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Moving Towards Competence in Teaching Architecture: The Relationship of Research and Design in Academia

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Abstract

Architecture is truly a profession of public trust requiring special care at all stages in academic education. European educational reforms initiated by the 1999 Bologna Process affected architecture education, and shifted the role of research. The number of doctoral programs increased, so the involvement of PhD students in teaching also expanded. This study aims to identify how these changes affect quality in architecture education. Using qualitative and quantitative approaches, different forms of architectural education offered in the European Higher Education Area, staff selection practices, requirements for PhD candidacy, and student achievements were assessed, compared and correlated. Both the apparent imbalance of theoreticians and practitioners staffed in architecture faculties, and increased didactic obligations for inexperienced PhD students with no formal qualification seem to generally undermine competence in architectural education. The author highlights the need to revise the prerequisite for teaching in architecture faculties. She proposes the establishment of two types of faculties in this discipline: an 'architecture faculty' and a separate 'theory of architecture faculty'. In the first one the accent is on the practical aspects of the profession and its graduates will be fully prepared to competent serve in construction and, in the second faculty, architecture issues will be discussed in terms of the humanities.

Keywords: architecture education, PhD programs, architectural research, education reform, academic qualifications;

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1. Introduction

1.1. Quality in Architecture

The built designs of architects shape our space and significantly impact our wellbeing and ability to function in urban reality. Thus, the architectural profession is truly a profession of public trust that requires special care at all stages in academic education. Though it may be argued that the quality of architecture has historically depended more on the talent and skills of architects than any other factor, it seems that individual talent or skill, or even former professional experience are no longer the leading criteria for acquiring or maintaining an academic position in architecture. So what are the key factors essential to assuring quality in architecture education? To what extent does professional experience affect competence in teaching? There are complaints from practitioners in the field that students are unprepared for practice [4]; so how does the educational process fail to successfully prepare an architect to practice in today's world? To address these important issues, the author will take a closer look at the changing quality of academic instruction and architecture scholarship, and how they are affected by imbalances between theory and practice in higher education.

1.2. The Bologna Process

The changing role of research has affected architecture education. In an effort to address contemporary needs, improve transparency between higher education systems and facilitate exchanges between institutions, the European Union first introduced the Bologna Process in 1999 to member countries. Intended to ensure comparability in the standards and quality of higher education qualifications, it also aimed to promote the role of the university in research and innovation. The changes dictated by the reform resulted in a modification of the profile for teaching staff at the departments of architecture in most European universities. Now an increasing disproportion between the number of experienced professionals and academic theoreticians employed at architecture schools may be observed. In some cases, PhD students with little practical experience have been given more obligations and authority in the didactic process. Many schools of architecture continue to support a traditional master-apprentice model of education, with 'knowledge as power' underpinning the pedagogical approach [11, 19]. Others by contrast implement critically reflective inquiry into teaching methods and theories that promote successful student learning through collaborative and supportive dialogue.

1.3. The changing role and importance of research

The reform in higher education in Europe brought about changes in the importance and role of research in architecture education. The number of doctoral programs in architecture increased, and likewise, research-based PhD programs and research studio options were either newly initiated or expanded in many schools. In most European countries, an increasing number of new architectural faculties in private and public universities have also been established. The new requirements introduced by the reform have obliged architectural schools to employ research personnel who can present significantly higher scientific qualifications than in the past. At present, the academic teachers supervising design and scientific processes are expected - as a priority - to have made considerable research achievements. In this era of innovations, and especially in recent years, a lot in the profession of architecture has also changed. Many architectural firms have either developed or expanded their research capabilities. It is also likely that most professional architects have conducted some exploratory investigations into the design process as a response to the demands of the contemporary real estate market. In some market sectors, the clients now expect architects to be able to demonstrate that their designs, in effect, are based on profound research results.

1.4. Review of Current Theories

The debate on the relationship between research and design is continuous and complicated. Some theoretical trends try to prove that both approaches are equivalent, while some trends suggest the contrary - to expose the differences in research and design-based approaches and suggest that they cannot be compared to each other. American theoretician

and architect Stephen Kieran (2007) described the relationship between design and research as divergent, but essentially complementary: "research brings science to our art [...] To move the art of architecture forward, however, we need to supplement intuition with science" (p. 31). Milburn, Brown, Mulley, Hills, and Steward (2003) - regarding landscape architecture - acknowledged that the "design and research process have much in common" (pp. 119-129). In contrast, Matt Powers (2007) asserted that since research embodies the scientific model of knowledge as "truth" and "fact" based on quantitative data, any overt integration of design and research "diminishes the most important aspects of each activity". He argued that design disciplines work toward the development of a "discipline-dependent scholarship" that moves" away from the shadow of science and toward its appropriate place within academia" (pp. 17-18). As well as B.D. Wortham (2007) noticed that research is "narrowly defined under a scientific rubric;" and argued that studio teaching could be researched in the sense that "it makes multiple contributions - to the academy, to education, and to the serving and reshaping of society" (pp. 44-53).

2. Research

2.1. Research and design in architecture

Research and design are two relatively distinct kinds of activity, although they include many similarities and some overlapping qualities. Research can inform design in many ways and at many times during the design process; and the design process and the eventual designed artefact can supply a multiplicity of questions that lend themselves to many forms of inquiry [8, pp. 25-27]. David Salomon (2011) ascertained in his analysis that design: "can alternatively be understood as both a rational problem-solving technique or intuitive aesthetic act, while research can be embodied in 'multiple modes of inquiry'" (pp. 33-44). This statement might be interpreted in the way that the design process takes a superior role over research, which plays the complementary role in this relationship. However, in particular cases designing may constitute one of the 'multiple modes of inquiry' in the research process. As research and design represent essentially distinct domains of activity, the question rises incessantly as to *how* theoreticians and practitioners can be integrated within architecture scholarship and the didactic process. Ernest Boyer & Lee D. Mitgang (1996) in *Building Community: A New Future for Architecture Education and Practice* suggested some key recommendations for the pedagogy and the focus of architecture programs. Based on data gathered from fifteen schools of architecture in the USA, this work simultaneously celebrated many of the educational strategies within these programs while reflecting on numerous conflicts within architectural tuition, many of which remain problematic to the present day. The authors of *Building Community* proposed a number of key goals for architectural education. One of the goals set in order to benefit students was that of a unified profession; seeking closer collaboration and understanding between the academy and the architectural profession. Relevant to the European educational reform of the 1990s, it has been noted that because the academy places more emphasis on traditional research, some architectural faculties have felt that design activity is considered less scholarly [2, pp. 53-57]. In their earlier work *Scholarship Reconsidered,* Boyer & Mitgang [1] suggested that the traditional model of research had been supplemented by new categories of scholarship manifested in integration, application and the teaching plane. The different categories of intellectual contribution are equivalent, not in kind but in import and value.

2.2. Method

In the European Union, despite the establishment of the one current European Higher Educational Area (EHEA), which was developed through the Bologna Process, there is a lack of universal guidance systems for the selection of academic teaching staff, and no unified rules regarding methods of teaching in the schools of architecture. So, for the purposes of this research, several European schools and universities whose curriculums and statutory provisions offer different forms of education to future architects were selected. The author made relevant observations and investigated current educational programs and materials provided directly by the persons responsible for the selection of the research personnel, statements of figures and statistics given in official documents and web pages of architectural schools, describing the formal criteria for PhD program candidates, and/or the profiles and compositions of the boards of the departments. A qualitative approach was applied by comparing requirements regarding the employment of

faculty, and entry requirements for the candidates of PhD programs. The analysis compared: the amount of formal professional achievements made by faculty members, the quality of professional experience of the currently enrolled PhD students, and the number of awards won by the university's students in international architectural competitions.

3. Results

In the Belgian Saint-Lucas School of Architecture for example: "[...] the intentions of the school were to develop experimental, practice-based concepts for this research, rather than to attempt to emulate the discipline-based research that is characteristic for the academic fields" [5, p. 42]. The school's program 'Research by design' was implemented in 2006 in the form of a 2-year plus curriculum. Most of the scholarship participants are practitioners and during their studies, they undertake research on issues strongly connected with their professional experience. Such dissertations are examples of standard discipline-based doctorates using the author's own practice as a *sample f*or fulfilling all the criteria of new modes of research. Ellison & Eatman made clear in their book that the new modes of research must be "judged by common principles, standards to which all academic scholarly and creative work is held"; and they specifically stated what these standards ought to be: "clear goals, adequate preparation, appropriate methods, significant results, effective presentation, and reflective critique" [6, p. 9]. Similar situations may be observed in German universities, as for example at RWTH Aachen University (Rheinisch-Westfälische Technische Hochschule Aachen), where PhD candidates in architecture may be admitted as students without any commitment to engage in teaching activities. However, more frequently PhD students are employed as research assistants at university departments or institutes and as such are obligated to teach postgraduate students [16]. The same system was introduced in most Austrian universities. One example is the Technical University of Graz, where PhD students of architecture conduct classes for bachelor and master's degree students, as they are obligated under contractual conditions to engage in such teaching activities. In most cases, these PhD students elaborate their research theses in respect of their employment as research assistants at the university. In Italy, generally there is no official legal obligation for PhD students to carry out a fixed amount of didactic activity during the academic year, nor during the entire doctoral studies. However, for instance at Politecnico di Milano, PhD program participants can take part in a teaching activity, but in agreement with their own coordinator and with a limited commitment, as stated by the university regulations and appointed in the PhD rules [13]. Quite the opposite situation can be observed in Polish or Hungarian universities, where the interpretation of the three-cycle educational system according to the Bologna Process obliges PhD students of architecture to teach design classes for students who are earning practical degrees in architecture and science (BArch/BSc or MArch/MSc). At Gdansk University of Technology in Poland, PhD students are obligated to conduct a minimum of 30 hours of didactic activity per semester during their entire 4-year course of study. This obligation is stated according to the law [12] and must be realized by all public and private universities offering PhD studies in Poland.

Similar to the situation in Poland, at the Breuer Marcell Doctoral School (BMDS) in Pécs, Hungary, there is an obligatory course of teaching practice every semester during the 3-year study program. The course requires PhD students who have earned a scholarship to offer 4 hours per week of consultations to students in the process of earning a BSc or MSc; so most of the PhD students at BMDS take a leading role in the undergraduate and postgraduate research and student talent activities. However, as opposed to the Polish example, the teaching activity provides a maximum of six credits per semester, which seems to be a drop in the bucket when compared to the 45 credits required for the semester during the PhD education process [3].

4. Conclusion

It can be concluded that design and research in architecture are indeed complementary and, as such, should form the balanced content of architectural studies. If this assumption were a guiding principle for all schools of architecture, then it would seem automatic on the part of the school to assemble teaching staff with both professional and academic competence in order to meet the demand for quality services, fulfil the aspirations of the university and to comply with the new principles of the Bologna Process. The present imbalance occurring between the proportion of practitioners with significant professional achievements and experience, who are able to teach the multifaceted

realities of the architectural profession, and the researchers who complement the theoretical knowledge base of students, seems to be the result of an irresponsible act. The sudden and numerous introduction of groups of young lecturers who hold degrees in science, yet lack significantly practical achievements, has led to the peculiar situation where theoreticians are teaching a practical profession. These supervisors hold no lawful building qualification, or national membership in any architect association, which in most European countries is sine qua non with respect to legally working as an architect. This pressing situation exists in the USA as well, and has not gone unnoticed. According to Buchanan (2012) there have been complaints by teachers of architecture that schools are failing to participate in, let alone take a leading role in the essential debates of our time.

With regard to this situation, Buchanan has hinted at a framework for understanding:

[...] the postmodern mindset dominates history and theory departments, home to PhDs who appoint other PhDs who, in knowing more and more about less and less, are not a natural fit with a generalist subject such as architecture. However, these are the people who boost the research ratings and so the funding of schools, no matter how worthless that research to the practice of architecture. Hence, some schools are staffed by disproportionate numbers of such scholars who lack the skills and experience to contribute much to the rest of architectural education. Besides, too often, studying for a PhD can ruin promising students, leaving them fit only for a career in architectural education. Hence, many professors admit in private that a university is probably not the best home for an architectural school. [4].

The observation that the inexperience of a PhD student teaching studios or courses in design could actually undermine competence in architectural education was crucial to this research.

Drawing on all the conclusions made as a result of this research, the author was led to put forward another -major and quite radical proposal, which is premised on the desire to solve the current dilemma by separating these two, independent fields of study in the European higher education system. The solution would be to establish two faculties: a faculty of architecture with a board composed of practitioners and graduates, who have the competence required for a truly practical profession; and a faculty of theory of architecture that is staffed by professors and doctoral students who have researched the history of architecture and ultimately devel1op theories about the potential tendencies in contemporary and future architecture. Although this idea perhaps seems extreme and controversial, maybe it is the most reasonable solution in response to both the increasing number of architecture theoreticians, and the young, unemployed architects who hope to survive the current economic crisis by deciding to start their PhD studies.

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