Critiquing the Role of the Learner and Context in Aesthetic Learning Experiences

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Abstract I critique the role of learners and context to more fully explore the latent conceptions and performance of aesthetic learning experiences in instructional design and technology. This critique is intended to allow for a fuller interrogation of how individual learners apprehend designed learning experiences, heightening the role of the instructional designer in envisioning such experiences. Using a 1-year ethnography of a graduate human–computer interaction program to document the felt student experience, I highlight the importance of understanding how learners construct their own experiences during the learning process through the roles they take on and the informal pedagogical experiences they create. I identify additional areas of research that are needed to expand our notions of designing for experience, informing both theory construction and practice.

Introduction

Instructional design and technology (IDT) is still coming to terms with how to approach the concept of aesthetics in learning, most frequently observed in an active or performative sense as an *aesthetic learning experience*. While many of the core concepts relating to learner experience go back to Dewey (1938/2005), only in the past decade (e.g., Miller, 2011; Parrish, 2005, 2008, 2009) has IDT begun to engage in this discussion in a meaningful way. As we view the machinery of a traditional learning intervention through the language of experience, this shift foregrounds issues such as: the paradigmatic relationship between learning objectives and temporal moments in an experience; how the instructional designer (ID) captures the often ineffable moments of an experience in a formal design process; and perhaps most importantly for this discussion, how to shift the focus to the learner in this conceptual space—a learner who lives inside, around, and through a designed experience.

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B. Hokanson et al. (eds.), *The Design of Learning Experience*,
Educational Communications and Technology: Issues and Innovations,
DOI 10.1007/978-3-319-16504-2_14

Defining Aesthetic Experience

In situating this discussion, it is important to understand how aesthetic experience has been historically defined, and what implications these definitions have on our creation of aesthetic *learning* experiences. Parrish (2005) defines "an aesthetic experience [as] one that is particularly heightened and especially meaningful," while McCarthy and Wright (2004) note the phenomenological qualities that aesthetic experience often foregrounds: "life as lived, not just as theorized" (p. 49). Shusterman (2000) expands on this, noting that an aesthetic experience is heightened in an important way, a "more consummate and zestful integration of all the elements of ordinary experience" (p. 15).

While other fields such as human–computer interaction (HCI) have capitalized on the notion of experience as a way of framing the design of interactive affordance as well as the actual interactions of users (e.g., Löwgren, 2006; McCarthy & Wright, 2004), IDT is still at a more formative stage, with attempts being made to locate how notions of experience relate to elements of the traditional instructional paradigm. For example, according to Parrish (2009), the primary qualities of an aesthetic learning experience should include: a plot-like character, where there is a felt beginning, middle, and end; learners are the protagonists of their own experience; the activity of learning is central, rather than the subject matter; and the context is somehow meaningfully used to create immersion on the part of the learner. While there are several ways of accomplishing these goals in a practical sense (McCarthy & Wright, 2004; Parrish, 2009, 2014), this is still an active area of investigation in the research community. Meanwhile, in IDT there has been little focus on the development of generative tools and methods that might support designers in the creation of such experiences, or guidance on how to teach future instructional designers to craft experiences in this way (Boling & Gray, this book).

When we apply this understanding of aesthetic experience to learning, we can assume that most curricula are felt as an experience (aesthetic or not) by the learner, even though many learning materials are designed in a less holistic, more modular way (e.g., Wiley, 2002). In the IDT tradition, many learning interventions are defined more by their proscribed learning outcomes than by the kinds of feelings and emotions the designer wishes the learner to feel while experiencing the learning. But the designed intervention is not the "thing" that is experienced by the learner—the learner's experience of or response to the designed intervention cannot be deterministically defined beforehand (Boling, Eccarius, Smith, & Frick, 2004; Boling, Gray, Modell, Altuwaijri, & Jung, 2014; Jin & Boling, 2010), and is temporally and contextually situated in a social milieu (Lave & Wenger, 1991), interpretively constructed, and bound to the individual learner's lived experience (Parrish, 2014; see also Bardzell, 2011 in interaction design).

We are left with a "wicked" problem: We can design an experience, but we cannot guarantee that learners will experience it in the way that we assume the experience to exist or as we define or specify it. Learners bring with them an active and

unknowable lived experience through which they interpret the designed experience (Kress, 2004, 2010; McCarthy & Wright, 2004), and the learner is shaped by complex interactions between the designed experience and other external forces that may or may not be known or able to be isolated by the designer. But yet, we want the learner to have an experience that is heightened (i.e., aesthetic) and meaningful, which results in some tangible learning gains. While we have traditionally dealt with these sorts of issues through lenses such as cognitive load theory, a purely cognitivist perspective does not allow the designer of learning experiences to demarcate which elements might universally cause extraneous load, or which load might actually cause learner engagement, regardless of its perceived extraneousness to a non-situated instructional designer. To address this design paradox further, I will address the evolving IDT understanding of the learning situation, along with components of that situation that are deeply affected by this shift in focus, including the context of learning, and the ontological and phenomenological status of the learner.

Issues in Confronting Experience

For decades, IDT has tended to treat the learner as a faceless blob in the enactment of a seemingly singular "ID Process"; the learner as a disembodied ratiocinator (Bannon & Bødker, 1991) that is recognized primarily for how it thinks, often with little accounting for the distinct agency, identity, and lived experience of the *individual* learner. While constructivist approaches to learning have combatted this stereotype to some degree, positioning the learner closer to the center of the learning experience, guidance on how to design for learners that have a unique lived experience and forge their own path in constructing knowledge is still nascent (Ertmer & Simons, 2006; Tobias & Duffy, 2009). In accounting for these learners in the design process, the tools we currently have to represent these unique learners bear more resemblance to the learner as ratiocinator, with a learner profile that results from formal learner analysis often taking on the characteristics of a marketing profile and with the implementer of the design often forced to fit a learning intervention onto a diverse group of learners which were not envisioned or adequately designed for by the original designer.

If, as IDs, we recognize and heighten the unique identity and agency of the individual learner in our design process, this shifts our understanding of how an aesthetic learning experience is brokered between the designer, designed experience, and learner. Learners actively engage with learning experiences, interacting in ways that are unique to them (Parrish, 2009); and this engagement results in an outcome that cannot be deterministically projected onto the learner by the designer. This reveals weaknesses in the traditional IDT understanding of the design process in two substantial ways, neither of which are adequately explored in existing ID theory and methods: our tendency to make context generic or underspecified, and our perception of the learner as a normalized "ideal type."

Genericization of Context

A genericization of the learning context assumes uniform or otherwise predictable roles for teachers/instructors/trainers and learners, often still implicitly relying on the transmitter–receiver model from message design (Bishop, 2014; Fleming & Levie, 1993). This genericization can have a number of practical implications for learners, including a lack of attention to the context within which they experience the design, such as its physical and material qualities, lack of relevance to the learner's lived experience or future practice, or a felt mismatch between the designed learning and the constraints of the actual learning situation.

In the 1990s, Tessmer led a discussion in IDT regarding the role of context in learning and the affordances of the learning environment (e.g., Tessmer, 1990; Tessmer & Richey, 1997), but this has not had a profound effect on the theories that undergird our field. In fact, this assumption of generic context is reified in our models and theories (e.g., "approaches to instruction" in Reigeluth & Carr-Chellman, 2009), even as some learning theories drawn from other fields (e.g., problem-based learning, case-based learning, studio education; see Gurung, Chick, & Haynie, 2009 for a fuller exploration of signature pedagogies) have pushed us to move beyond these assumptions in some ways—casting constructivism as a learning paradigm or problem-based learning as an instructional strategy. As a field, we have not relocated these contextualized assumptions as a critique for how the "design process" is commonly viewed.

This lack of critique at the lowest levels of ID theory has resulted in a slow transition to newer instructional methods—both in their design and implementation. When addressing the design process in this experiential mode, it is more difficult to show a rigorous, quasi-deterministic link between learning objective and content, as compared with other models like programmed instruction, which have come into vogue again through deconstructive methods like the 4C/ID model (van Merriënboer & Kirschner, 2007). This lack of attention to the contextual variables of a specific learner interacting with a design in a particular context has oriented our attention in the wrong direction; rather than relying on an understanding of context which does not and cannot represent reality, we must create and enact new theory, tools, and methods for instructional designers to use that more adequately reflect the situational properties of instruction. This should include borrowing from other fields where context has been central for decades or centuries; an understanding of physical and spatial relations from architecture and interior design; a richer sense of embedded affordances present in physical and digital media from human–computer interaction (HCI); knowledge about how individuals relate to graphic elements and holistic branding from graphic design and marketing; temporal and spatial renderings of experience, including journey moments through multiple forms of media and physical spaces from service design.

Normalization of the Learner

Within this genericized context, our perception of the learner as an entity or actor is also affected. Our poor definitions of context often result in a *normalization of the learner*: a collapsing of unique characteristics into a convenient, generalized description that tells us little about the unique challenges of specific learners. The learner profile, as it is currently implemented in much of ID theory and practice, is more similar to a stripped down version of Weber's "ideal type" (1904/1949) than a "round" character as found in literature. This latter assumption of "roundness" is inscribed into tools created for empathetic design (e.g., Cooper, 2004; Young, 2008) and is commonly implemented through the use of personas in marketing and user experience design (Chang, Lim, & Stolterman, 2008).

Current learner analysis in ID practice results in profiles that read more like market segments, including components such as basic demographic characteristics, reading level, and past experience with the instructional content (e.g., Morrison, Ross, Kalman, & Kemp, 2010). These components are not without value, but they are also not sufficient to develop empathy with the learner and develop a rich understanding of how the learner may perceive and interpret the designed experience. Designers are left to make substantive assumptions about the learner—in an often-caricatured form—which frequently shapes the ways instructional materials are designed, as the designer inscribes their ethical standpoint into the designs they create (Nelson & Stolterman, 2012; Verbeek, 2006). In addition, a lack of knowledge about the learner results in a designer ineffectually position-taking and advocating for the learner, and thus unintentionally designing for themselves or another "projected" learner. Parrish (2014) describes this difficulty well:

> …the individual qualities of learners, and how these will contribute to an experience, are always only half-known and not something that can be directly impacted. We can go through the process of learner analysis, but that is often a relatively superficial process, yielding only general characteristics. To understand learners in a way that helps design experiences, one needs empathy. (pp. 264–265)

Assumptions about the identity of the learner affect design outcomes in a deep way, including the way designers think about and employ instructional strategies, how content is sequenced, what existing skills/knowledge the learner might have, and what type of vocabulary is appropriate. As designers, we actively inscribe our understanding of the reality of the user in the designs we create (Bardzell, 2011; Nelson & Stolterman, 2012), so it logically follows that we should seek to understand learners in a deep way, as autonomous actors with goals that transcend the moment of instruction (e.g., Suchman, 1987). As with the discussion of context above, there is a wealth of knowledge from other fields that may be of value as we extend our knowledge of the learner, some of which is already in use in professional ID practice, but has not been explored in substantial depth in the IDT research literature. Additional sources of inspiration and validation of learners can be drawn

from contextual inquiry and mental models in Human–Computer Interaction (HCI), data- and narrative-driven persona development in marketing and user experience (UX), and deep study of learners through ethnographies in the sociological tradition.

A Case: Students Learning to Design Experiences

To illustrate how this complex interaction of learners within a designed experience occurs, I will briefly summarize findings from a 1-year ethnography in which I sought to document the student experience of a graduate program in HCI, taught with a design focus. A fuller reporting of this ethnography can be found in Gray (2014). In contemporary approaches to HCI, a significant focus is placed on designing for UX (e.g., Bødker, 2006; Harrison, Tatar, & Sengers, 2007), often coinciding with a focus on design (Fallman, 2003), with many students taking jobs as UX designers once they graduate. So, somewhat ironically, these learners are embedded in a learning experience that is teaching them how to design for experience once they graduate.

I collected data over two academic semesters, with the goal of cataloguing and understanding how students related to the formal pedagogical experience, creating their own informal learning experiences in the studio and other physical and virtual spaces that surrounded the curriculum. Primary data sources included: participant observation in a nonclassroom design studio space and observation of classroom instruction, with contact hours totaling over 450 h; 53 critical interviews; over 3,000 photos; and 276 h of audio recordings that supported the primary field note record.

Students in this cohort-based 2-year residential Master's program came from a wide range of academic disciplines, and almost none had a design background before entering the program. They experienced an intensive curriculum with theory and practice components and a substantial emphasis on team projects. Students quickly learned how to communicate with other students in the process of doing design work, conducting team meetings in the studio, engaging in critique of their fellow students' work, and engaging with the practice community through recruitment events and conferences. Students moved seamlessly between the virtual space students had created on Facebook (Gray & Howard, 2013, 2014) and the physical studio space, and the affordances of each space shaped the kinds of interactions that could take place. The studio space was not used for classroom instruction, and as such, was only nominally under the control of the faculty, created with the intention of supporting collaboration and design activity. Meanwhile, the Facebook groups that supported offline and virtual layering of experience in the physical spaces of the curriculum were entirely student-created and led. Students frequently used the virtual space to organize classroom interactions (e.g., data collection for team projects, shared notes), but just as frequently documented informal social activities on the Facebook groups, bringing those exterior to the studio at any given time into the activities of the space (e.g., whiteboard sketches, jokes/memes).

Students communicated in complex ways that were consistent with their future profession, and they actively sought to shape the curriculum and interact with other students and alumni as they looked toward their future practice of design.

Students Experiencing the Formal Pedagogy

The formal curriculum included a range of courses relating to HCI, including foundational readings, an introductory design experience, design methods, prototyping, design theory, and a rapid design course. Some faculty members created studio or studio-like approaches in their formal classroom environment, with a wide range of experiences, relationships to subject matter being taught, and relation to professional design activity. This may indicate that faculty members envisioned different "ideal types" of learners—with some taking on a more academically focused design role than professionally focused role. For instance, while one introductory design course included primarily lecture and demonstration activities, supplemented by summative student presentations of projects, there was a strong focus on building professional communication and presentation skills (Fig. 1). In another course taken by second-year students, the focus was on building physical prototypes with cardboard, foam, Arduino microcontrollers, and perceptual computing cameras. In this case, there was a diminished focus on presenting final work in exchange for the experience of the studio as a place to engage in design activity, with little lecture or formal instruction (Fig. 2). While the implicit goal of both courses

Fig. 1 A student team presenting their project in an introductory design course

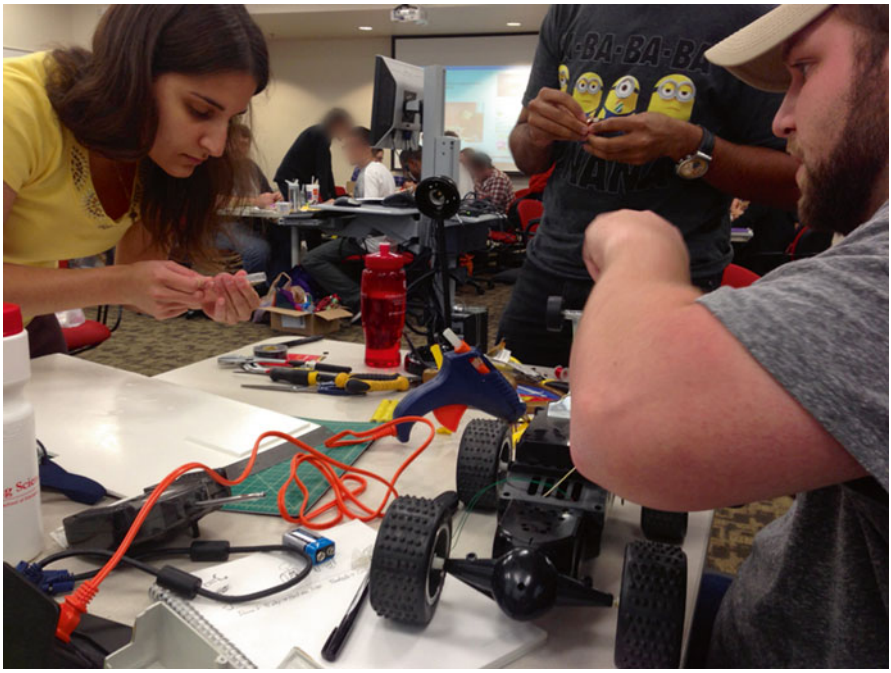

Fig. 2 Students participating in a repair-centric assignment during studio time in class

was presumably the same—to produce capable, professional UX designers—the approach to instructing these future designers, mediated by various instructional strategies and activities, was remarkably different. Both courses assumed that students would engage in design activity, but one faculty member placed designing, making, and building at the center of the educational experience, while the other faculty member foregrounded soft skills of communication, collaboration, and problem framing. In this way, the projected Weber-ian "ideal types" of learners were largely the same, but with dramatically different impacts on the formal educational experience of the learners due to the varied nature of the faculty members' beliefs about design, and how those beliefs informed instructional strategies and content explicitly taught to students.

Students Crafting Their Own Studio Experience

Outside of the classroom, students interacted with each other in relation to their formal educational experiences in the main nonclassroom studio space (Fig. 3). While these interactions were shaped by classroom activities to the extent that design activities were centered around the topics and materials of assignments, the

Fig. 3 Students interacting in the studio, engaging in individual and group work

social and collaborative nature of the space was created and negotiated by the cohorts themselves, with little outside pressure or guidance from the faculty. Students created and sustained certain forms of interactions that were informed more by their experiences in internships and professional design settings, with the guidance of program alumni, a set of interactions that I have termed *proto-professional*—those activities in which students take on the role of professional designer, even as they interact in an academic setting. One of the most dominant examples of this proto-professional behavior was a semi-regular, student-led event colloquially known as "Mad Skillz Club," a collaborative workshop structure where students shared knowledge and critique in relation to their design work. Each semester, students led the formation and scheduling of these meetings, often defining topics for discussion or engagement that mirrored the concepts being taught in the formal curriculum (e.g., critique, usability testing). In Fig. 4, one student is informally sharing and demoing perceptual computing tools such as the LeapMotion, Kinect, and other hardware. This interaction between first- and second-year students was typical, and following the first semester of the program, first-year students began to lead these sessions as well, with the informal mantra (as posted on a whiteboard advertisement) that "everyone has something to teach, and everyone has something to learn."

Faculty played a minor role in nonclassroom studio interactions, with only one or two of the five faculty regularly communicating with students in this context. On most occasions, these interactions between students and faculty were affirming, relating to project work, or more informal social interaction. But on occasion, these interactions revealed dissonance between the student-generated community—generally characterized by students engaging in proto-professional behaviors such as Mad Skillz Club—and the academically oriented formal curriculum. In one particularly dramatic event, two groups of students hung draft versions of posters they were planning to present at a professional conference a month later. The student teams intended these posters to represent a first attempt, so they could get more rounds of *formative* critique from their peers—an attitude that represented a proto-professional

Fig. 4 A second-year student demonstrating the affordances and use of perceptual computing devices to a group of first- and second-year students in the program

desire for formative critique. However, one of the faculty members that regularly interacted in the studio space saw the posters, and assumed that they were intended to be final; after making this assumption, he rendered a *summative* critique, leaving an excoriating note on the whiteboard shaming the students and requesting that they consult graphic design professionals. He left this note alongside the posters, which were already starting to fill with Post-It notes from students in the program (Fig. 5), who had correctly interpreted their presence as a request for formative critique. In this example of dissonance in the studio, we can see how the roles that some of the faculty imagined for students were not necessarily the ones they took on, and in this case, students took on a more rigorous, professionally oriented design perspective than did the faculty member.

Context and Learner Roles

In the brief program experience related above, the formal curriculum was not the only indicator of what kind of experiences the students would have and/or create for themselves, although it did contribute in scaffolding the overall program logistics

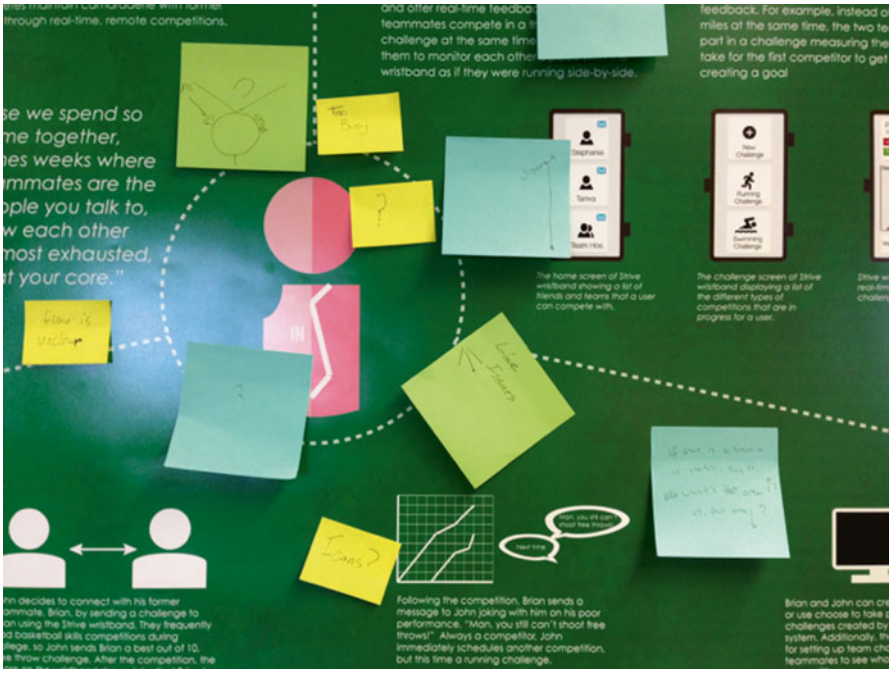

Fig. 5 Formative critique on a student team poster left by other students in the design studio

(e.g., coursework, cohorts, and physical spaces) that made student interactions possible. While the genres of activities students created for themselves in a proto-professional role were related to the kinds of design work promoted in the classroom experience, their specific structure and content were largely self-determined by the students, sometimes in reaction to the formal pedagogy rather than in support of it. In this sense, students not only took on the roles expected of them in the classroom—of student and collaborative team member—but also created roles that the formal pedagogy did not dictate, underscoring their collective goal of joining the professional design community.

Similarly, the contexts available to the students and faculty shaped the kinds of experiences and interactions that could take place—but these contexts did not *determine* the nature of the experience. In Figs. 1 and 2, we can see two very different studio experiences, one centered around summative presentation and critique, and the other focused on design activity itself. Each faculty member interpreted the surface features of the classroom studio (Brandt et al., 2013; Shaffer, 2003) in different ways in relation to their learning goals and pedagogical content, crafting a different set of activities with which students could construct their own experiences. As the students moved out into the nonclassroom studio, the surface features again informed the kinds of interactions that could take place, but in this case, it was the socialization of students, their trust for one another, and their shared experiences in

the program that allowed them to negotiate appropriate forms of interaction—a socially mediated view that is closer to the demands of professional design practice.

Through this case, I especially want to note the necessary tension between the student-generated experience—both on the part of individual learners, and through the student cohorts at large—and the formal pedagogy. Neither entity was in control of the resulting experience in its totality, but both groups contributed to the pedagogy that was experienced by faculty and students alike. An instructional designer would not be able to fully account for the roles learners would take on in advance, and the flexibility of the spaces used for classroom instruction and the nonclassroom studio may not have indicated the potential range of uses that actually occurred in real time. Thus, the experienced pedagogy that played out in this year of data collection can be seen as situationally and temporally bound: the experiences that resulted were due to student and faculty interactions with the spaces and curriculum that shaped the program, and are not, in their entirety, replicable experiences.

Implications for Research and Practice

There are numerous implications for this heightened view of a learner within a specific learning context, many of which are illuminated by the case of the HCI graduate program above. For researchers in IDT, this indicates a need for substantial, engaged research about the people who will be using or engaging in the learning experiences we design. Our theories and conceptions of design must shift to reflect the realities of how designs are experienced by learners in an active, constructive way, rather than a mere recitation or performance of a design specification.

There have been some limited attempts outside of IDT to address these issues. Critical and dialogic pedagogy seeks to equalize classroom power roles, with some scholars proposing a new set of instructional strategies to minimize power and empower student participation (Freire, 1970/2000; Giroux, 2011; Lefstein & Snell, 2014). From a different perspective, experiential learning foregrounds the importance of students learning through first-hand experiences (Kolb, 1984). Both of these existing lines of inquiry allow us to critique the current state of IDT theory and practice in various ways, but both tend to view formal instruction—regardless of the instructional strategies at play—to be the locus of the learning experience. The case I provided above demonstrates how a more critical view of informal learning in a graduate context can reveal the discursive and dialectic roles and practices that can be taken on by students and faculty alike; an equalizing of power which results in contributions to the learning experience across the informal and formal pedagogy from all participants.

Beyond the insights this perspective might provide to instructional practices, there is also a need for the role of the instructional designer to be heightened—seeing the design process as one that is enacted by a designer as human instrument (Boling, 2008). This includes a more substantive realization of the ethical and

normative impact of what is designed in terms of how it provokes emotive, not only cognitive, responses from the learner (Nelson & Stolterman, 2012; Norman, 2004; Parrish, 2014; Verbeek, 2006). A situated view of aesthetic experience—both temporally and spatially—informs us that the designed experience is much bigger than a set of learning objectives and desired outcomes, and in order to adequately design these experiences, designers need more vocabulary, tools, and methods to support their work. HCI as a community has made a substantial effort to create design tools and methods that support this kind of inquiry, but without the explicit learning focus that distinguishes IDT. So while there exists already a multiplicity of tools and methods spanning user and context analysis (e.g., Hanington & Martin, 2012), the IDT community must take up this effort themselves (e.g., Boling & Gray, this book), and not be content to merely use and adapt the tools and theories developed for other less situated purposes.

We must find ways to monitor and evaluate the ways learning experiences are designed and experienced, with the goal of improving our understanding of how to create and mold these experiences over time. As seen in the case I have described, learners are active constructors of their own experience, and do this even when we fail to give them space in the formal curriculum. This active construction process must be recognized both in our research and theorization of instructional design activity, and systemically engaged in ID practice in a way that heightens the role of the learner and learning context in an experiential mode.

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