

# Searching for a new paradigm in architectural education

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**ABSTRACT:** This paper is a position paper that will provide an extensive literature review on design education and raise questions regarding the current goal and a possible direction for architectural education. The paper will examine several critical issues such as education vs. training, the increasing disconnection of architectural education from the “real world” of design practice, and the role of research and theory in academia and the practice of architecture. This paper will address the challenges inherent in defining clear goals and directions for the field, given the current state of the architectural profession and academia. It will further argue that research can drive the development of a common language for use in a dialogue between the academic and the practitioner, a dialogue that is mediated by educational institutions, and which can also help shape architectural education and the profession as a whole.

We are currently in a networking boom where global, intricate, and complex collaborations are constantly taking place, and the world seems to be shrinking to create a new and more localized globe. Architectural education, however, continues to utilize models established almost 400 years ago. In order to keep up with this fast-changing world, the growing demands of the profession, and accreditation and institutional expectations, initiatives like the promotion of research into built environments, extensive coverage of new technologies, and an increase in the number of subjects covered during the formal education process, have all been undertaken by academic institutions. However, a clear directive for architectural education has yet to emerge. With major world changes including climatic change, population change, technological advances, and now a struggling economy, the architectural profession is scrambling to keep up. This paper posits that it is up to educators, to initiate a dialogue between the profession and academia, the studio and the lecture hall, the media and the material, design and theory, in order to have a forward-thinking educational process that not only readies students for the profession, but further helps focus the profession towards a common vision, shared between academics and professionals alike. We further posit that research is key to the development of this common vision that will help shape the educational system and, consequently, architectural practice.

Conference theme: Innovative approaches to architectural education

Keywords: architectural education, research, paradigm shift

## INTRODUCTION

This paper is a position paper that undertakes an overview of several key challenges in architectural education today. As such, it falls into the category of architectural criticism. According to Somol (2009:33) “criticism is not objective, it is motivated.” The motivation for this paper is to seek a direction for architectural education where practice and academia are not at odds with one another.

“Architecture is a distinct epistemological category, a Practical Art, occupying its own cultural territory” (Cunningham 2005:433). Architecture has always been

a complex discipline and has increasingly become moreso with a technologically, ecologically, and culturally evolving world. As educators, we can become so caught up in attempting to keep up with these changes that we often lose sight of the big picture. In this paper we argue for the proverbial “step back” to look at the forest we can no longer see for the trees. There is a need to revisit the seemingly all-encompassing questions: What is the goal of architectural education today? Is it the same as it was fifty, twenty, ten years ago? Is this the same goal that will guide architectural education tomorrow? With growing demands for research from academia and the

profession, what is the role of research in architectural education and its impact on the practice? The issue of refocusing key objectives in university education has been raised before (Fisher 1995, Bermudez 1999, Frank 2005, Habraken 2003, Salama and Wilkinson 2007), but has never been satisfactorily resolved.

An examination of the past 3 years of ACSA and ARCC proceedings (Hejduk and Van Oudenallen 2005, Heng and Tripeny 2006, Bing and Veikos 2007, ARCC proceedings 2007, 2006 and 2005.), as well as multiple issues of the *Journal of Architectural Education* have shown that although discussions regarding individual issues of architectural education and research are ongoing, the broader goals of architectural education have not been central to these discussions.

## 1. A CHANGING WORLD

In the past 60 years, our world and the profession of architecture have both changed dramatically: from the adopted design and communication processes, the shapes of spaces created, the construction methods employed, the materials developed and the machinery used, to the safety and quality standards adhered to and the incorporation of evidence-based design. Construction Facility management and Interior Design have both emerged as lucrative professions that acknowledge the complex system within which an architecture project operates. As a profession, in the last decades, architecture has continuously evolved and struggled (Fisher 1995, letters 1993). Despite this growing and glorious complexity, architectural education continues to utilize models established almost 400 years ago. While some change can be seen in the increasing emphasis on research, this change has not been homogenous across all schools; nor has it been construed to constitute a paradigm shift. Even at leading programs like that of Cornell University, where there is an emphasis on research and evidence-based design, the curriculum does not allow for a seamless integration of research and learning/teaching (Becker 2005).

Architectural education, within the university context, has a mandate not unlike that of other disciplines, with the

considerable diversity of opinion about the ideals that should characterize universities, or the specifics of their roles...there is general agreement that universities are institutions which deal with the production of new knowledge, the conservation, critical testing and refinement of existing knowledge and the development of knowledgeable understanding in students (Coaldrake and Stedman 1999:17).

The emphasis on research is growing; however the role of research in academia and the relationship between academic research and its application in practice has not yet been satisfactorily established.

## 2. CAN THE PROFESSION GUIDE EDUCATION?

According to Gutman (2000), the architectural profession is in a state of turmoil due to contradictions within the profession that are a result of—specialized and fragmented production systems, constantly increasing demands from society, the escalating complexity of the demands on the profession, and increasing competition with non-architectural professions that share the same market (Scalabre 2005, Seidel 1992, Bradley 2000). He (Gutman 2000:232) states it simply: “professionals are increasingly confused about their task,” especially now due to recess. In its current condition, the profession can provide little if any guidance to architectural education (Moore 2001). Within this context, the struggle to fulfil its immediate needs can result in senseless and dead-end strategies. Architectural education should prepare students for the profession in a critical rather than conforming manner. The architectural profession is not the client of architectural education. Education does not cater to the profession - it forms the profession. If education is inadequate to the task, then the educational system is at fault. But success or failure cannot be judged solely on the basis of training graduates who meet the immediate desires of a firm, but not the sustained needs of a profession. Unlike the profession, which is governed by the market, architectural education has the luxury, and indeed the responsibility, in both design and research, to maintain a critical position between the profession and the society it serves (Gislason 2005). As Necdet Teymur (1992:189) notices, unlike practice:

educational design can be imaginative even when it is not imaginary, and profoundly realistic without being expedient, subservient or mundane.

Architectural education also has the ability to experiment and theorize freely. “Education is the profession’s lever over its own future” (Milliner 2000:227). Can architectural education lead the profession, rather than be continuously led, validated and examined by it? Or can it join forces with the profession to create an architectural practice embodying a broadly informed, culturally rich, linguistically conversant, technologically advanced, socially responsible and formally creative art that can continue to sing distinct tunes while being enjoyed by different audiences? (Milliner 2000).

## 3. CROSSROADS: EDUCATION VS. TRAINING, ACADEMIA VS. THE PROFESSION

In the field of healthcare, evidence-based design is becoming the norm. Evidence-based design is defined by the Center for Health Design ([http://www.healthdesign.org/aboutus/mission/EBD\\_definition.php](http://www.healthdesign.org/aboutus/mission/EBD_definition.php)) as:

the process of basing decisions about the built environment on credible research to achieve the best possible outcomes.

Healthcare firms now often hire full time research personnel. Practice-based environmental design research is defined as “systematic inquiry that both creates knowledge and solves specific design problems” (Geboy and Keller 2006). According to this definition it is highly specialized and need-based, understandably so since research in firms relies on billable hours. One of the most compelling arguments in support of evidence-based design is the “making the business” case, which demonstrates that the use of design based on the best available evidence can improve health, the quality of care, and have an impact the financial bottom line (Center for Health Design 2009). Being able to establish a chain of logic between design, outcome and financial return is key to the success of evidence-based design. Unfortunately, a search for a similar chain of logic is missing in the profession of architecture as a whole, and in design education.

Professional trends, challenges and priorities, are important indicators of the future of a profession, and its system of education. It remains to be seen what impact evidence-based design has on architectural education, beyond what has been seen in the very specialized arena of healthcare design.

It is also important to realise that in academia the objective of research is, or should be, higher than “problem solving” or meeting the immediate needs of a particular project or even of an industry. As Boyer (1990:23) wrote, academic scholarship:

that both applies and contributes to human knowledge is particularly needed in a world in which huge, almost intractable problems call for the skills and insights only [the] academy can provide.

Not bounded by the constraints of a client or the demands of a market, academic research can be more “pure,” seeking knowledge for the sake of knowledge, and answering questions not in the service of a single project or organization, but for the entire knowledge community.

Academic Institutions possess incredible capabilities and freedoms with regards to initiating, processing, storing and putting in perspective great masses of knowledge that can be both immediately applied and/or stored until the time for its intelligent use arrives. Unfortunately, the disconnection between the educational system and the profession that prevails in architecture puts research in an awkward position – one of struggling to find its place.

#### **4. LACK OF A UNIQUE “DELIVERABLE” IN ARCHITECTURAL EDUCATION**

Robert Campbell, architecture critic for *The Boston Globe* (as quoted in *The Chronicle for Higher Education*, October 22, 2004) wrote:

Most people dislike the buildings that architects love most, and part of the problem is that architecture is taught within the culture of academe. University professors tend to believe, falsely, that architecture is primarily an intellectual activity, just like, say, philosophy. They dream up totally unreadable theories that can lead architects to “build for their peer group, and the hell with the rest of the world”.

Campbell’s point of view might be a little brutal in its expression, but is not unrealistic. The “God-complex” often seen in architecture students has become the element of the culture of the architecture school most responsible for encouraging the attitude of “starchitects” responsible for, at best 5%, of the building market (Letters 1993). Students graduate ready to change the world, with only a very fuzzy idea of what that world is really all about. Years in the profession tend to generate a healthy contempt for the very system from which we have all emerged. Jean-Paul Scalabre (2005:28) expresses this well when he claims that:

...the profession has the temptation to criticize a lack of realism in the school’s curricula and a non-suitability of education to what is supposed to be the needs of the profession. On the other hand, schools seem to be destabilized by the frenetic movement of society; they loose their references and do not know what kind of future has to be proposed to the students.

The discussion during the 2005 meeting of the Heads of European Schools of Architecture in Hania (Spiridonidis and Voyatzaki 2005) reiterated the historically uneasy relationship between the architectural profession and architectural education that continues to this day. This relationship is just as challenging to architects and students in other parts of the world - not only in Europe (Salama et al. 2002, Menon 2004, Makarova and Chuntunov 2002). According to Bradley, (2000:181) the profession and educational system each are responsible for forms of practical and theoretical work, respectively:

...each is able to maintain control over and develop its respective territory, unchallenged by the ‘other side.’ The territory of architectural discourse and production is partitioned between the two sectors, reducing the ability of either constructively to inform the other.

A common sentiment in the academic circle is that we should concentrate more on an understanding of and ability to “create Architecture” rather than simply to “build structures.” This is an interesting turn of phrase; architecture is allied with creativity, whereas construction is linked with mechanical skill. In the age-old guild system when the lines between art and craft, architect and builder, were blurred, skill *was* creativity, building *was* architecture, and practice *was* education.

Today, with an increasingly virtual world, firms exist in one location, build in another, for clients based in yet another locality, while outsourcing drawings from, perhaps, a completely different country. The profession has been completely redefined. It would be overly simplistic to advocate the previous structure without some accommodation for the way the world is organized today. Globalization gives us the "cultural general entropy" (Scalabre 2005) that offers unity to the seeming diversity that comprises today's society, profession and education. It is important to acknowledge that in fragmenting the whole, and in creating an extremely specialized and simultaneous world, a certain lack of equilibrium concerning a new, revamped "rightful place in the world" is only to be expected. If we can answer what the architect is uniquely qualified to do when (s)he steps out of school - and whether or not the unique qualifications (s)he now possesses represent a worthy goal - then education can find its essential direction. It has already become clear that an "architect as generalist," who is a "member of [an] exclusive aesthetic culture" (Letters 1993:77) is not a reasonable qualification on its own.

### 3. TRADING SOUL FOR SKILL

The detachment of the design studio from the real world, and the encouragement to work with media in a virtual rather than material world has made architectural education passive and, to a large extent, superficial. This passivity carries into the profession (Thomas, in letters 1993) and contributes to the widening gap between the architect's real world challenges and idealistic expectations. The academy has replaced the real with the mediated, mostly visual, significations, the rearrangement of denotations into new representations. As we have argued in our previous paper (Nanda and Solovyova 2005), architectural education today, with its overemphasizing of 'special language,' has led to the disembodiment of our experiences through visual manipulations and amalgamations, and has lost a practical focus. Intentionally or not, the whole aim of education has shifted from gaining an understanding of "how it works," and learning to develop and maintain minimum required skills, to acquiring as much information (with the assumption that understanding will evolve from such accumulation) and skill in technology as possible. The prevalence of 'soft' sources (design magazines and product catalogues) rather than 'hard' sources (like scholarly periodicals and hard data) has become a bad habit of instructors and students that has carried over into professional careers (Dickson and White 1993). Deep reflective thought towards a stable, material product of design has somehow been trampled by a frenzy to collect new tools, and showcase innovative skills developed from these tools. Worst of all, the information and skills so carefully collected during the course of education do not even equip students with a basic knowledge necessary for actual architectural practice (Crasbie 1995). In a sense, what the graduates gain in skill, they lose in soul.

Something similar happens in research. The research performed in practice and the research conducted in academia follow two separate lines, perhaps crossing each other here and there, but currently existing mostly independently of one another. AIA, Soloso (<http://www.aia.org/akr/index.htm>) and similar knowledge-sharing communities allow for collaboration regarding research findings. ARCC conferences consistently feed Soloso, making academic research readily available to the professional community. The profession helps to shape academic research through grant programs and collaborations. However, to a large extent research from the profession is usually need-based and independently conducted by research offices in firms; alternatively, the research generated at architecture schools is to a large extent theoretical, and led by faculty composed mostly of pure academicians). By requiring an advanced degree and promoting faculty on the basis of academic publications (at the cost of creative practice), the academy may continue to sustain and possibly increase the gap between the profession and the system of education. Professionals see academic researchers as living on an island of abstract thought; this is, in part, due to the lack of a common language shared by the two branches of the discipline. Academic scholars don't always conform to a "narrow interpretation of professional conduct" (Dickson and White 1993:4). If the practitioner's definition of research focuses on the end use of knowledge rather than on the generation of new knowledge "[where does this quote begin?]" with an emphasis on obtaining immediate answers for pressing specific design issues (Dickens and White 1993:9), then the gap will continue to grow.

Part of the problem is that not enough pressure has been put on architectural research to determine its own unique paradigm. Thus, while we know that architectural research is both pragmatic and philosophical, both scientific and artistic, researchers are left to choose their own external framework within which they fit their work. Groat and Wang's (2001) overview of architectural research provides a synopsis of the various disciplines from which research may draw. Unless research, rather than rhetoric, is emphasized by the academy, it will never be able to bridge the gap that currently exists between it and the profession.

Currently, academia continues to possess the important luxury of engaging in intellectual discovery, the value of which often may not be recognizable until some time in the future. The philosophical aspect of research, not immediately applicable to the needs of practice, allows for the bridging of knowledge across time and different domains, offering new perspectives that assist in the development of design as a discipline, and society at large.

### 4. RESEARCH: PILOTING ARCHITECTURAL EDUCATION

We have to be honest with ourselves – the accumulation of information is not a substitute for

knowledge and the creative process, but information accumulated through research can enhance and contribute to knowledge and the creative process in architecture. "Research can present new information that designers apply creatively in their design solutions," and

research provides substantial evidence of effectiveness (and alternatively, the weaknesses) of design decisions as they relate to the human experience of the environment (Geboy and Keller 2006:2).

Research is the backbone of most scientific disciplines, but in architecture it sits uncomfortably between the practical and the theoretical. Practice and pedagogy are both respected - but research that forms the foundation of both has yet to find a single solid ground upon which to locate itself. Paradigms and methodologies are borrowed from other fields; square pegs are forced to fill round holes. Philosophical architectural "theory" is omnipresent, but practical architectural research is, ironically, still only a distant relative. Part of the problem lies in the overall structure imposed by the university that sets the same standards for very different fields - research should benefit the industry (the reliance of different disciplines on grants), and research should somehow relate to teaching. In the case of evidence-based design, at least, a standard is beginning to be established for what constitutes a benefit to the industry (as exemplified by healthcare). According to Becker (2005:4):

If the goal is the production of research that is of publishable quality that contributes to the body of evidence-based knowledge, the trained and qualified researchers are required. Such research can be done as part of practice or academia. The key issue is not the location of research, but qualifications of those doing it (Becker 2005:4).

A similar attitude must be inculcated into mainstream architectural education as well - one that focuses on the quality of research, rather than on the profession vs. education debate. Direct links between design and industry benefits can be seen in the context of workplace design, retail, and the entertainment industry - all of which rely heavily on research before design. Yet objects of design analysis can't always be directly linked to profits in the market. Benefits of the industry must be considered to exist beyond the financial returns established in cases like that of the healthcare industry. A large chunk of architectural education that deals with the intangible lacks patrons willing to support the more abstract objects of investigation. While

without the competence to develop the unmeasured quality of space, we have very little to offer that belongs specifically to the core of our discipline (Olaf Fjeld 2005:93),

research that addresses this unmeasured quality is considered to be "too esoteric" (Anderson 2001) and

therefore receives little funding, support or appreciation. There needs to be a greater emphasis placed on developing a research paradigm that is appropriate for the unique issues in architecture and design that can help to translate the esoteric into the tangible, enable communication between the professional and the academic, and still maintain the integrity of the profession.

Linda Groat and David Wang (2001) make a significant contribution to the complexity of architectural research with their work on Architectural Research Methodologies. This is one of the few attempts that addresses the uniqueness of architectural research, and the interdisciplinarity that it encompasses. They make the following argument for the imperative nature of architectural research (p.8):

an ever increasing proportion of architectural practice involves unfamiliar circumstances beyond the expertise of individual practitioners, and beyond the conventional wisdom of the profession as a whole....great uncertainty is also likely if unconventional aesthetic principles are being used in a setting involving conflicting aesthetic values.

This need forms one of the key imperatives of architectural research. By being grounded in the needs of the profession, yet staying visionary about the future of the discipline, research can help draft the goal of what future educational qualifications should be. According to Dickens and White (1993:10, original emphasis),

the educator's *primary* role is to advance the profession through the generation of research that adds to the body of knowledge, to place this research into a contextual framework that can be used by the design profession, and to convey the existing body of knowledge to students. To advance the profession, the practitioner's *primary* role is to keep abreast of current research and to apply it in design solutions rather than frequently using past experience as the primary source.

The above quote describes a symbiotic role of education, profession and research, one that can establish a system of communication between the profession and academia. This interaction could solve the fundamental problem of the chasm between the two, which is the key challenge facing architectural education. By using research as the common language between these two architectural worlds, the field of architecture can advance towards a common vision, even when immediate goals and objectives vary.

## 5. CLOSING

As Boyer (1990:16) said, "the time has come to move beyond the tired old 'teaching versus research' debate" and move to a discussion of scholarship. Scholarship, in Boyer's understanding, has a much broader meaning and encompasses original research that builds bridges

between theory and practice, and communicates real and useful knowledge to others. We believe that research has become such an important and inseparable part of both academia and design as a profession that not long from now it will be academic scholarship that shapes both architectural education and practice.

A university setting creates a unique situation where highly educated thinkers and specialists from various disciplines, and practitioners of architecture with decades of real world experience, can come together to form a strong collaboration focused on accomplishing the same goal (Dudestadt 2003). It is

the complexity, diversity, and perhaps the contradictions within the university environment that make it so valuable, stimulate creativity and lead to new approaches and thinking as we strive to reconcile and solve the problems the structure imposes on us as academics (Frank 2005:2).

And as Constantin Spiridonidis (2005) claims, change is a fundamental dimension of architecture, and reform is a necessary condition of architectural education. In academia, research and teaching should and can be integrated (Brew 2003, Coaldrake and Stedman 1999, Boyer Commission 1998, Trigwell and Shale 2004). We are already witnessing research becoming a critical player in both education and design. Such changes will soon bring the paradigm shift to architectural education that it desperately needs.

In 1995, Fisher proposed three possible directions for the development of architecture, following examples of other professions that had already successfully overcome intellectual recessions: medicine, engineering and the law. Either one, or a combination of any of the directions taken by those other disciplines seem plausible, and two out of three strongly rely on a research component. If architecture is to follow the medical model, some architects will eventually serve as general practitioners, mainly responsible for diagnosing problems and analyzing needs, putting together a team of specialists - from architecture and from other fields - to offer in-depth knowledge in all areas affecting a particular project. In this case, specialists would be closely connected to the most current research, bringing the latest knowledge developments to the design practice. If architecture is to follow the engineering model, evidence-based design would become mainstream. Careful assessment of consequences decision making founded on evidence-based guidelines would allow for predicting effects and for proving the value of a project. In both cases, the market for architecture as a profession would grow from 5% to the entire building industry.

Most architects currently perceive evidence-based design guidelines as destroying 'the art of architecture.' Such a fear comes mainly from a lack of familiarity with the nature of research-based design. In reality, the guidelines established from research can only add strength, validity and marketability to creative endeavours. That said, both academia and the

profession need to invest in understanding what research really means in the unique context of architecture, and discover new currency for "evidence" that addresses core architectural issues, including the traditionally intangible.

Architectural academia has all the tools to allow research to change the profession of architecture. Academia is brimming with great minds that are actively engaged in research; it has an opportunity for interdisciplinary collaboration; it has connections to forums that allow academicians to share their research and to provide a direct feed into professional practice; and most importantly, it has the ability to change the mentality and habits of [future] professionals through the proper preparation of graduates who can be taught to conduct and apply research as a standard practice of design.

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