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Preservation Education Practice: Why the Designers of Tomorrow Need Studio Practice in Historic Structures

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ABSTRACT—Interior design is a specialty field of professional practice and inquiry that addresses the design and condition of the interior environment of buildings. Interior designers create environments that balance the needs of the people who will occupy those environments with the conditions of a building and its site. This study examines and criticizes current teaching practices to prepare and inform students to design interiors within historic buildings. Today, history and preservation are primarily taught in lecture courses with memorized content. However, interior design education centers on studio learning. In studio, students actively demonstrate their growing knowledge and expertise about the practice of interior design. One of the significant challenges in interior design practice is creating compatible new interiors for existing and historic buildings. Compatible new interiors combine the best of the past and the present to create an aesthetically pleasing and functional new interior combined with original character-defining features. Students may find creating a compatible interior challenging; therefore, this essay explores teaching and learning literature to explain why interior design students need to practice developing preservation solutions in an engaging educational setting before they begin professional practice.

S tudent learning and classroom experiences are a complex congruence of factors. Active student learning is part of interior design studio class practice. Studio learning supports student engagement and the development of intrinsic motivation by letting students work on complex problems with the potential for multiple good solutions. Student engagement, including self-directed pursuit of solutions, enjoyment, and involvement in the learning process are central factors to active learning. This article explains how interior design studio learning is conducted today and frames these practices within a theoretical understanding of active studio learning processes. By exploring an active-learning teaching model through both practice

and theory, educators from diverse preservation fields can learn from contemporary design teaching practices.

Relatively more compatible design outcomes for historic buildings are produced by designers and design students who care about their project, are engaged with their work, and understand local conditions. But how do interior design students develop the traits to support a relatively more compatible design outcome? Are current teaching practices already promoting this goal, or is something else needed? The following sections examine the studio learning experience to explain (1) why current history teaching practices fail to prepare students to practice in a historic building and (2) how to engage interior design students in a historic preservation project that facilitates active learning about the local historic and architectural conditions of their project. The reviewed research that follows suggests that students learn through (1) active and project-based assignments (2) that are context and content specific, such as a historic building rehabilitation project, (3) that are based on complex, content-rich real problems that students can immerse themselves in, and (4) that students are practicing with feedback from instructors and peers. Examining studio practice and learning is necessary to explain why current practices may be failing to prepare students to create well-conceived interiors in historic preservation projects.

WHY THE HISTORIC BUILT ENVIRONMENT NEEDS INTERIOR DESIGNERS WHO UNDERSTAND HISTORIC PRESERVATION

The National Council for Preservation Education (NCPE) is an organization connecting educators and preservationists in their efforts to improve preservation education and practice throughout the United States. NCPE (2012) has 12 registered undergraduate degree programs capable of supporting up to 792 students at all grade levels. An additional 6 programs with up to 213 students offer undergraduate certificates. These 18 programs provide educated historic preservationists ready for practice, but they represent only a small fraction of students preparing to shape the built environment.

The Council of Interior Design Accreditation (CIDA) is a leader among several interior design program–accrediting bodies. There are 163 CIDA-accredited undergraduate programs in the United States—9 times the number of undergraduate NCPE programs (CIDA

2010a; NCPE 2012). Interior designers, both as students and practicing professionals, will continue to outnumber dedicated preservationists well into this century. Therefore, it is vital that historic preservationists are involved in the preservation-related education of interior design students and understand how design education functions, or could function, to better support preservation practice by interior designers. This article supports preservationists by explaining how interior design education is organized and implemented today and providing support for a stronger preservation presence in interior design education from education research.

INTERIOR DESIGN CURRICULUM

Interior design programs are typically four-year undergraduate programs in which a cohort of students follows a strict sequence of studio and lecture courses. CIDA, the premier accrediting body, accredits interior design programs and reviews member programs every six years (CIDA 2009). Reviewers examine both curriculum logistics, such as specific courses, course content, course structure, and delivery method, and student projects demonstrating outcomes of learning. The perceived significance of CIDA accreditation in interior design education cannot be overstated: CIDA holds classes on accreditation and learning standards at national Interior Design Educators' Conferences, students graduating from a CIDA-accredited school submit less documentary paperwork to apply for state licensure, and accreditation confers status on member programs (CIDA 2010b). Less than half of all interior design programs in the United States are CIDA accredited.

For each major aspect of interior design content, CIDA (2009) subdivides knowledge level into three categories: awareness, understanding, and application. Graduating seniors must understand contextual influences on the design of the built environment and movements, periods, and traditions in design and architecture. Students must also "apply historical precedent to inform design solutions" (CIDA 2009, II-18). CIDA does not discuss historic preservation or history beyond this. Preservation practice or philosophy is not a required part of interior designers' education. This article provides support for those working on the continual improvement of interior design education, which should prepare students for working in a rich, historically significant built environment.

An Example of History and Preservation Instruction in Interior Design

Interior design students take between one and three semesters of history courses and between six and eight sequential studio courses during a four-year undergraduate degree program. CIDA does not require any studio projects to be set in a historic building. Evidence on the frequency of preservation practice during interior design education is limited, but two of the rare texts containing sample projects for studio instructors have only three of their thirty-four projects set in a historic building (Temple 1992; Scalise 2003).

To examine how preservation education works in practice, this author followed twenty-eight interior design students at a CIDA-accredited, highly ranked interior design program in the Southeast. During their freshman year, students took two sequential history of interiors courses. Students attended lectures, watched films, took multiple-choice tests, and wrote short essays. Three years later, during their final senior studio, students' completed a studio project set in two original Frank Lloyd Wright buildings on the Florida Southern College campus. While in studio, students completed essays about their experience and their instructor provided regular feedback about the course. In some ways, this studio was exceptional: the instructor had preservation fieldwork and teaching experience, now leads a graduate-level NCPE member historic preservation program, and had already taught these students during their two required history of design courses. Also, the site was significant: it was famous enough to inspire students. Students had twelve weeks to complete rehabilitation designs, turning two campus buildings into a conference center. They followed a guided sequence of exercises for the first six weeks: visiting the site, learning its history, and researching how to integrate new construction issues, such as building systems, LEED (Leadership in Energy and Environmental Design), and accessibility guidelines. During the final weeks, they prepared drawings to illustrate their design solutions and presented their finished work.

Students' essays throughout the process demonstrate that they learned a great deal about rehabilitation and the special care needed when designing within historic structures, but essays also reveal students' concerns (Goldsmith 2012). They felt unprepared to work in a historic structure, particularly because of the aesthetic and technical issues. Almost half said they never wanted to work in a historic building again. Only one student was pleased with her final design solution; for most, the project left them deeply concerned about their level of preparedness for professional practice with historic structures. Had this experience happened earlier in their education, this hesitation could have led to introspective growth followed by learning. However, these were graduates and they will not have another opportunity to design in a studio class. They needed the practice of designing in a historic structure, but sooner in their education, when they could have tried again and applied their knowledge. A year of history courses and more than three years of studio practice in contemporary structures was inadequate to prepare these students for preservation practice. Preservation studio experiences are a unique learning opportunity that should be prioritized in interior design education.

INTERIOR DESIGN STUDIO PROCESSES: LEARNING THROUGH PRACTICE

Interior design professionals work on a series of real problems, with both known and unknown design parameters. Practicing designers learn about their project by asking questions in order to discover a project's scope and its solution (Schön 1984). Interior design students learn how to practice design through active inquiry by practicing on their studio projects (Schön 1987). Students begin a studio project based on a real-world problem; then they engage in multiple studio activities and processes. Students' studio learning process is active learning, characterized by self-directed inquiry. When active learning is occurring, students are inquiring and exploring, rather than being given knowledge by an instructor. Since instructors do not completely control the inquiry process, students given problems based in whole systems will focus selectively on those aspects of the system that interest them (Lindfors 1987, 226). However, working on a context-rich problem, with interconnected questions and solutions, imparts meaning and aids learning (Lindfors 1987, 226).

Learning stems from the discovery process where students are guided, not instructed, by their teachers (Scanzoni 2005, 136). Higher-order learning, as John Dewey observed, is demonstrated by the student's ability to do something such as complete a studio project and not merely repeat information (Scanzoni 2005). Just as student learning should end with students being able to do something, it begins with their attempt to do something. Students learn to solve realistic, complex problems by tackling similar problems in guided classroom settings

(Scanzoni 2005). This real, learning-by-doing approach is the cornerstone of an active-learning situation. By placing students in greater control of their classroom learning, they can be immersed in complex problems and follow their own interests toward the solution (Scanzoni 2005, 149). Creating a compatible design solution is a challenge. Practicing on a historic building in studio allows students to explore problems, so that they will be prepared to tackle the making of a compatible interior in their professional practice.

In their review of literature addressing the psychological basis for problem-based or active learning, Norman and Schmidt (1992) found that problem-solving skills are content specific. Problem-solving skills learned for one type of material will probably not be applied to other different content (Norman and Schmidt 1992, 558-60). Applied to interior design, this suggests that not only is it important for students to practice solving interior design problems, it may also be important for them to practice on a wide variety of problems and techniques used in developing design solutions. In other words, designing contemporary buildings may not prepare students to design in a historic structure. Without classroom studio practice on historic structures, students may not learn how to address the unique problems of historic structures. Norman and Schmidt's (1992) finding supports this study's emphasis on the importance of historic building design practice. History content learning and contemporary design practice are probably not adequate preparation for practice in a historic context.

In support of context-based learning, Norman and Schmidt (1992) found that "elaboration of knowledge at the time of learning enhances subsequent retrieval" (559). Even though students may not seem to need "extra" information for their classroom problems, immersing them in complete problems aids their learning (Lindfors 1999; Norman and Schmidt 1992). Learners remember more when they solve complex, real problems and they recall more of what they learned (Norman and Schmidt 1992, 559). Learners also improve when they receive feedback on their solutions, making an active, participatory studio environment important for student success. Students' interests and learning may increase by letting students talk together about both their problems and the proposed solutions (Norman and Schmidt 1992). Lindfors (1987, 1999) urges teachers to allow students to have open discussions about their projects to help create stimulating learning environments. The studio-learning environment provides a place for instructor feedback, as well as individual explorations and group discussions (Schön 1987).

In both early language and design learning, neophytes are immersed in a rich, complex environment—whether of words or buildings. Without institutional or formal instruction, almost all individuals will acquire language and the ability to use it in a wide variety of situations. Similarly, before beginning formal studies, design students already have an innate, functioning knowledge of buildings. Most beginners can navigate through large airports and behave appropriately as guests in new homes. Students already understand the spatial concepts common to their culture and communities, such as hallway circulation and the difference between public and private spaces. Yet despite their functional competence in the built environment, many students struggle to design when they begin formal design coursework. Design education broadens students' exposure to the built environment and develops their ability to come up with creative new solutions to design problems. The struggle to design, rather than use, may begin again when students transition from contemporary to historic project building sites.

In lecture-based classes, students are rarely instructed through immersion in the same ways that they acquire knowledge outside the classroom. Instead, lecture-based classes subdivide a whole environment, whether language or design, into smaller, discrete units. It can be difficult for students to learn buildings in their setting, where different types of buildings surround them and buildings are a conglomeration of additions and styles. Completing a real design project in studio may help prepare students to work in the context-specific real world.

Lindfors (1987), an early childhood educator and language arts and acquisition researcher, discussed how difficult it can be for students to transition from learning through immersion in the whole system to classroom practices with abstract and discrete elements. In school, language learners must take language, which kindergarteners have already begun to acquire through immersion and exploration, and then dissect and label their intuitive language knowledge. Similarly, despite living in the built environment their entire lives, students usually find themselves unprepared for studio instruction methods and media. In studio, design students are asked to first learn the spatial elements of architecture, such as compression/expansion of walls and ceilings as well as intentional views and circulation routes. Architectural

textbooks, such as Ching's (2007), note the grammar or lexicon of architecture, with different chapters providing brief explanations and myriad sketches illustrating each element. Historic district guidelines assume a working knowledge of many elements of designs. Guidelines refer to design terms such as "massing," "volume," "proportion," and "rhythm." While developing their design vocabulary and grammar, students need to learn to apply these abstractions to buildings, use them to analyze and break down existing designs into discrete components, and build appropriate new designs from parts. Students build abstract models and draw sketches using such new communication tools to demonstrate how architectural concepts can be realized through their designs. Comparatively, schoolchildren use language arts exercises, such as worksheets that direct them to find all the articles, to demonstrate their competency with language.

Both design studio and language arts classrooms can be daunting for many students. Students with a functioning knowledge of buildings and language may find themselves struggling to discuss and manipulate the abstract elements of these systems (Lindfors 1987, 222-23). Knowing how to use a complex system and being able to discuss its elements are two different skills (Lindfors 1987, 81). Lindfors's (1987, 81-86) discussion of how children learn language suggests that providing students with context-based learning problems may allow them to apply and expand the implicit, functioning knowledge they bring to the classroom. Historic buildings are unique systems, different from contemporary buildings. Historic buildings are based on different aesthetic and technical systems. Working in historic buildings requires new, often site- specific, knowledge. Lindfors's (1987) research suggests that to design compatibly, students need to use, practice, and experience manipulating the complex elements specific to a historic building project.

Likewise, studio projects set in older buildings and developed in a real-world context should begin with what students already know and allow them to improve by practicing purposeful communication through design media. As students explore the older building, they can expand their general design knowledge into system abstractions specific to the historic building. For example, previously acquired knowledge about creating rhythm in design could be used to understand and learn from the rhythm of surviving neo-classical interior plasterwork on a project building. If students begin with context-based projects before trying to manipulate isolated abstrac-

tions, language acquisition researchers suggest that a foundation of context-rich work should make this transition easier and increase learning (Lindfors 1987, 81-86).

In lecture-based history courses, the instructor often plays an active role—seeking out relevant projects to show, asking and then immediately answering questions about the significance or architectural features of a building, and, finally, generating test questions and preparing students to memorize the answers. The instructor's processes are active and engaged, while students are passive memorizers of supplied content. In studio courses, these roles are reversed. In studio, the instructor introduces a design question based on a real-world problem. Then the instructor provides introductory guiding exercises to help students begin researching and engaging with the project site. Throughout the project, students move toward greater engagement and self-guidance. Instructors provide critiques, but they do not lead students' learning or classroom experience (Table 1). This may cause some instructors to believe that they are not teaching, but design professors teach by modeling the skills and thinking processes they want their students to acquire. By doing so, instructors can raise and develop students' awareness of design issues. In-depth lecture-based courses and related projects can help students transition from awareness to understanding. For example, interior design programs often offer an introduction to interior design course. This course covers a wide range of content, from color theory to building systems. In introductory courses, the instructors' goal is to raise students' awareness of the myriad issues pertaining to interior design. Students will later take specific content courses, developing their knowledge level from awareness to understanding. In studio courses, students demonstrate their ability to apply knowledge. In studio, students discover content; instructors model discovery processes. This is why students need to complete historic building projects in studio. Students need to learn and practice successful processes for working with historic buildings, which are different from contemporary buildings. Later, students can use their process knowledge to design compatible solutions for different historic buildings. For example, students need to learn how to locate and use historic district design guidelines, and practice responding to existing features.

In Educating the Reflective Practitioner (1987), Schön observed students learning in MIT's architectural design studios. Students would sketch their designs, then try and explain themselves to their professors, who would

Lecture Products	Lecture Process	Person	Studio Process	Studio Products
content	finds	Teacher	frames	content learning exercises
questions	asks	Teacher	frames	questions
solutions	asks	Teacher	frames	questions
solutions	provides fixed	Teacher	critiques	solutions evolving
content	is given	Student	discovers through	content learning exercises
questions	is told	Student	discovers how	questions
solutions	memorizes fixed	Student	practices finding open	solutions

Key to Table 1	
Person	
Active Process	
Passive Process	

Table 1. Illustration of different process experiences for teachers and students in studio versus lecture classes.

then sketch while talking about what the students were doing and planning to do next. Observed faculty used their monologues to demystify their thinking process and their sketches to show students how those thoughts appear in a drawing. To instruct, professors combined speech and sketching to model how an architect thinks. The monologues that Schön observed professors using to explain their in-progress sketching were a vocalization of their internal dialogue. By vocalizing a normally internal thinking process, professors demonstrated the design discovery process for their students and provided them with a scaffold to connect students' familiar language thinking to the new medium of sketching and content of architectural design.

In Vygotsky's (1986) discussion of inner speech, he explains how monologues, like those of the observed design professors, are inner speech or thoughts framed in words. Inner speech emerges and evolves throughout development both during children's early language acquisition and when adults learn new knowledge. Inner speech allows conciseness and the development of thought; it is a tool learners can use to explore and expand their own learning. By modeling design inner speech while drawing, professors demonstrate to students how to approach a design problem, use design elements, and work through multiple solutions. Schön (1987) found that vocally modeling their design thinking process was one of the major ways instructors used classroom time, and when successful, it built a scaffold to lead students to-

ward their own conscious design thinking. If instructors include elements of compatibility as part of their demonstrations of how to design for historic buildings, students can learn how to design compatibility while they are developing their designs toward creating compatible design outcomes.

Bakhtin (1986) analyzed the problem of speech genres, or spheres in which language is used (60). Speech genres exist in many forms, such as the difference between written and spoken language or between popular and academic presses. Language acquisition can be envisioned as the process of acquiring and appropriately using a collection of speech genres: ones for school, parents, friends, and so on. As students mature in school, they acquire speech genres for multiple school and social groups. Students' mastery of subject knowledge is linked to how much of each subject's speech genre they have acquired. Like mathematics or biology, design has a speech genre that users learn to communicate with in unique ways distinct from general language use. New design students must learn to use certain terms and thought processes in order to become part of the design language community and develop into mature designers. In studio, students practice working within their new design speech genre. They use new words and make new mental connections that allow them to practice and expand their knowledge while completing studio work. By practicing their new design speech genre, students can actually expand their knowledge. Once students have mastered their speech

genre, they can freely use and manipulate it (Bakhtin 1986, 80).

Language is a powerful tool for design students, and they practice using it to expand their knowledge, leading to more sophisticated practice. Because of this, students should practice using the particular speech and media of historic preservation projects, such as historic district guidelines explaining history and character-defining features, and preservation texts discussing compatible design and construction techniques. History lecture-based classes and awareness of historical movements do not allow students to practice the language or use the media of contemporary historic preservation practice. Students need the engaging practice of a studio environment to find and develop new skills in historic preservation.

Design students need to actively engage with the ideas they are learning. Learning occurs best as students begin to express themselves, either through speech, writing, or drawing, and then begin to intentionally modify, shape, and form these early expressions (Lindfors 1999). Interaction and discussion with classmates and teachers, as well as the student's own self-reflection, can all help the learner interact with new thoughts and design ideas. As students practice giving their thoughts form, their ability increases because they can consider their developing project and develop ideas through oral, written, and graphic media. The active interaction with learning found in language, where students learn by revising their writing or discussing their ideas with others, can also be found in studio, where students edit their designs, discuss them with their instructor and classmates, and refer back to the design project site for new ideas.

Suwa and Tversky (1997) examined what architects and architecture students see in their own drawings and sketches. They filmed architects and students designing a space by creating a series of sketches. Participants then watched their video and explained to the researchers what they were thinking in each part of the design process. This study found that professional architects, when compared to students, saw more in their sketches and were able to make more connections between their sketches and an imagined built design. By verbalizing what they saw in their sketches, the practicing architects demonstrated the strong connections they made between the process of drawing and their internal visualizations. Due to their greater experience with sketching as a communication and planning tool, these experienced practitioners used their sketches to imagine a more detailed

design than the students did. Students need practice to use their design skills to see potential in a historic building and design a compatible solution.

Suwa and Tversky (1997) found that both architects and student-architects used their sketches to clarify their thinking; sketch development was a dialogue with oneself. That architects saw and remembered more detail in their sketches than the students demonstrates how learning continues throughout designers' careers and that practice enhances thinking. This mirrors a language acquisition process. As students interact with and shape new ideas, they are able to conceive of increasingly complex ideas (Lindfors 1999). Early language and design learners' developing ability to elaborate internally and externally is one of the primary goals of education. Their growing imaginative and elaborative ability allows students, and junior professionals, to create new and increasingly complex thoughts and designs.

SIGNIFICANCE OF THE STUDIO SETTING AND CONTEXT-BASED REAL-WORLD PROJECTS

Interior design classes usually operate as two parallel systems of studio and lecture courses. In theory, lecture-based courses should inform and broaden students' understanding of specific content areas and reinforce their studio practice. Research in interior design education suggests a more complicated and disparate relationship between content and studio courses.

In studies from multiple interior design content areas (discussion following), interior design faculty discuss students' struggles to integrate content knowledge into studio projects and their own attempts to develop methods to help students to combine content knowledge and studio practice. Instructors in accessibility and universal design found that students struggle to combine content knowledge, such as best-practice suggestions for serving special needs populations, with studio practice (Kriebel 1983; Stiffler 1990; Brent et al. 1993). Kriebel (1983) designed a course in accessibility for interior design students after finding that students lacked experience working with accessibility guidelines, as evidenced in their studio work. The course combined lecture, class work, site visits, guest lecturers, and design projects. Kriebel (1983) had mixed success in improving student understanding and project outcomes, and concluded with proposals to modify the course, such as increased testing on technical content. Stiffler's (1990) course on designing for special needs populations included in-

class lectures, site visits to healthcare facilities and residences, and a studio design project. Through pre- and post-tests, Stiffler (1990) found student improvement in several areas, particularly awareness of and empathy with special needs populations, but a weak improvement in students' knowledge and application of technical design knowledge. Students wanted to make their designs accessible but still struggled to put best-practice knowledge into their studio projects. Brent et al. (1993) designed a three-day workshop for students and professionals to learn about accessibility codes and apply them in a small project. Their workshop used a variety of teaching methods, but pre- and post-testing showed only a 25 percent improvement in accessible design understanding. These results illustrate the difficulties instructors face when trying to increase students' knowledge of a content area and to require them to apply that knowledge in studio practice. These three studies all found that lecture and studio teaching are not being integrated into students' studio project outcomes, despite an attempt to use multiple teaching methods to bridge the gap between content knowledge and studio practice.

Color and light is another content area where students struggle to fully integrate technical knowledge into their studio designs and interior design faculty experiment with methods to teach the theory and practice of using color and light in designs (Poldma 2009). While framing learning issues students face regarding color and light, Poldma (2009) states, "too often light and color elements and theories are taught as separate design features." This leads students to treat them as "applied elements introduced [in studio projects] after planning may already be complete" (20). Poldma calls for integration between studio practice and color and light learning and application; separate learning in content courses leads to separate application in studio courses (21). Poldma presents course methodology and exercises focusing on applying color and light theory to experience in studio projects and real interior spaces. Teaching practices are explained for their ability to help students apply their learning in studio practice and Poldma calls for an early integration between studio practice and theoretical learning (Poldma 2009).

Poldma's (2009) underlying assumption, that studio is where students practice and integrate their content knowledge, was drawn from Fontain's (1997) attempts to teach architecture students to integrate lighting theory and concepts into their studio learning and projects.

Fontain found that studio was a "dynamic situation" and students "put their best energy into the studio project and have little time for their other courses" (Fontain 1997, 179, in Poldma 2009, 21). This echoes Schön's (1987) observations in MIT's architectural design studios. The studio is where students learn, practice, and relearn in a dynamic situation (see Table 1). Schön's (1987) work on architectural education and thinking was based primarily on observations of what architectural faculty and students were already doing, but it has shaped and influenced understanding of what happens in design studios, and appreciation of studio as the core of design education.

Like the courses discussed above, history of interiors courses are lecture based and content specific. If students encounter a historic preservation project in studio, they often struggle to integrate history into their studio learning (Lichtman 2009; Margolin 1995; Morgenthaler 1995). As lecture courses, history classes are separated from studio classes. Class structure, course assignments, and student demonstrations of learning—studio projects versus history tests—are different in history and studio courses (see Table 1) (Lichtman 2009). Lichtman's multipart study surveyed and interviewed design history instructors throughout the United States and conducted a case study analyzing student feelings, assignments, and classroom activities from 1982 to 2000. Lichtman (2009) found that most instructors believed a lecture-based course was necessary to introduce students to the material and provide them with an overview of the discipline. However, this lecture-based survey format is "creating a rift between academic goals and creative practice" (Lichtman 2009, 342). It can leave students struggling to find any relevancy to their studio practice. Lichtman concluded that the primary method history faculty use to teach their courses is a "masterpiece" approach. Faculty members discuss masterpieces of design and master designers, with canon organized chronologically and into historical styles, such as Gothic, Romanesque, or Beaux Arts.

The masterpiece instruction method can provide a clear organizational structure for students and faculty to unify the content of history survey courses. Both Lichtman (2009) and Margolin (1995), in his overview of the history and purpose of design history courses, discuss the pros and cons of the masterpiece method. It was developed when history of design courses were first established in the 1970s and is based on a traditional art history model. Design history faculty often come from history or art history, not design practice, backgrounds

(Lichtman 2009; Margolin 1995). In art history, lecture-based survey courses focus on showing students the "best of the best," analyzing the superior qualities of each piece, and sorting artworks into discrete styles. Instructors try to give students a historical overview, not inform their design work (Margolin 1995). Margolin (1995) states that this distinction—giving students a historical overview versus informing their design work—is an important, if unacknowledged classroom objective. It may help explain why design students find little relevance in their history classes (Lichtman 2009; Margolin 1995).

Unlike accessibility, color, and light content courses, history courses are deliberately separated from studio learning and practice. Margolin (1995) traces this development to Bauhaus teaching pedagogy, which emphasized designing from principles, such as form and mass, rather than historical inspiration. Dunbar (1989) provided further credence for this theory by examining the writings and teachings of the Bauhaus director and Harvard Graduate School of Design instructor Walter Gropius. Dunbar (1989) examined Gropius's principles and traced their influence through interior design education. He found that Gropius's teaching practices and philosophy remained important influences in interior design education in the late twentieth century.

Design history faculty concerned about a disconnection between history and studio learning experimented with different teaching methods to help design students connect their history and studio learning. Morgenthaler (1995) examined architectural design history courses and used a case study to develop a non-chronological, thematic approach based on studio concepts with a goal to "unleash the creative potential of architectural history" (218). Beecher (1998) critically examined the history of interior design teaching, available textbooks, and the limits of the masterpiece-chronological teaching structure. Like Morgenthaler (1995), Beecher wanted students to be inspired by the process of design history, finding that the "linear construction of history often promoted by interior design texts potentially limits students' abilities to understand the connection between the creative processes used in design activity and those used to study the past" (Beecher 1998, 4).

Beecher (1999) continued research in history of interiors teaching practice through a case study with two sequential history courses. The courses still focused on masterpieces, but instead of a chronological presentation, sites were grouped into four themes that included exam-

ples from different time periods and cultures. Beecher expected that these groupings would help students see connections between different works and between studio processes and the processes used by historic designers. While this study was informed by developing classroom practices to improve history learning, this article is different from previous research. The author proposes design history learning should enter the studio classroom and explore learning outcomes in a real world–inspired, active-learning studio setting.

The subdivision of interior design curricula into studio and content courses presupposes that students need lectures rather than studio courses to learn technical material and that they will later be able to integrate content learned in lecture courses into studio projects. Both assumptions have been shown to be faulty in attempts to improve accessibility, lighting, and color practice. First, while the passive learning that students experience in lecture courses may seem to transfer large quantities of information to students, once each course is complete, students may not actually remember much (Scanzoni 2005). Second, faculty from multiple content areas share a concern that students are not integrating knowledge learned in different settings into the studio, which is the primary location of student learning and where students apply their learning through practice. In comparison to other interior design content areas, history faculty members face an even greater challenge than instructors of lighting, building systems, or technical design standards. Interior design history knowledge is not presented in an application-ready format and students are not generally expected to apply their history knowledge to studio projects. History faculty members continue to experiment with teaching methods and in-class assignments that may make the material more applicable to students' studio work; however, Morgenthaler (1995), Beecher (1999), and Lucas (2009) all reported being limited by the class time and structure of the history course. Their experiments did not bridge the lecture-studio gap, and they did not test their new teaching practices on students' studio project outcomes. Meanwhile, history faculty members agree that they need available course time just to present an introduction to their material (Lichtman 2009). History instructors' concerns about covering their materials imply that until the expected content and format of history courses change to allow time for exploratory projects and practice, students will need to practice working with historic buildings in their studio courses. Because studio

is where students are active and energized learners practicing design, this author proposes preparing students for professional practice in an educational practice setting. If students are to achieve compatible designs for historic buildings in their professional practice, they most likely need to practice with context-based real-world projects in studio.

Studio learning allows students in the act of designing to learn through complex, content-rich problems. This is a significant feature of studio learning. Engagement in studio with real, complex problems should actively absorb students in their learning and promote long-term student learning and recall (Norman and Schmidt 1992). Real-world context-based projects are the foundation of studio projects. Real-world context-based projects are complex, rich with content and detail for students to actively explore and discover. Because of the richness of these problems, students can pose multiple questions and solutions; questions and answers are not closed and fixed, as they sometimes are in lecture-based history classes. Learners may find active, discovery-based learning—finding questions and solutions—more engaging (Lindfors 1999; Scanzoni 2005). Working on real-world projects can promote a genuine interest in learning and practicing design; students' work is engaging and meaningful (Lindfors 1987, 1999).

Compatible designs are developed in the real world, in response to local situations and design guidelines. Designing compatibility requires an engaged designer actively learning the local history and design features relevant to the project site. Context-based studio rehabilitation projects encourage students to seek out new information and respond to the specific context of their problems. Students engage in practice, rather than memorization.

A CALL FOR CHANGE

This study examined how students can go beyond knowledge of interior design history to historic preservation practice. This leap, from lecture to studio, understanding to application, presents challenges to students, but it also furthers their professional education and prepares them for practice with existing historic buildings.

Creating a compatible design solution requires a student-designer who is engaged with the project and understands local conditions, including the history and significant design elements. Designing compatible solutions can be a challenge, by requiring design students to work with historic and contemporary elements to transform

the space into a new interior. Students may be motivated to engage with the design process and learn about their project site if they have a context-rich studio project based on a real-world problem and discover design solutions in an active-learning studio. In an active-learning studio, students immerse themselves in the complexities of their design problem, explore questions and answers as they discover solutions, and receive feedback through discussions with their instructors and peers. Active-learning, exploratory studios may allow students to discover how they can use a historic project building to create a new interior design. In turn, their educational practice will prepare them to create more compatible designs within the historic buildings they encounter throughout their careers.

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