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Form, fit and flair: considering the design doctorate

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Abstract: *Across the domains of design education the Design PhD is an area of much contemporary discussion and debate internationally. As the field of the discipline of design matures, so does its relationship with this qualification: its form, methods and relevance within and beyond the academy. In this paper, the authors critically reflect on their respective observations of differing models of undertaking design PhDs and subsequent models of submission and examination. Founded in their observations of the diversity of design PhDs pedagogically and structurally, the authors have begun a global mapping of current PhDs in design and are exploring how the various forms of design PhDs 1. Reflect socio-cultural and economic contexts of the study, and 2. Evidence a design research mode of inquiry and contribution. Through this discussion they question how do we design Design PhDs that have relevance to the field, respect design's particular contributions, and maintain the critical and scholarly contribution that is the basis of the PhD qualification?*

Keywords: *design, doctorate, education, research.*

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Changing landscapes of design knowledge making

Doctoral education in design is maturing fast, both pedagogically and in terms of research and associated publications. Following the theme of this conference, *what are we to make of the histories and current configurations of the PhD in Design as part of anticipating, and ensuring richer futures for learning and researching design at this level?*

In recent years a number of international events have taken place that examine and discuss the character, variety, diversity and complexity of teaching and learning the PhD in design (e.g. Durling and Friedman 2000). A set of international papers entitled 'Practice, Knowledge, Vision' came out of a Doctoral Education in Design Conference held in Hong Kong in 2011. A substantial book of edited chapters called *The Unthinkable Doctorate* (Belderbos and Verbeke 2007) emerged from the same named event, resulting in subsequent explorations into new forms of doctoral education at Sint-Lucas School of Architecture, Brussels & Ghent in Belgium. This was just one example within design and architecture critical reflections by members of the academy (Heynen 2006). Recent DRS and CUMULUS conferences have included work relating to post-graduate education and in particular methods in design research. In Norway, the host of this DRS / CUMULUS conference, considerable work has gone into discussing the changing character of the design PhD (e.g. Dunin-Woyseth and Michl 2001; Michl and Nielsen 2005; Dunin-Woyseth and Nilsson 2012; Morrison 2013). In Sweden a national doctoral school has tackled a multitude of issues to do with practice-based inquiry and the diversity of design domains a PhD school needs to address.

Overall, doctoral design education is also expanding its scope and reach (Durling, 2002; Doucet and Janssens 2011): doctoral students in design are now placed within wider funded research projects, they are embedded in networks of inquiry and practice, and they publish in a variety of formats, increasingly there are also article based theses and media rich reflections in and on practice. Attendance and participation at the main design research conferences - IASDR, CUMULUS, Nordes, Design and Emotion, especially the sharper focus on design and learning at CUMULUS and the special interest group on education in DRS - provides us with the platform on which to discuss these matters and to share related research. Within this discourse there is also an increasing understanding of the need to identify the unique qualities of researching and supervising in these domains and the different strategies that are being drawn on to do this (Allpress et al. 2012; Vaughan 2012).

Complexity and diversity on the design PhD

From the authors' individual and joint experiences in shaping, managing, teaching, redesigning and researching doctoral education in design we see a need to develop a wider view on the nature and character of the design PhD. Much of the discourse at these research events (listed above, see also Friedman 2003) has addressed these issues of forms of doctoral submission (What is the thesis?), methodology (to research through practice, or not), and new areas of design practice and inquiry (the introduction of HCI, Service Design, Design for Social Innovation, or the design business interchange). However this discourse and knowledge exchange through examples of curriculum, submission forms, methods and ideology, have failed to embrace the complexity of design education, research and practice and the changing nature of the academy. We believe that it is time for us to critically consider how the design

doctorate can, should or does relate to the changing nature of design research (in the academy and industry) and required academic qualifications for design academics.

As those of us who work within a global design education context know, there is a diversity of doctoral programmes and schools in the education market place. These cover a complex mix of distinct interests and combinations. They refer to a range of professional and practical knowledge. They also reflect contemporary pressure and expectations within the academy for design faculty to publish and to bring design knowledge and insights into research via different media, thereby connecting with a wider public, and industry.

The title of this paper 'Form, fit and flair' encompasses key components in the ongoing negotiation that constitutes the pedagogies and research practices involved in doing a doctorate in design. *Form* points to more known matters of the structure and formats of curriculum, teaching approaches and modes of publication. These need to *fit* into changing practices, tools and modes of knowing that design can include. We argue that in addition design itself brings special ways of working, researching and knowing to design doctoral education. Consequently doctoral design education has the potential to both develop a particular identity and indeed *flair* that is realised and critiqued from within, but also through its interdisciplinary linkages with the wider world, including industry. This may be extended to the ways we also communicate design research, through a mix of formats, technologies and events.

We approach the medley of from, fit and flair in the changing character of the design oriented PhD by referring to our individual and shared experiences in design, teaching and researching doctoral education in design. We draw on this experience in a mode of dialogue between two teachers and researchers in design at post-graduate level who come from, and work in contexts that are widely separated geographically. That said, we have both moved across and between our own locations and contexts of learning, teaching and design practice, and doctoral education has been a shared topic of discussion and exchange between us.

A tentative and heuristic framework

Following several years in collaborating on design education and overlapping research interests we have identified a need to look more closely into the characteristics of doctoral design. We do this by offering the first phase of a wider research inquiry into a 'mapping' of PhD design education. To date we have discussed our shared experiences, frustrations and successes in design research based on our own roles as doctoral candidates, and then researchers, curriculum developers, programme coordinators, project leaders and supervisors.

Through these discussions we have devised a working, heuristic frame for the further and more systematic coverage of PhD design education. This is an education that we have invested in deeply, often with few resources from outside our own institutional contexts. We have found a need to look beyond the similarities of our two remote settings and towards building understanding of the diversity of PhD programmes in design.

The matrix of key aspects in doctoral education in design we have devised and present below is offered therefore as a device to revise and reposition: through the conference, its review processes and assembled discussions. We are in the process of making a related large research grant application to pursue further study of PhD

education in design that would involve a wider set of representative participants from the contexts mentioned, as well as others not currently listed. It is important to state that we do not intend this matrix to be a decisive and divisive tool. In making it we have both seen the value of shaping a space and schema for shared discussion regarding the many issues pertaining to the design doctorate. To be clear, we are undertaking this mapping not with the ambition of using the data to design THE design PhD. Rather, we are seeking to identify the qualities, knowledge contexts and cultural differences that underpin design education at doctoral level, in the same manner that we understand the diversity in the practice of design. As we discuss in the conclusion, this is one step in a larger research inquiry that needs to be extended to and across different institutions, design domains and settings..

Mixed modes of knowing

In general, discussions on doctoral education in design have been concerned with what types of knowledge are needed to underpin our educational goals when developing further PhDs that are located in design, and their reach from engineering to art related aspects. This is important as tensions still remain between what has been termed Mode 1 and Mode 2 of knowledge building (Nowotny et al. 2001), the former referring to more traditional and established disciplinary academic domains and the latter more situated and practice informed ways of both working associated abductive, emergent and 'designerly' ways of knowing (Cross 2001), thinking and practice informed inquiry.

While these modes may inform one another, and indeed are needed to build richer transdisciplinary research and education in graduate level design, design doctorate education needs to be realised that makes fuller use of Mode 2 knowledge making. As a result, related Mode 2 practices and rhetorical forms that best reflect their richness, ontologically and epistemologically, are often difficult to publish and communicate in journals and conferences that place their definitions and criteria for academic rigour largely in Mode 1 zones. Design researchers and design educators themselves need to experiment and compose alternative forms that fit the types of design activities and inquiry in play. Further, flair here refers to lifting this design centred content, related work practices and reflective articulations to be inflected with specifically design characteristics.

Designerly ways of knowing and the PHD

The catalyst for the paper - across hemispheres, contexts, languages and legacies in design and research - is a need from our own pedagogical and research activities to better understand and develop PhDs in design. This fits with the formal, disciplinary domains related to design research in many respects. Yet, it extends beyond them to celebrate that design inquiry and design education is actually more reflexive in its workings, shifting between formal concepts and notions that arise from an ecology of design practices. For us there is a need to also celebrate the dynamic and challenging character of designing and what it brings, more patently and less tacitly, to what we develop in the activities of design. This may mean less problem solving than finding solutions, and how the flair of the resultant processes, hybrid products and entwined systems and services may be interpreted.

Here we see the wider contexts and cultural settings of design research as being crucial to a doctoral design education that relates design studies and inquiry into a variety of emergent practices and especially technologically mediated ones. Such practices may be in conjunction with industry partnering, resulting in a diversity of discourses and professional arenas outside the academy. This means that in offering a tentative mapping of many of the components of doctoral education we need to look beyond single site programmes or weighting in particular contexts on specific domains, be they product or interactions for example.

Directions

In the sections below we first present the wider contexts for looking more closely at the complexity and diversity of doctoral design programmes. We then present the tentative mapping of a variety, but not all, PhD programmes in design. This provides us with a set of categories for discussing the range of programmes and their specific characteristics. We further map this by noting our own various experiences and participation in different aspects of these programmes across and within several countries and educational structures. The categories are discussed in relation to both the longer histories of developing graduate education in design while also taking up more recent initiatives and innovations that are informed both by educational theories and research, some of it outside design, and the developmental innovations that have been implemented to meet many of the design specific challenges and needs mentioned above.

In so doing we discuss some of the implications for wider curriculum development in the design doctorate, at local and institutional levels, but also globally and transdisciplinarily. Linked to this is the matter of examination formats, student mobility, new 'design' scholarship and research methods and post-PhD employment. In the longer term we see this research to be the first phase in a larger and unfolding research project into a more nuanced detailing of the matrix that would be conducted online and is one part of the larger 'project' that design graduate educators face in understanding and shaping the future of doctoral education in design.

Context

Discussion of the design PhD cannot be considered in isolation. As a research training degree the PhD must be considered within the broader context of design research and its evolution. Following on from the developments of the design degree within universities, over the past 15 years we have seen graduate education, the development of the design PhD and design research as areas of academic endeavour expand exponentially – both seeking identity, methods and recognition. As argued by Victor Margolin (2010), 'Today they [design PhDs] exist in many countries and more are on the way, despite the fact that the fundamental questions about what constitutes doctoral education and what it is for remain unresolved. Most new programs appear to be devised locally without reference to elsewhere' (p.70). Such questions about what is a design doctorate, what is it for, and what is its relationship to design research, scholarship and practice, in themselves evidence the diversity of what constitutes design from various perspectives. These are variances that are based on criteria of nationality, profession, academic tradition and scholarly position. Margolin argues that

that one of his concerns is that design research remains ‘cacophonous and without a shared set of problematics’ (2010, p. 70), or what he would desire – ‘a consensus as to how we identify the subject matter of design and, of equal importance, what design research is for and how different communities of researcher contribute to its purpose’ (p.71).

This points us in the direction of what is one of the key underpinning issues related to the role and form of the design PhD – what is it for? Traditionally across other fields the PhD is the prerequisite qualification for pursuing a career as a university academic (Golde 2006, Menand 2010). This is not the case for design, where until recently in most countries the Master Degree has been deemed to be the terminal degree for the field. Traditionally too, design academics have entered the academy from the professions, where by expertise in practice and technical skills were the key selection criteria for employment. The exception to this were design history or theory faculty who tend to have been drawn from the humanities fields, and material science or technology specialists who would typically originate from the natural and applied sciences.

However, like the rise in the importance of design research both within and outside of the academy, so too is the rise in the doctorate being the required qualification for on-going academic employment. These developments mark more than minor shifts in the machinations of the design school, whether institutionally it is a stand-alone entity or part of a larger university. Although a late arrival in the higher education domain, the design school and design faculty are now being expected to perform and be measured in the same manner as their colleagues from other disciplinary domains.

Although design schools internationally are facing this challenge, and there are numerous conferences, publications and discussion lists seeking to articulate what this will mean, rather than creating a greater level of understanding and universality of academic practice, it seems that the first stage is to highlight the differences. These differences appear to be grounded less in the actualities of design in practice, and more in the external or associated disciplinary fields that have been drawn on to legitimate knowledge production and knowing.

Perhaps one core of the problems in considering what a design PhD is or should be, is the very nebulous nature of the word design. A design PhD may be theoretical, historical, technical, poetic or performative. It may be aligned to any number of design professions or fields of practice, from architecture and engineering, to communications, fashion or service design. It may be undertaken within the model of the laboratory, the studio, the library or ‘the street’. The application of the knowledge may span Frayling’s (1993) categories of design ‘through, for or about’. It may also be ‘through, for *and* about’, depending on the nature and context of the study. In addition, the form of the PhD, its measures and modes of inquiry will be equally driven by the educational context that it occurs in, including the location of the awarding institution (Davis 2008).

Another important issue that needs to be addressed when considering what a PhD in design is, is the changing role of doctoral education both in design and more broadly in the academy (Menand 2010, p. 141). The PhD is no longer dominated by the expectation of it being a university teaching training qualification, in that it is the prerequisite for teaching. It is now understood more broadly as being a research training qualification and thereby, as the discourse of innovation and research expands into all areas of knowledge and professional practice, the potential destination for a PhD graduate may well be in government, in business or the professions broadly.

Ironically for design, this is being realised in both directions. The PhD in design is increasingly becoming the required qualification for research active design academics (who must also be participating in the undertaking of research and disseminating outcomes through publications, prototypes, patents etc.). Simultaneously, there is an increasing demand for design researchers across domains of commercial and private practice in the pursuit of innovation (Everson and Dubberly 2011).

Perspectives

In response to the authors' observations of doctoral education in design the following list of categories of forms, contexts, modes of study and evaluation of PhDs has been drafted. It draws on our combined 30 years of experience in the field, with over 50 successful MPhil and PhD candidate completions, and 20 examinations internationally. This is in conjunction with our participation in the scholarly and design research community as peer reviewers, authors, editors, conference convenors and practitioners, and lead researchers on funded research projects incorporating PhD candidates.

Both of the authors have also been coordinators and directors of PhD schools, graduate education and the design and delivery of research methods programmes and associated research skills development. These categories have also been shaped through reflective critique and by way of 5 years of international collaboration and co-teaching and exchange visits between our host institutions.

Initial Observations of Doctoral Programs Structures and Activities	
Place	The location of programs is fundamental to all other observations
Mode of Study	Research only Coursework + research
Supervision/Advising	Research Methods Internal External
Context of Study	No of people involved in advising/supervision Project funded research Self initiated
Funding source	Embedded within organisation Project grant Self funded Government funding Industry funding
Milestone activities in progress of study	Completion of coursework Examination Progress review Proposal approval Completion seminar
Submission format	Thesis/monograph Thesis by research publication By publication past practice Project or by practice
Examination	Viva – Public Viva – Private Thesis only – no viva Project and exegesis – no viva
Examiners	Internal External Mix Examiners identified Examiners anonymous
Enrolment status	Part-time Full-time On campus Off campus
Field of inquiry	Design studies Design history Practice Material science Methods Interdisciplinary Industry
Expected student university roles/activities outside of study	Teaching Researcher assistant Member of research team Co-publishing Networking

Table 1. An incomplete mapping criteria for design PhDs.

Table 1 shows the main categories we have identified to broadly chart the diverse character of design PhDs. Its important to restate that there is considerable variation in the nature of PhD degrees. They may focus more on a Design Studies approach, drawing on discipline-based knowledge generated from outside the practices of designing. They may also be tightly connected to engineering and product engineering, and linked to related conferences and organisations such as The Design Society. They may alternatively be connected to the intersection of interaction and technology but not aim to follow the formal prescriptions methodologically or rhetorically as embodied in Human Computer Interaction oriented arenas and publications housed in the ACM Digital Library.

Many design schools nevertheless arrange a mix of domains and methods that are connected to design practice. This increasing inclusion of knowledge built in and through practice, already formalised in the professions of nursing and social work for example, may feed and inform philosophical writings or the generation of analytical concepts and mode of reflective writing about design as essayistic criticism.

In addition to pedagogic frameworks and modes of inquiry, we have also identified there are variations across programmes based on modes of study, involvement or employment of doctoral candidates in the daily life of the design school, teaching duties, and funding models. We have included these in the categories as we they help to identify the differing social, cultural and economic frameworks present in the course of a doctoral degree, and the relationship between the doctorate, the academy and design practice.

In our initial survey we have identified eleven categories of diversity. The left hand columns include broad categories that are core to design PhDs; the right hand columns note sub details that vary across contexts, and within countries, their states and regions and even institutions. We discuss these categories in more detail in the next section where we map onto them our experience of teaching, consulting, researching, examining and designing within different PhD programmes.

Discussion

As a first step in our research project into the various forms of the design PhD, we undertook an initial mapping of our respective experiences (Table 2). Although each of the categories that has been identified may seem at first glance obvious and instrumental, it is our hypothesis that an issue such as place, or funding source can have a profound influence on the research that is undertaken, what is reported, to whom and how.

Author encounters		Laurene Vaughan	Andrew Morrison
Place		Australia, UK, USA, New Zealand, Norway, Austria, Belgium	Norway, Sweden, Australia, South Africa,,Denmark, Finland, UK
Mode of Study	Research	X	X
	Coursework	X	
	Research Methods	X	X
Supervision	Internal	X	X
	External	X	X

	No of people involved in advising/supervision	From 1 solo supervisor, to 5 advisors	Typically 2
Context of Study	Project funded research	X	X
	Self initiated	X	X
	Embedded within organisation	X	X
Funding source	Project grant	X	X
	Self funded	X	X
	Government funding	X	X
	Industry funding	X	X
Milestone activities in progress of study	Completion of coursework	X	
	Examination	X	X
	Progress review	X	X
	Proposal approval	X	X
	Completion seminar	X	
Submission format	Thesis/monograph	X	X
	Thesis by research publication	X	X
	By publication past practice	X	
	Project or by practice	X	X
Examination	Viva – Public	X	X
	Viva – Private		
	Thesis only – no viva	X	
	Project and exegesis – no viva	X	
Examiners	Internal	X	X
	External	X	X
	Mix	X	
	Examiners identified	X	X
	Examiners anonymous	X	
Enrolment status	Part-time	X	X
	Full-time	X	X
	On campus	X	X
	Off campus	X	
Field of inquiry	Design studies	X	X
	Design history	X	
	Practice	X	X
	Material science		X
	Methods	X	X
	Interdisciplinary	X	X
	Industry	X	X
Expected student university roles/activities outside of study	Teaching	X	X
	Researcher assistant	X	X
	Member of research team	X	X

Co-publishing	X	X
Networking	X	X

Table 2. The authors' encounter with the incomplete mapping criteria for design PhDs.

Let us now explain some of the criteria in more detail. In so doing we hope to show how such seemingly simple terms are in fact signifiers of far more complicated and systemic issues where one aspect such as a mode of study may in fact highlight a range of socio-cultural issues, funding opportunities and the pace of a study to successful completion. An initial evaluation of this reflective mapping has revealed that although there are many similarities in programmes in terms of academic progress and pedagogic premises, how these manifest in practice can be quite different. For example the integration of students into the life of the school, expectations of teaching, modes of study, and length of enrolment.

Places: For the authors of this research we have been involved in differing roles in design PhDs in Australia, Austria, Belgium, Denmark, Finland, New Zealand, Norway, South Africa Sweden, UK, and USA.

Mode of study: The mode of study that the doctoral programme is designed has significant impact on the student experience, length of study, funding and outcomes. For example a PhD undertaken through 100% research only, (plus research methods which would be common to all study) is different to a mixture of two years coursework plus three years research thesis.

Supervision: There are differing models of supervision across modes of study, countries and institutions. This may vary from the model of 'master and apprentice' with the PhD candidate working in relation to the supervisor in an almost trainee approach; to the other end of the spectrum with peer supervision amidst a community of learning in the context of a larger research or professional community.

Context of study and funding sources: There are many potential variances in a project, research measures, expectations and available resources to a research candidate depending on who initiates a project and who funds it. A self-funded and self-initiated body of inquiry may lack resources, be isolated, be unbounded and exploratory in comparison to a doctoral inquiry undertaken within an industry-financed research scholarship within a funded project.

Milestone activities in progress of study: Various modes of study and the inclusion or exclusion of coursework, graduate research skills training and public or private progress presentations all impact on the progress of candidature, possible timeliness of completion, and quality of research submissions.

Examination: There are vast variances across institutions regarding the formats and expectations of examination of the final doctoral submission. From the allowance of internal examiners, dissertation committees, opponents or the requirement for international examiners, each examination approach provides challenges for examiners in evaluating the quality and appropriateness of a submission, and for the nature of the scholarly community from which that the PhD has emerged.

Enrolment status: We have identified variances in programmes and in colleague's expectations of the quality of PhDs and of doctoral communities between part time and full time students. Variations in enrolment may also reflect differing modes of study, funding and contributions to other aspects of design school academic life.

Student university roles/activities outside of study: The varying expectations of inclusion of doctoral students within the life of a school references not only variations in enrolment and funding, but also expectations of graduate destinations post-PhD. For some institutions PhDs are factored into teaching staff requirements and such teaching is an important part of doctoral training. In alternative programmes inclusion of PhDs in other research activities is seen as a requirement for establishing track records for future work as design researchers.

These are just some of the variations of the categories listed in the table. They are just surface markers for what are broader pedagogic issues and the economic realities of contemporary university life. It is anticipated that as this research project progresses we will use a variety of research methods to identify a broader understanding of the differences between and across different design PhDs. We will go beyond the surface of the data table to build rich links that we anticipate will increase the design education field's understanding of what the current landscape of design PhDs is, and how we may want to redesign our own programmes as befits our respective contexts.

Conclusion

In the introduction to this paper we declared that we were not undertaking a mapping of doctoral programmes with any expectation of designing THE design PhD. In fact, our ambition couldn't be further from this. Our aim is to use a diverse range of methods to collate the various approaches to design PhDs globally, and from this, to then identify the various pedagogic approaches and contexts for design PhDs.

The catalyst for our inquiry is our shared commitment to the importance of doctoral education not just to train the design academics and scholars of the future, but also to create an engaged and able community of research design practitioners and thinkers who can harness advanced skills in design and research, and to apply our knowledge to the broader domains of design practice and inquiry, so that these embody and enact the form, fit and flair we see as already in play and available for further design, pedagogy, learning and research

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