

LOOKING BACK: THE FOUNDATIONS OF DESIGN EDUCATION

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1. FOUNDATIONAL CONSIDERATIONS

In many ways, any speculation about the future of design education is dependent upon an understanding of the foundational structure that constitutes our fundamental beliefs and assumptions about that education. Just as we teach our students that their design efforts must be grounded within a particular context, we, as educators, must likewise have something to respond to in making any claims about the future. Like our students, we must begin with a fundamental question; we must ask ourselves what we know about design education. We must come to some understanding concerning its origins—origins both historical and philosophical—before we can make any meaningful speculations concerning its future. In considering the future of design education, in looking forward, there is also some implication that the present educational environment is not ideal; that there is some room for criticism of our contemporary beliefs and practices related to education in design.

As a result of the meteoric advances of technology and the concurrent, and ever-present, changes in the design industry there is certainly a need to speculate on the future of design education; however, it is most meaningful to first explore some of the foundational issues that have led to our need for speculation. In order to broaden the available scope of these issues, it is productive to think of “design education” as representing the fields of industrial and product design, architecture, interior design, landscape architecture, and many, if not most, of the engineering fields—essentially, educational realms that cohere to professional practices that tend to solve difficult problems associated with humankind’s physical interactions with the world. To understand what we might learn from the foundational origins of education in design—its historical and philosophical origins—it is necessary to explore some of the criticisms leveled against contemporary practices in design education. In most cases, these criticisms manifest themselves as criticisms of methodology—as criticisms of particular teaching methods—however, there is a more fundamental criticism that exists at the core of our educational beliefs. This foundational criticism is one concerning the underlying identity of our professional practices and how questions of cultural relevance might influence our educational beliefs and practices. For design educators, beyond our concerns regarding technology and methodology, there is a crisis of identity. This crisis of identity is a result of our lack of familiarity with the origins of both design and design education—with the foundational identities that we rely upon to structure our beliefs and practices.

1.1. AN IDENTITY CRISIS

For the past several generations, design education has been in a state of crisis; a crisis consisting of a highly self-conscious questioning of identity; a question of who we are, where we came from, and how those fundamental identifiers might impact pedagogical practices and curricular content. This crisis concerning the identity of design as a practice, and its educational implications, has been most readily evidenced in the critical writings of both social and design theorists. As early as the eighteenth century, political philosopher Adam Smith, in *An Inquiry into the Nature and Causes of the Wealth of Nations*, suggested that the complex issues of a division of labor inherent in the mechanization and industrialization of production provided the context in which design became detached from manufacture—in which design, in a contemporary sense, became a profession for which a particular sort of education became necessary (Smith 1904). Smith described the emerging role of designers when he suggested that there are those “who are called philosophers, or men of speculation, whose trade is not to do any thing, but to observe everything, and who, upon account, are often capable of combining together the

powers of the most distinct and dissimilar objects” (Lees-Maffei and Houze 2010, 32). For Smith, these people of speculation included those who acted to conceive of the physical artifacts that are used by humans in their daily activities—what we might think of as the first professional designers.

With the ever-increasing frequency of industrial manufacturing in the early nineteenth century, an era that many consider as more fully necessitating the contemporary disciplines of design, William Morris, John Ruskin, A.W.N. Pugin and others decried the newly prevalent system of machine production as antithetical to the knowledge realms associated with the education of those practicing traditional methods of manufacture. Collectively, these thinkers expressed a fear that non-critical acts of machine production—and the assignment of productive innovation to people of speculation—would supplant the traditional knowledge generated by individual makers practicing their particular trades. These very early criticisms—criticisms of identity that arose with the birth of the design professions—can be characterized as concerns about a fundamental shift in knowledge generation, acquisition, and transmission that occurred as design emerged as a distinct discipline during the transition from individual acts of making to industrial forms of manufacture. Since the industrial marginalization of individual making, and the concurrent emergence of design as a profession, critical questions in and about knowledge, and the pedagogical practices and curricular content supporting that knowledge, have maintained a constant presence among those theorists struggling to make sense of what design is and how design shapes and expresses our human relationships with and in the world.

1.2. A CULTURAL CRISIS

In 1965, architectural theorist Christian Norberg-Schulz suggested that the shortcomings of architecture—the shortcomings of the designed environment—“necessarily implies that the training of architects is unsatisfactory. The schools have shown themselves incapable of bringing forth architects able to solve the actual tasks” (Norberg-Schulz 1965, 219). In this case, those tasks were the tasks of integration and analysis; tasks that might provide the experience necessary for designers to fulfil their professional and cultural roles. Norberg-Schulz—further elaborating the phenomenological critiques of Hegel and Heidegger—was primarily concerned with the dissociation of human experience from the artifacts of our daily lives. Designer and social historian Bernard Rudofsky, also in 1965, called into question the canonical nature of the design professions—particularly architecture—when he presented the exhibition *Architecture without Architects* at the Museum of Modern Art in New York City. Rudofsky’s work, this exhibition and a subsequent text, visually expressed a dissatisfaction with the persistence of design history and practice in marginalizing the vernacular—in dismissing those design artifacts that did not emerge from imperialist and consumerist cultures but, rather, from the daily necessities of lived experience.

Building upon the idea of lived experience as essential to design artifacts and design practices, urban planner and learning theorist Donald Schön—in theorizing ‘designlike’ practices—argued that design practices consist of problem solving in an experiential world (Schön 1983). One central intention of the designer is to solve a problem that exists. In some ways, ‘designlike’ problem solving can be thought of as a pragmatic approach that generally distinguishes design artifacts from other artifacts. For example, artifacts that we call “art” may act to depict the existing (perceived) world, to define possible worlds, and/or to represent beliefs and customs regarding the social world, but they are generally not thought of as artifacts that are created in order to solve physical problems. Further, Schön distinguishes design “know-how”—the ability to solve problems—as the central form of knowledge transmitted by design education. Schön, as an educational theorist, prioritizes this ‘know-how’ knowledge over the generally accepted two-culture model of knowledge in the sciences and knowledge in the humanities. This binary model of educational practice was first theorized in Varro’s seven liberal arts and, more recently, by C.P. Snow during his 1959 Rede Lecture, *The Two Cultures* (Snow, 2012). Snow’s lecture, and its subsequent dissemination, firmly established a two-culture binary as the predominant descriptor of contemporary educational practice—it unequivocally defined what counted as knowledge and, as such, what counts as educational practice.

Norberg-Schulz, Rudofsky, and Schön appear to be critical of the design professions—and the education of designers—in that they are concerned that design has moved away from the necessity of human experience to an arbitrary and self-referential reliance upon itself in order to address matters of taste

rather than matters of use. This shift from utility to the arbitrariness of taste implies a reliance upon a repressive system of canonical standards and educational practices that do not appear to address an essential role of design—a role associated with practices in physical and useful innovation. Further, the accepted binary model of knowledge—knowledge in the sciences and knowledge in the humanities—has positioned education in design as existing outside of contemporary educational practice.

As recently as 2010, Monica Ponce de Leon—currently Dean of Princeton’s School of Architecture—echoed these social and educational critiques when she noted that design education “has become associated with elite societies and, as a result, has remained outside of recent dramatic cultural shifts” (Ponce de Leon 2010). In remaining outside culture, Ponce de Leon’s critique suggests that design has failed to recognize changes in the beliefs and attitudes that define cultural practices and, more importantly, has failed to engage in the construction and maintenance of culture in relation to those changes. This failure to engage in cultural concerns has been most evident in how design education has been ineffective in addressing issues of equality and diversity—of race, class, and gender—that have had a profound effect upon how, for whom, and by whom design is practiced (Cline 2017). Ponce de Leon further suggests that design education has established and maintained a model of pedagogy that “has already shown its limits, its weaknesses, and its flaws” (Ponce de Leon 2010). At about the same time, design theorist and educator Don Norman suggested that design curricula were still reliant upon outdated methods and, resultantly, that “design education is mired in the past” (Norman 2011).

Both Ponce de Leon and Norman appear to reinforce the implication that design education has been limited by its unquestioned reliance upon Euro-centric traditions of knowing, as codified by canonical works and knowledge, and that the resultant pedagogical practices have become stagnant. Pedagogical practices in design, and the curricular content that influences those practices, have become removed from, and are not responsive to, the contemporary cultures in which they exist. An uncritical reliance upon a canonized past has not allowed for design to fulfill its role in relation to the complex problems associated with contemporary lived experience or in relation to cultural production. It appears that these stagnant pedagogical practices and a neglect of curricular content have been antithetical to educational concepts that could allow for a critical assessment of both physical needs and the roll of design in the construction and maintenance of culture.

While this broader crisis of the academic identity of design education may not be able to be solved in any reliable manner, its impact upon pedagogy and curriculum can be addressed within the contention that it is the lack of a historical and philosophical framework for education that is the underlying cause of concern for social and design theorists when they are critical of design education. Theorizing a historical and philosophical framework for education in design can provide an understanding of the central beliefs and assumptions that ground and influence both curricular content and pedagogical practices in design; beliefs and assumptions that exist at the root of contemporary criticisms of design education. Such a theory provides access to what educational philosopher Jane Roland Martin calls the deep structure of educational thought; “the culture’s very general and fundamental habits of thought” that influence how we engage in educational practices; in this case, how we think about and teach design (Martin 2011, 27). It is these fundamental habits of thought, our deeply held and often unquestioned beliefs and assumptions, that act as a foundation for the deep structure of educational thought in design. These beliefs and assumptions exist at the core of criticisms suggesting that design education is failing to succeed in educating future designers and in contributing to the creation and maintenance of culture.

In order to reconceptualize contemporary criticisms of education in design as problems of educational thought rather than problems of design methodology, it is necessary to theorize a history and philosophy of education in design. The theorization of such a history and philosophy allows for an interrogation of the beliefs and assumptions that exist at the “rock bottom” of how we talk about and teach design; beliefs and assumptions that form the deep structure of our thoughts concerning design and the education of designers. In an effort to respond to these criticisms, it is important to look back, to explore the origins of what we think of as design so that we might be better positioned to speculate about the future of our educational practices.

2. THE CONTEMPORARY ORIGINS OF DESIGN

In attempting to locate the origins of design as a profession, Smith's theorization concerning the division of labor associated with the rise of industrialization in the eighteenth century gives us our first insight regarding the professional practices that we associate with the field of design. Design, in this context, is that field whose practitioners conceive of physical artifacts that are used by humans to mediate our physical relationships with and in the world. Smith's theory suggests that the educational practices we associate with design are relative newcomers to the academy—that before there was a need for professions associated with speculation regarding the creation of physical artifacts there were no academic disciplines associated with educating designers. As it turns out, the terms “design” and “designer” as we use them today are of relatively contemporary origin. Art theorist Howard Risatti suggests that these terms came to their current definitions in the early Industrial Revolution; they arose because of a need to differentiate between those objects that were handmade and those that resulted from machine production. “Before industrial production took over, the idea of ‘design’ as it had come out of Italy [*il designo*] was not understood as an endeavor abstracted from the practical realization of objects by separate individuals working with their hands but as a feature integral to their making” (Risatti 2007, 155 – 156). Prior to industrialization there was no distinction between maker and designer. In its contemporary understanding, the term designer implies someone who conceives of—but does not produce—objects, spaces, and/or places—design artifacts—that act to solve complex and pragmatic problems; physical artifacts that mediate and improve our human relationships with and in the world. In other words, a designer conceives of things that make our lives easier, or more efficient, or less stressful, or any other number ways of saying that products of design allow for an improved quality of life.



Figure 1. Student engaged in the fabrication of a design artifact; in this case a cutting board for stroke survivors suffering from hemiparesis.

In trying to find a more fitting way to envision those professional and educational practices that describe the acts associated with conceiving of design artifacts, it is necessary to speculate about where the contemporary professions that we associate with design might have come from; to think about and imaginatively construct a past that might assist us in understanding what it means when we call ourselves designers. Because design is a relatively contemporary term, one whose history originates in the beginnings of the Industrial Revolution, we must turn to other, more long-lived, practices that might be thought of as the historical precursors of design practices. These precursors of design might be thought of as those practices that extend the scope and history of design such that there is a deep structure to explore; a structure that parallels the longstanding need of humans to create physical artifacts that assist

in mediating our relationships with and in the world. Even though design is a contemporary term, it seems reasonable to think that there have always been people, since the beginning of human history, who conceived of and produced artifacts in an attempt to make life better—people who worked to renegotiate and redefine our physical encounters with the world.

3. THE HISTORICAL ORIGINS OF DESIGN

In trying to identify early designers—those people who worked to create artifacts that shaped and expressed our physical encounters with the world—the term craftsman, as defined by sociologist and cultural critic Richard Sennett, begins to allow for a more robust conception of a possible history of the practice of design. According to Sennett, a craftsperson is one who works with physical materials to modify them into useful objects that are a result of problem finding and problem solving related to needs that arise out of our lived experiences in the world. In this sense, traditional objects of craft can be thought of as bowls, blankets, stools—physical artifacts that contain, that cover, and that support (Sennett 2008). These artifacts that contain, cover, and support are representations of the design artifacts necessary to solve the problems that humans have encountered in responding to their physical environments. For Sennett, the craftsperson is a maker that is involved in the practices of craftsmanship; in those practices that produce physical artifacts intended to mediate our physical relationships with and in the world. In thinking about craftsmanship as a practice of engaging specific forms of skill and knowledge in order to solve problems, there is a suggestion that the knowledge engaged by craftspeople occupies the spaces that exist between the problem, the physical material engaged in solving the problem, and the experiences, skills, and beliefs employed by the craftsperson in addressing the problem at hand. As the craftsperson that Sennett is describing is a pre-industrial maker, it can be assumed that this craftsperson was engaged in practices that might now be called design.

In order to solve the complex and practical problems of physical engagements with and in the world, we can understand craftsmanship as a series of related practices that allow for a broader conception of knowledge than that available in binary systems—binary systems implied in Snow's two culture knowledge binary that privileged knowledge in the sciences and knowledge in the humanities while simultaneously marginalizing all other ways of knowing. Craftsmanship can be thought of as both a practice and a way of generating forms of knowledge that challenge our binary assumptions. Further, in thinking about craftsmanship as an expression of making that depends upon both the ability to solve problems and the skills necessary to create those physical artifacts that assist in mediating our physical relationships with the world, we can say that the practices of craftsmanship just are the practices of technological innovation and that the physical artifacts created by craftspeople just are technological artifacts. If we accept the premise that craftsmanship just is technological innovation, then perhaps we can understand design practices—in their efforts at improving quality of life—as practices originating in the technological innovation first practiced by craftspeople. It is this idea of design originating in craftsmanship as a practice of technological innovation that has the potential to alleviate the crisis of identity manifesting itself in contemporary criticisms of design education and to allow for conversations about privilege—canonical, gender, class, and race—in regard to the field of design. Further, this understanding of craftsmanship as originating in and embodying the role of technological innovation might provide value in theorizing an educational philosophy of design.

3.1 THE HISTORICAL ORIGINS OF CRAFTSMANSHIP

To begin any exploration into the idea of craftsmanship as an educational philosophy—as a means of teaching design in a way that addresses both the practical requirements of technological innovation (material, physical, and environmental concerns) and cultural issues associated with privilege—it seems appropriate to investigate the conceptual origins of craftsmanship; to engage the deep structure that grounds our beliefs and assumptions in regard to craftsmanship. This investigation is necessary in order to develop an understanding of what a term like craftsmanship implies for a philosophy of education in design and how design, as an educational concept, might find its place in relation to the established binary culture of educational practice. Practices associated with craftsmanship—the making of physical artifacts that are useful to humans in living their daily lives—can be thought of as practices that stand in as the precursors of those practices that we currently associate with design. These practices have produced physical artifacts that can be identified and understood as useful throughout the entirety of the

historical record. We have identified and collected artifacts produced by craftspeople from almost all periods in the archeological record of humankind; useful artifacts that existed prior to recorded history. Museums are filled with artifacts that contain, that cover, and that support; artifacts that have, over time, described and explained human relationships with and in the world. Recorded history is also filled with references to the artifacts that humans have created and used.

Our earliest recorded documents give us a glimpse into how early humans understood craftsmanship and how they explained its origins and necessity. In the Western historical tradition, some of our earliest accounts of craftsmanship are found in Greek mythology. These same myths also contain what might be thought of as the “rock bottom” beliefs and assumptions about the world that are the foundation of Western thought. The mythical stories recorded by the Greek poets begin to flesh out our understanding of what it means to be human; they construct and explore our human relationships with and in the world. Social psychologist Émile Durkheim has noted that myths provide the basis of our means of categorizing the world—of making the world understandable—and, as such, myths can be seen as forming the basis of philosophy and science (Durkheim 1995). Further, social anthropologist Perry Cohen has theorized that “one of the important functions of myth is that it anchors the present in the past” (Cohen 1969). Myths, in this way, act to establish the historical basis of our contemporary beliefs about the world.

Popularizer of classical Western mythology Thomas Bulfinch, in attempting to expose the Greek myths to a broader audience, suggested that the origins of mythology might be thought of as allegorical; “that all the myths of the ancients were allegorical and symbolical, and contained some moral, religious, or philosophical truth or historical fact... there are many myths which have arisen from the desire of man to account for those natural phenomena which he cannot understand” (Bulfinch 1990, 228 – 229). Bulfinch’s suggestion that myths be considered allegorical, coupled with Durkheim’s assertions, allows us to think about them as a pre-rational way of comprehending things that we could not easily explain. Resultantly, an exploration of both the mythological and the historical origins of craftsmanship appears appropriate to any effort to begin a conversation about the role of craftsmanship in pedagogical practices and in the academic identity of education in design. Through an exploration of the Greek myths, one can theorize a more fully coherent association of design with craftsmanship and, further, with the technological innovation that describes practices related to design.

The Greek myths are populated with stories that discuss the origins of practices associated with craftsmanship and the production of physical artifacts. We find these origination stories in the tales of Prometheus, Pandora, Hephaestus, Athena, Arachne, and many others; these origins of craftsmanship parallel the origins of Western cultural practices and Western thought. For the ancient Greeks, the productive acts associated with craftsmanship were understood as necessary to human life; they were the practices that became the skills and labors that defined humanity. These practices—including weaving, masonry, metalsmithing, carpentry, and pottery—each required particular skills; particular *technê* in order to produce useful artifacts. *Technê* is the set of particular skills—the manual competence—employed by a craftsperson in creating physical artifacts. *Technê* represents the “know-how” of a particular practice; i.e., there is a *technê* associated with weaving, a *technê* associated with metalsmithing, and a *technê* associated with carpentry. The Greeks associated these skills—the *technê* of material practices—with the Daimona Tekhne and placed them, like her, within the sphere of the domestic.

Unfortunately, this association with the domestic ensured that *technê* remained subordinate to the privilege given knowledge in *epistêmê*—knowledge represented by universal truths—and its association with the universal character of the gods; an association with those things that cannot be questioned. In associating *technê* with the domestic realm, it was seen as beneath the dignity of culture; antithetical to the pursuits appropriate to the citizen. The subordination of the domestic, of the *technê* associated with the production of physical artifacts, is a form of oppression that prioritizes the value of knowledge. This oppression acts to silence the “know-how” of *technê* and, therefore, undermines educational practices associated with craftsmanship and, by extension, educational practices associated with design. This foundational subordination can be seen as contributing to the contemporary subordination of design knowledge evidenced in an acceptance of the work of Snow—the knowledge of *technê* as fundamental to design practices existing outside, and subordinate to, the two-culture binary and the privileging of

knowledge of *epistêmê* represented in the sciences. This subordination can also be thought of as underlying contemporary criticisms of education in design.

3.2 THE HISTORICAL ORIGINS OF DESIGN EDUCATION

Once *technê* in domestic practices—what we might think of as those practices now associated with design education—was acquired, there is an assumption that those skills were passed down to others; that there was teaching and learning associated with *technê*. There is, however, no substantial exploration of how these skills were passed down; of how, over time, others became skilled in the production of physical artifacts or in the innovations necessary to create new artifacts that could mediate our relationships with and in the world. Even though the Greeks did not provide us with a clear understanding of the curricular structure and practices associated with education in *technê*—what we might think of as the education of craftspeople in the domestic arts—it can be thought of as one of the first, and most important, means of educating. Theorist of vocational education David Coffey (1992, 11) has suggested that “life was primarily sustained by the passing on of manual skills from one generation to the next. Most people were educated ‘on the job’, in particular by experiencing some sort of formal or informal apprenticeship.” This passing on of skills should not be considered a formal education in the sense that we currently understand but, rather, as training that happened through making and doing; as on the job training that taught new learners the skills of their particular practices.

The Roman architect Vitruvius expressed the necessity of this form of education when he suggested that the learning of *technê* was a matter of practice that consisted in “the ceaseless and repeated use of a skill...according to a predetermined design” (Book I, Chapter I, 1). We can think about this “predetermined design” as embodying the educational practices that were provided by a teacher; skill that was acquired either formally or informally in the guidance of the learner’s hand. It is from the formal and informal education that passed down generationally that the practices of craft education—and, by association, design education—arose. As educational practices became more formalized, vocational education—for the most part—replaced the apprenticeship model in regard to the training of craftspeople. This transition was a result of cultural changes brought about by the emergence of formal education in other knowledge fields, the rise of enlightenment thinking that prioritized the objectivity of scientific practices, and the rise of industrialization that required uniformity in the education of craftspeople.

The transition of educational practices related to craftsmanship from one of hands-on training to one divorced from the acts of production has had a significant impact on design education. Our educational practices have come to represent the speculation theorized by Adams understanding of industrialization rather than the *technê* represented by the Greek craftsman. It is from this tradition, one arising through history from the foundations of Western thought, that design education has been shaped. Having begun to engage the philosophical, historical, and educational origins of design education, we can gain insight as to how we might address contemporary criticisms of design education; criticisms that suggest that our current educational practices are limiting our ability to adequately educate future generations of designers. Looking to the past gives us a foundation from which to respond, it allows us to identify the deeply held beliefs and assumptions that have influenced how we think about and teach design. To chart a new course for design education, it is necessary to more fully engage and explore the lessons of our past.

4. LOOKING AHEAD: A THEORY OF DESIGN EDUCATION

In accepting that the Greek myths are allegorical lessons that describe our beliefs and assumptions about the world, they can be thought of as the “rock bottom” of Western thought. They constitute the foundation from which all subsequent thought arises, responds to, and is structured. In theorizing craftsmanship as the historical and philosophical progenitor of design, it is necessary to engage craftsmanship at this “rock bottom”—in the allegorical stories that underlie the origins of Western thought. In such theoretical engagement; however, we must recognize that the deep structure of thought underlying our beliefs about craftsmanship as a disciplinary practice emerges from, and is heavily influenced by, the same deep structure that anchors the beliefs, assumptions, and practices that are responsible for the binary relationships associated with the veracity of knowledge and that allows for the liabilities of privilege and subordination. As a result, we must take account of the assets and liabilities contained within these

allegorical foundations. We must come to understand how the assets and liabilities at the foundation of our Western beliefs influence educational practices in design—how they can prove both beneficial and detrimental in conceptualizing how we think about and teach design.

The binary constructs that arise from our foundational beliefs appear to be one of the primary liabilities to design education. The bias implicit in these binary constructs exists at the heart of the marginalization of *technê* as a valid way of knowing—as a way of producing knowledge that assists in our understanding of the physical world. As such, this liability must be overcome if we are to look ahead, if we are to overcome the criticisms of design education. In this brief look at the foundations of design education, it becomes obvious that a great deal more exploration is necessary. As design educators we need to more fully theorize the foundational relationship between binary liabilities and design education as a means of engaging culture and improving our educational and professional practices. A more comprehensive awareness of, and response to, the related origins of the practices associated with craftsmanship and our binary liabilities might help eliminate most contemporary criticisms of design education and position us to make positive contributions to educational practices that will benefit the future of design education.

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