

CHALLENGES IN DOCTORAL RESEARCH IN ARCHITECTURE IN INDIA

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Abstract

Undertaking a doctoral study has traditionally considered as a form of academic apprenticeship, and training inevitably has a part to play in producing the well rounded academician. PhD in Architecture is comparatively new in Indian Universities. Present paper discusses what a PhD stands for today with reference to architectural education in India. There are numerous misconceptions about the process and product of doctoral work which is adversely affecting the architectural education as a whole. True meaning of PhD is not known and the role of doctoral research in architectural profession and practice is largely under estimated. There is an urgent need to define PhD education process as well as product in architectural discipline which is aimed at the student's empowerment and transformation as a professional and academician. It is stressed that doctoral study is not just an academic apprenticeship but it possess capability to develop and promote creative talent and enable students to become professional researchers or researching and scholarly professionals. This paper talks about epistemological and methodological considerations in doctoral studies. Various aspects of PhD education are highlighted, characteristic of a good PhD thesis is put forward which essentially is scholarship, which examiners defined as originality, coherence and student autonomy in addition, a well-argued, logical progression of ideas. Various initiatives to promote doctoral research are discussed in addition to its current status in India. The overarching aim of this paper is to provide an overall picture of doctoral studies in architecture in India in the interests of ensuring the best possible form of doctoral education. It has been found that the doctoral research in Indian architectural schools needs a paradigm shift in order to promote research culture in academia and practice holistically. To achieve this adoption of practice oriented research approach is suggested considering the demand of architectural discipline which is a nascent area of concern in current educational scenario in the country.

Keywords: Doctoral, Tacit, epistemological, methodological, apprenticeship.

INTRODUCTION

PhD is essentially training for scientific research for a defined period dedicated for learning tricks of profession and establishing researcher peer among experts. It is aimed to attain mastery of the subject, analytical breadth and mastery of depth which refers to the contribution itself, judged to be competent and original and of high quality. It is the period to learn the art and the science of research, the ethics of research, the intellectual rigour required. It is about how to frame research questions, pursue and mould them, to complete a piece of original research (Mullins, 2000). According to Barnett (1994), modern society requires higher education to prepare students to function effectively in society. The number of science doctorates earned each year grew by nearly 40% between 1998 and 2008, to some 34,000, in countries that are members of the Organisation for Economic Co-operation and Development (OECD). In 2004, India produced around 5,900 science, technology and engineering PhDs, a figure that has now grown to some 8,900 a year. This is still a fraction of the number from China and the United States, and the country wants many more, to match the explosive growth of its economy and population. The hope is that up to 20,000 PhDs will graduate each year by 2020.

Architectural education need to expand their notion of knowledge production from simply the development of 'reliable' knowledge (Gibbons, 2002). PhDs are increasingly not just educated for

academic research, but for the labour market in general. It is important for knowledge society in which knowledge is seen as the basis for social and economic development where architectural research can play a crucial role. Considering the interdisciplinary nature of architecture it is becoming increasingly necessary to draw on knowledge from other disciplines in meeting the challenges and opportunities of the modern economy and society. Architectural research, in particular, benefits from the inclusion of complementary work in the social sciences and humanities. There is a need to think about ways the practice of interdisciplinary research can be encouraged and facilitated (Howard, 2008). It is still an implicit assumption that the doctorate in architecture is preparation for an academic career only. PhD student gain high-level research, organizational and interpersonal skills, which can open up exciting career opportunities in academia, research institutions or architectural consultancy. Architectural research at PhD level is aimed to test the originality of thought and the determination of the researcher to see a project through. The PhD places an aspiring candidate at the core of the university's intellectual life and at the forefront of its worldwide quest to provide future generations with the necessary flow of new ideas for architectural development. In many countries like Germany, the UK, PhD holders are preferred in the labour market as employers value their ability to work independently and be highly reflective and critical. The motivation for undertaking a PhD is improving one's position in the labour market outside of academia which is not the case in Indian context particularly in the field of architecture.

DOCTOR OF PHILOSOPHY: A HISTORIC BACKGROUND

Doctor of Philosophy is originated from the Latin *Philosophiæ*, which is a postgraduate research degree awarded by universities. The title PhD is derived from the Greek, meaning "Teacher of Philosophy". In the context of academic degrees, the term "philosophy" does not refer solely to the field of philosophy, but is used in a broader sense in accordance with its original Greek meaning, which is "love of wisdom". PhD degree was started in medieval Europe as a licence to teach in universities. It was established as a research degree in Germany in the early 1800s. German universities started attracting foreign students, notably from the United States. In 1861 Yale University started granting the Ph.D. degree. From the United States, the Ph.D. degree spread to Canada in 1900, and then to the United Kingdom in 1917. University of Yale awarded the first PhD degree in United States to three men in 1861. In 1892 both men and women were allowed to enrol in PhD programmes at Yale. Two years later, the first seven women awarded PhD degree in the year 1894. The Ph.D. in Architecture was one of only four such programs in the United States when it was established in 1969 at University of Michigan and it was the first university in United States to offer the Doctorate in Architecture (Park, 2007).

PhD has been described by scholars in different ways, as "the pinnacle of academic success" (Nyquist 2002), "the zenith of learning" (Lovat, Monfries and Morrison 2004), and "the pinnacle of university scholarship" (Gilbert 2004). PhD is defined as a research degree offered to a student who has acquired the capacity to make independent contributions to knowledge through original research and scholarship (Association of American Universities, 1998). It is aimed to prepare student for a lifetime of intellectual inquiry that manifests itself in creative scholarship and research (Bargar & Duncan, 1982). In United States doctoral education is considered as an academic programme to develop professional researchers' (Bourner et al., 2001). It is referred as a 'critical transition' characterized by a shift from course taker student to independent scholar (Etzkowitz et al., 2000; Lovitts, 2001). PhD programme prepare students for a research or academic career, who can offer advanced research support in industry, civil service, culture, media and the heritage sector.

It is basically the research degree of choice (Park 2005a) which takes a number of different forms in different countries (Noble 1994). In the USA, a doctorate programme usually includes both taking advanced-level taught courses and undertaking academic research, with access to a range of academic advisors and supervisors. In UK, European universities and Australia, this degree is typically based largely or exclusively on research, with the student effectively serving an apprenticeship under

the guidance of a principal supervisor. In the last century the PhD has considered as a qualification recognised internationally, as the standard qualification for entry into the research and academic professions, and for other labour markets. Today it is supposed to the topmost academic qualification in most countries. PhD facilitates inter-organisational circulation of tacit knowledge as well as inter-generational circulation of knowledge. It serves two main objectives. The first is quite explicit as the student researcher is required to produce an original and substantial contribution to knowledge. The second, who is less explicit, is to investigate and become proficient in the process of doing research in an ethical manner in one's chosen area (Phillips & Pugh, 1990). Hence, doing a doctorate is an experience in learning.

QUALITY OF A DOCTORAL WORK

Doctoral degree is associated with scholarly experience which is to be reflected in the outcome or thesis. What makes a doctoral work worthy of a PhD degree is a point of concern. Trafford & Lashem (Trafford and Leshram 2002 b) referred the term "doctorateness" which defined as mastery of subject, mastery of analytical breadth where methods, techniques contexts and data are concerned, the mastery of depth which include the contribution itself judged to be competent, original and of high quality. The features which make a thesis scholarly are an intellectually coherent argument, methodologically plausible research design, and quality of writing outcomes and conclusions and contextualization. Doctorateness in a thesis can be achieved if all the components are adequately fitted together to represent an inherent notion of synergy (Fig 5). All these components are supposed to form a mutually interdependent network system of all the parts with a justifiable relationship within the thesis. Thus the whole may be greater than the sum of its parts. It should satisfy the requirement of examiners which include two variables viz. Innovation and development and scholarship. Trafford suggested a matrix having four quadrants:

- A- Technology of thesis
- B- Theoretical perspective
- C- Practice of research
- D- D Jointly underpinning Doctorateness

The quadrants display gradation of thinking that moves from practical and technical aspects of producing a thesis (A) through abstraction conceptualization interpretation (Trafford and Leshram 2002). In this matrix the quadrant D is considered the most significant.

PHD EDUCATION - INTERNATIONAL TRENDS

In 21st century PhD education is characterised by stronger emphasis on the broader social and economic value aimed to develop a knowledge society, and a knowledge economy. The Bologna process suggests a common structure and degree for doctoral education in Europe in order to increase cooperation and mobility across countries ensuring a common approach to quality in doctoral education (Bologna Declaration 1999). Salzburg principles are the ten structuring principles framed to set a standard across the diversity of individual and national systems of PhD education as mentioned in 2005's Salzburg report (European University Association 2005). It is an attempt to retain the traditional core values as well as its application for profession. They stress on originality, diversity, interdisciplinarity and development of transferable skills. Nature of research training in different countries is different which has to be streamlined (Kyvik and Tvede 1998). The Bologna Declaration is an attempt to increase harmonisation of the higher education across Europe in which PhD education and training is one of the agendas (van der Wende, 2000) aimed to promote its convergence. Regardless of the differences in research cultures, a PhD research invariably involves critical enquiry, the strenuous intellectual activity of collecting, sifting and analyzing information for the sake of new knowledge'(James & Baldwin 1999). To meet the challenges of modern economy it has become necessary to take advantage of research and knowledge base from a number of disciplines and find out ways to promote interdisciplinary research (Howard, 2008).

OTHER EUROPEAN INITIATIVES

Two important European initiatives have an impact upon doctoral education viz. Lisbon Agenda, and the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers. Key aims of the Lisbon agenda are to strengthen the research base and competitiveness of Europe, and to increase the training and production of doctoral students (Nilsen 2006). The European Commission (2005) has adopted a European Charter for Researchers, and a Code of Conduct for the Recruitment of Researchers, which are designed to help make research a more attractive career and increase mobility by giving researchers the same rights and responsibilities across Europe. The scope of PhD education and training is not limited to academics which is traditionally considered as a piece of work that changes the course of human knowledge base. In many countries like UK and Australia the doctorate has been reconceptualised as a training period for future researchers (Collinson 1998). Universities are "custodians of academic standards and have the responsibility to award the degree. It is designed by universities but is the product of multiple owners or stakeholders (Nyquist 2002).

INDIAN SCENARIO

In India first PhD awarded in science in 1957, by Indian Institute of Technology Kharagpur. Minakshi Cadambi was an archaeologist who was the first woman to get a doctorate from the University of Madras in 1936 her topic of research was Pallava history. PhD in architecture was initiated by a few schools of architecture which included, Indian Institute of Technology Kharagpur, Indian Institute of Technology Roorkee and few more added later like Vishveshraiya National Institute of Technology Nagpur, Maulana Azad National Institute of Technology, Bhopal, School of Planning and Architecture Delhi. Currently more than 20 architectural schools are offering PhD programme under different University setups.

ROLE OF SUPERVISOR

The doctoral candidates are often become intellectually confused, frustrated and doubtful about the progress. Supervisor resolves their problems and guides them to come out of such a situation. Traditionally, most supervision was based on the 'secret garden' model (Park 2006), in which student and supervisor worked closely together without external scrutiny or accountability. Role of supervisor is very important as it influence the process as a whole. It extends from teacher, trainer. Virtually supervisors not only shape the research but also guide the student through the research experience. The encouragement and inspiration of a supervisor can develop a student's personality as an independent researcher who is able to think creatively. PhD students need interested, available, critical, supportive and encouraging supervisors who provide scientific guidance, psychological support, overall perspective, inspiration when the going gets tough as well as career advice. Indian Universities generally define the qualification of supervisors but their role is not adequately defined.

ASSESSMENT

The PhD education has potentially major implications for the examination process. Most Universities the examination focus almost exclusively on the thesis submitted by the student, through an oral examination but there are diverse ways to conceptualize and operationalize the same (Tinkler and Jackson 2000). Many times examination process become very stringent which as per Mullins and Kiley (2002) there is a need to remind examiners that "it's a PhD, not a Nobel Prize". Indian Universities give the primary emphasis in examining the doctorate based on the product (thesis) rather than on the process (developing the researcher). There is a need to create an appropriate balance between the two. In traditional Indian universities examination is kept open only to the two or at most three examiners and the student, sometimes with the supervisor present as a silent witness. The final

defence involves an 'examination' to which outsiders sometimes even members of the public are invited which is a good practice.

PROFESSIONAL DOCTORATES

In UK the PhD degree was introduced as "the process of preparation for an academic career in the university" (Blume and Amsterdamska 1987). Professional doctorate programmes are established in response to perceived gaps in doctoral education; such a trend is also evident in the USA (Hambrick 1997) and Australia (Pearson 1999). They are based on development projects which result in substantial organizational or professional change and a significant contribution to practice" (Lester 2004). Architecture is a complex discipline with a long tradition of studying architecture "from the outside" by researchers from other disciplines. Architectural research generally adopts theories and methods from other disciplines without reflecting on the specific character of the architectural field (Lundeqvist, 1999). The practice-based doctorate is a new concept where knowledge is advanced partly by means of practice which in turn based on a continuum from scientific research to creative practice" (Frayling et al., 1997). Practice-led Research refers to the research in which the professional and/or creative practices of art, design or architecture play an instrumental part in an inquiry" (Rust et al., 2007). As per Michael Biggs practice-based research prioritises some property of experience arising through practice, over cognitive content arising from reflection on practice (Biggs, 2004). Such type of PhD is need of the day particularly in Architectural discipline which is not at present available in Indian context. Introduction of such format of PhD in architecture is likely to encourage more candidates to join doctoral programme and contribute to the academics and architectural practice both.

DISCUSSION

PhD in architecture needs an interdisciplinary research which is characterised as "intellectual border crossing" (Metz (2001) and as "most productive in innovation and discovery" Gilbert (2004), which emphasize on relevance to society and knowledge transfer. Although many Indian universities are encouraging interdisciplinary research in architecture still more efforts are needed in this front. The doctoral training has to be designed to cater for, the expectations of candidates as well as expectations and requirements of employers, and transition and mobility. PhD students are a living strength of scientific production who is involved in experiments and knowledge-production that require the use of more complex processes in architectural discipline as compared to others. They contribute towards scientific production, towards teaching and towards relations with the professional/industrial partners which is an important aspect as far as architectural discipline is considered. Researchers are one of the vehicles for the diffusion of tacit knowledge acquired during their training through research. It has been found that the perceptions of stakeholders are remarkably different. Students consider it an "academic passport with international reciprocity" (Noble, 1994). Armstrong state it as a licence to teach at degree level, and an apprenticeship in "proper" academic research (Armstrong, 1994). Many research universities across the globe place themselves at the top of the ladder of academic qualifications (Stauffer, 1990). There are widely articulated tensions between product (producing a thesis of adequate quality) and process (developing the researcher), and between timely completion and high quality research. There is a wide gap between what universities are producing and what employers are looking for in terms of doctoral candidates not just in terms of competencies and transferable skills but also in terms of attitudes and behaviours (Leonard and Metcalfe 2006). This phenomenon is crucial in the architectural discipline which is largely practice oriented.

The meaning and value of the PhD education is to be defined as well as the standards of PhD education need to be explained in order to establish appropriate practices in PhD education in Indian universities offering PhD program in architecture. PhD programme has to be established and developed with utmost care with a flexible nature otherwise it may become cumbersome, restrictive

and wasteful and become a trap for the candidate and a sinkhole for intellectual resources. In Indian context doctoral the students' journey is currently not well planned in most of the architectural institutes and the desirable academic consciousness is found missing. The unstructured nature of the PhD education often make the whole process an outbound struggle in which candidates are supposed to first discover and then overcome. They have to discover elements of the structure of their doctoral work which is aimed not only to satisfy the examiner but also meeting University Regulations.

CONCLUSION

Doctoral studies can help in maintaining a reliable supply chain of researchers which is crucially important, particularly in today's knowledge economy from a national perspective. Researchers are key knowledge workers actively engaged in knowledge transfer. PhD education should locate research education as a ready source of labour and commodities for the new economy, which is said to trade principally in knowledge for the benefit of society (Barnacle 2005). It is true with reference to architectural discipline which deals with people's issues and concerns by and large. The environmental, socio-economic and cultural aspects are the focus of architectural doctoral work which can contribute for sustainable development and quality of life of the society. There is need for investment in developing both the research base and the researcher base, fuelled by an appreciation of the impact of research and development on economic development as well as to maintain the country's competitive position within the increasingly global marketplace for goods and services including knowledge where architectural doctorate has to play an important role. To cope with the rapid growth in PhD candidates, the institutions have to take steps to streamline the PhD education by adapting common guidelines and principles, The PhD training should be aimed to promote good practices in organisation and management with a strong focus on monitoring quality and efficiency. The misconceptions about PhD has to be addressed to encourage the new generation of architects to go for it .The throughput of productive doctoral students is vital to the health of academic disciplines like architecture as they are custodians of the disciplines. It is essential that there must be a sustained supply of architectural doctoral students, not just to grow the next generation of academics but to maintain vitality and research momentum in the discipline.

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