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AN EMBODIED APPROACH TO LEARNING AT THE BEGINNING DESIGN LEVEL

Abstract

The challenge of teaching design in an information age is that learning is often confused with collecting a grab-bag of images that are available at the click of a mouse. The speed of acquiring visual information, and producing visual artifact, cannot be compared to immersive design. This speed and the simultaneity of the immediately available abundance of visual elements has been held accountable for a certain imbalance in our design objectives and designed environments, causing a resurgence of sensory and embodied concerns in design thought.

This paper catapults from these concerns in the context of design pedagogy. It becomes vital to address these concerns at the beginning design level, when students first develop conceptual as well as technical skills.

The paper is founded upon the design implications of certain perceptual paradigms. We place particular emphasis on embodied experience and embodied cognition to illustrate the formative role of the environment on the cognitive processes and emphasize holistic perception and learning. We then discuss the potential of application of embodied theories in our pedagogical initiatives and suggest a three-step learning strategy based on those theories.

We propose a three-part teaching and learning process that will embody education within the existing format. Once interwoven in the existing fabric of architectural education, students' embodied learning will be enriched, allowing a balance of collateral and collective experience: immersion-connection-reflection-communication. Immersion involves dwelling in the places of study. Connection allows students to establish a link between architectural concepts and their autobiographical experiences of dwelling in a place. And the last step consists of students' reflection on learning, expressing that learning via a variety of media and communication techniques best suited to articulation of their learning.

Keywords: embodiment, senses, pedagogy, learning, experience.

This paper addresses the issue of disembodiment in beginning design education. In this paper we argue that students' personal experience is of as much importance as the training that formal education can impart. The embodiment of formal concepts through personal experience yields true education.

This paper also addresses the issue of disconnect in beginning design education. Each subject and discipline taught within the curriculum is approached independently, making it difficult for students to establish a connection between various fields of knowledge. Again, the separation of the self from the profession can be held accountable for this disconnect. Students do not mediate between the specialized knowledge that they acquire through their own personal experience, thus building chasms rather than bridges between the various pillars of knowledge.

Understanding many design concepts inherent to architecture can be achieved only through direct experience. Notions like comfort, privacy, and sense of home cannot be taught or understood by cognitive thinking alone. Reflection on experiences allows a holistic approach to learning via a continuous process of giving meaning to and categorizing new experiences and information. Learning is always a product of previous experience, context of culture and role of others in the present. To assist students in learning we must assist them in finding connections between experiences and information yet to be learned. It is especially important at the beginning design level because incoming students have nothing to refer to but their previous experience. Such a learning-to-learn approach can help students become lifelong learners who can go beyond memorizing isolated pieces of information and mastering limited skills to establishing fluidity between domains and engaging in reflective practice. This paper suggests that hands-on exercises, continuous interdisciplinary projects, and self-reflecting practices will allow students to gain insights and link past, present, and future experiences into embodied design.

Knowledge in the technological culture

"The existentially most important knowledge of our everyday life—even in the technological culture of today—does not reside in detached theories and explanations, but it is a silent knowledge beyond the threshold of consciousness that is fused with the daily environment and behavioral situations" (Pallasmaa, 2007:771). We learn for every moment of our life, even if we don't realize it. Eve-

rything new we learn, we interpret in terms of our prior experiences, beliefs and values, and current goals. “In architecture, a realization of this personal dimension of knowledge is paramount” (Perez-Gomez, 1987:58). In beginning design, the realization of this personal dimension is vital. Personal grounding allows the embodied making of an architect, and it is this personal grounding that must become the basis of the education of an architect.

Professional education emphasizing technical knowledge and skills prepares students poorly for practice (Yinger, 1987). We only touch the surface when we teach students discrete disciplines of history, technology, and techniques. It is not through usage of recognizable and marketable architectural forms, nor refining of a couple of techniques learned in school, nor fitting the current dogma or detached experimentation with new materials and technology that one becomes a good architect. It is through deep understanding of a human being in a dwelled place, and personal reinterpretation of this understanding through an architect’s own techniques, that one becomes a good architect. Beginning design education lays the foundation for such understanding and development of the skills to be manifested in material form.

Currently the curriculum in architectural education is derived primarily from the Bauhaus tradition. Over the years, the architectural curriculum has endured a myriad of transformations leading to more amorphous pedagogical initiatives and continuous addition of new courses to meet the demands of practice. Obviously, the onus of education cannot be on the curriculum; it must be on the approach to learning. Unfortunately, the emphasis on performance and evaluation targeted toward sustained accreditation and improved ranking among schools, based on performance and evaluation, is a deterrent to nurturing this emphasis. As a result, rather than inculcate mediation between modalities, architectural education defines boundaries between domains and students struggle to juggle among them.

Landrum (2004) stated: the overwhelming problem in education today is students’ neglect in recognizing their own relationship to the very reality in which they dwell. Space cannot be taught, it can only be learned through one’s sensory and emotional engagement with the world. Often, beginning design exercises are meant to teach students to abstract. We give students exercises—a set of rules guiding them through generalization and reduction of information content to a concept, an image somehow distilled from a real world to a pure form. Students learn the steps of getting from point A to

point B, but do they really learn to extrapolate and abstract learned experience into future spaces? Instead, maybe we need to allow students to investigate their own process of embodiment and develop their own process of transforming those embodied experience into new architecture, whether through abstraction or reflection.

Embodied realities

When professional education discarded the apprenticeship model, knowledge through analytical thinking superseded learning through practice. The emphasis shifted from learning by doing and contemplation of activity and consequence to “pure” thought, learning theory and techniques, and abstract analyses of lectures by knowledgeable researchers (Hoberman and Mailick, 1994). Perhaps there is a lesson to be learned from the fact that vernacular buildings are commonly considered both humane and sustainable (Sorvig, 2005); they are built from embodied experience. In an age of information overload and technological sophistication, by the time the student graduates his (her) tools are already obsolete, and therefore the internship model in practice is firmly in place, where the student must re-learn in context, and unlearn what is no longer relevant to the industry. Students in design schools cannot win the race with technology. Education must equip them for challenges in a swiftly changing world by relying on their inner resources. As we become more connected to a shrinking world, connections with our own embodied core become weaker, transient, and heavily mediated. In this context, beginning design education must accept the challenge to triangulate the *what*, *why*, and *how* of architecture with the critical *who* of each of our own embodied realities.

Information vs. knowledge

“This field (of architectural practice) becomes increasingly oriented to the pursuit of symbolic capital and disconnected from the life-world of everyday experience... The values of the field also permeate architectural education with an increasing specialization in the production of symbolic capital” (Dovey, 2005:293). We are all familiar with Internet’s tidy summaries, infinite links to information and images (Beckett, 2007). It is so comfortable to open your laptop and peruse through endless imagery on any subject readily available through Google: it is irresistible!

Since students now have much more and easier access to information, it seems like they have more knowledge. However, it is a mis-

take to classify knowledge, “the normative frame for our *praxis*” (Perez-Gomez, 1987:57) as identical to information. Today, people have overwhelming abundance of information but very little knowledge. Internet allows seductive ease of information access, profession puts pressure of informed design, but it is not the collection of facts and figures that allows one to create good architecture. “Architecture is not the embodiment of information; it is the embodiment of meaning... Knowledge must be understood as a possession of embodied consciousness qualitatively different from superfluous information” (Perez-Gomez, 1987:57). Even now, in the digital age of fictitious realities, we live in our bodies and create meaning through our bodies.

Starr-Glass (2002) has a great analogy of the territory (the actual experience) and the map (representation of this experience) that is figurative but cannot be substituted for the actual territory. We should explore the territory, not the map: in beginning design, we need to rely on embodied experience, not the mediated experience. Many curricula of beginning design now introduce computers very early. However, with the emphasis on abstraction and media we can only map the map, not the territory. “Thinking and feeling our selves as they *make sense* is more than merely the sensation of knowledge in making. It is a sensing of our selves in the making, and is that not the root of what we call learning?” (Ellsworth, 2004:1)

Experiential learning

There is a significant body of literature today that makes the case that embodied relationships are crucial and inevitable (Csordas, 1994; Downing, 2000; Israel, 2003; Johnson, 1989, 1990; O’Loughlin, 1998; Pallasmaa, 2005, 2007; Perez-Gomez, 1987). Unfortunately, this argument is still under-represented, and beginning design education remains too abstract, too theoretical, and too mediated. “The prevailing educational principles fail to grasp the indeterminate, dynamic and fundamentally sensuous and holistic essence of human existence, thought, and action” (Pallasmaa, 2007: 769). Experiential learning of real world problems is what allows for embodied learning.

Webster (2001) provides a good summary of influential theories and variations of experiential learning adopted by different professional programs. Learning by doing, problem based learning, and project-based learning exemplify the superiority of experiential learning

over traditional models. Even though architectural education was the first among other professions to use project-based learning as the core of education, the role of reflection in the learning process and role of subjective embodied experience in understanding spatial concept have been overlooked.

Experiential learning is the type of learning that naturally occurs when the learner is an active participant in a real life event. By default, this experience is embodied. Even though Dewey (1933), the father of experiential learning, did not believe that experience without reflection produces real learning, we believe that embodiment that occurs during the experience is the only way to achieve understanding of the place and meaning of the event. Reflection takes this understanding to a different level; helps this understanding to float up onto the level of consciousness. Kolb's cycle of experiential learning (1984) summarizes what seems to be obvious: understanding cannot be imposed or transmitted by direct action. The knowledge must be constructed by the learner through the transformation of personal experience. Towards this objective of constructed knowledge based upon an *embodied mediation of information*, we propose a three-part teaching and learning process that can address beginning design education within the current format. Once interwoven with the existing fabric of architectural education, students' embodied intuitions will be enriched, allowing a balance of collateral and collective experience: (1) immersion, (2) connection, and (3) reflection and communication.

Immersion

Students must dwell in the places they study. To make design decisions they must immerse themselves completely within a built environment or draw from the environment in which they are immersed. Such immersion would mean elimination of abstract exercises, reducing studio time and increasing travel, field trips, or sessions in natural/inhabited surroundings. Learning for architects has traditionally involved exploring actual places, and learning by actual interaction with clients, patrons and contractors, designing and construction. Such learning is real, rich, and personal and can be drawn upon in more abstract exercises such as the creation of a 2-dimensional representation of buildings, or drawing. When directly experienced, perception and actual experience of a space "contracts and expands in relationship to a person's emotions and state of

mind, sense of self, social relations, and cultural predispositions” (Low, 2003:12).

Immersion must not be just at a physical, or merely cognitive level, but at an emotional level as well, because human experience is grounded in emotion. “It is the embodied self which expresses feelings and disposition, and which thus *communicatively* inhabits its places in the world. The body as action and communication can only be so through emotion. Major educational policy and curriculum discourses still tend to assume that there exists an independent reason or cognition which operates independently to effect the acquisition of knowledge within the minds of learners” (O’Loughlin, 1998:280). In authors’ views, beginning design education in architecture should be pre-K style: learning about one’s immediate environment through sensory and emotional experiences, playing with building blocks, and reading books that describe those experiences in a simple way but in architectural terms.

Immersion should also include exercises similar to Israel’s (2003) “design psychology toolbox,” facilitating exploration of a person’s intimate connection with a place. Such exercises help to uncover the experiences of past places, to draw upon those remembered places and their qualities, and to translate their elements into the new design. Using such a toolbox can teach students how to transform embodied experiences into a conscious design tool. Once students are introduced to the process of immersing in the environment, and in their own consciousness, they can create their own process of translating those experiences into designs ..

Connection

Bourdieu (2000) said that space frames social practice, McCann (2005) called space “the empty container of experience,” and Dovey (2005:291) wrote “architecture is the practice of ‘framing’ the habitat of everyday life, both literally and discursively.” Students must be exposed to architecture in the context of real life—not as an object of art, but as *dwelled* places—to facilitate the connection of architectural experiences to their autobiographical experiences. Immersive experience must be connected to the creative endeavor that is at the foundation of architectural education.

In order to forge these connections, and understand them, students must be encouraged to take electives in the social sciences such that they are better able to connect the human experience of dwelling with the making of place. Hands-on, design-build exercises that

help students connect autobiographical experience to the learned formal and technical concepts must build upon the theoretical foundation studied in classrooms.

Beginning design should also offer connection-hubs, a range of spaces and cultural settings for students to connect with people of different cultures, different fields of education, and different points of view. A connection hub, by definition, must be outside of the studio environment. It must take students out of their studio-world into a world where ideas are exchanged and experiences are lived. Through experience of other cultures, both geographic and academic, students gain great insight into their own culture and *self* within it. Universities allow students the opportunity to amass a repository of embodied experiences to draw from when designing an individual, unique “pattern in language” in their minds (Alexander et al, 1977; Yinger, 1987). This pattern in language constantly changes, together with experience, while allowing for recognition of the framework and providing basis for communication. “It is, rather, a structure of an imaginative *process* that we bring to experience by way of anticipating recognizable forms, but which is then re-formed by its imaginative instantiation in a particular situation” (Johnson, 1989:370). In other words, once we have a library of embodied (in this case, architectural) forms, imagination can transform those forms into new imaginary or real places.

Relying on a student’s embodied experience is crucial while teaching the architectural language. The terminology students learn in academia contains a significant amount of “jargon shaped by assumptions, prior conceptualizations, and academic traditions” (Starr-Glass, 2002:228). In order to translate this jargon into a usable language there is a need to develop shared meaning (Starr-Glass, 2002), and the only way to do that is through embodied experiences we share. When we teach new concepts and terms in beginning design, references to students’ autobiographical experiences are much more productive than academic readings of Kahn and Le Corbusier alone.

Reflection and Communication

Most educators in the field of architecture are familiar with Schön’s (1983) “reflection in action.” Stump and McDonnell (2001) introduced the notion of “reflection on action.” Reflection *in* action refers to reflecting attempts in order to solve the problem at hand. Conversely, reflection *on* action draws on the experience of an ac-

tion as a whole. Reflection on action can be called experiential if we define such learning in Kolb's terms (2001) as "the process whereby knowledge is created through the transformation of experience." Experiential learning is more powerful than traditional modes of learning as it is continuous; it involves intrinsic motivation, emotional connection, bodily participation, and interaction with others. Reflection *on* action should become a regular practice in the beginning design studio.

Students must take time to reflect on their experiences, both in school and outside its confines. In this fast-paced world, without the time and effort to reflect, both immersion and connection can become fleeting phases with no lasting effect on the design process or on student learning. It is important that pressure from presentation be lifted periodically in order to emphasize the depth of a particular thought and the ability to communicate it meaningfully. Experimentation with media and communication techniques (oral, written, and visual) must be encouraged to allow students to express their subjective experiences better.

"Experience is not an orderly sequence of events but the narrated reflection of being" (Starr-Glass, 2002:228). When we relate to prior experience, the experience is explored, reinterpreted, and redefined, depending on the current situation. It is the process of "investigating multiple and ever-changing metaphors" (Starr-Glass, 2002:229). Research on reflection in design typically addresses studying the design process (Dewey, 1933; Pereira, 1999; Shön, 1983; Webster, 2001;). In this paper, authors argue that as part of understanding one's own design process, it is critical to understand the sources of design imagery. Design decisions are often reached intuitively, even though the process of formulating the various solutions may be argued rationally. Israel (2003) and Downing (2000) investigated how the embodied experiences of designers are used as imagery during the design process. Tracing back those embodied experiences and reflecting on their transformation into new places is necessary.

There are various ways to introduce reflection to the beginning design curriculum; video and blogging are probably most enjoyable. Video recording of students working and interacting with others can be revealing and powerful (GTC, 2007), as it allows students to see themselves with someone else's eyes. Almost everyone now has a blog, a Facebook or Myspace. Many of our students are very disciplined about writing in their Facebook every day, describing what

happened, reflecting on the day's events, communicating with peers and strangers. Beginning design education can build on the popularity of such online communication utilities to help students reflect on their experiences as related to architecture. Experience, embodiment, and reflection can allow students to create their own architectural language—a framework specific to a unique person for how they understand the world and translate this understanding into the creation of truly meaningful places—architecture with an embodied soul.

Devoy (2005:283) posed a critical question for our times: “We experience architecture primarily in states of distraction; we live in it first and look at it second. Our contemplative gaze falls upon ‘architecture’ within a spatial world we have already silently imbibed and embodied. How do we reconcile this unreflexive embodiment with the production of architectural imagery; everyday life with architecture as discourse?”. Our answer is: through immersion, connection, reflection and communication.

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