

DEWEY, ALBERS, NEWTON: AMERICAN PRAGMATISM AND MID-CENTURY DESIGN EDUCATION

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1 ABSTRACT

The goal of this paper is to sketch one element of the intellectual history of design education: the confluence of American pragmatism and Bauhaus modernism, particularly in the discipline of landscape architecture. An investigation of the philosophy of John Dewey, the teaching methods of Josef Albers, and the writings of landscape architecture professor Norman Newton reveal a number of intellectual consonances. Primary sources for this work are writings by the three principal players. Supporting sources are comments and writings by their students and by other investigators. These sources are analyzed hermeneutically to discern commonalities in the theories and practices of the three principals.

1.1 Keywords

pragmatism, modernism, Dewey, Albers, design education

2 INTRODUCTION

This paper sketches one element of the intellectual history of American design education at the college level. Its primary sources have been the published works of its principal players; its method has been the hermeneutic analysis of these sources with input from secondary sources in the literature. As a work of historical analysis, it does not attempt or claim to achieve the establishment of cause and effect relationships between the ideas it examines.

The present work is instead intended to illustrate an apparent consonance between the philosophy of American pragmatism of John Dewey, the teaching methods of Bauhaus and Black Mountain instructor Josef Albers, and the design theory of Harvard landscape architecture professor Norman Newton. (Newton is cited in this paper because of the striking similarity of his language to Dewey's and because of the degree to which Harvard dominated the production of design educators in the mid-to-late-20th century. Other seminal figures, such as Stanley White at the University of Illinois, deserve attention and recognition as well).

William Perry, Jr. is another important player in this sketch. His work was influenced by Dewey and his conclusions, though derived from his work with liberal arts students, are particularly instructive in the context of the intellectual development of design students.

Plans for future work along this line of reasoning include the explication of the deeper historical roots of thought about design education and a study of contemporary practice in studio teaching in light of the conclusions reached here.

Design differs dramatically in its pedagogical practice from many other fields of academic study in a number of ways: 1) it lacks a body of theory comparable to that of mainstream education; 2) "learning by doing" through studio instruction is its primary means of teaching; 3) it appears that the underlying, unspoken philosophy of design education is much more closely aligned with Pragmatic thought than it is with either the Rationalist or Empiricist paradigms that inform most of mainstream education.

One important aspect of this work is an examination of the intersection of the Bauhaus expression of European modernism with the philosophy of American pragmatism. The focus here is on the thought and practice of Josef Albers after 1933 (when he left Germany and began teaching at Black Mountain College in North Carolina), particularly in relation to the philosophy of American pragmatist John Dewey.

Design education intends to help students gain marketable skills; at a deeper level, it is concerned with helping them harness, develop, and direct their creativity to produce positive change. Albers and Dewey both had intense interests and firm stances on that subject, and each has had profound influence on subsequent thinking.

A timeline of the lives of the principle thinkers and teachers, along with dates of selected publications and educational programs pertinent to the current discussion is shown in Figure 1.

 PRAGMATIC PHILOSOPHERS AND DESIGN EDUCATORS

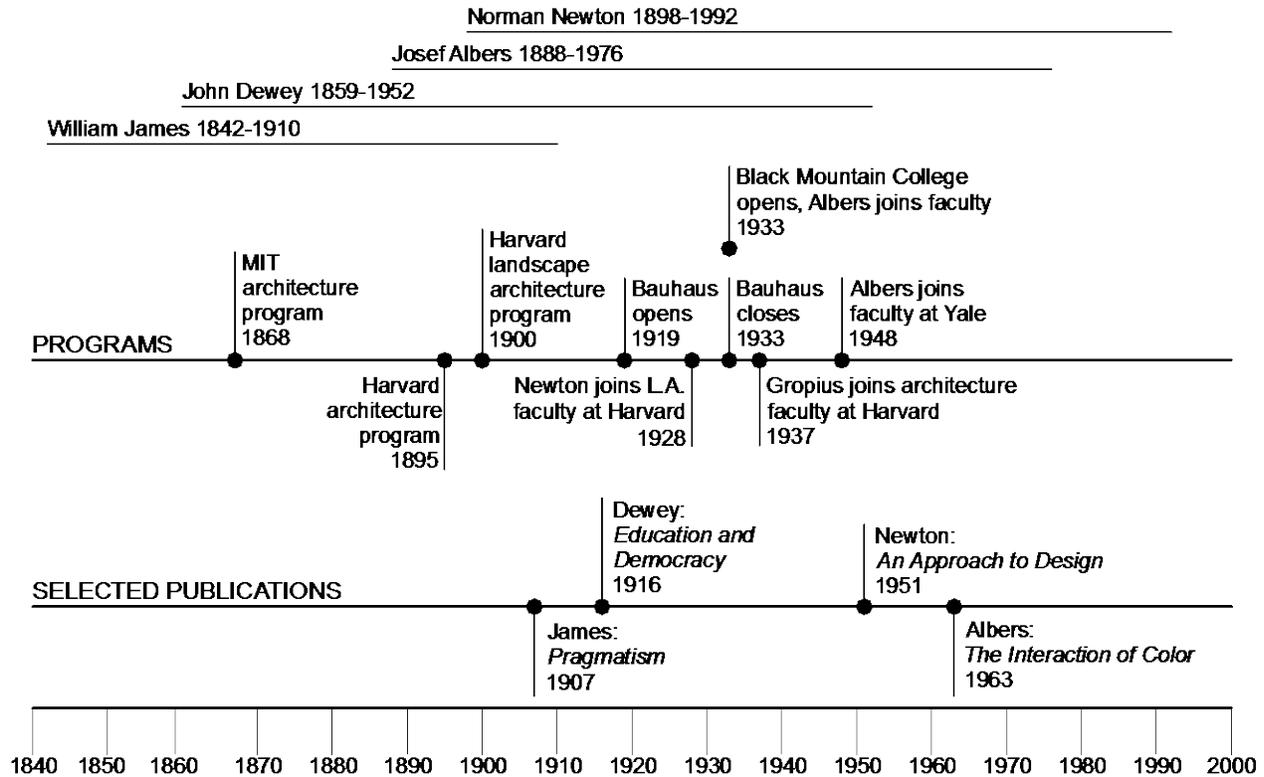


Figure 1. Timeline. (Crawford, 2013)

The architecture program offered at the Massachusetts Institute of Technology initially in 1868 is often considered the beginning of design education at the college level in the United States. The Ecole Des Beaux-Arts in Paris was the primary pedagogical model for the MIT program (William Ware, the program's founder, and many early instructors, had been Beaux-Arts students) (Pause, 1976, p. 20). "There were nine well-established professional schools of architecture by 1898;" the level of Beaux-Arts influence varied (Weatherhead, 1941, p. 68). In 1900, Harvard instituted the first baccalaureate program in Landscape Architecture (Simo, 2000, p. 9).

Walter Gropius, who became the school's first director, founded the Bauhaus in 1919. The eventual widespread influence of the Bauhaus can be attributed to 1) the fact that it was a formally (if loosely) administered school and was widely recognized as such; and 2) the creativity and charisma of its founder, who saw how to realize his vision and how to identify and seize opportunities for its proliferation.

Modernism was not invented at the Bauhaus. It had been evolving in both Europe and in the United States since the late nineteenth century, and the American design schools were not oblivious to it. Prior to about 1930, however, modernism developed more fully in Europe as a response to the far more pressing social and political circumstances that dominated there during the period. In the United States, innovation was geared more toward finding advanced technical solutions within an established stylistic paradigm than a matter of responding to new cultural realities by developing a relevant theoretical stance (Alofsin, 2002, p. 51).

With the onset of the Great Depression, and in presence of longstanding significant uncertainty in society, politics, labor, education, and other areas (Kloppenber, 1986), a set of philosophical questions arose that compelled design schools to face the fact that a new way of looking at the world was necessary.

Beaux-Arts rationalism, with its roots reaching back through the Renaissance to Antiquity, did not provide a theoretical framework within which to create design appropriate for the modern world.

At almost the same historical moment, the Bauhaus lost its home in Germany, forced by the Nazi regime to cease operation in July of 1933. Its most famous faculty members fled to the United States: Walter Gropius to Harvard, Ludwig Mies van der Rohe to the Armour Institute (later the Illinois Institute of Technology) (Kentgens-Craig, 1999).

American pragmatism began its development as a formal philosophy with conversations in Cambridge, Massachusetts in the 1870s between Charles Sanders Peirce (1839-1914), William James (1842-1910), Oliver Wendell Holmes (1841-1935), and others (Menand, 2001), and was explicated far more thoroughly in the works of John Dewey (1859-1952), who contributed roughly 700 articles and 40 books published between 1883 and 1952. The fundamental epistemological basis for pragmatism, introduced by James and developed by Dewey, is the transactional paradigm, in which knowledge is viewed as an interactive, ecological system of object and observer within a specific environment.

3 PRAGMATISM

William James's father was Henry James Sr., whose epistemology was based on a Platonic, rational, "belief in the unchanging reality of an unseen world, indifference to temporal moral distinctions, and anti-individualism," which "belong to the conception of a closed and predetermined universe—the 'block universe'—that William James designed pragmatism to subvert" (Menand, 2001, p. 88). William James did not merely disagree with his father's rationalism by adopting an empirical, experience-based view of reality like that of Locke or Rousseau. Instead, he upped the ante by shattering the epistemological dichotomy that supports both paradigms. Both rationalism and empiricism depend on the independence of object and observer. James's pragmatic viewpoint envisions the object and the observer as interacting players in a contextual environment, all three of which continually affect one another, none of which make sense in isolation. Many philosophers have tried to create unified systems to explain reality. The German Idealists Kant (1704-1804) and Hegel (1770-1831) tried to address the rift between rationalism and empiricism through synthesis. William James bypassed the need for synthesis by doing away with the supposed division: The "knower is not simply a mirror floating with no foothold anywhere, and passively reflecting an order that he comes upon and finds simply existing. The knower is an actor, and co-efficient of the truth" (James, 1878, p.17).

The epistemological foundation built by James allowed John Dewey to see a way for philosophy to become useful in a practical way: "Philosophy recovers itself when it ceases to be a device for dealing with the problems of philosophers and becomes a method, cultivated by philosophers, for dealing with the problems of men" (Dewey, 1917, p. 65). This is possible because James's insight allowed Dewey to understand and develop his "particular mode of intelligence... the strategy he used in approaching every problem: expose a tacit hierarchy [or dichotomy] in the terms in which people conventionally think about it... We think that first there are individuals and then there is society; Dewey taught us that there is no such thing as an individual without a society. We think we know in order to do; Dewey taught us that doing is why there is knowing" (Menand, 2001, p. 330).

One reason the pragmatic project may ring true for a designer (particularly for a landscape architect) stems from the notion that the object and the observer are elements of the environment in which they exist, parts of an integrated system. The epistemology of pragmatism is ecologic; it would almost certainly not exist without Charles Darwin (1809-1882) (Garrison, 2009, p. 85). Context is key—for obvious reasons in landscape architecture, where natural process and social circumstance are always part of the equation.

The system envisioned here is more than an assemblage of parts working in concert, like a machine. An ecologic system grows and changes in response to stimuli from within and from without. Using it as a model for knowledge relieves us of both: 1) the fundamentalism of permanent, unchanging, rationalist truth; and 2) the relativism that results from a purely empirical vision of a separate reality existing in the mind of each observer. Pragmatic holism is far more than seeing the whole as greater than the sum of its parts. It gives us a way to move beyond the intractable contradictions in the ways we have viewed knowledge for centuries.

4 AMERICAN EDUCATION

At the beginning of the twentieth century, eight percent of youth in the United States graduated from high school (Tyack, 1995, p. 48). The magnitude of the crisis was well recognized. Many solutions were proposed; two major categories emerged. The conservatives advocated more of the same: strict discipline, rote memorization—the clichés of the American schoolhouse. The progressives, on the other hand, promoted innovations that have often, but only partially correctly, been attributed to the work of John Dewey.

The Committee of Ten, led by Harvard president Charles Eliot, evaluated the state of American high school education in 1893. The committee “saw the high school as an agency for honing intelligence for its own sake but also as an institution for preparing students for careers in a complex and interdependent society” (Tyack, 1995, p. 50). It recommended a system that included four years of high school at the end of a twelve-year curriculum.

By the early 1900s, public education was widely understood as a basis for the political future, and as a business. Also at this time, when the efficiencies of industrialization were at the forefront of the cultural consciousness, education began to be envisioned in terms of production. The *Cardinal Principles of Secondary Education* were published in 1918 by a group generally comprised of professional educators who are referred to by some as “administrative progressives,” who were largely concerned with creating a pervasive system for the socialization of youth. Of the seven Cardinal Principles, one addressed the traditional role of education—Command of Fundamental Processes (the three R’s). The other six were: Health, Worthy Home Membership, Vocation, Civic Education, Worthy Use of Leisure, and Ethical Character (Commission on the Reorganization of Secondary Education, 1918).

The early twentieth century progressive movement in education defeated the conservatives. Much of what the administrative progressives accomplished has been erroneously attributed to John Dewey’s educational philosophy. First, “what Dewey meant by progressive education has been so distorted by generations of well-meaning but ill-equipped educational administrators that its original significance has been almost entirely lost” (Kloppenber, 1986, p. 374). Many of the results of so-called the “child-centered” philosophy of progressive education were so patently bad that John A. Rice, the founder of Black Mountain College and a Dewey devotee, wrote: “Progressive education, when it is stupid, is much more stupid than the other kind” (Rice, 1934). Dewey’s philosophy, and the resulting vision for education, has been misunderstood by both educational conservatives and progressives (and by extension, by both political extremes), almost certainly because the philosophical underpinnings (particularly pragmatism’s transactional epistemology) of Dewey’s work are not grasped by the majority of people whose views of knowledge reside in the rationalist or empirical paradigms. Dewey is quoted out of context to accuse him of socialism and atheism on the one extreme (Smoot, 1962) and to justify woefully misguided schemes on the other.

“Ellen Condliffe Lageman has argued that ‘one cannot understand the history of education in the United States during the 20th century unless one realizes that Edward L. Thorndike won and John Dewey lost’” (Tomlinson, 1997, p. 367) the battle for the future of American progressive education. Thorndike “shaped the curriculum, pedagogy, and organizational structure of the American school as well as the basic aims and methods of university-based inquiry... it is Thorndike’s conception of human nature and the social good, rather than Dewey’s, that permeates [the] century’s mainstream literature and continues to generate what Henry Giroux has called ‘a culture of positivism’ within American educational thought and practice” (Tomlinson, 1997, p. 366).

Thorndike and Dewey both embraced the scientific method; their interpretations and conclusions were radically different. Thorndike assumed that quantitative measures used in the hard sciences could be directly applied to psychology and thence to education. He is known for performing a number of foundational studies; he introduced new statistical methods into the interpretation of data. His work led him to conclude that all human action could be reduced to cause and effect sequences and that statistics held the keys to understanding human nature. This mechanistic view led to a vision for education based on an industrial model that was easy for the administrative progressives to adopt. Their methods owed far more to Thorndike’s way of thinking than they did to Dewey’s. Thorndike “saw educational science as a storehouse of objective knowledge... Dewey viewed it as a method of rational problem solving” (Tomlinson, 1997, p. 367). Thorndike’s instructional goals and assessment methods were relatively easy to quantify, generalize, and administer. Dewey’s were based on individual experience, were inherently personal, and were difficult to reduce to a procedure suitable for mass production.

Thorndike’s epistemology was based on a view of truth as a fixed entity—a basic characteristic of

the rationalist viewpoint, developed by Plato, that had led to the nineteenth century successes of positivist science and capitalist industry. Dewey's transactional paradigm challenged the foundation of 2,500 years of western philosophy. "Our reliance on grand theories... is the kind of thing Dewey hoped we would grow out of. Understanding that there is nothing out there to refer to, no universal truth or framework informing our culture, represents a significant shift in human inquiry" (Moore, 2010, p. 61).

Dewey tells us: "Since growth is the characteristic of life, education is all one with growing... The criterion of the value of school education is the extent in which it creates a desire for continued growth and supplies a means for making the desire effective in fact" (Dewey, 1916, p. 32). In Thorndike's view, heredity was the basic determinant of a person's character. "The concept of growth was simply not part of Thorndike's vocabulary" (Tomlinson, 1997, 1997, p. 373). His work was extremely influential: he wrote the seminal *Educational Psychology* and *Introduction to the Theory of Mental and Social Measurements*. His career at Teacher's College of Columbia University ("the Sears, Roebuck of learning" (Rice, 1942, p. 318)) spanned forty years. He influenced large numbers of educators at all levels. Thorndike's way of thinking is still a dominant force in education today, though probably more in evidence at the elementary and secondary levels (e.g. No Child Left Behind) than in college teaching. Following Thorndike's lead, later "behaviorists succeeded in eliminating the distinction between *training* (for performance) and *teaching* that aims at the generation of understanding" (Glaserfeld, 1995, p. 4).

5 CONSTRUCTIVISM vs PRAGMATISM

The phrase "learning by doing" is commonly used in relation to John Dewey's educational program. The curriculum of the Laboratory School, which he established at the University of Chicago in the 1890s, "called for a pedagogy that would build on the inherent interests of the children, while leading them to the accumulated wisdom of adults embodied in the established subjects. He urged teachers to structure the classroom as a cooperative community of inquiry, thereby fostering in children both the skills of scientific investigation and the character essential for a democratic society" (Westbrook, 2001).

The constructivist theory of education is often written of as a result of the work of Dewey (along with that of Piaget, Vygotsky, and others) (Phillips, 1995). Educational constructivism is based on the notion that "learners *construct* or build their own knowledge and meaning as opposed to having it 'given' or 'delivered' to them" (McColluch, 2008, p. 125). The resulting teaching practices are designed to create conditions that lead to the building of knowledge by students: curricular content that relates to students' life experiences; methods that promote "learning by doing;" emphasis on social interaction in learning; building awareness and mental discipline through encouragement of metacognition and self-regulation; and the assertion that each learner is responsible for their education, and ultimately in control of it.

If one examines the nature of the educational practices of a typical design program, many constructivist techniques will probably be observed. Studio courses lead students to find their own paths, require that they work in groups, strive to help them understand their unique design processes. Students are often asked to draw on their own life experience and often an objective is to help them project themselves forward into their creative futures. Constructivist theory therefore appears to be closely aligned the means and methods of landscape architecture education.

The viewpoint of constructivism is summarized in contrast to the objectivist view in Table 1 below.

Table 1. Objectivist and Constructivist views of knowledge and learning. (Thanasoulas, 2011)

Objectivist View	Constructivist View
Knowledge exists outside of individuals and can be transferred from teachers to students.	Knowledge has personal meaning. It is created by individual students.
Students learn what they hear and what they read. If a teacher explains abstract concepts well, students will learn those concepts.	Learners construct their own knowledge by looking for meaning and order; they interpret what they hear, read, and see based on their previous learning and habits. Students who do not have appropriate backgrounds will be unable to accurately “hear” or “see” what is before them.
Learning is successful when students can repeat what was taught.	Learning is successful when students can demonstrate conceptual understanding.

Constructivist education theory is today fractured by the very kind of epistemological debates that Dewey found to be so counter-productive (Geelan, 1997). Through the means of the transactional paradigm, John Dewey’s body of work is consistent in its foundational principles, one of which is the rejection of false dichotomies. The basic philosophical issue is his dismissal of the subject/object distinction (with its inherent two-level view of reality) that provides the framework for both the rational and empirical branches of western philosophy. He doesn’t want philosophy to be irrelevant; he wants it to be a useful part of everyday life. The failure of philosophers, in his view, is that they do not see that the subject/object dichotomy leads to bad assumptions about the nature of knowledge and thence to bad conclusions. “Philosophic systems in their opposed theories of knowledge present an explicit formulation of the traits characteristic of these cut-off and one-sided segments of experience—one-side because barriers to intercourse prevent the experience of one from being enriched and supplemented by that of others who are differently situated” (Dewey, 1916, p. 187).

The fundamental difference between pragmatism and constructivism is epistemic. James transcended the rational/empirical dichotomy and thereby provided the foundation upon which Dewey built a coherent framework of pragmatic thought. Piaget and Vygotsky did not take the transcendent step; the constructivists’ approach is dialectic, in that they seek to reconcile or synthesize their essentially empirical positions with rationalism by insisting on rigorous scientific method. (Piaget, 1970), (Fox, 2001). Constructivism is therefore in the position of having to balance mutually exclusive views of knowledge. Pragmatism bypasses that problem, but does so by seeing knowledge in a way that throws many people’s intrinsic beliefs about the nature of knowledge into question. The issue is whether one sees knowledge as residing in either the object or the observer, and therefore in need of synthesis, or whether one sees knowledge as a system of object and observer in an environment, a position that renders the idea of synthesis superfluous.

6 ALBERS

Walter Gropius on the pedagogic method of Josef Albers: “Albers has the very rare quality of a teacher who treated every student in a different way. When the student was unsafe of himself, and he couldn’t swim yet, so to speak, he pushed him into the water, and when he started drowning, then he got him and he was open for advice. He was just ingenious, doing that... He is really the very best teacher I could imagine because he brought the student to himself. Imitation was taboo, and he brought him really down to earth and developed him out of his own qualities” (Gropius, 2007).

Albers asked in 1941: “How can we develop imagination when the schedule of study confronts the student with merely with a set of given problems to be solved by a given set of solutions? To place theory before practice, knowledge before experience, or research before search will end in mechanical application of rules and tricks. Such schooling may develop laborers or imitative disciples but not imaginative and

productive minds” (Horowitz, 2006, p. 99).

The repeated experience of being “pushed into the water” leads one to develop some level of acceptance of the ill-ease that comes with ill-defined problems. The work of William G. Perry (1913-1998) (conducted at Harvard in the 1950s and '60s) helps us see the process of growth away from a view of knowledge that only operates well when problems are well-defined and have demonstrably correct answers to a view that facilitates solutions to poorly-defined problems without clear solutions (Perry Jr., 1999).

Perry found that college students progress through a sequence of epistemological positions when faced with the sort of ill-defined issues posed in the realm of liberal education. This growth sequence, when successful, leads them to a belief system that works for them in the absence of universal truth. The sequence Perry describes is not a series of stages à la Piaget—retreats occur, progress is not always permanent. Further, positions will vary across various areas of a person’s intellectual and personal life. Perry’s study group came to these difficult realizations about their views of knowledge over the course of several semesters. In design school the experience is more immediate (in Albers’s words: “I put them in a vacuum and teach them how to breathe” (Horowitz, 2006, p. 99). Even so, Perry’s work shows us a way of looking at the design education experience in the light of American pragmatism, as an epistemological shift toward the transactional paradigm.

Perry’s position of Commitment allows for decision-making in a relative world that does not become another level of unassailable Truth. William James writes: “The pragmatism or pluralism which I defend has to fall back on a certain ultimate hardihood, a certain willingness to live without assurances or guarantees” (James, 1978). Creative thinking is at least in part the ability to see relative truths in productive relationships without producing new dogma. “Giving up the ideal of certainty in knowledge, however, did not mean embracing skepticism or despairing of knowing anything at all; on the contrary, it meant tempering our judgments by the available evidence and refusing to make claims that the evidence will not support. As Peirce put it, referring to our cognitive powers, when we know the limitations of the instrument, we all the more secure in setting it to work” (Smith, 1999, p. 5).

Why does design education exemplify the pragmatic view? The question becomes even more interesting when one factors in the dearth of theory associated with design pedagogy. Design instructors rarely have training as educators—many simply teach “as they were taught.” “The rejection of top-down learning, the promotion of shared learning experiences, an openness to the new, education as problem-solving [all characteristics of Dewey’s pragmatic approach to education]: these qualities characterize art education virtually everywhere today, and can be traced back directly [not to Dewey via mainstream education theory, but] to Albers’s beliefs and teaching practices” (Horowitz, 2006, p. 252), (Crawford, 2013, p. 11).

Josef Albers was a student at the Bauhaus beginning in 1920, and a master there from 1925 until 1933 (Wick, 2000). Although some of William James’s work was translated into German by 1899, and several of Dewey’s works were translated before 1914, “the outbreak of World War I abruptly broke off the development of the pragmatism debate that had begun to spread through Germany in the pre-war years. The fact that it was not resumed after the war is one of the most significant lacunae in the history of German philosophy. Instead of a productive exchange of ideas there arose a long chain of misunderstandings and misconceptions of American pragmatism, originating from some of the most eminent German philosophers, and passed on with an amazingly uncritical self-assurance to others” (Oehler, 1981, p. 27). Some Bauhausers may have been familiar with, or influenced by, American pragmatism, but it does not seem likely that pragmatism was a direct or powerful influence at the Bauhaus.

After the Bauhaus closed, Josef and Anni Albers moved to Black Mountain College, where they taught from 1933 until 1948. Josef Albers then became the head of the Design Department at Yale, teaching there until his retirement in the late 1950s. His courses at both institutions were in basic drawing, basic design, and the interaction of colors—courses that were well suited to his inductive concept of learning and teaching.

Black Mountain opened its doors in 1933 under the direction of John Rice. It was one of many progressive colleges that began operation in the 1920s and 1930s in the United States. At Black Mountain, the active learning of art in the context of a liberal arts education was seen as an essential part of the program. John Rice admired the work John Dewey, who visited Black Mountain on at least three occasions (Reynolds, 1995). “Through Albers, Rice, and [Theodore] Dreier, Black Mountain achieved a unique synthesis between American progressivism in education and European modernism that resulted in an exceptionally dynamic, creative atmosphere” (Harris, 2002, p. 14). There was clearly some level of philosophical consilience between the primary players.

However, the agreement does not seem to have been particularly explicit, at least in the beginning. Albers writes that the primary goal of the Bauhaus was to influence industry, but that “instead, we gained something else, something much more effective: a new visual education. We had a disorganized but very far-reaching influence on general education. This was an unexpected success. I do not believe that during the ten years of my life at the Bauhaus I heard the word ‘education’ mentioned. We talked a lot about design, production, and industry, but hardly about education. We simply tried to teach anew. In America today the mistake is made of talking of a Bauhaus method. We have heard that it is of no use to talk about the Bauhaus style because no style was sought. A Bauhaus teaching method was never intended, because each master developed his own method of teaching, independent of the others and especially independent of any agreed principles and aims of teaching” (Albers, 1993, p. 181).

7 PRAGMATISM AND DESIGN EDUCATION

One constant in the history of American design education has been the centrality of the studio teaching model. Though the teaching prevalent during the Beaux-Arts era was constrained by Classical style and Renaissance method (Rykwert, 1982), (Pause, 1976), the studio environment was characterized by a hands-on approach to learning. Certainly, many of the tenets of the constructivist model of education are manifested in the studio method used in American design instruction at the college level today; we can see how the modernism of the Bauhaus has helped solidify that orientation (Table 2 below).

Table 2. Beaux-Arts and Bauhaus views of art and design. (Crawford, 2013)

Beaux-Arts View	Bauhaus View
Timeless truth and beauty are expressed in the language of Classic forms.	Classic forms and orders have lost their ability to express meaning in the modern world.
Students must learn the Classical orders through strictly disciplined and repetitive drawing.	In the manner of the Medieval builders, students must learn craft and the essence of materials before attempting design.
Art is related to a higher plane of academic reason.	Art must to be restored to its former level of importance in everyday life through good design applied to industrial production.

One point of agreement between the American pragmatists and the European modernists had to do with the vision of a system that “would give those who engage in industrial callings desire and ability to share in social control, and ability to become masters of their industrial fate. It would enable them to saturate with meaning the technical and mechanical features which are so marked a feature of our machine system of production and distribution” (Dewey, 1916, p. 175). This statement by Dewey is as clear as any written by Gropius to describe the goal and purpose of the Bauhaus.

History and geography, the studies of the stories of people and their physical places, deserve emphasis in Dewey’s view because he sees the continuance of culture as one of the most important roles of education: The “development within the young of the attitudes and dispositions necessary to the continuous and progressive life of a society cannot take place by direct conveyance of beliefs, emotions and knowledge. It takes place through the intermediary of the environment [which is] truly educative in its effect to the degree in which an individual shares or participates in some conjoint activity” (Dewey, 1916, p. 16). Teaching is a matter of creating an environment in which a community of learners can flourish and help individuals find their own ways of seeing. As Norman Newton, who taught landscape architecture at Harvard for many years, says: “I, for one, am especially interested in helping you to develop a way of designing—or of viewing design—that will be *uniquely yours*” (Newton, 1951, p. 77). That unique style or vision is developed by each student in the process of comparing his or her responses to design problems with the responses of other students.

Dewey’s educational philosophy is exemplified by Albers’s teaching method, the basic tactic of

which is to assign tightly focused tasks that require students to examine the capabilities of materials in the simplest terms. One might expect that all the students would arrive at the same conclusion, but in practice the results are quite varied. Upon examination of this multiplicity, students are compelled to think about how they see in relation to other students' visions. This is an example of the transactional paradigm—knowledge as a system of object, observer, and environment in relation to one another—in action. Meaning is dependent upon shared concrete experience.

Further, Dewey tells us that thinking “is the method of an educative experience. The essentials of method are therefore identical with the essentials of reflection.” These essentials are:

- A continuous activity that genuinely interests the student
- A problem within the activity or situation that stimulates thought
- The information and observational ability necessary to understand the problem
- The development of, and personal responsibility for, orderly solutions
- The communication of the student's ideas and the testing of their validity (Dewey, 1916, p. 90)

Here Dewey has described a project assigned in a landscape architecture studio in a modern American design school.

William James defines truth as “the name of whatever proves itself to be good in the way of belief, and good too, for definite, assignable reasons” (James, 1904, p. 40). Norman Newton defines quality design: “Our only measure of ‘goodness’ or ‘badness’ in a work of design is the ultimate balance, so far as we can judge it, between the helpful and harmful effects it will have on living men and women and children... under the given conditions, at the given time, for the given purpose.... There does not exist any such dogmatic, unrelated, invariable fixity as ‘good’ design or ‘bad’ design. Design can only *be* good insofar as it *does* good” (Newton, 1951, p. 78).

Newton continues: “we have come to realize that a strong parallel exists between the structure of design and the biological notion of the *organism-as-a-whole-in-an-environment-as-a-whole*...that both through organism and environment there flows a continuing *transactional* [emphasis added] stream as each of them, acting *through* as well as on the other, affects and modifies it in manifold ways (Newton, 1951, p. 86). John Dewey: “All communication is like art” (Dewey, 1916, p. 7), “a process of sharing experience till it becomes a common possession. It modifies the disposition of both parties who partake in it” (Dewey, 1916, p. 9).

The transactional relationship also exists between the designer and the designed: “The creative process does not end with the thing created... [it] forms a great circuitous flow of happenings—a sort of organic recirculating system... that carries over into the structure of the work of design thus brought into being and then *feeds back* as the thing created exerts its effects upon the designer himself” (Newton, 1951, p. 49). In experience, Dewey tells us, “the brain not only enables organic activity to be brought to bear upon any object of the environment in response to a sensory stimulation, but this response also determines what the next stimulus will be” (Dewey, 1916, p. 183).

Process, rather than a fixed object to be produced, is at the core of Dewey's vision—the “process of growth, of improvement and progress, rather than the static outcome and result, becomes the significant thing... The end is no longer a terminus or limit to be reached. It is the active process of transforming the existent situation. Not perfection as a final goal, but the ever-enduring process of perfecting, maturing, refining is the aim in living” (Dewey, quoted in (Hildebrand, 2008, p. ix).

William James “believed that a risk-assuming decisiveness—betting on an alternative even before all the evidence was in—was the supreme mark of character.... He also thought that certainty was moral death” (Menand, 2001, p. 75). The designer assumes risk with almost every decision, because almost every problem is ill-defined. Certainty inhibits the possibility of seeing new and different relationships, which amounts to creative death.

Dewey's view in regard to creativity:

The doctrine that intelligence develops within the sphere of action for the sake of possibilities not yet given is the opposite of a doctrine of mechanical efficiency. Intelligence as intelligence is inherently forward-looking; only by ignoring its primary function does it become a mere means for an end already given. The latter is servile, even when the end is labeled moral, religious, or esthetic. But action directed to ends to which the agent has not previously been attached inevitably carries with it a

quicken and enlarge spirit. A pragmatic intelligence is a creative intelligence (Dewey, 1917, p. 63).

John Dewey advocated, and Josef Albers practiced, an inductive teaching method that sought to enhance creative intelligence. It began in the personal experience of the real world and moved to the abstractions upon which we build shared meaning. The philosophical foundation for the method is the transactional epistemological stance that at practically every turn questions assumed dichotomies. Based on the evidence shown herein, this philosophy is at the heart of good design and good design education as perceived in the twentieth century and beyond.

Given the parallels we have seen between pragmatism and design, it seems reasonable to follow John Dewey's example and question the validity of common dichotomies: Where, for instance, do we draw a hard bright line between intelligent thought and practice? "Dewey, at an eightieth birthday celebration, is reported to have corrected his tribute by saying that his philosophical effort had not been... as the tribute had it, to practicalize intelligence, [it had] been to *intellectualize practice*" (Xu, 2010). Intelligence and practice are not opposites. Dewey wasn't speaking in favor of one over the other; he was speaking of changing the way we look at the relationship between them. It is hoped that a continuing discussion of how we might intellectualize the practice of design education will allow us to compare our thoughts, to understand our positions relative to one another and within a historical framework, and thereby to establish our own commitments to how we wish to design our own teaching philosophies.

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