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DESIGNED FUTURES

Design educators interrogating the future of design knowledge, research and education.

Postgraduate Communication Design Education in South Africa: Challenges and opportunities

Ria (HM) van Zyl: IIE Vega
Loffie Naude: Da Vinci Institute and Southern Business School)[18]

Abstract

The study qualitatively explored the local communication-design-education landscape and identified the structures, nature, challenges and role players. Theoretical models with the potential to guide the development of postgraduate design education were analysed. These are the Mode 1, 2 and 3 models, Innovation Triple, Quadruple and Quintuple Helix models, as well as *research approaches that have the potential to better align academia with industry, such as practice-based and practice-led research, recognition of prior learning and work-integrated learning.*

One of the possibilities to increase capacity at postgraduate levels is to work closely with the design industry, and the study, therefore, gauged the perceptions, attitudes and needs of designers in industry about postgraduate education. The findings confirmed the gap between industry and academia, with industry seeing the main role of academia as the provider of entry-level designers. No alignment between postgraduate degrees and designer's career paths exist, and academic research is not seen as a valid or accessible source of knowledge.

Key findings and insights about the educational landscape, the theoretical models and the perceptions and needs of designers in industry formed the foundation for the development of a conceptual framework. The frame-innovation approach, a problem-solving method based on the processes used by expert designers, was used to direct the development of a framework that offers various possibilities. These possibilities take the widening domain of design into consideration through the conceptualisation of an open, collaborative space that would allow for the different interests of academia, industry, society and ecology and flexible research approaches.

The contribution of the study is, therefore, the creation of an evidence-based consolidated framework that is systemic and has practical value for future development and implementation; that may increase capacity and potentially align industry and academia beyond entry-level supply.

18 The paper is based on doctoral studies conducted at The Da Vinci Institute for Technology Management

Keywords: Capacity-building, challenges, postgraduate studies, communication design

Introduction

Design has developed into a mature discipline that addresses human, societal and ecological needs (Norman 2016; Manzini 2015). Part of this development is a widening of the domain of design and shift from solution-driven to problem-processing design. The changes in the discipline of design result in the requirements for new skill sets and knowledge for the designer and design education. These changes extend the competency needs of a designer to be interdisciplinary, to move from being focused on form, technique and manufacturing also to include social, cultural, economic, psychological, and ecological factors. Education therefore also needs to adapt to provide designers with matching skill sets, and a craft-based education can no longer sufficiently deal with these new requirements (Norman 2016).

The knowledge needs of a changing discipline led to the development of courses at higher education institutions (HEIs), making design one of the youngest 'new' disciplines (Buchanan 2001). For a field to be called a discipline it needs to have a specific research focus, a body of specific specialist knowledge based on theories and concepts, use a specific technical language and specific research methods according to research requirements; the discipline is taught at universities and colleges and linked to professional associations (Krishnan 2009). The discipline of design ticks all these boxes.

Knowledge production is strongly associated with economic and social development, and the development of high-level skills is seen as central to increase global competitiveness and success of societies (Webbstock 2016; Simpson & Gevers 2016). New knowledge generation often takes place at postgraduate levels. Therefore, the development of capacity and activity at postgraduate levels is not only central to the development of knowledge generation and distribution but also improves productivity and innovation (Simpson & Gevers 2016).

Postgraduate contexts in communication design

Design education in South Africa started to include more human-centred design approaches, service-learning and modules such as critical citizenship but is still seen as 'static' and not driven by local 'needs' (Sooful 2013, p. 238, 242; Chmela-Jones 2013; Costandius 2012). Despite shortcomings, undergraduate education provides entry-level designers with sufficient knowledge, skills and insight to carry on with a career in design.

Master's and doctoral degrees in design make up a small part of design education (Table 1). One of the outcomes of these low numbers is the shortages of lecturers with one-up qualifications. Another shortcoming is seen in the limited research and publication of local design knowledge that could advance *both* academia and practice. Frascara (2007) states that research needs to be relevant, and recognises that although there is no research without method, research is useless without relevance, even if it follows method. International research generally does not fulfil the need for relevant local knowledge

Advanced design knowledge and skills are part of the development of an innovative economy and the development of the discipline (Davis 2008). A challenge, not only in South Africa, is the inherent conflict between theory and practice in design. Potur and Kayıhan (2010) point out a deep gap or bias where academics view the practical field as formalist and non-intellectual, and professionals see the academic environment as abstract and theoretical.

A review of the Higher Education Management Information System (HEMIS) data from 2010–2016 revealed that the Design and Applied Arts (030200) CESM produced only 14 doctorates (CHET, s.a.). This CESM includes Graphic Design and Illustration, Industrial Design, Commercial

Photography, Fashion/Apparel Design and Interior Design. Master's level in this broad CESM shows some growth, from 11 in 2010 to 36 in 2016. However, qualifications awarded at The South African National Qualifications Framework (NQF) level 8 (honours level) steadily decreased from 348 in 2010 to 108 in 2016 (Table 1).

Table 1. Design and applied arts (030200) CESM

2010 - 2016 Design and applied arts (030200) CESM at Public HE institutes*											
	NQF6	NQF7		NQF8				Total NQF8	NQF9		NQF10
(All races)	UG DIP/CERT (3YRS)	1ST BACH DEG (3YRS)	B TECH (1 YR)	1ST BACH DEG (4YRS) NQF8	PG/DIP/POST DIP DIP/CERT	PG BACH DEG	HONOURS NH DIP		MASTER'S RE-SEARCH	MASTER'S NON RESEARCH	DOCTORATE
2016	468	20	174	73	0	0	35	108	33	3	0
2015	485	81	179	118	0	0	17	135	24	3	3
2014	484	56	No info	277	1	0	11	289	22	1	6
2013	483	37	No info	277	0	0	2	279	16	3	2
2012	526	23	No info	302	0	0	5	307	19	3	0
2011	446	10	No info	266	0	0	0	266	20	5	1
2010	488	13	No info	345	2	0	1	348	6	5	2

*(*Excludes University of Stellenbosch, whose data captured in a different CESM)*

Source: Compiled by author, based on available HEMIS tables (CHET, s.a.)

According to Academy of Science of South Africa (ASSAf) (2010) it 'takes' approximately three honours graduates to produce one master's graduate, and seven master's graduates to convert into one doctoral graduate in South Africa. The conversion based Table 1 is one master's graduate for every 10.5 honours and one doctorate for every 11.5 master's. This conversion indicates that design needs a much bigger pool of honours students or change the current conversion rate to master's and doctorate levels.

These numbers do not take the students at private HEIs into consideration – if they are included, then these pipeline numbers show more deviation from the ASSAf pipeline. Several private education providers entered the design education scene over the last 25 years. See Table 2 for a snapshot of private providers teaching communication design at undergraduate levels but none at postgraduate level.

Table 2 shows a gap in the public provision of NQF8 qualifications. This is a hopefully temporary, as a direct result of the re-aligned NQF framework. This gap may also explain the decrease in NQF8 graduates. A typical designer's education stream before the NQF restructuring was:

- National diploma ⇨BTech⇨MTech⇨DTech
- Bachelor's degree (three years) ⇨ honours degree⇨ master's ⇨ doctorate
- Professional bachelor's degree (four years) ⇨ master's ⇨ doctorate

The new structure looks as follows:

- National diploma (NQF6)⇨ advanced diploma (NQF7)⇨ postgraduate diploma/honours Degree (NQF8)⇨MA (NQF9)⇨ PhD (NQF10)
- Bachelor's degree (NQF7) (three years) ⇨ donours degree/postgraduate diploma (NQF8)⇨master's (NQF9)⇨ doctorate (NQF10)
- Professional bachelor's degree (NQF8) (four years) ⇨ master's ⇨ doctorate

Table 2. Communication design courses at HEIs in South Africa

Communication design courses at HEI's (July 2019)					
	NQF 6	NQF 7	NQF 8	NQF 9	NQF 10
Universities					
University of Pretoria		● (4 year)		●	●
University of Stellenbosch		● (4 year)		Visual Arts**	Visual Arts**
North West University		● (4 year)		●	Communication**
Comprehensive Universities					
University of Johannesburg		●	■	■	■
Nelson Mandela University	●	BTech*		●	
Universities of Technology					
Tshwane University of Technology	●	BTech*		●	■
Cape Peninsula University of Technology	●	BTech*		■	●/ ■(UConstruction)
Vaal University of Technology	●	BTech*	■PGDip Design Technology	●	
Central University of Technology	●	●Advanced Dip GD	■PGDip Art and Social Design	●	
Durban University of Technology	●	BTech*	●	●	
Private Higher Education					
Greenside Design Centre		●	●		
AAA		●			
Inscape Design College		■	■		
Pearson (MGI)		●	●		
Prestige Academy		●			
Red & Yellow		●			
Stellenbosch Academy		●	●		
Open Window		●	●		
Cape Town Creative Academy		●			
IIE (Vega +RosebankCollege)	●	●	●		
Style Design College	●				
Ruth Prowse	●				
Damelin	●				

* Phaseout. ** Different CESMs ■ Combination: different design disciplines
Based on SAQA and institutional websites at the time of writing.

The reclassification of qualifications puts the BTech as equivalent to the BA Degree. The MTech and DTech degrees retained their level status (NQF8 and NQF9). The temporary absence of available advanced diplomas in design is at this stage an obstacle and designers with diplomas have few options to access postgraduate studies, with BTechs being phased out and fully subscribed.

The doctorate degree is an international benchmark widely used as a representation of the health of a higher education system, as well as an indication of the competence to start work as an independent researcher (Simpson & Gevers 2016). The top four reasons found by ASSAf for doing a doctoral study is the following: a natural continuation of studies or career, preparation for a career in teaching or research at a higher education institution, personal interests and some other professional career.

The NDP (2012, p. 308) recognises that universities play a critical developmental role: firstly, universities "educate and train people with high-level skills for the employment needs of the public and private sectors"; secondly, universities are the dominant producers of new knowledge and critique and develop existing knowledge; thirdly, universities provide opportunities for social mobility and strengthen "equity, social justice and democracy" (NDP 2012, p. 308).

ASSAf (2010:82) found that the weaknesses noted by employers in the skills and abilities of doctoral graduates in South Africa are a lack of "i) exposure to international expertise, theories and debates; ii) methodological competence; and iii) 'real-world' relevance". Furthermore,

many private employers consider a doctorate as an unnecessary qualification and require more practical business administration, financial administration and other business-related skills (ASSAf 2010). Students, on the other hand, reported that the skills least developed as part of their doctoral studies were the development of innovative solutions, networking, teamwork, leadership and managerial skills, and international cooperation (ASSAf 2010). Graduates further reported that despite a change in title and status at their place of work after doctoral studies, their responsibilities, income, critical tasks and position did not necessarily change (ASSAf 2010).

52% of doctoral graduates are employed in higher education, the others are employed by industry, government, science councils, not-for-profit sector or self-employed. In humanities, 60% of doctoral graduates are employed in higher education (ASSAf 2010).

Academia and industry – worlds apart?

The academic profession needs renewal and needs to meet the needs of industry and society for the South African universities to expand (NDP 2012). Therefore, the question is what the design industry's needs and perceptions are. Industry and academia are posed as opposites in Figure 1.

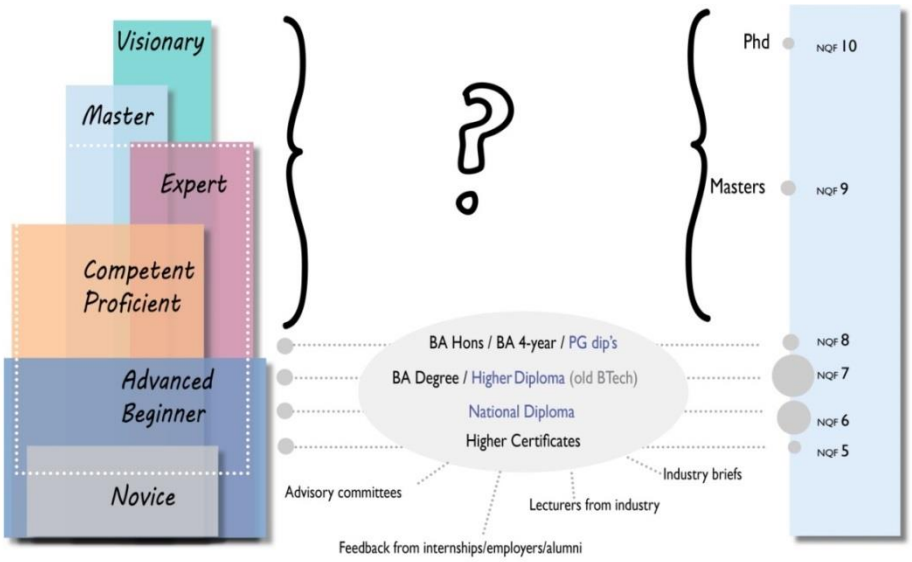

Figure 1: Aligning career paths with education levels

Bachelor degrees produce a graduate at an *advanced beginner* level. Alignment between undergraduate education and industry requirements are achieved using advisory panels, guest lecturers, feedback from students doing internships and alumni feedback.

The next level is *proficiency* and *competence.* The competency level is characterised by a new 'unease' due to the recognition of the scope of work and the sense of involvement (Dreyfuss & Dreyfuss 2014). This is followed by a level of *expertise*, the highest level that most designers will achieve. Here designers do not consider more alternatives but develop high-quality solutions faster than novices (Björklund 2013).

The development path on the left takes place in the *world of work,* and the knowledge necessary to cope is lay knowledge, gained through education and learning, experience and self-reflection (Mouton 1996). Mouton (1996, pp. 7–11) points out that the description 'lay' knowledge is by no means simplistic and can be complex and sophisticated. The imperative for such knowledge is *pragmatic* and caters for the *what* and the *how* to do it.

World 1 in a design context is the workplace where the goal-oriented process of design takes place. The designer needs to understand the nature of the design problem and project-specific knowledge about the client, cultural contexts, customer/user needs and expectations, visual approaches, trends and technologies and skills. Questions need to be answered about material, purpose, lifespan, markets, budgets and production; these are by no means simplistic questions, but pragmatic (Friedman 2003, p. 510; Visocky O'Grady & Visocky O'Grady 2017).

Project-specific knowledge is gained through what Friedman (2003, p. 510) and Buchanan (2001, p. 17) calls 'clinical research'. Research undertaken in the studio (World 1) contributes to design knowledge, but the end purpose or intention of research in the studio is to complete a project and not to add to the broader knowledge pool.

World 1 problems or phenomena become the foundation for systematic, methodical and rigorous inquiry and study by scientific researchers, described as World 2 (Mouton 1996). World 2 is driven by the need for *'epistemic'* or truthful knowledge and is the world of science where new theories are developed, tested, accepted or rejected. World 2 reflects the complexity of World 1.

Design research in World 2 would, for example, be conducted at institutions of higher education or by stakeholders such as organisations and includes applied research where the aim is to develop theories or principles, such as best practice, or rules-of-thumb working with classes of problems (Friedman 2003; Buchanan 2001).

World 3 of knowledge is characterised by a *critical* focus on the scientific world of a discipline and includes the meta-reflective and methodological development of scientific research. Research in this world aims to bring "conceptual clarity, historical perspectives and moral behaviour" (Mouton 1996, pp. 9–10). The interest of World 3 is the improvement of Worlds 1 and 2.

World 3 research in design, 'basic' research, is the search for general principles and meta-theories that cover broad areas and the cultural, broader social meaning of design outcomes (Buchanan, Doordan & Margolin 2010, p. 1). Meta-theories are often interdisciplinary and are critical to the future of the field (Buchanan 2001, p. 19). Development of researchers for Worlds 2 and 3 typically takes place at postgraduate levels.

Opinions from industry

The next section reports on insights about designers' perceptions about academia and knowledge need once they enter the workplace and is based on fifteen in-depth interviews with communication designers at various levels of their career development and in different industries (Van Zyl 2018).

The interviews confirm that postgraduate design studies are seen to have limited value and recognition. When asked if they would consider studying further, participants related the answer to negative undergraduate experiences, the shortage of lecturers with suitable industry experience and that postgraduate education lacks accessibility, flexibility and affordability. When asked if they know anybody with postgraduate design qualifications, participants only mentioned colleagues or friends who did MBAs. Some of the older participants showed a lack of awareness of any postgraduate qualifications in design, while the younger participants are aware of postgraduate pathways.

Three of the participants have incomplete master's degrees and mentioned barriers such as fees, workload and those supervisors are very young with little industry experience. This seems to be an unusual generation gap that is maybe more specific to design than other faculties at

university. These participants also pointed out how difficult it was to apply for postgraduate studies and to write a research proposal.

The second set of questions probed to see if designers in the industry regard universities as centres of knowledge. The lack of access to libraries and the high costs of academic journals were mentioned as barriers. Nearly all participants mentioned that their lecturers in the past have a lack of industry insight and knowledge.

The dominant outcome of PhD studies – that of a thesis – was criticised as a dated medium that lacks the fundamentals of communication. Only one older designer mentioned case studies as an opportunity to learn. Participants described universities as a provider of entry-level designers and with no other purpose.

The workplace is regarded as a key source of development, and moving positions are seen as part of development. Nearly all the participants who are formally employed pointed out that their employers encourage development, but do it in-house through workshops and training.

The knowledge and skills needs that received the most mentions during the interviews related to *business intelligence* such as entrepreneurship/own business, design strategy, project management, costings, proposals and tenders. The needs for workplace skills such as time management, life and work balance, health, how to behave and connect with people, workplace etiquette, the need to be adaptable and deal with criticism, were mentioned, and the need for mentorship has been a point of discussion. Several of the senior designers mentioned the need to improve written or verbal communication and the need to learn how to work in transdisciplinary or interdisciplinary collaborative teams.

The need to stay up to date with software and new media are seen as part of the daily existence and survival for designers. Respondents seemed comfortable about their design and technology knowledge and often mentioned the fact that they learn ‘on the job’.

The online space received the most mentions as a space for development. Design Indaba, an interdisciplinary design conference, was mentioned by nearly all the participants, but also criticised for being expensive and too international.

The younger designers mentioned that postgraduate qualifications could provide career opportunities, such as advancement to a management level or the start of their own business. Some of the respondents are aware that postgraduate qualifications would enable a designer to lecture, but some others saw lecturing as limiting. Further studies were recognised by these participants as a way to move up the corporate ladder or to apply for corporate or government positions, but that they would still like to be designers.

On a positive note – the ability to conduct research as part of the design process is seen as important by all the respondents, and the youngest two respondents were most positive about going back to study further and may point to a new generation of designers.

Industry is still seen as having a glass ceiling for designers, especially by participants in an agency environment, and these participants felt that they are still perceived as the ‘executors’. Several of the participants referred to the nature of the industry as brutal, and that their own business can be a better alternative. Participants also see the NGO sectors as an alternative area of practice, and several participants expressed the need to make a difference to society as designers.

The interviews provided rich insights about the perceptions of designers, their challenges and knowledge needs.

Models to close the gap

Theoretical frameworks and approaches that can be used as a foundation to close the perceived gap between industry and academia and promote mutual and collaborative development are briefly introduced and considered in the next section.

Recognition of prior learning (RPL)

RPL is a recognised process that can be used to provide access to postgraduate qualifications (SAQA 2013). RPL for access can take place when the candidate does not meet the entrance criteria (Keevy, Bolton, Naudé & Lloyd 2014). According to the Council on Higher Education – the responsible body for quality assurance and promotion in South Africa (CHE) a service provider may not allow more than 10% of a cohort to be RPL candidates (CHE 2016).

RPL could provide access to postgraduate design studies for candidates with national diplomas and work experience. This process may also apply to designers with a degree in Fine Arts, as was common practice in the past. There is not yet any research available that reports explicitly on the application of RPL in design education.

Work integrated learning (WIL)

WIL uses practices that integrate formal learning and workplace concerns and is highly suitable for the field of design (CHE 2011, p. 4). It is traditional practice to include some form of WIL in undergraduate design education, usually in the form of internships, shadowing or simulations.

The CHE also provides formats for WIL at master's and doctoral levels in the form of work-directed theoretical learning, problem-based learning, project-based learning, and workplace-learning. The CHE WIL policy document indicates possibilities for opportunities and different pathways for qualifications with a professional focus that could add diversity in qualification type and professional relevance (Webbstock 2016). The professional doctorates would be such an example.

Mode 2 approaches as a solution to close the gap

One of the ways to narrow the distance between academic research and industry is found in the development of the Mode 2 approaches. The Mode 2 model originated in management sciences as the answer to the need for practice grounded problem solving as part of academic research. The characteristics of Mode 2 knowledge production are as follows (MacLean, MacIntosh & Grant 2002, Sandstrom 2016):

- It is not institutionalised in universities but produced in the context of application.
- Makes use of a wider range of quality criteria. Mode 1 uses peer evaluation, Mode 2 uses the broader community and practicality of solutions as part of evaluation.
- Mode 1 is disciplinary and homogeneity while Mode 2 is transdisciplinary, heterogeneous and transient. The transdisciplinary nature means that the research and knowledge production is not limited to a single discipline, but that it is more systemic. The heterogenic nature means that the problem is not limited to a specific team or institution.
- Socially accountable and reflexive: a system of inclusion through negotiation with participants, composite nature.
- Mode 2 allows for a horizontal discourse that extends to include industry, with a permeable boundary.

Design as part of a creative and innovative economy could be ideally suited to Mode 2 knowledge production and transfer, where workplace problems can be solved through the development of practice-led, evidence-based solutions. Mode 3, as an alternative in transforming higher education, are now also debated and refers to knowledge systems situated in the electronic information space that looks at the combined future of science, knowledge and technology (Sandstrom 2014, p. 16).

Practice-based research

One of the newer approaches in design research is the application of practice-based research, where design activity is part of the research process. The criteria for evaluating practice-based research are how well the research questions were answered, the process and the contribution to knowledge (Candy & Edmonds 2018).

Practice-based research differs from practice-led research. Practice-led research shares characteristics with Mode 2 and is workplace or project related, where the practice is informed by research. The result is a contribution to new knowledge or best practice and the development of a solution. In these cases, the process and solution are taken into consideration when evaluating.

However, none of these alternatives is implemented without some problems. Many supervisors and students are not familiar with these approaches and examining workplace holders of PhDs remain problematic (Johnson 2005). To involve the professional community actively as field supervisors in assessment, can be one way of overcoming this challenge (Johnson 2005).

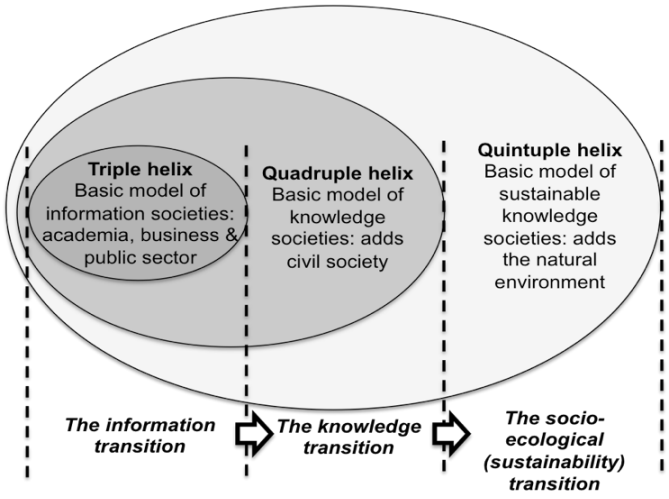

Figure 2: Triple Helix, Quadruple Helix and Quintuple Helix innovation systems, the Helix system and transition to sustainable knowledge societies

Source: http://www.unksoc.org/index.php/handbook/4-1-transforming-societal-architectures/4-3-knowledge-and-innovation/4-3-1-creating-different-types-of-knowledge/

The last conceptual model to consider is the Helix system of knowledge production between university, industry, public sector, civil society and the natural environment (Figure 2). Such a system creates hybrid integrated formats for the production, transfer and application of knowledge. From a practical perspective, a university, in this case, will be entrepreneurial driven and would educate not only individuals but also organisations. The Helix system proposes the integration of different stakeholders as part of a knowledge society (Gebhardt 2015).

The way forward

The information and insights gained from the literature, desk research and interviews were used to develop a systemic conceptual framework (Van Zyl 2018). Dorst's (2015) frame innovation approach was used to guide the process. This abductive approach follows seven stages of reframing: archaeology, paradox, context, field, themes, frames, futures, transformation and integration. Frame innovation is a design thinking approach used to tackle problems that are open, dynamic, complex and networked.

The lead question is 'what makes this problem hard to solve?' (Dorst 2015, p. 74). Dorst (2015) uses the word 'paradox' to describe a problem that has one, two or more conflicting statements, that is situated in the real world, and is caused by conflicting values and needs. The core paradox is a 'deadlock' that is in the way of the solution (Dorst 2015, p. 76). Some of the paradoxes identified are:

On perceptions, knowledge and skills in the industry:

- *Because* skills are seen as more important than knowledge, designers feel they do not need any further design education.
- *Because* the next stage in the career of a senior designer is in the management of strategy, creative direction, teams or an entrepreneurial venture, management knowledge is seen as more desirable than design knowledge.

On the gap between universities and industry:

- *Because* academic research adheres to academic requirements and platforms, industry cannot access it in terms of language/understanding or costs.
- *Because* the younger generation of design academics with postgraduate qualifications have little or no industry experience, designers in the industry feel they cannot learn from them.

On the postgraduate landscape:

- *Because* few designers return to postgraduate education, the pipeline from graduate to postgraduate is small.
- *Because* HEIs are under pressure to get master's and doctoral students to finish studies in a very short time, only a few top students are admitted with little flexibility for the older working student.
- *Because* of supervisor capacity, access is limited for the non-traditional student who could be RPL'd.

On Mode 1 approaches:

- *Because* design is visual and conceptual, designers struggle to fit in the narrow constraints of the conventional research approaches 'allowed' at universities.

- *Because* of university 'conventions', new research approaches are not seen as legitimate.

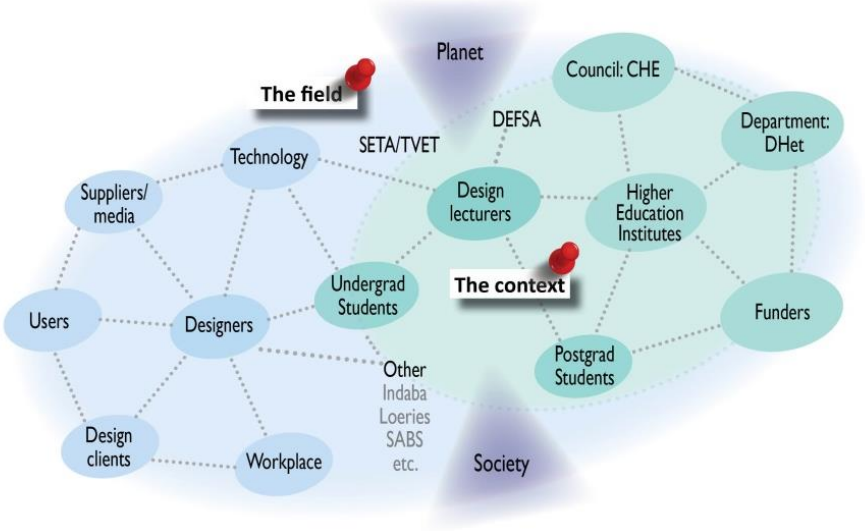

Figure 3: The context and field

When these paradoxes are studied, the complexity of the situation is evident. The next step in frame innovation is to look at the problem from a network point-of-view since complex problems can seldom be solved in isolation. The *context* is the inner circle of stakeholders and comprises students, lecturers/supervisors, HEIs, departments, councils and funders.

The field as an extension of the context comprises designers, workplaces, technologies, media, clients and users. Ecological and social challenges underpin both industry and education and these are indicated as *planet* and *society* (Figure 3).

Some collaborative and practical strategies to build capacity are:

- Collaboration between postgraduate and undergraduate students: expose undergraduate students to research.
- Use RPL for access.
- *Improve knowledge transfer:* make research accessible for industry
- *Find a common core*: Actively pursue the development of shared meaning, feeling of belonging, well-being and contributing to 'something bigger than ourselves' (Cherkowski & Walker 2014, p. 73). By developing such common foci, the relationship between field and context loses any form of hegemony and could direct research for the benefit of all (Figure 4).

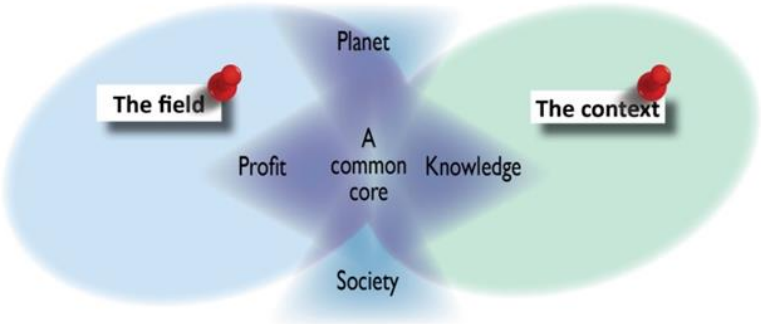

Figure 4: A shared common core

- *Collaborate with other disciplines in academia and industry:* through collaborating with other more developed disciplines, capacity can be developed much quicker than by doing it in isolation (Figure 5).
- *Build the business case for research:* Build an economic case for the use of evidence-based design and communicate the value for industry and society.
- *Embrace new approaches* in the postgraduate space, such as the use of practice-based, practice-led/Mode-2 approaches, with suitable evaluation methods.
- *Become user-centred*. Develop student-centred processes that allow for the adult working student and show empathy for the knowledge needs of the industry.

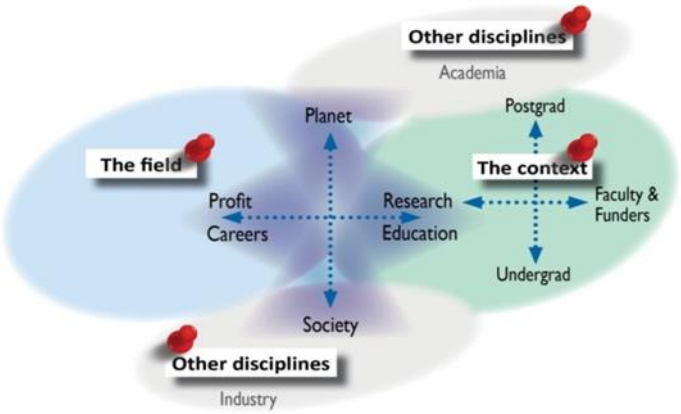

Figure 5: Integrated framework

This exploratory study revealed the division between postgraduate education and the industry. This gap and the lack of postgraduate capacity may be symptoms of the core of the problem: a discipline that is still trying to catch up with the internal shifts from being craft-based to knowledge-based, new knowledge needs and rapid changes in the workplace and technological landscape. DEFSA's role will be essential to address the challenges, monitor changes and to create opportunities to grow postgraduate education in design. Hopefully, ten years from now, the postgraduate landscape in communication design will look different.

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