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Many flowers, small leaps forward: Debating doctoral education in design

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Commissioned review for special issue of Art, Design and Communication in Higher Education (Research Journal of ADCHE-LTSN) dealing with *Best Practices in PhD Education for Design*

As a point of departure for this review I have taken three events in 2000, a time when debate about research degrees in Design seemed to reach a peak. Two were conferences: the Design+Research Conference at Politecnico di Milano and the 2nd Conference on Doctoral Education in Design at La Clusaz, France. The third was a particularly heated online debate by members of the DRS email discussion list during the preceding year. While these three events by no means define the whole territory they do crystallise some issues which continue to characterise the PhD “problem”.

In looking at these events, and the wider picture of research degrees in design, I would like to draw out two themes. The first of these is the different, but complementary experiences of colleagues in many parts of the world who are wrestling with these issues. The second is the problem of a proliferation of ideas, philosophical positions and rhetoric, which is not matched, as yet, by many visible developments in practice. Perhaps this is not surprising since any small development in this context has a gestation period of at least 3 years and could take much longer to move outside the walls of the institution which has fostered it.

One of the benefits of the two conferences in 2000 was that they allowed participants to explore informally some of the differences in practice and institutional culture in the countries represented. A pervading theme was that design educators working in universities, if they wished to retain their standing, and in some cases their right to remain within the institution, needed to match up to a range of new expectations which usually included a much greater emphasis on research.

Local manifestations of this effect in different countries ranged from large numbers of design teachers being required to study for PhD's themselves, to the strange example (from a country in the middle of Europe) of a person with no prior knowledge of design being employed by a university to devise a research strategy and programme of research for the design department, on the basis of which government funding would be provided and research staff employed. The Milano conference itself was, in part, an example of a design department with an international reputation, staffed by some eminent thinkers in the field, needing to demonstrate its research credentials to a sceptical local audience.

In some places the central purpose of achieving a doctorate is to gain employment as a university teacher and there is a national institutional framework which manages that process. Anna Calvera (2000) characterises the system in Spain in this way and goes on to suggest that there may be few opportunities in Spain today for research to have a direct effect on practice or provide a route to employment outside the academy. However she implies that this situation is an interim one and it is reasonable to decide that the impact of "design doctors" on the profession and the economy cannot be assessed until a significant number of candidates have been awarded their degrees and gone on to make their mark in employment. Calvera provides a detailed picture of the very specific Barcelona PhD typography programme in the Spanish 2+2 model with 2 years formal curriculum in research methods and subject knowledge followed by 2 years of individual research.

The Barcelona PhD is not only tightly focused as to subject but it is clearly structured around a particular academic project: the re-discovery of both local and international histories of typographic design. Students may elect to investigate areas of "scientific" knowledge relevant to contemporary practice but the majority choose historical topics, reflecting the emphasis in the substantial taught curriculum. This emphasis on formal subject knowledge and scholarship is quite different from, for example, the "design science" approach of many East Asian research programmes or the independent (isolated?) enquiry of most British PhD's. It also resonates with some aspects of the professional doctorate to which I will return below.

The great variation in institutional approaches was exemplified, at La Clusaz, by two papers dealing with approaches to innovation in the PhD. Michael Kroelinger and Jacques Giard (2000) described the development and introduction of the interdisciplinary PhD program in Environmental Design and Planning at Arizona State University, a lengthy and detailed process involving external authorities and requiring a clear and strictly constrained definition of the subject scope of the program and a planned curriculum. By contrast, Steven Scrivener (2000), describing his experience in supervising “practice-based” PhD’s at Coventry University in the UK, presented a radically different picture of a regime in which an individual Director of Studies was able to identify new opportunities and, if they could satisfy the university that individual proposals were sound, enrol students to undertake research degree studies which were very novel in both subject matter and methodology. It was clear that the US system exemplified by Arizona provided a very robust approach to quality assurance, perhaps reflecting the USA’s longer experience of research degrees, whereas the UK regime provided scope for innovation which might be difficult to pursue in the USA.

The tension between these two English-speaking traditions has been evident throughout the debate. The expectation that doctoral education should involve a significant proportion of formal curriculum, implicit in the idea of a PhD “Program”, does not sit comfortably with the UK’s historical attitude to the research degree as a much more individual activity. Underlying the visible differences between these two approaches might be discerned a tension between the research degree as, on the one hand, the “terminal degree”, the highest qualification to aspire to as well as a licence to practice research, and on the other hand a means for an individual to pursue significant knowledge of a subject which interests them greatly, a tendency which has grown in the UK with the increase in self-funded research students (Bourner et al 2001).

Of course these are not absolute distinctions and La Clusaz also saw a paper by Julian Malins and Carole Gray (2000), describing the MRes degree at Robert Gordon University in Aberdeen, Scotland. This is a distance learning programme designed to prepare artists and designers to undertake research degrees and the first UK programme of this kind in design, although there are similar ventures in other disciplines. Part of the driving force behind the Robert Gordon initiative, and subsequent new courses at Sheffield Hallam University, the University of Central England and Coventry University, is the growing recognition, by funding and quality agencies in the UK, of the value of a 1 year plus 3 year model for Doctoral degrees.

While some interpret the 1+3 model as a PhD following a conventional master’s degree, others feel that the logical conclusion will be a 1 year research training programme (eg MRes or MA Research Methods) which leads directly into the PhD and that model is emerging in several disciplines. One might see in this a too early narrowing of focus but it is also arguable that it allows students to start developing their research questions and their contextual research much earlier, engendering greater confidence for both student and institution when they enrol for their PhD.

In an environment increasingly dominated by quality concerns, Universities will do everything they can to ensure good completion rates so the attractions of a programme which ensures that students enter a PhD, equipped with both a thorough training in relevant research methods and a well-developed research proposal, will be obvious. The corollary for universities, and especially funding agencies, is that students who are not suitable for Doctoral study are likely to give evidence of that during the first stage of the programme, and a clear break between the taught stage and the PhD gives a good opportunity to prevent students from progressing if they are unlikely to succeed in the PhD.

Having spent some time on institutional matters I would like to move on to the philosophical debate, although institutional issues will continue to assert themselves. One of the topics which seems to dominate debate about research and research degrees in design, although it is not so evident in formal contributions, is the relationship between practice and research. In stating the issue thus I am treading on very thin ice since almost any use of the word "practice" is likely to give rise to ownership disputes. This being so I will try to set out some definitions that might be acceptable to readers, even if they dislike some of the ideas indicated.

Firstly, it is clear that terms such as "practice-based" or "practice-led", when applied to research, will always arouse dispute, characterised by John Langrish's (2000) contribution to the La Clusaz conference, "*Not everything made of steel is a battleship.*" Langrish drew on his extensive experience to give a clear and cogent description of what a PhD is and should be and I commend it to anyone who wishes to understand the distinction between research and practice in design. However Langrish also delivered a vigorous sideswipe at the use of the term "practice-based research" on the grounds that "*All PhDs are based on the practice of research. Any other kind of practice is not being certificated*"

Unfortunately, in taking this position, John Langrish chose to ignore the problem that some people were using the term to point to research practices which did not inherently challenge his prescription for the PhD but which were sufficiently distinctive and novel to require a handy label which would facilitate discussion. To try to deal with this problem and improve the precision of the debate I suggest that the term "investigative designing" indicates designing that is undertaken as an instrumental part of the work of investigating or developing a research question. Where the term "practice" is intended to refer to the practice of research it should be qualified as such, eg "research practice" and otherwise terms such as "professional practice" or "creative practice" will indicate the context of the practice being discussed.

Having said all that, there is clearly some concern that designing and researching might be conflated and bring design research into disrepute. The greatest fear seems to be reserved for the spectre that individuals might cynically propose, for example, a piece of product design as being research largely on the grounds that it is a new product and therefore new knowledge. David Durling (2002) reports some cases where research students appear confused about these issues and links this to departments where there is little or no formal research training. Some commentators have referred, in this context, to research practices in fine art but it is important in any discussion of design to avoid becoming mired in debate about fine art, which may share some practical concerns with design but has some very different concepts of enquiry.

A development of the “design=research” problem is the widespread concern that individuals may attempt to pass off a single artefact as a research degree thesis and lax regulations and examiners may allow this to happen. Here we have a terminology trap since a thesis is clearly a single artefact and it is arguable that a thesis might take different forms in future as long as it continues to meet its central purpose of describing, explaining and providing a permanent record of the research. At La Clusaz, Lars-Henrik Stahl (2000) reviewed the problem of architecture students who set out with the intention of “making” a thesis and pointed out that there are significant barriers that become apparent once students start to engage with the wider implications of their investigation.

Since there are no clear models of “made” theses on offer in design at present we might conclude that this is an interesting theoretical problem, characterised by Michael Biggs (2001) as a “Holy Grail”, which may never be solved but which offers some stimulating challenges that individual researchers may wish to pursue.

One frequent response to the “practice” problem has been the suggestion that a professional doctorate might allow designers working at the most advanced levels of practice to acquire a doctoral qualification in keeping with their professional standing. Unfortunately this does nothing to pacify those (and I count myself among them) who see a useful role for designing within the practice of research, and a closer look at professional doctorates indicates that, in the UK at least, they do not (as implied by some) offer a ready-made recipe for designers who want to be doctors.

Bourner et al (2001) carried out an analysis of all professional doctorates operating in English universities in 1999 and characterised them thus:

*The traditional Doctor of Philosophy degree is intended to develop **professional researchers**, the professional doctorate is designed to develop **researching professionals**.*

From their review it is clear that, far from rewarding excellence in practice in the rather simplistic way implied in some debates, the professional doctorate is usually a combination of a substantial individual research project supported by a smaller proportion of taught subject knowledge. The main difference between PhD research and professional doctorate research appears to be one of scope, with professional doctorate theses focusing on research in service of professional practice and Bourner et al suggest that the OECD Frascati definition of “applied research” describes professional doctorates. It is likely that any move to bring design into such a framework will engender exactly the same disputes and confusions as the present PhD debate.

A subversive view, based on the Bourner analysis, might be that a great number of current and recent research projects in design, including some PhD's, address the question of improving or understanding professional practice methods and theory, so there is probably a case for a much wider use of the professional doctorate for those students who apply themselves to issues of professional practice or design strategy, reserving the PhD for more outward-looking candidates whose enquiries are concerned with adding to knowledge in wider contexts. However this mischievous view only goes to demonstrate that drawing such fine distinctions is impossible, as demonstrated by Shackleton and Sugiyama (2000). Their overview of doctoral education in Japan portrayed a system in which there was little concern about discriminations between professional and philosophical content, students engaged in research appropriate to doctoral study and most chose the title Doctor of Engineering (higher status in Japan) but could elect to receive a PhD if they were planning to work in territories that valued such things.

Moving on from the vexatious problem of “practice” it was evident in the events of 2000 that, while there might be serious intentions to engage with purposeful debate, the very diverse interests and agendas of participants, combined with some inherent problems in the format of academic conferences, made it very difficult for such debate to be sustained. In Milano the conventional parallel session format was partly offset by some strong plenary sessions which allowed exploration of specific issues such as the infrastructure for research publication, but no strong theme emerged. At La Clusaz the agenda was more focused with a single session running over four days and plenty of informal engagement but, while this arrangement prevented fragmentation it could not enforce direction. This became apparent in plenary sessions where there was a marked reluctance to lay aside individual pre-occupations and focus on the broader questions which might be teased out of the conference.

This was discouraging, since the online debate, which included several discussions arising from Clive Dilnot's (1998) paper in the Ohio conference on Doctoral Education in Design, has indicated a great interest in developing ideas about forms of research and knowledge particular to design. Other formal expressions of this interest include Ken Friedman's (1997) calls for the development of “design science”, not to be confused with Herbert Simon's concept of a “science of design” discussed below, and Richard Buchanan's contention that design is a “transdiscipline” (1998) or even the latest, and possibly the only remaining, liberal art (1992).

The persistent efforts to identify the nature of “design enquiry” and “design knowledge” have been passionate, fractious, wordy, multifaceted, at times intriguing, but more than anything they bring to mind Mao Zedong’s (1957) call to *“let a hundred flowers bloom, let a hundred schools of thought contend.”* Chairman Mao brought his debate to an abrupt halt within 6 months and sent the academics off to the countryside to dig ditches but we may have rather longer to go before our community feels able to settle down to more mundane research tasks with some confidence in at least a core of shared thinking on the nature of design enquiry.

One facet of this is the shortage of examples which set out clearly the scope and substance of PhD projects in design. In most universities there will be very few design PhD theses in the library, with a great weight of work from other disciplines to confuse the picture. In the wider field, while large numbers of short research papers are available in journals and online and there are some tantalising PhD abstracts available, for example on the Research Training Initiative website of University of Central England (BIAD 2002), a complete PhD thesis is a very big document to download and it is not yet normal practice to make them available online. The upshot of this is that neither supervisors nor students have a straightforward opportunity to review a broad spread of exemplars in proper detail.

Alongside this, I perceive from the online debates that at least some of the heated exchanges arise because people in different places are not able to see the actual research practices which inform their colleagues’ thinking. For this reason I commend the remarks of Darren Newbury elsewhere in this journal, where he stresses the importance of getting on with the practical work of doctoral education without allowing too many (unresolved?) methodological issues to interfere with the work of individual students. Only by the production of a diverse body of PhD exemplars will we approach the possibility of grounding theory in practice.

Meanwhile, back in the theory mines, it is possible to identify some developments. At the first (Ohio) conference on Doctoral Education in Design, Victor Margolin (1998) delivered a robust critique of Herbert Simon’s “science of design”, pointing out that Simon’s disdain for design’s “cookbook” methods and reliance on judgement and experience was a measure of his location in engineering and infatuation with the idea of systematising (mechanising?) design process. Such ideas may not find much currency in the design communities of Europe or North America but it is noticeable that the main Asian design economies (Japan, Korea, Taiwan and increasingly China) are very happy to use the term “science of design”. Published research in that arena includes a significant amount of work applying scientific methods to developing new or more controlled design processes (eg Kamaike 1999) and, although such research can suffer too often from a lack of contextual insight, one cannot ignore the possibility that last year’s design challenges may become tomorrow’s routine task. Designers will always need to move on to new arenas and new problems.

This is not a uniquely Asian perspective and the traffic is two-way. In the plenary session of the 2002 Design Research Society Common Ground Conference, Kun-Pyo Lee of the Korean Advanced Institute of Science and Technology described how he had come to recognise from the work of his western colleagues that research could be reflective as well as analytical. Professor Lee has in turn given much food for thought to western audiences through both his pioneering work in introducing rigorous user research methods to undergraduate design education (Lee 2000) and his designerly use of visual media to portray his work, something that is sadly rare in design research circles.

So how to summarise? There is a huge body of ideas that do not yet interconnect properly, there is a real wish to engage with the issues, even if it is sometimes hard to maintain focus, there is a growing international community who are learning to respect each other, even if they do not always agree. There are many ideas in circulation although far too many of them are speculative and, gradually, we are acquiring a body of exemplars and experiences in which to ground our ideas.

If there is an immediate challenge, it may be for members of the design research community to focus inwardly on what they can do to improve research degree practices in their own institutions and outwardly on sharing their practices to help build a foundation for theory development. As for new theories, my personal prescription is the same as that of a manufacturer with an excessive number of different products in their portfolio. If you wish to propose a new one you must demonstrate how it will replace at least three of the existing ones.

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