The Social Construction Model and Architectural Education

JOONGSUB KIM
Lawrence Technological University

Introduction

I recently conducted in-depth interviews with African American female professionals in architecture and allied disciplines in Detroit (Doe, 2005: pseudonym for the author). I learned in the interviews that black women in such fields who work in underserved urban areas must wear many hats in the course of their work and address issues that they never encountered in design school. In addition to carrying out the traditional activities of a professional designer and planner, they find themselves acting as counselors, facilitators, and educators. The physical and social environments in which these professionals typically operate require skills in social learning, public deliberation, negotiation, community building, participatory design and planning, and hands-on field research. They work every day amid abandoned buildings, burned-down houses, vacant lots, trash, and abandoned cars on the streets—not to mention crime, vandalism, drugs, and other social and economic problems. Facing such difficult conditions, and against long odds, these minority professionals play a significant role in neighborhood revitalization.

These professionals must be able to respond quickly to unpredictable, complex situations that can spin out of control if not addressed effectively. They improvise, make the best of the limited resources they have, modify the conventional approach that they were trained to apply, and experiment with radical or untested ideas. I contend that contemporary architectural pedagogy does not train students to deal with such difficult situations, especially those involving underrepresented segments of the population. Such situations form the 'everyday' environment that Habraken (2003) and Till (2003) talk about in their studies. The contemporary architectural pedagogy to which I refer here is what Till characterizes as the 'orthodox' approach in architecture schools today. I argue here that current pedagogy in architecture lacks diversity in terms of both the population it serves and its traditional approach to studio teaching.

This situation is, however, nothing new, as Habraken and Till pointed out. I contend that the aforementioned orthodox model is grounded in a narrow, rational approach to teaching in architecture, in contradistinction to which I propose a social construction model. I argue that the social construction model helps students to experience a sense of ownership and autonomy, to deal confidently with difficult situations, to explore innovative ideas, to fire their imaginations, and to realize their full potential. My study is based not only on real experience but also on imaginary scenarios undertaken at the Community Studio (pseudonym), a community design and outreach program of the architecture school at a local university where I teach. These examples and materials are supplemented by the results of the abovementioned interviews with African American female leaders of neighborhood revitalization in Detroit. I will draw lessons not only from such fields as planning, anthropology, environmental psychology, and sociology but also from my experience in that community outreach studio. As Bechtel & Churchman (2002) argue, drawing on such diverse sources can provide us with new tools in design and allied disciplines, promoting new discoveries and new understanding.

Architectural pedagogy: current debates and responses

Habraken (2003) and Till (2003) are joined by several other scholars in criticizing the current state of architectural teaching. They argue, for example, that orthodox pedagogy neglects disadvantaged populations, such as low-income people, the disabled , the sick, the elderly, women, etc. Moreover, orthodox pedagogy is often associated with a student-apprentice model, complete with painful studio crits and other inflexible, top-down techniques. Arguably, such orthodox approaches have isolated the architectural profession, alienating certain populations as it discourages diversity, especially in studio culture.

Bound by such traditional practices and cultural norms, architectural education rarely serves as a fundamental agent of socialization, a concern of many scholars who think about traditional design studio pedagogy, content, and culture. Boyer and Mitgang (1996) and other scholars support studios that address human equity issues for both architecture students and those who inhabit or experience the built environment. They urge faculty to transform the teaching of architecture into a socially embedded discipline and to foster an atmosphere of collaboration and respect in their classrooms. Boyer and Mitgang contend that curricular and design sequences imposed on students at architecture schools should foster a climate of caring for human needs by including more frequent contact with clients and communities and by placing greater emphasis on environment and behavior. Building to meet human needs means helping architecture students become effective teachers and listeners who are able to translate the concerns of clients and communities into caring design.

A report known as the "Redesign of Studio Culture" issued by the American Institutes of Architecture Students (2002) acknowledges the challenge of sensitizing the design studio to human equity issues. It calls for change throughout its detailed critique of current practices in design studio education emphasizing, among other things, the need for increased diversity in architectural education. It contends that architectural education too often ignores underrepresented groups, urging the architectural academy to embrace diversity so that practicing architects understand how to design for everyone.

The organization Adaptive Environments echoes these studies, advocating a more human-centered curriculum in schools of architecture with improved access for people who need it most (see www.adaptiveenvironments.org). They urge architecture faculty to adopt a holistic view of design that integrates human health, environmental health, and social justice. They highlight the connections that must be made to create inclusive, healthy, and sustainable neighborhoods and communities. The increasing separation of populations or societies by race and income and the struggle to end environmental racism and gender discrimination are all interrelated community-building challenges. Boyer and Mitgang (2002) and Days (2003) also emphasize teaching the goals and techniques of inclusive or universal design in design school programs. My paper responds to these debates and concerns, focusing primarily on the issue of diversity in architectural education in terms of its scope, goals, and approach to studio teaching, as I join in calling for the discipline to break the shackles of its orthodox model.

A rational model in architectural pedagogy

Friedmann (1987) observes that a rational decision-making process typically consists of identifying necessary information and objectives, evaluating information, making decisions based on the preceding steps, implementing the resulting decisions through appropriate institutions, and assessing program outcomes. Such a linear approach typifies design studio pedagogy.

Design studio teaching typically begins with initial research (identifying pertinent issues, data collection) and moves serially to the analysis of issues, the synthesis of design goals and concepts, the implementation of design and physical strategies, and feedback on student outcomes (such as studio reviews). Moreover, studio teaching thrives on the student-apprentice model. Students adhere to strict guidelines laid down by faculty, learn and apply standardized principles to the architectural styles their instructors promote, and deliver projects that reflect their teachers'

ideals. The review process in a typical studio is interrogative, top-down, expert-driven, product-oriented (measuring student performance mainly by reference to the finished product rather than to the process of learning), and dictated by faculty along with other expert guest jurors who critique student work in front of a "silent" audience (the students). Such is the rational model.

According to Friedmann (1987), the rational decision-making process that characterizes studio pedagogy is linear, administrative, technical, and bureaucratic, advancing a technocratic approach to problem solving. This can have a negative impact on studio teaching, as we will see in the next section. The rational model does, however, offer some benefits. Cullingworth (1997) observes that the expert-driven orientation of the rational decision-making approach promotes technical rigor. At the same time, however, this strength can be a weakness, because it discourages experimentation. This limits the value of the rational approach to studio teaching.

Drawbacks of the rational model

Design studios too often approach problems through the rational/apprenticeship model, implementing discrete steps in a particular order. Such a process discourages innovation and creativity because of faculty presuppositions about what data is worth collecting—they favor the predictable and comfortable. Moreover, such a rational, expert-driven approach can undermine students' sense of ownership and undervalue individual characteristics, values, and potential because the "comfortable" data favored by faculty and experts may apply only very generally.

A system that is confined by such a rigidly linear and top-down process can serve useful purposes but at the expense of new or accidental discovery, innovation, sense of ownership, diversity, and flexibility. Christenson (2005) argues that an 'accidental' approach can spark experimental ideas that would not arise under a rigid, expert-driven, preconceived 'manual' approach. For example, in many studios students are expected to follow a pre-determined, mentor- and textbook-driven process in designing the physical environment for a given site. But adhering rigidly to such an approach can stifle the imagination, precluding the "accidental" development of experimental or innovative ideas. In the next section, I discuss alternatives to the rational model and suggest how studio teaching can benefit from experimentation via social construction.

The social construction model and experimentation

I argue that we should explore new approaches to the rational model—not to replace it but to improve on it by compensating for its inherent defects. I advocate a type of experimentation in the design studio that promotes a culture of innovation, productive accident, fresh thinking, a sense of autonomy, a sense of ownership, and accelerated implementation (making design applicable to real world problems in a timely manner). Such positive outcomes will benefit architecture students during and beyond the school years.

In making innovation a major criterion of success this paper, informed by multi-disciplinary findings, advances a social construction model within which variations in approach are possible and experimentation can occur. In the social construction model, a studio instructor "facilitates" rather than dictates the studio process, allowing a student to create or construct her own reality, her own image, and her own future. Social construction is experimental and non-linear. Socially constructive design does not necessarily start, for example, with data collection. In some social construction models data collection occurs only after the visioning of students' own goals (or the studio clients' goals), with little grounding in the goals of faculty or design experts. This promotes innovation and new discovery because it allows the unpredictable or accidental to happen as a result of breaking out of a predictable, "rational" routine.

The social construction model can also benefit studio clients, project sponsors, and residents. For example, Hou & Rios (2003) argue that current practice in neighborhood development lacks political crafting and cultural framing (discourse building, consensus building, etc.). Thus in the case of community design projects undertaken at university-based community outreach studios in collaboration with

sponsoring communities, social construction helps a community's residents help themselves to craft their own political reality. This builds consensus among residents because no one is pushing the ideals of the studio or its faculty on them. It is, after all, the community residents' own project that studio participants will execute. In the following section, we explore several types of social construction that help experimentation produce positive outcomes. When that happens, students enjoy a new kind of success in the design studio.

Four types of social construction

I now describe in detail and discuss the key strengths and weaknesses of four social construction approaches that promote experimentation in the studio, and that are potentially beneficial to neighborhood design and revitalization projects undertaken by teaching studios.

Inversion

Inversion begins with imagining the future rather than with global data analysis. Students or student/client teams work together to form their own image of the ideal place and the results inform and focus subsequent data collection and analysis. Under inversion, a studio instructor works from the outset directly with the "untested" visions of students or studio clients (residents, project sponsors, etc.). The instructor will use these untested visions to guide them, avoiding a potentially time-consuming process of untargeted data collection and analysis. We can think of these visions or imaginary solutions to problems as hypotheses that need to be tested. To test such hypotheses, one needs to collect specific data for later analysis.

According to Forester (1989 & 1999), laypersons such as students or community residents, intimidated by the expertise of studio professionals, are hard pressed to advocate for their own visions. When practicing inversion, a studio instructor treats the untested visions of students or studio clients as hypotheses to be assessed empirically, rather than dismissing them as worthless pipedreams. This is similar to treating a design as a hypothesis to be tested via proper research, as environment-behavior studies by scholars like Zeisel (1984) suggest. Such an approach is particularly valuable in the case of architects, planners, and other professionals who work in neighborhood revitalization in underserved urban areas. To inform a project with a student's or a studio client's own vision gives that project a clear direction.

It is possible, of course, that such an informing vision, unmoored to solid ground by professional expertise, will indeed be wholly unrealistic. Some hypotheses are not testable. Some visions cannot be implemented practically. So some caution is necessary. Without assuming some risk, however, no experimentation is possible. For example, since there are rarely sufficient resources, time, or manpower in poor areas, the inversion approach, featuring careful selection of a community vision proposed by residents themselves, can promote workable experimentation because residents will likely know more about the limitations and possibilities of their communities than outside observers. Much is at stake, but making positive outcomes more likely helps to reduce the risk.

Simulation

Simulation allows students or studio clients to undertake small-scale experiments (such as the design and construction of a "mock" playground), drawing immediate lessons that can make the final design process more efficient and effective. Under simulation a studio instructor facilitates a process in which students experiment with ideas that residents have been thinking about. It gives students and residents the opportunity to test their ideas and see an immediate result.

Small-scale simulation affords the opportunity to test "big" ideas before launching into full-blown implementation. Especially when a proposed idea is potentially expensive or risky, conducting an experimental simulation is wise, economical, and safe. The key is to keep a simulation small enough to be relatively manageable so that mistakes are not overwhelming in their consequences. Simulation is, then, based on the idea of the 'small experiment' proposed by Kaplan (1998). She explains that small-scale experiments are a powerful means of sharpening our intuitions, overcoming

indecision, and testing ideas without undue baggage.

In a recent community design project undertaken at the Community Studio, residents wanted to develop a program to teach children about the importance of taking care of the physical surroundings of their own block and neighborhood. We developed an experimental class comprised of seventh-grade African American students in the study neighborhood in Detroit. Students learned to make architectural scale models. Our studio conducted pre- and post-tests on the effectiveness of the proposed program. This short-term experiment enabled us to draw an immediate conclusion, contributing to greater understanding and new explorations. The outcomes of the experiment were incorporated into the studio's design process.

In this way, simulation enables students or studio clients to clarify whatever misunderstandings, misgivings, or doubts they might have about their ideas, while preventing false hopes from disappointing them later. Students learn that a small-scale experiment can expedite the implementation process by obviating debate about launching a program that would require a major commitment of time and resources. A community in turn is able to re-think or implement a "big" idea more wisely when attempting it later on a much larger scale.

A studio or a community must nevertheless be careful when choosing which project components to simulate first and which to simulate later. Since conducting even a small-scale experimental simulation can be expensive, careful planning is needed. On the whole, however, the experience and outcome of a small-scale simulation gives students or studio clients a sense of control, of accomplishment, of hope, and of confidence. Small-scale experimentation thus provides a way of addressing a project's intended purposes within the constraints of existing resources.

Reciprocity

Reciprocity in the design studio involves students and other project participants in role-switching exercises. Role playing has been used widely in planning and other fields (Hoch, 1994), as well as in projects that involve group activities, multiracial and intergenerational age groups, diverse social classes, and multiple disciplines (Levy, 1997). When role playing In the design studio, students present their findings to studio clients or other participants and vice-versa in a mutual critique that counters biases while enhancing mutual understanding. Reciprocity can be applied to students and guest jurors as well. For example, students can play the role of laypersons, while guest juries play their usual role as experts. It has been widely published that experts and laypersons have different preferences for or levels of understanding of the production of a built environment (Groat, 1995; Schon, 1985). Reciprocity therefore educates participating professionals (experts, jurors, etc.) and non-professionals (students, residents) about the difficulties of collaborating with someone from a different background. It encourages both sides to acknowledge that they need each other to ensure the success of a project.

At the Community Studio, especially in the beginning of a semester when meeting with project clients or sponsors, reciprocity begins with students acting as residents, asking questions that they think residents would ask experts. During a subsequent focus group session, students play the role of experts, asking questions they would expect professionals to ask students or residents. Then, during a later workshop, participating professionals are instructed to play the role of residents, asking students questions from that perspective. Residents are then asked to play the role of students during progress review sessions. Participating residents learn to be open-minded about students' fresh or experimental ideas. These exercises expose participants to stereotypical views expressed all too often by people of different backgrounds.

One possible liability of reciprocity is that it may be difficult to apply it to projects with extensive technical requirements because students and residents typically lack the technical background offered by experts. Indeed, difficulty in communication between expert professionals and laypersons is among the most serious roadblocks to successful multi-party collaboration (Forester, 1998). For all participants, then, learning to communicate with people of different backgrounds not only

enhances the design process, but it satisfying in its own right.

Research-in-action

Finally, research-in-action allows research tasks to occur simultaneously with design and implementation activities. Research-in-action is based on the concept of 'action research' (AR) or 'participatory action research.' Such an approach has been promoted in anthropology, planning, sociology, and related fields. Greenwood & Levin (1998) explain that AR promotes broad participation in the research process and supports action that leads to a more just or satisfying outcome for stakeholders.

In the rational design studio model, research precedes action. This can cause problems, especially in the case of community outreach projects or others in the real world, because of the urgency with which residents wait for outcomes to emerge. When practicing research-in-action, project participants conduct design-design hypothesis testing and repeat it as time permits. This gives students the opportunity to create a design and immediately test a corresponding design hypothesis. The goal is to generate quick feedback on a design hypothesis via scientific research conducted with prospective or hypothetical building users (employing surveys, interviews, simulation, etc.). Such almost-instantaneous feedback can guide students and faculty to more sharply focused data collection and analysis as well as better informed design.

Design hypotheses can be tested by reference to study participants' comments. Testing outcomes in this way helps students and faculty determine which data are needed in a particular case. Once the necessary data are collected, class participants quickly revise or improve their design, based on that data. Following data analysis, a design team presents an improved design hypothesis to studio clients and prospective or hypothetical building users for further testing. This cycle is typically repeated several times within an allotted time limit.

At the Community Studio, a key building proposed in a recent project was a farming education center with a market. Students had performed a quick conceptual design exercise to develop a design hypothesis using video, painting, music, installations, and the like. They presented their design hypothesis to residents, project sponsors, and other participants early in the semester. Based on other participants' reactions, students quickly defined the issues on which to focus and the type of data they needed. They then collected specific information on the appropriate subject matter. Next, they revised their design concept by supporting it with data they had collected and reported back to residents and other stakeholders for subsequent feedback. Such a process of confirming, contesting, and redefining collaboratively with project participants enriches the design process while conducing to outcomes acceptable to all.

It is possible that in some cases students need time to warm up their "design machine" before developing and testing a conceptual design idea. Nevertheless, research-in-action allows class participants to quickly identify the needs of their clients. Research-in-action properly utilized should help students and residents experience a greater sense of control as they witness how their feedback is reflected in the multi-stage design-design hypothesis-testing process.

Conclusion, implications, and further study

We now review key themes and implications cutting across the four models of social construction and suggest areas of further study. I acknowledge some overlap among the four approaches I have discussed, but each is nevertheless unique. All four should be utilized in studio teaching to achieve the maximum effects of social construction. In these four social construction models, predetermined steps in the rational decision-making model are reversed, merged, or even omitted. In that sense, the models are experimental, allowing new or accidental discovery or learning to emerge. For example, when the untrained visions of students or residents, not the preconceived imperatives of the experts, guide sharply focused data collection and analysis (in inversion); when participants conduct small-scale experiments that may be incomplete and imperfect (in simulation); when participants switch roles (in reciprocity); and when design is merged with research (in research-in-action)—in all these cases, anything can happen.

The examples given in this paper indicate further that all four social construction models, if implemented successfully, could save time and resources in a community, an especially attractive benefit to architects and planners working on projects for underserved, resource-poor urban areas. More importantly, the four approaches enable students and residents to take responsibility for their own ideas. Ideally, they promote a sense of control and accomplishment by allowing participants to experiment with their ideas. In this context, a studio instructor is more like a facilitator than a master-director, setting up meetings, coordinating activities, reinforcing initiatives, nudging reluctant participants, informing the process, and resolving conflicts—all the while letting studio clients or residents make certain key decisions via a democratic process, as students and studio clients experiment with their ideas and take responsibility for their actions.

Despite the potential benefits of the four models of social construction, a few words of caution are in order. It is not realistic to abandon the rational decision-making model entirely or to replace it with social construction, especially in the case of community revitalization in poor areas. Building on some of the strengths of the rational model can benefit social construction. For example, Kaplan (1998), while advocating small-scale experiments, emphasizes the necessity of careful, goal-directed planning in the execution of an experiment and in the dissemination of the outcomes.

While the social construction approach will introduce students to conversational social learning, community building, and participatory design and planning—as well as teaching them about the environment and behavior perspective—design studio teachers must first understand and teach the specific skills students need in order to utilize social construction successfully. Inversion and reciprocity may require negotiation skills as students learn to work with faculty, studio clients, and other stakeholders. Simulation and research-in-action require field research skills to enable students to undertake hands-on assignments working in collaboration with classmates or studio clients. My research (2005) on African American female professionals working in underprivileged urban areas indicates that their work requires negotiating and hands-on research skills as well as related skills needed for conversation, social learning, public deliberations, democratic practices, and environment and behavior research. While some of these skills can be learned via the four types of social construction, further study is needed to develop a program for teaching other skills to students. After all, few of the aforementioned skills are included in mainstream studio teaching approaches.

Social construction techniques allow participants to experience the excitement of experimentation while successfully completing a project, but it is also vital to equip students with traditional design and technological skills that are necessary for professional registration and successful architectural careers. We need also to study the effectiveness of the four models of social construction. In what type of project would social construction be more beneficial than the rational model? Can the social construction model work better for a neighborhood revitalization project in a poor area than for an "enlightenment" project like an expensive orchestra hall in a thriving downtown area? A study comparing both models is indicated. It is impossible to eliminate all risk from experimentation via the social construction model, and our acknowledgment of other challenges involved in social construction techniques points up several additional areas that need study if we are to maximize the benefit of the social construction model.

References

Adaptive Environments, *Access to Design Professions,* www.adaptiveenvironments.org. Accessed July 31, 2005.

AIAS, The *Redesign of Studio Culture: A Report of the AIAS Studio Culture Task Force,* Washington, DC: The American Institute of Architecture Students (AIAS), 2002.

Bechtel, Robert B. and Churchman, Arza, *Handbook of Environmental Psychology*, New York: John Wiley & Sons, Inc., 2002.

Boyer, Ernest and Mitgang, Lee, *Building Community: a New Future for Architecture Education and Practice*, Princeton, NJ: Carnegie Foundation for the Advancement of Teaching, 1996.

Christenson, Mike, "Promoting Conditions for Productive Accident," in the Proceedings of 2005

ACSA International Conference, Washington, D.C.: ACSA Press, 2005.

Cullingworth, Barry, *Planning in the USA: Policies, Issues, and Processes*, London: Routledge, 1997.

Day, Christopher, *Consensus Design: Socially Inclusive Process,* Oxford: Architectural Press, 2003.

Doe, John (pseudonym for author), "African American Women and Placemaking in Neighborhood Revitalization" (unpublished paper, 2005).

Forester, John, *Planning in the Face of Power,* Berkeley: University of California Press, 1989.

Forester, John, *The Deliberative Practitioner: Encouraging Participatory Planning Processes,* Cambridge: MIT Press, 1999.

Friedmann, John, *Planning in the Public Domain: From Knowledge to Action*, Princeton: Princeton University Press, 1987.

Greenwood, Davydd J. and Levin, Morten, *Introduction to Action Research: Social Research for Social Change*, Thousand Oaks: Sage Publications, Inc., 1998.

Groat, Linda, "Meaning in Post-Modern Architecture: An Examination Using the Multiple Sorting Task," in *Readings in Environmental Psychology: Giving Places Meaning*, Linda Groat, ed., London: Academic Press, 1995.

Habraken, John, "Questions that will not go away - some remarks on long term trends in architecture and their impacts on architectural education," The keynote speech at the EAAE conference in Hania, 2003.

Hoch, Charles, *What Planners Do: Power, Politics, and Persuasion*, Chicago: American Planning Association Press, 1994.

Hou, Jeffrey and Rios, Michael, "Community-Driven Place Making: The Social Practice of Participatory Design in the Making of Union Point Park," *Journal of Architectural Education* 57:1 (2003): 19-27.

Kaplan, Rachel, Kaplan, Stephen, and Ryan, Robert L., *With People in Mind: Design and Management of Everyday Nature*, Washington, D.C.: Island Press, 1998.

Levy, John M., *Contemporary Urban Planning*, Upper Saddle River: Prentice Hall, 1997.

Schon, Donald, *The Design Studio: An Exploration of its Traditions and Potential,* London, RIBA Publications Limited, 1985.

Till, Jeremy, "Lost Judgment," A selected paper in the EAAE Writing Prize 2003-2005, Sheffield University, Great Britain, 2003.

Zeisel, John, *Inquiry by Design: Tools for Environment-Behavior Research,* Cambridge: Cambridge University Press, 1984.

SUSTAINING ETHICS IN PEDAGOGY

SESSION 2: COMMUNITY, IDENTITY, AND ENCOUNTER IN ARCHITECTURAL EDUCATION

This session addresses how community, identity, and encounter are central to critical engagement, society, and pedagogical practices. The first, "The Project as Encounter with the Others: An Ethical Opportunity in Design," explores the relationship between the notion of a design project and the encounter with others, presents design projects that address issues of social ethics in architectural pedagogy, and argues that the concept of the design project as the place of encounter offers a way for students to value and understand ethics as a design choice. The second, "Ef/Facing Racial Segregation - Understanding Culture: Transcending Boundaries in a Design Studio," explores ways to incorporate cultural aspects of architecture in an urban design studio and illustrates how a studio can be a setting for students to discover the history and legacy of racism, as well as the role of race and racism in urban design. The third, "Fabricating a Pedagogy While Mending Tears," describes links between students' desire to help communities with the physical and social settings of those experiencing poverty, homelessness, addition, and mental illness and argues that a sustained encounter with such communities positively impacts students' critical and ethical thinking in design. The salient issues in and among these papers include race, difference, common (public) space, and the transformation of students engaged in critical thinking and ethical decision-making.

SESSION MODERATOR:
IGOR MARJANOVIC
Iowa State University

SESSION PAPERS: