projects and modeling design practice (Cennamo, 2016; Schön, 1985), the studio has drawn attention from researchers not only for its affordances in building skills, but also as a potent means of nurturing dispositions that are tacit and difficult to explicitly teach (Hoadley & Cox, 2008). Studio pedagogy not only has a long tradition in conventional design fields like industrial design (Christiaans & Venselaar, 2005) or architecture (de la Harpe et al., 2009), but it has generated interested on the part of scholars and teachers in emerging design fields like human-computer interaction (Gray, 2014) or instructional design (Boling et al., 2015; Clinton & Rieber, 2010; Gibbons, 2016; McDonald et al., 2019).

Because of the growing interest in many disciplines to adopt studio approaches, it is important that the scholarship of teaching include research to help educators better understand and apply its techniques. In this study we aim to better understand one of the central components of the studio approach: the design critique. Previous research in design education has studied critiques from a number of perspectives. For instance, Belluigi (2016) focused on various roles instructors might play when offering critiques, such as a master overseeing an apprentice, a critical friend, or as a servant giving wise counsel. Alternatively, Cennamo and Brandt (2012) highlighted structural dimensions of the critique, drawing attention to how instructors use it to organize the studio environment to “co-construct” knowledge with their students (p. 839). Still others have emphasized the nature of instructors’ “moment-to-moment interpersonal interactions” (Sonalkar et al., 2016, p. 73), or how critiques model forms of professional design practice (Budge, 2016).

While we recognize the value of these analytic perspectives in understanding the critique, including how to carry out critiques in ways that maximally benefit students, in this article we focus on the experience of being an instructor who offers design critiques. Philosophers such as Dreyfus (1991), Guignon (2012), and Yanchar and Slife (2017) asserted that a rich understanding of the human experience includes understanding peoples' self-interpretations about how they fit into the everyday communities to which they belong. In the context of the studio, this includes recognizing that although instructors are the dominant authority in the setting, the environment itself is not of their own making. They cannot arbitrarily choose what is expected of them as studio participants, but they can choose the stances they will take on the various possibilities that the studio offers. These stands constitute their self-interpretations as studio instructors, or, as Yanchar and Slife called it, "a kind of commentary on the options and possibilities made available through [their culture]" (p. 151). Therefore, studying how studio instructors talk about critiques along with how they view themselves as people who offer critiques can be a valuable source of insight for other instructors seeking to implement critique methodologies, especially in the context of studio environments.

To investigate these issues we interviewed instructors who teach in a variety of studios. The research questions guiding our interviews were: (a) how do studio instructors depict the critique experience? (b) how do instructors depict themselves as critics? and (c) what can be learned from their depictions about improving instructors' abilities to offer critiques?

## Literature Review

### *The Critique in Studio Pedagogy*

Design critiques are an "examination [and evaluation] of an idea, phenomenon, or artifact" (Hokanson, 2012, p. 74). Critiques are one of the definitive aspects of studio pedagogy (Schön, 1985), being a primary method by which instructors evaluate students' work and design ability (Cennamo et al., 2011), communicate design knowledge (Adams et al., 2016), model how designers think and act (Budge, 2016), and support novice designers in developing their professional identity (Percy, 2004). Critiques play such an important role in design that Gray (2013b) identified them as "the centre of design practice, both in the education of a designer and in formal design practice" (p. 110). As Orr and Shreeve (2018) also noted, "when practiced well, the [critique] is a pedagogic tool which helps students to develop a critical and evaluative approach to creative work" (p. 88).

Studio critiques can take many forms. They include informal conversations between students (Gray, 2013a), both formal and informal critiques between an instructor and one or more students (Goldschmidt et al., 2010; Hokanson, 2012), or high-stakes juries that review final projects or other milestones of work (Anthony, 1991). The purpose and form critiques take can also vary between disciplines, or even between instructors within the same discipline (Brandt et al., 2013). Despite these differences, however, critiques have a reputation for typically being "unstructured," and even somewhat "unpredictable" (Huet et al., 2007, p. 261). They unfold "moment to moment" as actors within the studio respond to other participants or to situational saliences they experience (Adams et al., 2016, p. 39).

Critiques are not merely an educational technique, however. Gray (2013a) argued that they help shape the "normative behaviours and beliefs" of studio participants (p. 203). Seemingly simple decisions about when, how, or in what form to offer critiques provide tacit clues to both students and instructors about who is in charge, what kinds of relationships participants should have with each other, who is authorized to talk, and how much compliance is expected (Oak & Lloyd, 2014; Webster, 2006; 2008). This does not mean that critiques are deterministic forces that simply replicate cultural patterns, however. Students actively interpret what they experience in critiques, using what

critics offer to pursue their own goals even if those critics may have intended something different (McDonald & Michela, 2020). But critique patterns and forms do function somewhat like a language that participants deploy to achieve certain effects, whether they are fully aware of those effects or not (Dozois, 2001; Thiessen & Kelly, 2017).

But despite the benefits critiques might hold, one should not assume they are a universal good. Critiques are often public, and because of their visibility can create a climate of “fear, defensiveness, and anxiety” among students, especially with the harsh form they may take in some fields (Scagnetti, 2017, p. S782). Other researchers have questioned whether critiques might normalize unequal and unjust relationships between instructors or students, as well (Belluigi, 2016; Dutton, 1991; Glasser, 2000; Oh et al., 2013). Further, critiques can reflect instructors’ personal preferences of good work, rather than arising out of students’ own interests, the goals of their educational program, or broader disciplinary norms (McDonald & Michela, 2019). Yet instructors may also present critiques as if they were based on objective and unquestionable standards of good design (Anthony, 1991). For more about critiques in general, especially their pedagogical and cultural functions, we refer readers to more detailed studies of studio pedagogy (Hokanson, 2012; Orr & Shreeve, 2018; Sawyer, 2017; Sims & Shreeve, 2012; Williams & Stables, 2017).

All these aspects of critiques – their form, benefits and disadvantages, and assumptions or beliefs held about them – provide a background against which studio instructors see possibilities being made available to them, along with providing tacit standards by which they understand themselves as achieving (or perhaps not achieving) good forms of studio practice (McDonald & Michela, 2019). So given the ubiquity of the critique within the studio it seems almost unescapable that how instructors view critiques along with themselves as critics will be a meaningful influence in how they understand themselves as instructors, and how they carry out the practice of studio pedagogy. Recognizing this suggests that the study of studio critiques should also include study of how instructors interpret these aspects of their experience.

### *Self-Interpretation and Social Practices*

As Brinkmann (2008) explained, human beings are more than only “a collection of objective facts,” such as “height,” or “the colour of [one’s] eyes.” We also take stands on a variety of issues that define “what *matters* to [us], . . . [and] what [we] find *valuable*” (p. 405; emphasis in original). Sometimes the stands we take are the result of deliberate reflection and decision. Often, however, they are the result of our adoption of norms and expectations placed upon us as members of the various communities to which we belong (Guignon, 2012). The totality of these views provides us with a generally coherent identity called “a self-interpretation,” or a way of being “that informs and orders all [our] activities.” Examples include, “*being* a father or *being* a professor” (Dreyfus, 1991, p. 95; emphasis in original). Self-interpretations are not purely subjective ways of viewing the world. They are in large measure a reflection of the social practices in which we engage (Dreyfus, 1991; MacIntyre, 2007). Our views are enabled by the objects we encounter, which in the context of our various communities already have meaning that transcends any private interpretations we may hold (Dreyfus, 2014). For example, if one is a writer one will tend to see a table a place where one can write. Or, if one is a carpenter, one will see tables as places where one can store tools.

Additionally, when we express an identity, it places certain demands upon us about views we should hold or activities in which we should engage, to which other people will expect us to conform (Taylor, 1989). Yanchar and Slife (2017) illustrated this using the example of teaching:

Teachers . . . do not act in accordance with any arbitrary account of what students are and need; rather, if these people are to be teachers, they must cope with the

needs of students who struggle to learn particular concepts, who are cognitively unchallenged by certain subject matter, who fail to follow rules that protect the safety of others, and so on. One does not “construct” those classroom realities into or out of existence in the act of teaching; rather, teachers seek to foster student success in light of . . . obligations that define the practice of teaching. (p. 150)

As Guignon (2012) observed, studying the self-interpretations that emerge from various practices “gives us a distinctive way of understanding what it is to be a ‘person’ in the fullest sense of this word” (p. 97). Research that investigates people’s self-interpretations can help articulate and clarify how we as human beings make meaning out of the various practices to which we feel committed (Stigliano, 1989). It can also provide insights into the nature of those practices themselves, that cannot be uncovered through analytic methodologies alone (Yanchar & Slife, 2017). For these reasons we have scoped our study to focus on the self-interpretations of studio instructors, as understood through how they depict critiques as well as themselves while giving critiques.

## **Method**

To investigate these issues we conducted a case study of studio instructors from design programs at a university in the United States.

### *Participants*

Our participants were studio instructors who teach at a university in the United States. Using Brandt et al.’s (2013) framework that defines a studio environment, we identified programs containing at least one studio course, including some outside of traditional design disciplines, which at this university included areas such as cybersecurity and education. We then purposefully sampled six programs for this study: two with historical roots in the studio (graphic design; industrial design); three in which studio teaching was an emerging interest at least at this university (clothing design; information technology; mechanical engineering), and one where the studio was a new pedagogical approach, using design inquiry to teach a non-design topic (entrepreneurship). One instructor from each program was then selected as an interview participant. All instructors approached about the study chose to participate (see Table 1). Their ages ranged from their late 30s to early 60s. All participants taught undergraduate courses, with student populations ranging from 18 – 24. In addition, Daniel and Nick also advised some graduate students, with students’ ages ranging from mid-20s into their 30s or later. Although this recruiting method resulted in a small pool of interview participants, this was justifiable given our case study methodology. Our focus was to describe the nuance and detail of individuals and their self-interpretations rather than attempting to discover generalities found in large populations of research participants (Flyvbjerg, 2001; Stake, 1995).

**Table 1. Summary of Participants.**

Pseudonym	Sex	Field	Years teaching experience
Ben	Male	Entrepreneurship	22
Daniel	Male	Information technology	11
Jeff	Male	Industrial design	13
Lindsay	Female	Clothing design	27
Nick	Male	Mechanical engineering	12
Sam	Male	Graphic design	4

*Data Gathering*

We conducted three interviews and one class observation with each participant. Interviews ranged from 45 – 60 minutes and were transcribed for analysis. Observations ranged between 25 – 40 minutes and were video recorded to serve as discussion prompts during participants’ second interviews. The first interview focused on instructors’ backgrounds, common class procedures, and perspectives on the critique. The second elicited detail about how they critique by comparing their comments from interview one with activities recorded during our observations (using video segments as prompts). The third interview allowed participants to clarify thoughts from earlier discussions, share additional examples, and respond to some of our findings generated from earlier interviews. Each interview started from prepared prompts; based on their responses participants were asked follow-up questions to elicit detail and examples (see Seidman, 2006). In general, participants were allowed to tell their own stories even if an interview protocol could not be completed (Brinkmann, 2013).

*Data analysis*

Our analysis procedure followed Yanchar and Gong’s (2019) approach for studying participation in practices, that has been used successfully in previous research of a similar nature (e.g., Matthews & Yanchar, 2018; McDonald & Michela, 2019). Our procedure included the following phases, carried out iteratively throughout the analysis process: (a) identify sections of interview transcripts that expressed how participants viewed their critique activities or themselves as critics; (b) develop a preliminary thematic structure based on interview keywords that reflected details of participants’ experiences; (c) refine the initial structure by comparing/contrasting individual keywords, looking for relationships between keywords, merging similar keywords, etc.; (d) carry out each of the previous steps again as further interviews were completed, revising our thematic structure to reflect the additional detail uncovered; and (e) ask each participant to review our initial findings for their corroboration, and further refined our themes based on their input.

*Trustworthiness and Limitations*

We used reflective memos, negative case analysis, and member checking to help establish the trustworthiness of our findings (Lincoln & Guba, 1985). Memos were created at milestones throughout our process and provided an audit trail of our activities. Negative cases were sought for each theme by examining transcripts and keywords to look for plausible counter-interpretations of our data. As relevant, negative cases are reported in our findings. Finally, we conducted two member checks of our interpretations. First, we shared early findings with participants during their third interviews, allowing them to add detail, and in some cases challenge our initial interpretations.

Second, we provided participants with a draft of our findings and asked them to comment on our use of their statements. At most they requested minor clarifications in how we excerpted their comments. All their requests have been incorporated into our findings.

Even with our efforts to build trustworthiness we are aware this study does have limitations. We recognize our findings are based on the comments of certain types of instructors. Both because of our in-depth interviewing method and because of the specific programs taught at this university, not every field with a studio tradition could be included. Also, our participants all seemed to enjoy their work as studio instructors, meaning our findings are not informed by those who might view the studio unfavorably. All participants were from the same university, so we recognize that institutional culture could play a role in how they viewed and depicted their experiences. We also only found one woman to include as a participant in the study. While this reflects the percentage of women teaching in the studio departments at our selected university, we acknowledge that it limits the type of self-interpretations we encountered. Although the study's limitations do not negate the experiences of those we did interview, we acknowledge that additional research should be conducted to address gaps in our findings and provided other, important accounts instructors' experience with the critique. Finally, we recognize the value of including student perspectives in understanding design critiques; although out of scope for this study we point to a companion study we have completed that addressed students' views (McDonald & Michela, 2020).

We also note that we do not view our interpretations of participants' experiences as final. Our aim is to present a version of the studio's pedagogical form of life as seen by those who have had a certain type of experience in this world of practice. While we hope readers find our interpretations insightful, we are also open to their alternative interpretations, as well.

## Findings

Our research interest was to understand how studio instructors depict critiques along with themselves as people offering critiques. Throughout our interviews, participants depicted the need to balance complex, and sometimes competing, demands that critiques placed upon them. In fact, over a third of our interview content related in some fashion to this overarching theme. Our account of what participants reported includes three challenges that illustrate the type of complexity they faced, along with four dispositions they told us helped them cope as they strove towards equilibrium (see Tables 2 and 3).

**Table 2. Summary of Challenges.**

Theme	Complexity involved
Interpersonal dynamics	Critiques are more than only assessing students' work; participants also consider how students might respond to being critiqued, as well as how their own personality might influence the critique experience.
Prior experience	Participants' prior experience can help them offer better critiques, but that experience might also be difficult to communicate explicitly or simply.
Critique standards	Clear guidelines, criteria, or standards can focus participants' critique actions, but might also oversimplify or constrain the types of critiques they offer.

**Table 3. Summary of Dispositions.**

Theme	Definition
Risk tolerance	Attempting to resolve the tension of competing demands by taking chances on activities with uncertain outcomes.
Attentiveness	Observing critique situations with sensitivity, alertness, and awareness.
Carefulness	Pausing, examining critique situations more deeply, reflecting, or otherwise taking measures to act thoughtfully in the face of complexity.
Self-possession	Being relatively untroubled when problems or complexities arise during critiques.

### *Challenges*

For our participants, the experience of being a studio instructor was one in which they engaged in almost constant decision-making about why, when, and how to offer a particular critique to a particular student (or group of students). While these decisions were sometimes straightforward, they were just as likely to create challenges, as they required participants to carefully balance a multiplicity of factors: how could they provide detailed advice without simply doing the work for their students? How could they encourage students to pursue their own interests, while also maintaining disciplinary standards and norms? How could they help students be as successful as possible while also recognizing it was useful to sometimes allow them to fail? To better understand how such issues affected our instructors' experiences, we present three challenges they expressed that illustrate the type of complexities, paradoxes, and problematics they faced, namely, the effects of: (a) interpersonal dynamics; (b) prior experience; and (c) critique standards.

*Interpersonal dynamics.* As participants reflected on their critiques, they described complexities that arose from interpersonal factors in their environment, including the challenge of trying to predict reactions students could have to judgments they made. We particularly noted this as participants described two, competing ways they might offer critiques. The first was to be very direct and candid, but risk hurting students who may have been unaccustomed to such blunt evaluation. The second was to soften critiques to be more emotionally supportive, but risk that students might misunderstand the substance or importance of feedback they were given.

In the abstract it may seem simple to conclude that our participants should have harmonized the extremes—offering direct, clear critiques that were also encouraging and nurturing. But some participants described how such balancing could be difficult because standards such as direct or encouraging were viewed differently by the various students they critiqued. Sam provided an example:

When I was teaching at [another university] I had a number of students—some of them very talented—who were afraid to stand up in front of the class and show off their work, even if no one gave them feedback. I had students that would even leave class when it was their turn to share. It shocked me to realize that in some groups, maybe students have enough social anxiety that I'm not able to just turn over critiques to them in a way that is very easy to do in other groups.

Other participants remarked that even the same student might react differently to being critiqued at different times. Jeff called this “an emotional mismatch,” where some “subjective”

factor, perhaps even external to the class, was “overwhelming” to a student in-the-moment, eliciting an unanticipated reaction to seemingly benign feedback.

Students’ reactions to critiques were not the only interpersonal dynamic our participants reported. Some also noted complexities they could introduce into the environment themselves. We recognized this as participants described occasional incompatibility between the stance they took during a critique, and the actual progress they thought students had made. For example, Nick described, “I want to be positive, but there [may not be] a lot to be positive about. And then I say things that are insincere, which bothers me.” Daniel similarly described, “there are times when I’m too kind. . . . And the risk is that sometimes I might not provide as much feedback [as I should].” These instructors described critiques as more than dispassionately assessing students’ performance against objective criteria; rather, the evaluations they made were also colored by deep-seated desires they had in relation to their students. And because such desires could affect how students responded to critiques, they added an additional challenge to the interpersonal dynamics described so far. In a sense, the effects of all these interpersonal dynamics could lead to a type of triple balancing during critiques, where instructors tried to manage the substance of the critique itself, their projections of possible student reactions, and the influence of their own personalities, all at the same time.

*Prior experience.* Participants also discussed balancing complexity that their prior experience, both as design professionals or as teachers, could add to critiques. This is not to suggest they said prior experience was unhelpful; participants described many benefits that experience brought. One of the most common was that experience helped them more easily recognize problems their students might face. Sam, for example, noted that at this point in his career, “I can draw on more principles [when I critique] than I could when I was a first-year adjunct.” He elaborated, “once you see a hundred student projects . . . it becomes easier to see potential pitfalls and give advice.” Ben similarly described, “lots of history has given me the ability to say . . . ‘I’ve seen this movie before, and I know how it ends.’” And Daniel described a benefit of his experience as a sense of “confidence,” helping him feel at ease when he “provides feedback on the fly,” with little time to prepare.

Accompanying these benefits, however, participants identified at least two ways that prior experience might complicate the critique process. First, their design expertise was tacit, and could be difficult to communicate. As Daniel described:

If somebody asks me . . . “Why?” That’s a tough question. I can often come up with an answer, but not always right off the bat. . . . There is a role for intuition or gut-feels that is usually right, but articulating why you have that gut-feel—you may not even know yourself.

Second, and related to the first, some participants observed that while experience gave them sophisticated views of design on which to base critiques, those views might be too advanced to communicate in a manner that novice students could easily understand. Nick reflected that, “I have a tendency to make [design] complex because I’ve experienced it so many times. . . . I have to try really hard to not let that complexity come in and confuse [students].” Or, as Sam expressed, “[sometimes] I launch into something . . . but then realize that I’m speaking way over [students’] heads because they’re still struggling with some basic principle that I really needed to talk about first.” While experience was clearly an attribute that participants would not give up just to simplify their critiques, they did recognize that it could also require them to balance how to best draw upon that experience, without either miscommunicating something that was difficult to put into words, or otherwise overwhelm students in the process.

*Critique standards.* A third challenge our participants expressed was balancing the benefits and drawbacks of explicit evaluation criteria or other standards. Some departments, like Sam's, provided at least high-level criteria of how students were expected to perform, while in other cases when they discussed standards our participants meant their own personal assessment criteria. But regardless of the source, when talking about standards we noted how instructors would sometimes describe the benefit these assessment tools could provide, such as helping focus their attention on salient elements of work they reviewed, facilitating communication between themselves and students, or helping them manage the critique process for a large number of students in a limited timeframe. Sam summarized some of these possibilities when he said, "we have parameters and strict guidelines in terms of what [students] bring in at what time, so that . . . I'm able to prepare, and think about where they're at." Lindsay also argued for the value of formal criteria, "I list what I'm going to be looking at . . . so [students] know exactly . . . what the standard of excellence is." Overall, participants' use of standards seemed to be for the purpose of bringing at least some predictability into the environment, and to provide both their students and themselves some assurance that judgements they make were grounded in something stronger than their own biases.

At the same time, however, participants expressed that there were disadvantages of relying on explicit guidelines when offering critiques. One was there could be so much variability between students' work that the criteria might not be powerful enough to account for all the legitimate differences that instructors observed. Jeff noted:

[Students'] projects are all unique, and [the skills they develop] are different than the students next to them. . . . So, do I look at the intellectual and meaningful capacity [students gained]? Or the final outcome? Maybe one student who didn't quite finish his project learned a lot more than the one who did, but chose a simple thing.

Ben asserted that unambiguous criteria might even mislead students about the nature of the practices they are learning:

The core theme of this class from day one is we're going to walk into a world that is full of uncertainty, and . . . the only way to do that is through experiments, and introspection, and just going out and doing it. So, I am fairly cautious about saying [in advance], "This is the right thing."

Participants seemed to express that the more they explicitly specified the criteria by which they critiqued, the more they might inadvertently constrain what their students were able to accomplish. The criteria themselves might have narrowed the range of critiques they offered, and encouraged students to only pursue ideas that were simple enough to be communicated through the standards that instructors were able to create. The balancing in which they engaged, then, was using explicit criteria to the extent that those criteria strengthened their critique activities, without relying on them so much that they oversimplified or otherwise limited the critiques they offered.

### *Dispositions*

Participants' interviews also provided insights into how they reacted when confronted with challenges and complexities during critiques. While we noted wide variability in the actual techniques by which participants responded, we also observed some dispositional tendencies seemed to help them better cope with challenges they faced. Four dispositions our participants said helped them

cope with the complexities of critique situations were: (a) risk tolerance; (b) attentiveness; (c) carefulness; and (d) self-possession.

*Risk tolerance.* When reflecting on how to balance complexities that arise during critiques, some participants argued that instructors should be open to risks that can accompany the process. In one sense this included encouraging students to take risks; as Jeff described, “I reward risky behavior, whether it has a positive or negative outcome. . . . In the creative world, making your own rules is so important, so I reward flexibility of thought. . . . That’s what designers do on a daily basis.”

But of additional relevance is how participants described being willing themselves to take chances on activities with uncertain outcomes (trying something risky) when faced with demands and challenges. This might have taken the form of turning a critique over to an observer (like another student), even though they may not have known what kind of critique that observer would offer. It might have meant adjusting a critique procedure at the last minute if a potentially better option emerged. It might also have meant experimenting with the type of feedback one gave, making declarations or offering examples that hopefully improved students’ understanding, but might have also ended up confusing them further. In this regard, Nick observed, “[Critiques are] risky, right? They could totally go in a direction that’s bad. . . . There’s [always] risk that students won’t know how to interpret feedback, and [understand] how they’re supposed to turn it into something positive.”

Some participants asserted that this tolerance for risk was foundational for successfully balancing competing demands, because the nature of the critique environment was such that there may not have been an obvious response to a challenging circumstance. If instructors were not willing to take a risk on actions with uncertain results, they may have found themselves not taking any action at all. In other cases, being open to risk broadened the range of options they could try when working in problematic situations. From this perspective, Ben noted, “we’re looking for a pathway in this uncertain space of teaching. We’re looking to get to the best outcome, and the easy path isn’t it.” In this way, risk tolerance may have been like our participants trying to physically balance themselves on an unstable surface. Balancing is easier when one has more positions to place one’s feet. Similarly, balancing competing demands during critiques may have been easier when participants were open to as many alternative courses for addressing issues as possible.

*Attentiveness.* Being attentive connotes observing with a sense of sensitivity, alertness, and awareness. Participants expressed that being attentive during critiques often consisted of two, complementary ways of observing.

The first was being attentive to details, or, as Lindsay called it, paying attention to “the cues” that students or the broader environment might offer about a helpful way to approach a critique. This type of attentiveness was important because even a minor detail could contain insights about how to successfully respond to a challenging circumstance. For example, Jeff recounted how when he found himself wanting to push a student to work harder, or otherwise encourage them to better live up to their potential, he sometimes relied on his knowledge of their “funny quirks” to help him judge how to best deliver that message. Usually these only give him small “insights,” as he called them, yet these might have been what made the difference for him to “align” the form of a critique with his underlying intent, and ensure that he was not “read falsely” by a student who was in a potentially vulnerable, emotional state.

Other participants described attentiveness as paying attention to the entirety of a situation, focusing less on particular details in favor of considering, and responding to, circumstances as a whole. Nick called this addressing the “substance,” and noted that it helped him focus on meaningful issues instead of becoming distracted by “details that don’t matter.” He elaborated:

I'm constantly trying to find the substance [of a situation]. . . . I'm only going to be able to say one or two things that are really going to matter to these students, and so am I going to waste that on [something tangential]? . . . No, I'm going to try to focus on the most systemic, substantive [problem I can].

As our participants were attentive to both the whole and the parts of complex situations, they found themselves experiencing a sense of clear-sightedness that helped them understand how to better balance competing demands placed upon them. Nick described this as “getting a sense” of what critique is most helpful to offer. We interpreted this as meaning that he did not always see a definitive factor in a situation that clearly told him what to do; rather, the cumulative weight of everything he observed (nothing which by itself provided sufficient evidence to justify a course of action) pointed him in a direction, with each complementary manner of being attentive helping correct deficiencies in the other. Attending to the whole gave instructors a foundation in which to ground their overall critique, one that was informed by situational totalities instead of potentially giving too much weight to a relatively trivial, but very noticeable, point. And attending to details helped them remain sensitive to factors that might transform their understanding of a situation, but that were easy to overlook against the background of the environment in its entirety.

*Carefulness.* As participants discussed critique experiences, we noticed that they often referred to moments where they would pause, examine a situation more deeply, reflect, or otherwise take measures to act carefully and thoughtfully in the face of complexity. Sometimes this concerned the content of a critique, as when Sam described certain types of evaluative judgments where he thinks both he and his students need outside input:

Sometimes I have to [tell students] that I really don't know what the best answer is. [I tell them] to wait until we can do some user testing; or, to wait until they can actually workshop [their idea] with other students, because there's no way I could make a judgment on it alone.

At other times being careful related to the dynamics that existed with a particular individual. Daniel recounted an example of a student who seemed to regularly get defensive when being critiqued. After speculating on some possible reasons why, Daniel concluded, “what I need to do is have a good discussion [with him] to understand. I don't know what's going on in [his] head, so I'm kind of at a loss as to how I can help.”

In calling our participants careful, we do not mean to suggest that they disregard their intuitive judgements. Even when participants described taking an intuitive stance, they also sometimes noted how at the same time they at least attempted to be careful, as well. Ben seemed to express this when he observed, “I'm [not] scripted in what I ask [during a critique]. . . . But sometimes [I tell students], ‘I need to digest what you're saying right now’ [before responding].” We also do not suggest that being careful meant that participants emotionally disengaged from a critique to examine the situation from a detached, objective perspective. Rather, participants discussed critiques as a type of questioning, or exploration, that should be undertaken with thoughtfulness, but that did not require each step to be formally verified before they could act. In fact, exploring is a metaphor that many of them used, such as when Ben called critiques, “exploring a brand-new topography of uncertainty.”

Participants indicated that being careful helped them balance the complexities that arose during critiques because it helped them resist the pressure they could feel to respond to situations in a hasty or thoughtless manner. Ben noted this when he said that “in the interest of being fast,” instructors can sometimes misdiagnose the real problems students face. Because of this possibility,

he encouraged other studio teachers to pay close attention when something just “doesn’t feel right.” They should “spend time” with the problem, and not feel an obligation to judge quickly, even when the overall class dynamic was fast paced. Being careful during the critique process might be likened to walking through an environment with uncertain footing. Care does not prevent one from making progress, but it does mean that one might only place a little weight down first to make sure the ground is stable before fully committing to the action.

*Self-possession.* None of the dispositions discussed to this point are meant to suggest that balancing challenges during a critique was a problem-free enterprise for our participants. Not every risk paid off. Attentiveness did not always help them find a path forward. And some challenges could not be balanced only through careful reflection. Throughout our discussions, participants routinely expressed how they could have done a better job handling difficult circumstances. Sometimes this was due to a situation being more demanding than they had the skills to address. Sometimes they admitted they simply make mistakes.

When recounting how they respond to challenges, however, participants displayed a sense of composure and self-possession that indicated they were relatively untroubled when problems arose. Even giving a student poor advice did not seem to be a reason to worry. Jeff said, “it’s okay to make mistakes and be honest. . . . The students will recognize that [your advice] didn’t work. And if they recognize that you recognize it, everyone will all get along better.” And Lindsay observed that making a mistake means, “[students] know that I’m human, too. . . . I’m not afraid that they’re going to think I don’t know what I’m doing.”

Not only did participants express confidence that they could recover from even severe mistakes, some of them also asserted that the possibility of error was a reason to offer critiques more often. Nick used the metaphor of “momentum” to describe this, saying that he viewed his class “like a big wheel that’s spinning around, and each review is one little touch of your hand to keep it going.” Frequent critiques helped Nick compensate if an individual experience was less effective, “if you try to hit the wheel and you miss, there’s enough momentum that it continues to go by itself until the next time you review.” Just like a wheel cannot remain in balance if it is moving too slow, Nick expressed that a class could not remain in balance if critiques happened too infrequently. This willingness to engage despite challenges seemed to indicate a sense of self-possession on Nick’s part that was advantageous when balancing complexities in the critique environment. Individual attempts to balance may or may not be successful, but by remaining composed and unperturbed he was prepared to take the next chance when it arose, and apply his best efforts over time towards correcting any mistakes he might have made.

## Discussion

At this point we are prepared to discuss implications of our findings for improving instructors’ abilities to offer critiques. We do this through a strategy of drawing connections between our findings and related theoretical and philosophical literature. Throughout our discussion we focus on: (a) how our participants could not escape their nature as balancers, and what this implies for helping instructors improve critique abilities; (b) the nature of expertise in studio critiques and how that matters when helping instructors improve; and (c) the nature of the dispositions that our participants depicted as helping them cope with challenging situations, and how they relate to improving critiques.

*Helping Instructors Improve as Balancers*

First, we comment on what may seem like a self-evident point, but is one that we suggest is meaningful for helping studio instructors improve: balancing challenges that arose during critiques was an inescapable part of our participants' studio experience. It did not appear to be a sign of their ignorance, nor did it seem to be something they outgrew as they developed greater expertise. In fact, our interviews suggested the opposite. As illustrated by the challenges that could accompany prior experience, there is reason to believe that expertise contributed towards their need to balance, such as when Nick said, "I've experienced [design] so many times. . . . I have to try really hard to not let that complexity come in and confuse [students]."

In stating this we do not claim that our participants explicitly labeled themselves as "balancers." Nevertheless, we do suggest that because of its ubiquitousness in their experience it became part of their identity, and shaped their perspective on what it meant for them to be a studio instructor. As Brinkmann (2008) and Taylor (2004) have emphasized, one's identity is bound up with the social practices in which one is involved. In the context of our study this likely meant that as participants tried to balance challenges that accompanied critiques they began to interpret themselves from the perspective of being a person who balances, even if such understanding was only a tacit assessment of their selfhood. Consequently, many of their actions may be interpreted as attempting to find a way to bring some "stable meaning," or sense of order, to their lives (Dreyfus, 1991, p. 37).

Because of this, we suggest that viewing oneself as a successful balancer during critiques could be seen as important aspect of what constitutes one's personal sense of excellence as a studio instructor (cf. McDonald & Michela, 2019). According to Brinkmann (2008), when people decide what actions are appropriate for the circumstances they face, their self-interpretation play a part in the choices they make. Therefore, our participants' (and likely other instructors') self-interpretation as instructors-who-balance played a part in choices they made about how to cope with challenges that arose during critiques. This was likely the case even if they were not explicitly aware that this was the type of person they were. The strength of their interpretive framework, built in part on the foundation of their critique activities, influenced the evaluative criteria by which they made decisions (Taylor, 1989). The four dispositions involved in how our participants depicted coping with challenges seems to support this view. As they described these attributes, participants' comments tended to show that they cared about being successful balancers in challenging circumstances, even though they did not use such terminology explicitly, for instance when Ben described his work as "looking for a pathway in this uncertain space of teaching."

This implies that strategies for how to help instructors become better critics should explicitly consider their likely identities as balancers. Not being aware of how central this is to the instructor experience could inadvertently lead one towards techniques that interfere with instructors' ability to respond fluidly and freely to the dynamic circumstances they actually face, such as critique methodologies that are too rigid or too simplistic to be useful in situations characterized by variability and change. Attempts to help could actually interfere with instructors' performance, much like trying to teach someone to physically balance on an uncertain surface without considering the shifting movements of their bodies or the shape of the ground beneath them. Conversely, assistance that does not prescribe, but rather attempts to give instructors "a heightened awareness . . . of what is already implicit in [their] way of life" (Dunne, 1997, p. 160) could help them adjust to changing circumstances more nimbly than might be possible through their trial-and-error efforts. Such assistance might be like Aristotle's (2011) leveling device made out of lead, that "changes in relation to the shape of the stone [beneath it] and does not stay the same" (p. 112). Practically speaking, this

might mean that critique strategies be intentionally designed to flex or be adjusted depending on the context in which they are used.

### *How the Nature of Critique Expertise Affects Instructors' Improvements*

We also comment on another seemingly self-evident point: the challenges our participants faced during critiques were, at least in part, the result of attempts to respond to specific work generated by students, rather than trying to present principles of design in a general manner detached from any particular situation. Recognizing this points us towards a better understanding of the nature of critique expertise, that could lead to more flexible approaches for improving instructors' critique skills.

As Dreyfus (2017) explained, the expertise required to respond to unique situations in an appropriate way is not a matter of being more skilled than others at understanding and applying a system of rules. Instead, an expert response is the result of the actor “stay[ing] open and involved and draw[ing] on his or her past experience” when taking action (p. 35). Only after the response is made does one conclude that it was appropriate for the circumstances, not because of how well some established procedure was executed but because of the results the expert was able to achieve (or, in our study, able to help their students achieve).

There must be some difference between the novice and expert response, however, even if it is not based on skillful application of rules. Dreyfus (2017) argued that this difference depends on aspects of the expert's character that allow them to discern possible responses out of the material of their prior experience, as well as the determination to act on an option even if it runs counter to cultural norms. However, this usually does not happen in an analytic sense of explicitly calculating the pros and cons in an array of options. It is more a matter of discrimination—seeing what others do not see—and even creating new possibilities of response that were not viewed as options before an expert's engagement with a situation (see Dreyfus, 2017, p. 35).

In this context we return to the dispositions that undergirded our participants' approach to critiques. While we do not categorically claim our participants achieved the level of expertise described by Dreyfus (2017), we do propose that attributes such as risk tolerance, attentiveness, carefulness, and self-possession are the type of characteristics one develops along the path to becoming an expert (acceptance of risk, in fact, being an attribute specifically identified by Dreyfus when he described the concept). We also note how consistent Dreyfus's views are with the conclusions of other scholars who have studied what design educators do during critiques, such as Adams et al. (2016), Cennamo and Brandt (2012), and Schön (1985, 1987).

We additionally suggest, then, that efforts to help instructors improve their ability to offer critiques should focus on developing such attributes, possibly before but at least alongside explicit strategies for carrying out a critique. As Dreyfus (2017) observed, expertise is not cultivated by explicating “what *general* thing to do,” such as might be provided by a critique technique or procedure, but rather by modeling ways of being that demonstrate “*how* to respond in an especially appropriate way” (pp. 35-36; emphasis in original). Such support (perhaps provided by highlighting the work of excellent critics) could provide instructors with examples that help them “to be more alert regarding the nature of [their] own task” (Dunne, 1997, p. 160). This type of support could also help instructors remain flexible in their critique activities. For instance, a specific technique can be modeled as one of many possibilities rather than as a preferred solution, opening space for other appropriate actions to emerge. Or, techniques could be better contextualized, showing how they might be helpful in some circumstances but become counter-productive in others. Concrete examples of what this type of modeling could consist of would also be a productive area for future

research to explore. Further research is recommended to explore these types of strategies, or other types of flexible approaches to critique situations.

### *The Nature of Instructor Dispositions and Improving Critiques*

Finally, we comment on the nature of the dispositions that helped our participants cope with challenges that arose during critiques. To do this, we discuss what may seem like an inconsistency between the dispositions our participants expressed, especially attentiveness and carefulness, and Dreyfus's (2014) analysis that expertise often involves the "spontaneous response" of a skilled performer (p. 191).

Our attempt to understand these differences takes two parts. First, Dreyfus (2014) does not claim that experts never engage in explicit calculation or deliberation. In fact, he explicitly recognizes expert deliberation of two types. One form actually does involve calculative analysis, such as a detached evaluation of a set of options. Yet while this might help experts understand some of the possibilities available to them, it also draws them into a different way of being than that which allows them to discern a truly situationally specific response (see p. 119). But the other form of deliberation Dreyfus described was of a type where the expert "stays involved" with his or her circumstances (p. 118), much like the carpenter who meticulously sets wood for a joint, taking time to make sure the pieces are properly aligned. This is a qualitatively different type of deliberation than where someone computes possible reactions based on comparing potential responses against a formula or technique. And, we propose, it is a better way of understanding what we mean by the dispositions that our participants expressed, especially attentiveness and carefulness. We illustrate this through Nick's description of his attentiveness as not being a technical response, but as "getting a sense" of a situation so as to better discern what type of critiques he should offer.

Second, we note that while much of our commentary has drawn on Dreyfus, he in turn drew on other thinkers, such as Aristotle's (2011) conception of *phronesis*, when developing his structure of expertise. And we can turn directly to *phronesis* itself as an additional means of gaining insight into the dispositions expressed by our participants. While *phronesis* was originally developed by Aristotle as a virtue that enabled one to perform situationally appropriate actions with wisdom, later thinkers such as Gadamer (2006) interpreted it as a form of "dialogue" (p. 21). In Gadamer's view, wise actors have both the ability and the attributes needed to metaphorically carry out a conversation with a situation in which they are placed. And through such conversation they can determine useful responses, moment-by-moment as the situation unfolds (cf. Schön, 1987). It is through such phronetic conversation that they judge how to best adjust "the general law" of action to the nuances and specificity of the "individual case" (p. 21), much like how through conversation with a human partner one can discern the other's level of understanding on a topic and formulate a response designed to increase their comprehension. We cite, for instance, what Sam discovered through his deep engagement with an individual group of students: that he could not critique those with severe social anxiety the same way he might critique others. We also note how often Lindsay sought to understand "the cues" found in her studio environment, that assisted her in better offering helpful comments to her students.

Using this imagery, we suggest how one can express attributes such as attentiveness and carefulness, yet still offer a spontaneous response to a critique challenge. Spontaneity in a conversation does not necessarily imply impulsiveness, but rather openness. We can take time to spontaneously reflect during a conversation, not because we have planned to but because our conversation partner may have called for our reflection through a statement he or she made. Similarly, critique situations can call for phronetic reflection on the part of our participants, such as when Ben said he sometimes must "digest" what a student has presented before reacting. According

to the views we have presented here, this was not because Ben necessarily planned to reflect, but because the situation presented itself as one where reflection was both the spontaneous and the wise response.

Certainly, this type of engagement does require skill. It might even require instructors to develop skills for negotiating within themselves what dispositions they might need to prioritize in a given situation (for instance, when greater carefulness may be needed so as to avoid their risk aversion from turning into recklessness). Yet as we have emphasized throughout our discussion the skills required cannot rest on a foundation of technical rationality by which a critique can be reliably conducted, any more than a conversation can be skillfully carried out by using a flow-chart or decision tree to determine one's next response. Just like the attitudes one brings to a human conversation spontaneously impacts its tone as well as the overall direction it takes, the dispositions possessed by our participants in this study, which appear to correlate with phronetic conduct (cf. Dunne, 1997), set the tone and direction of the critiques they offered at least as much as any procedural skills they had the ability to execute.

## Conclusion

In this paper we have inquired into how studio instructors depicted the critique experience along with themselves as critics, and what can be learned from their depictions about improving instructors' abilities to offer critiques. We have suggested that a crucial aspect of our participants' teaching was the ability to balance complex, and sometimes competing, challenges that critiques placed upon them, namely the effects of: (a) interpersonal dynamics; (b) prior experience; and (c) critique standards. We also found four dispositions that seem to help instructors cope with these challenges: (a) risk tolerance; (b) attentiveness; (c) carefulness; and (d) self-possession.

We believe these findings are insightful not only for interpreting the experience of other studio instructors, but also provide insights for how to help them improve their critique abilities. Yet the practical implications we suggest are not meant to develop better procedures for carrying out critiques. As we emphasized throughout our discussion, stripping studio instructors' experience of its richness and contradiction may allow us to develop critique approaches that are simple to communicate, but that also may be too simple to be useful in the unpredictable contexts that instructors face. In that sense, our study is more about "restoring life to its original difficulty" (Caputo, 1987, p. 1), than in reducing experience down to a straightforward procedure.

Even so, as we suggested, there are still implications we can derive from our findings to help instructors cope with challenging and demanding situations. But it does require us to focus our efforts on a different means of improvement—encouraging instructors to develop phronetic dispositions at least as much as recommending any method or technique. We hope the direction we have pointed towards in this paper illustrates how this can take place, and encourage scholars and practitioners to engage in the efforts required to help bring it about.

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