CLTD 5th Annual Conference 'Challenging the Curriculum' 12-13 April 2010 Tiergarten Berlin

Feeding the Three Headed Monster of Higher Education

Stuart English and Elizabeth MacLarty
Northumbria University
School of Design, Newcastle upon Tyne
NE1 8ST United Kingdom

Abstract

The integrated Taught Postgraduate framework (PGT) at Northumbria University supports a range of postgraduate programmes in design disciplines, design management and design practice by distance learning as well as professional doctorates. The framework provides rigorous taught modules dealing with subjects including creative thinking, research principles, intellectual property, design strategy, commercialisation, reflective practice, contemporary influences on design, design value and cross cultural communication. These theoretically grounded modules have been developed over a ten year period and provide the foundation for the PG provision at Northumbria.

Students value the content of these modules but have in the past struggled to connect them and develop a mutually enforcing relationship between theory and practice.

Northumbria, like many other UK universities, manages its Schools under three portfolios: Research, Enterprise and Teaching and Learning. Most academic roles operate within one of these 'silos' and it is often structurally problematic for academics to move between portfolios to combine their respective aims.

This paper examines the difficulties faced by academics whose activities span research, enterprise and teaching and learning. It documents the recent evolution of the PGT framework at Northumbria to support the integration of these portfolios of activity for the benefit of the students, academics and school as a whole

The authors have developed a taught PG 'lattice' structure that maps theoretical modules of study against industry-based practice.

Multidisciplinary teams of students carry out technology led projects for commercial clients supported by experts and specialists in the field. Hence the same theoretical concepts are applied from the standpoint of different disciplines within the same team.

This structure has enabled the integration of distinctly theoretical areas of design expertise with their application in practice through industry based projects that:

Provide teaching resources including materials, new technologies, industry specialists and commercially realistic parameters
Create income and develop intellectual property leading to royalties, equity and spin off consultancy
Generate research papers, publications and exhibitions.

These outcomes align with teaching and learning, enterprise and research respectively.

This paper presents an innovative PG model and describes case study material from strategic commercial projects with companies and consortiums.

Introduction

Northumbria University, like many other UK universities, manages its Schools under three portfolios: Research, Enterprise and Teaching and Learning. Most academic roles operate within one of these 'silos' and it is often structurally problematic for academics to move between portfolios to combine their respective aims. This paper charts the experience within School of Design.

The modern academic has a juggling act to perform with three masters to answer to: Teaching & Learning, Enterprise and Research. Increasingly the demands from each of these three masters can cause conflict of interests. The three headed master has become the three headed monster!

Business, Enterprise, Research and industry engagement

The academic has more than a single traditional teaching role. The changing profile of funding – the driving forces of government, social, and commercial direction has created new agendas. Programmes are encouraged to be outward facing with regional, national and international engagement. Budgets are being squeezed, putting pressure on universities to produce new income streams and perform in a business arena.

The academic has to perform on the world stage of research and be an expert in their field. Research funding and league tables are used to reflect and benchmark the nature and quality of each individual institution. REF submissions will dictate future funding levels from government, influencing income, increasing the value of an academic research profile. Today an academic without research lacks currency.

This has altered the relationship between the exchange of Design Knowledge and its value to different communities outside and inside the university. A new model has emerged that has to incorporate a focus on identifiable funding streams.

Within the constraints of this current scenario the authors have developed a taught PGT 'lattice' structure that maps theoretical modules of study against industry-based practice.

Teaching and Learning and industry engagement

Increased student/teacher ratios and the administrative burden of modern educational bureaucracy has put a strain on traditional teaching methods.

Modularisation further segments and attempts to quantify the teaching activity. These elements contrive to encourage a fragmented and compartmentalised learning experience that can lack connection for the students. The learner learns to rely on regulated 'bite size' pieces of information, the teacher to spoon-feed in response. In this way modularisation is risk averse and strives towards maintaining the status quo.

Commercial enterprise is courted and cherished as an essential element of a viable postgraduate student experience, however the current modular structures and staff mindset can make this difficult to achieve. This fragmented learning cuts across a

meaningful approach to Industry engagement, which by its very nature is holistic, specific to situation, changing, random and working within a different set of timelines to an academic calendar.

Postgraduate framework

The integrated PG framework at Northumbria University supports a range of postgraduate programmes in design disciplines, design management and design practice by distance learning as well as professional doctorates. The student cohort is made up of designers and non-designers, with a range of working experiences and cultural backgrounds.

Masters level design education we define as 'understanding what you know' achieved through an understanding of self and context, applied to real world situations. (Young, Maclarty, & McKelvey, 2009).

This is in contrast to undergraduate design programmes that tend to prepare students with practical skills to operate in a professional environment *' postgraduate design education is focused on achieving personal mastery through the application of theory in their own practice, and applying skills in different context'. (Yee & Mac Larty 2010)*

This prepares students for working *'in a post-disciplinary era where problems are more complex, stretching across different disciplines and cultures (Moggridge, 2007).* This requires an individual who is*' comfortable working in cross-disciplinary teams, communicating and sharing knowledge across different domains.'(Yee & Mac Larty, 2010)*

Multidisciplinary teams

The authors have produced a postgraduate framework that takes a stance on delivering generic theory that can be applied into specific practice, both as individual practitioners and as tools to engage with industry projects. Thus encouraging students to make connections and synthesize learning creatively to live situations. That is - to innovate.

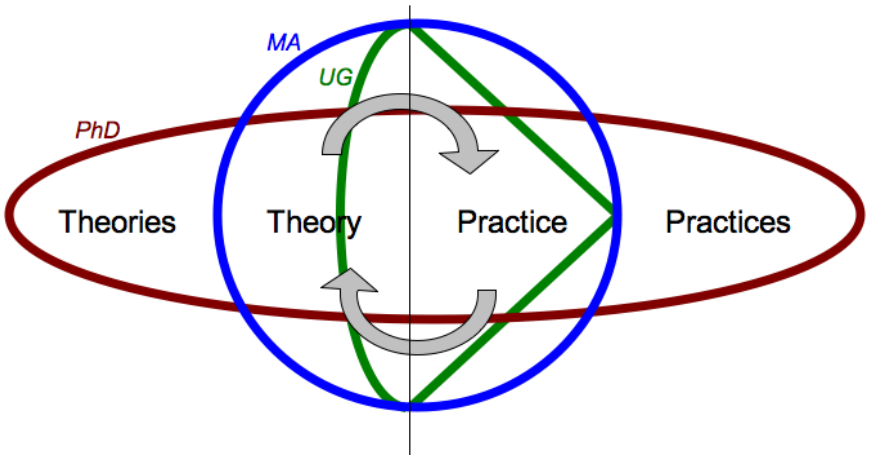

Fig 1: Cyclic relationship of theory and practice (English 2008)

The framework provides rigorous taught modules, which provide a theoretical core for all students taking MADE (MA Design) and MADM (MA Design Management. Students value the content of these modules, however they have in the past struggled to connect them and develop a mutually enforcing relationship between theory and practice.

The modules deal with subjects including creative thinking, research principles, intellectual property, design strategy, commercialisation, reflective practice, contemporary influences on design, design value and cross cultural communication. These theoretically grounded modules have been developed over a ten year period and provide the foundation for the PG provision.

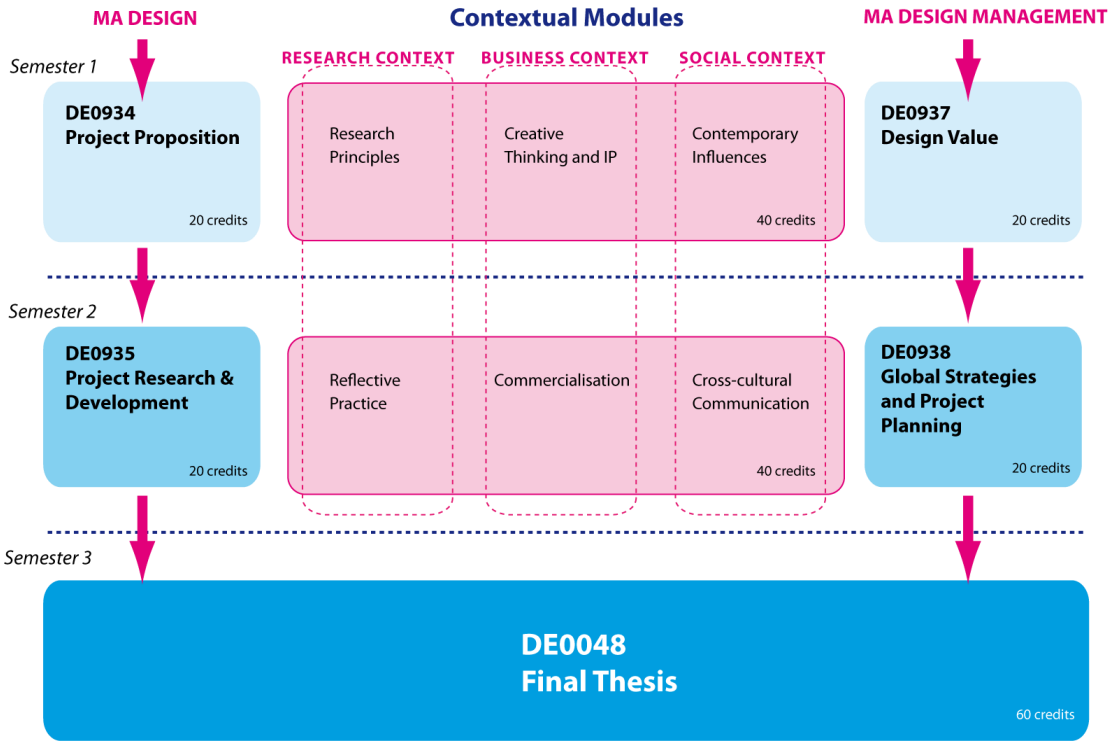

Fig 3 Northumbria design school postgraduate module structure

Maps theoretical modules against industry based practice

The integrated framework (fig 3) provides a common structure for on campus students on the MA Design (MADE) programme and MA Design Management (MADM). Within MADE there are 9 different pathways such as fashion design, graphic design, 3D design etc. MA Design Management includes students with non design backgrounds.

The pink, central ‘contextual’ modules are taken by all students (MADE, MADM). These provide the theoretical basis, the raw material of research, business/enterprise

and social context. The blue is the specialist pathway where the learning can be applied into an individual specialism or direction.

Industry engagement

Commercial projects are brought into the programme through the reflective practice and creative thinking modules. When mapping the theoretical modules to support commercial engagement and innovation, the modules below were identified as core. Creative Thinking, Reflective Practice (taken by the total cohort designers and managers) and Design Value and Strategy (taken by design managers)

Multidisciplinary teams of students carry out technology led projects for commercial clients supported by experts and specialists in the field. Design managers manage the cross-disciplinary teams and in this way, different students within the same team are applying theory from different perspectives. The result is a sharing for a common goal and common best result for the situation. Hence the same theoretical concepts are applied from the standpoint of different disciplines within the same team.

This structure has enabled the integration of distinctly theoretical areas of design expertise with their application in practice through industry-based projects.

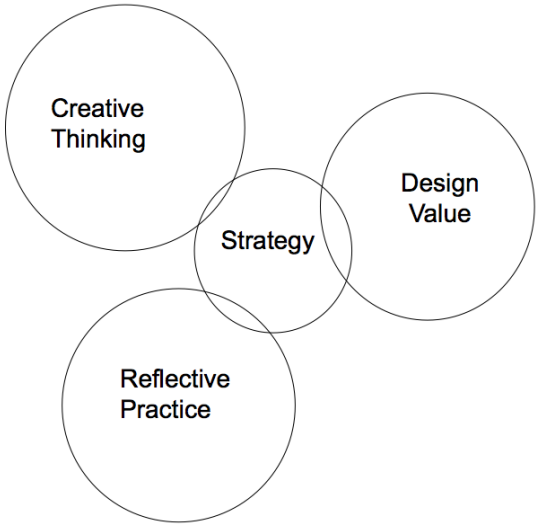

Fig 4

The lattice provides flexibility as the technologies, the type of companies involved or the opportunities afforded by the industry engagement can alter and vary. Case studies so far have included nano technology, printed electronics, collaborative spaces for an innovation park and oral care.

As demonstrated through these case studies – the postgraduate structure has enabled the integration of distinctly theoretical areas of design expertise with their application in practice through industry based projects that:

•Provides teaching materials including new technologies commercially realistic parameters (T& L)

•Creates income and IP leading to royalties, equity and spin off consultancy (enterprise)

•Generates research papers. Publications etc synthesis of information bridging students, staff experts/learning and new knowledge (research)

INNOVATION

Conclusion

Kelly (2008) states that *'while teachers feel pressed to cover more and more material in their discipline, what students need is time to make mistakes, to correct them, to fail and try again and they need teachers to help them view each failure as merely interim –not as a terminal judgment on their abilities'* (cited Young R, E. MacLarty and K. McKelvey 2009)

This paper describes a postgraduate structure that aims to nurture the development of design knowledge through engagement with theoretical concepts and industry based creative projects. Taught modules focus on theory providing a safety net that encourages students to take risks and apply their knowledge in different ways. Module assessment focuses not on design outcomes but on the application of theory and personal philosophy through team projects, thus allowing students to put their knowledge to the test in different contexts.

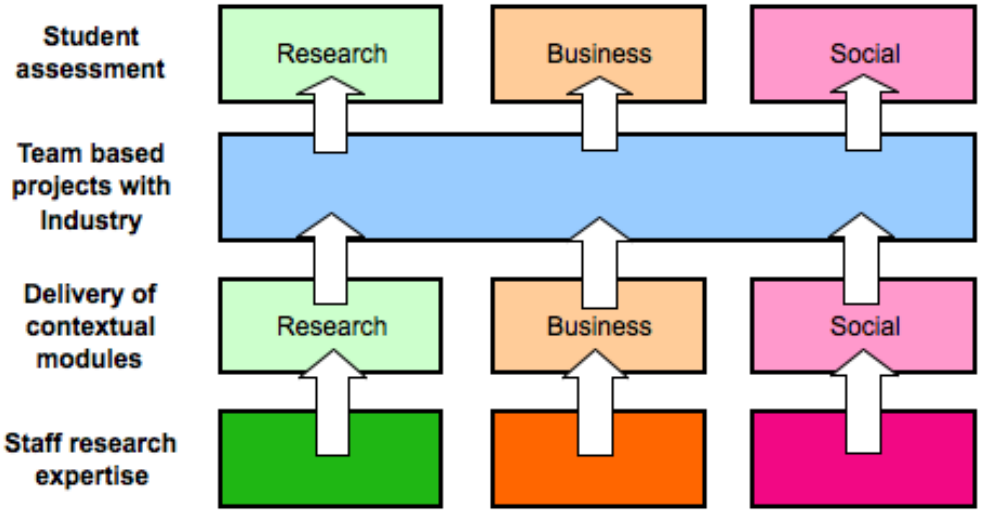

Fig 4

Following presentation of this paper at conference several issues were highlighted, Firstly, how can a constant stream of high quality industry based projects be maintained? And secondly how can academics escape ‘silo’ based roles to develop a portfolio of related activities around their research aims? These two questions are interlinked since the development of industry-based collaboration cannot be achieved through a focus on lecturing.

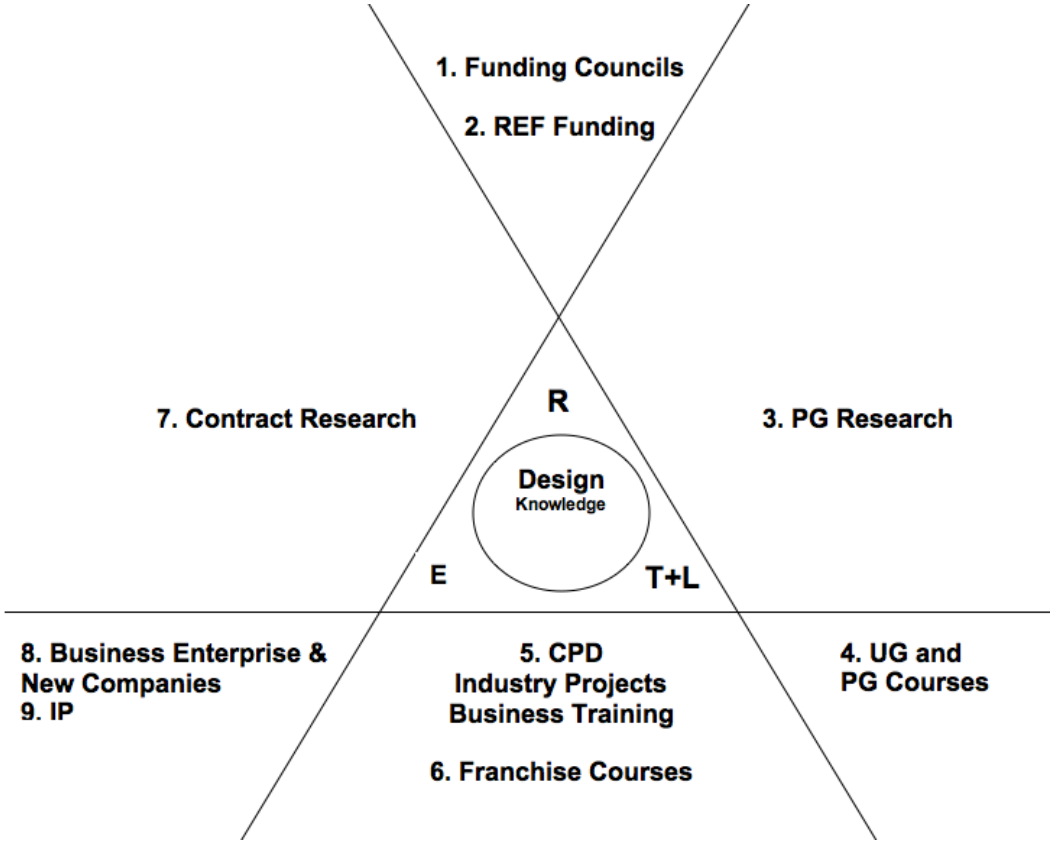

Fig 5: Map of income streams relative to school portfolios

In figure 5 the three points of a triangle represent teaching & learning, research and enterprise respectively. Income streams 1-9 are plotted in relation to these portfolios.

This model highlights areas of common ground between portfolios but more importantly it recognises the chain reaction that activity in one area can have on others. For example in relation to figure 5 practice informed research (2) led to the development of a new spin out enterprise 'ideas-lab' (8) that set up industry based projects (5) for PG students (4) that subsequently led to a tri-party collaborative agreement between the university and two regional SMEs and a funded contract research project (7) to develop new technology based medical treatments that led to joint IP (9) and potentially an industry funded PhD (3).

Since the model represents related income streams it can be used as a planning tool to apportion and manage staff time against school aims. The researchers aim to use the model to explore staff activities and objectives.

References

English, S.G. (2008) *Enhancing the reflective capabilities of professional design practitioners.* 'Undisciplined!' eds D. Durling, C. Rust, L. Chen, P. Ashton and K. Friedman Proceedings of the Design Research Society International Conference 2008, Sheffield, UK 16-19 July. ISBN: 978-1-84387-293-1

Moggridge, B. (2007). *Designing Interactions*. Massachussetts; London: MIT Press.

Yee, J.and E.MacLarty (2010) *Enabling a Community of Practice: Fostering social learning between designers and design mangagers at Postgraduate level*. CLTD 5th Annual Conference 'Challenging the curriculum' 12-13 April 2010 Tiergarten, Berlin

Young, R., E.MacLarty, and K.McKelvey (2009) *The Design Postgraduate Journeyman. Mapping the relationship between Design Thinking and Doing with Skills Acquisition for Skilful Practice*. International Association of Societies of Design Research. October 18-22 2009 COEX Seoul, Korea