

# Testing Grounds: Some Thoughts on the Registration Exam Debate in Light of Recent Pedagogic Theories

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Architecture's various regulatory bodies (NCARB, AIA, ACSA, etc.) have been actively promoting the notion that the traditional period of internship prior to sitting for the architectural registration exam (ARE) should be eliminated. In proposing to move the exam to the end of a student's formal education, the AIA explicitly intends to shape both the content and the approach of accredited architectural curricula

The proposed presentation begins with an examination of the proposal in the context of recent pedagogic theories. It will identify some aspects of the architects' competence that are poorly measured by the crude mechanism of the exam, propose some alternative pedagogic goals, and then conclude with a discussion of the experience of one studio which addressed some of these in an experimental way.

## Part One: The Exam "Debate"

Recognizing the importance of the multi-organizational Internship Summit of April 10-12 [1999], the AIA Board of Directors at its March [1999] meeting in Tampa devoted several hours to a formal debate on the future of architectural education and practice. Resulting from the debate, the Board adopted three positions for use at the summit, namely that:

Professional-degree graduates be allowed to take the Architecture Registration Exam immediately upon graduation

Schools of architecture incorporate practical experience into professional degree programs

Schools of architecture integrate strong emphasis on communication, leadership, and business skills in professional degree programs.

In substance, the debates reflected the high degree of caring on both sides of the academic/professional coin as well as the need and willingness to work together to create a better future for the profession and a better profession for the future.

Thus begins a frontpage article in the May 1999 issue of *AIArchitect*, the "newspaper of America's Community of Architects" under the headline: "Board Debates Education, Practice of the Future." The article, written by Stephanie Stubbs, Assoc. AIA, the managing editor of *AIArchitect*, outlines a "debate" that occurred at the March meeting of the AIA Board of Directors. Despite the reported "caring" among the parties at the event, the article gives no indication of the mechanism

whereby consensus on this position was reached. Was the vote unanimous? If not, what kind of majority was in favor of the position? Was there a substantial minority? Is the statement intended to represent all AIA members? (I'm a card-carrying member of the organization, and nobody ever asked my opinion on the matter.) The questions are relevant, because the "positions" would be rather sweeping in their impact if implemented.

Both published reports and eyewitness accounts give the impression that the so-called debate was a rather choreographed affair. The pro team substantially outweighed the con team in regulatory and professional credentials. Four AIA members, three of them fellows and two representing the top NAAB administration (the apex of the bureaucratic hierarchy of architecture's credential-granting organs) upheld the pro side. Two AIA fellows joined two current architecture students representing AIAS to plead the con position. Given that authority in our field seems to rest in the presumably superior grasp of something called "reality" (read money) among practitioners, the contrast between "strong" industry advocates and "weak academics" is particularly striking. The cons are, for the most part, depicted as half-hearted in their advocacy of their positions, like reluctant students in a staged debate forced to argue assigned positions. The agenda of the exercise becomes completely transparent in the last of the "debates" reported in the *AIArchitect* article. Gray Plosser, director of NAAB, predicts that under the new regime "schools will be more accountable for a tangible outcome. Curriculum will change some, and exams will change some." (Stubbs, 1999)

Subsequent published writing on the topic: the web-based report from the Summit on Architectural Internship held at Shaker Village, Kentucky, and the September [1999] ACSA news, suggest a snowball effect of enthusiasm for the change. The Shaker Village summit adopted the following proposal:

It seems to us that it is reasonable to consider that:  
the registration exam could be taken upon graduation from an accredited degree program;  
practice could be integrated into education;  
education could be integrated into practice;  
the term "intern" should be reconsidered;  
there be alternative paths to practical experience;  
the profession foster a culture of lifelong learning and mentorship;  
national and international reciprocity progress be preserved and enhanced ; and  
accessibility to profession be strengthened.

## Part 2: Implications

The initial AIA proposal was put forward with the clear intent of affecting curricula. The Internship Summit, dominated as it was by architecture's regulators, presented a kinder, gentler version of the AIA proposals. ACSA must take an active role in ensuring that a thorough examination of the implications of this proposal occurs. If, as appears inevitable, the changes are implemented, it is hard to imagine that many institutions, aside from the most elite and independently wealthy and the most bravely non-conformist, will resist.

The proposed changes cannot help but increase the influence of the exam in particular and reductive, business-based productivity measurements in general, over the entire formative education of the architect. An exam, however, is a "decontextualized exercise" (Gardner, 1995). It demands a situation-specific performance (specific to the situation of the exam) that bears no resemblance to the way someone trained as architect might really be challenged (read tested) in professional life.

Architects do not, in everyday situations, confront options A, B, C, & D starkly arrayed before them. A core of the intelligence of the architect is the ability to formulate a question, or start from a given question, then develop options to present to clients or other constituencies. An equally central role of the architect is to be critical, to know which possible operations are ethically, environmentally, socially, or otherwise problematic. This distinguishes architecture as a set of disciplinary and professional practices from the building industry, and argues for an educational path that is not dictated by the demands of that industry. In short, we need architects who can think about what to do, not just how to do it, and who can demonstrate deep understanding of the complexities of the built environment, not simply a collection of facts and techniques.

## Part Three: The Intelligences of the Architect

Current theories of intelligence reject the notion that intelligence is a single attribute that can be measured in a uniform manner, like so much flour or sugar (the underlying assumption of IQ tests). Instead, we have begun to recognize that there might be different kinds of intelligence appropriate to different activities. A list of intelligences proposed by Harvard psychologist Howard Gardner includes seven:

- Linguistic
- Logical-mathematical
- Spatial
- Musical
- Bodily-Kinesthetic
- Inter-personal
- Intra-personal

Gardner freely admits that there may be more or fewer (some could be consolidated). His theory began as a critique of K-12 teaching, but has begun to attract interest in higher education

and even some professional circles. His central argument is that the intelligence required of the physicist is rather different than that required of the musician, the athlete, the labor negotiator, etc. If this were not the case, then the proverbial rocket scientist would also be an excellent dancer, painter, negotiator, manager, etc. Surely there are cases of such people (it sounds like the typical search ad for an academic administrator position), but there are probably many more cases of people who are highly intelligent in one area, and mediocre or even deficient in another.

While spatial intelligence is usually attributed to architects and landscape architects, I would argue that all of these kinds of intelligence have a place in design education and practice. For a project to get from initial conception to final implementation, someone needs to:

- explain it (linguistic);
- calculate various aspects (logico-mathematical);
- conceive it spatially (spatial);
- understand it in terms of the physical presence of bodies in the space, i.e. acoustics, rhythm, etc. (musical & bodily-kinesthetic); and
- understand the needs and desires of others (interpersonal) and of oneself (intrapersonal).

If this sounds like a crazy new idea, read Vitruvius, writing in the first century BC, who states that "the science of the architect depends upon many disciplines," including letters, draftsmanship, mathematics, history, philosophy, music, medicine and astronomy. (Vitruvius, 1934 translation) Of course it is highly unusual that one person excels in all the different "intelligences," however "the disciplinary expert emerges as one who can exhibit his mastery in multiple, flexible modes." (Gardner, 1991, 14). Thank goodness architects usually work in teams! In fact, it is rare that a design is realized without the contributions of many different people. Architecture requires different kinds of intelligences, and in our teaching we must consequently find room for different kinds of learners.

A valid assessment of an architect's skills would be appropriate to the specific "intelligences" required of that person. There might mean different things in different situations, but one thing it would not mean is mass production testing. We fool ourselves if we imagine that we can design an exam that will adequately assess the abilities of thousands and thousands of people. It is a crude sieve. Standardized tests can measure some aspects of linguistic and mathematical intelligence, but they fall short on other aspects that are equally if not more important to the architect.

## Part Four: Prestige

The emphasis on the exam is part of a broader attempt to regain some of the prestige that the profession has apparently lost. The exam, however, can grant no more than the prestige of the good test taker, and since our society holds no special reverence for those who ace the SAT or GRE, it's hard to imagine the licens-

ing exam itself counts for much more in the eyes of the public. In contrast, the historic prestige of the architect was based on his (usually) mastery of many kinds of understanding: visual, spatial, numerical, etc. Architects were often well read, and it was not uncommon for them to be musically gifted. With this mastery of multiple disciplinary areas, the architect was well-prepared for the unexpected. The more we focus on the exam as the end goal of education, the more we reduce architectural education's opportunities to provide the broad basis and perspective that have always been at the foundation of the architect's prestige. Furthermore, we do a tremendous disservice to those architecture students who chose not to become architects, but who value an architectural education.

What is the constituency of architectural education? In this country, and worldwide, a large portion of architecture students who attend accredited choose not to practice architecture. The institution at which I teach, for example, provides a thorough grounding in all technical areas of architecture in the undergraduate (BSAS) curriculum, yet at least a third of the graduates of that curriculum choose unrelated careers. Is this the failing of the students, the schools, or the profession? Or is it not a failing at all? I would argue the latter.

Architects have very little actual influence on the built environment, when compared with people involved in political and economic life. Is it not in our interest to have a large class of architecturally educated non-practitioners? Yet in order to support this kind of education, we need to focus on some of the deeper questions regarding the built environment: what to build and what NOT to build, rather than simply how to build. A sense of ethics and aesthetics is far more important than the acquisition of volumes of technical information.

The notion of the universities as the place to impart the skills that interns now acquire in offices is also suspect. It is a completely fraudulent notion that we can accurately simulate the "professional environment" in academia, or that there is any good reason to do so. The office is simply the most efficient place to learn about the office. Many office skills can be acquired in very short time by an apprentice architect working under more experienced co-workers who are actively engaged in the specific activity and who have a real stake in the outcome. In an academic setting key motivating factors, the pressures of the business world, are usually missing, and for good reason. This permits financially inefficient activities such as questioning and open experimentation. If the academy chooses to or is forced to give up this aspect of the formation of the architect, will the offices step in to fill the gap? Most are as poorly prepared to do so as the academy is to simulate the office environment.

The decline in prestige of the architect has occurred concurrently with an increasing regulation of the licensing process and emphasis on that process as the principle source of the architect's status. Our governing bodies, who have a vested interest in controlling the production of status, seem to believe that the process is not sufficiently regulated and emphasized. But it seems

at least plausible that the regulation has backfired: that somehow we have reduced the prestige of the architect in circumscribing his/her competence. To use a foreign example, but an analogous one, the unregistered Italian architect Carlo Scarpa seems to have suffered no lack of prestige or, more importantly, trust, despite the fact that shortly before his death the Italian regulators of architectural credentials attacked him for practicing without a license.

## Part Five: Ways and Why to Teach

YOUNG PEOPLE GO TO UNIVERSITY WITH THE AIM OF BECOMING ARCHITECTS, OF FINDING OUT IF THEY HAVE GOT WHAT IT TAKES. WHAT IS THE FIRST THING WE SHOULD TEACH THEM? FIRST OF ALL, WE MUST EXPLAIN THAT THE PERSON STANDING IN FRONT OF THEM IS NOT SOMEONE WHO ASKS QUESTIONS WHOSE ANSWERS HE ALREADY KNOWS. PRACTICING ARCHITECTURE IS ASKING ONESELF QUESTIONS, FINDING ONE'S OWN ANSWERS WITH THE HELP OF THE TEACHER, WHITTILING DOWN, FINDING SOLUTIONS, OVER AND OVER AGAIN.

— Peter Zumthor, 1996

As faculty, probably the best thing we can do for students is to be good students ourselves. By being inquisitive, unafraid to admit ignorance, and persistent in seeking new answers, we set an example that transcends any outright instructions we might offer. The undergraduates that we teach for the most part have had very narrow life and work experiences. Part of our job might even be to make them a little uncomfortable with their assumptions, which are based on a limited set of familiar notions. If we can provoke them to look beyond their horizons, we are giving them something that may be more important than all the skills and factual information they think we are there to impart.

Recent pedagogic theories such as Gardner's recognize that there are many different kinds of people in the student body, and what works for one student doesn't necessarily work for another. These theories have proposed various ways of understanding and accommodating these differences. Some simple things that they have proposed are:

- 1) Trying several different ways of explaining the same thing so that our students have a better chance of getting it one way, if not another, and so that the message is reinforced. For example, one might try a verbal explanation, a quantitative description, an analogy, a diagram, etc.
- 2) Being patient with students who seem slow or resistant, and maybe trying a different approach to see if it works better for them. The idea is not to "dumb down" the material or otherwise lower standards, but to promote genuine understanding and thorough mastery.
- 3) Recognizing the difference between adequate performance and true understanding. Nothing makes a student feel more fraudulent or defrauded than receiving a passing mark when

he or she has exhibited the minimal, context-specific performance without achieving increased understanding.

Our goal is to help the students become independent from us, but at the same time it is important for them to learn to work in an interdependent way. We can help them learn how to work with a mentor in a productive way, and we can help them learn how to work in teams. These skills will help them both in their education and in their careers, and as they acquire them the teaching and learning experience will be more effective for all concerned.

Despite all the new pedagogic theories, there are aspects of architectural education that seem fairly solid and unchanging. Certain skills and sets of information apparently need to be taught and learned in the “traditional” way. But such things may be fewer and further between than they appear. Take a factor as simple as gravity, the eternal bedeviler and enabler of architects and landscape architects alike. Impressive designs were invented and constructed for millennia before what we would recognize as a coherent, scientific theory of gravity came into being less than five centuries ago. And even then the way of understanding, explaining and representing the problem was different than that which we use today.

Our current method of diagramming moment and shear in beams, for instance, is a relatively recent invention in comparison with the long history of architecture. Given the rapid pace of change in technology and representation, I would not be totally surprised if the familiar moment diagram were to become antiquated within our lifetimes. The student who has trouble with the diagram might be helped if we would offer different ways of understanding the same set of phenomena. This leads back to the idea of difference in learning, and my concluding remarks.

## **Conclusion: Improvisation as One Alternative Model**

One of the biggest hidden problems that we face in architectural education is the inability of students to retain and translate academic knowledge into applications that are out of the context in which they were taught. A top student of structures, for example, might build a model in studio that collapses under light hand pressure in the direction of typical loads. A student who has excelled in courses in sustainability might turn around and make design choices that clearly damage the environment. A student who produces a perfect presentation board under highly constrained circumstances might make a sloppy, incoherent presentation when material and format constraints are lifted. These students have learned how to perform in the context of specific assignments and exams, but the learning was situation-specific. Gardner and others have shown that this phenomenon is consistent across different fields of knowledge, from physics to history.

What is the solution to the problem? I believe we should all think about how to teach and learn in such a way that our stu-

dents are prepared for the unexpected. We need to get our students to think beyond the next exam, beyond the semester grade, and to value learning. The grading system is a simplistic set of rewards and punishments that is unfortunately unavoidable in the current structure of university education. If we can communicate enthusiasm that transcends this system to our students, we will have made our most important contribution to their education.

During the spring 1999 and 2000 semesters my students have collaborated with a group of dance students on an interdisciplinary experiment. The dance professor and I had already begun a conversation on connections between architecture and dance when we decided to bring together two groups of students to explore these questions further. Her group was participating in an advanced improvisation studio, mine in a third-year design studio. We have since been joined by a group of cinematographers and a physicist.

Students from both dance and architecture work in interdisciplinary teams to explore movement through different spaces and with various props and prosthetic devices. The purpose of this exploration is to 1) demonstrate the possibilities and limitations of bodily movement in an architectural context; 2) expose the indeterminacy of terms and practices we take for granted in our work; and 3) invent design processes that anticipate the unexpected.

In place of the “service industry” model that has come to dominate the profession of architecture, the studio explores a collaborative relationship between architect and “client.” The teams develop new approaches to the documents and procedures of design. Through a process analogous to the use of improvisation in dance, we reconsider the habits of architectural practice. During the first semester of this experiment, through an exploration of improvisation as an architectural principal, we found ourselves encountering similar questions to those raised in a national discussion of “hiphopitecture” and “blackitecture,” namely the possibility of a “freestyle” approach to design. The work of the first semester of the studio culminated in a joint “showing:” an improvisation by the dance students structured around full-scale constructions designed and built by the architecture students.

In designing and implementing their full-scale installations, the students in this studio learn skills analogous to those they might use in an office situation, yet without necessarily realizing it. They learn to negotiate cultural differences in interdisciplinary collaboration. They design and rework details to prevent premature failure and ensure smooth operation. They comply with applicable fire safety and accessibility codes, and satisfy other requirements of the location. They confront questions of sustainability in their choice of materials as they endeavor to use materials that have already served a use or that can be used again. They gain an accurate idea of types and quantities of materials for each project, and also of the time and tools necessary to construct and dismantle each installation. The most compelling aspect of the studio, however, seems to be the experi-

ence of watching the dancers interact with their constructions, sometimes altering them in the process. This provides "fast-forward" examination of the processes of human occupation. The design is not a perfect form disturbed by human presence, but rather a changing entity that is completed through its occupation. Architecture becomes a performing art, with all the necessary precision of timing and emotional intensity of dance or theater. In odd and sometimes unpredictable ways, experience of this studio develops, challenges, and, yes, tests, the same kinds of intelligence required in practice.

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#### WEBSITES

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- "Board Debates Education, Practice of the Future" by Stephanie Stubbs, Assoc. AIA  
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