RAISING OUR GAME: CREATING NEW LEARNING EXPERIENCES WITH RESEARCH COLLABORATIONS

Jennifer LOY[1], Stephen REAY[2], David WHITE[2]

[1]Griffith University
[2]Auckland University of Technology

ABSTRACT

Within the University sector, there has been concern expressed in recent years over the accreditation of alternative higher education providers to deliver degree programs. This presupposes that the two sectors would be in direct competition for the same students with providers offering similar programs and content, and catering to students with similar learning styles for comparable outcomes. Arguably, if a University is failing to provide a learning experience that is significantly more elevated and substantially different to one that is offered by an alternative higher education provider, then it should be re-evaluating its own practice rather than trying to eliminate the opposition.

Product Design programs have undergone a contracted evolution since their academic inception following the Industrial Revolution. Therefore, they are arguably best placed to lead an evolution of University education as they are less hampered by the weight of historical expectation than traditional academic disciplines. This paper is a reflective opinion piece that proposes new practice to provide innovative, high order thinking learning experiences inspired by cutting edge collaborative practice between international University research partners. This partnership is based on an aspiration model of authentic collaboration between product design and engineering, in a health and wellbeing context. It suggests a way forward that clearly differentiates and enhances University Product Design education for a next generation research design education nexus.

Keywords: Transformative, collaboration, innovation, eLearning, transdisciplinary

1 INTRODUCTION

According to Scott, Professor of Higher Education at the Institute of Education in the UK, institutions that started as Colleges of Advanced Technology in the UK, such as Surrey and Bath Universities, survived the transition to University status whilst maintaining a strong commitment to world-class Engineering and Technology. However, as UK polytechnics were universally given University status in 1992, Scott argued it was surely inevitable there would be problems. In a 2012 article in the Guardian newspaper [1], Scott described how the UK Government in 1992 saw a revised role for all universities "as business-facing institutions producing graduates in vocational disciplines and applied research," but he challenged the understanding of the Ministers at that time of a definition of those labels and their implications for University education. With widening participation and an aim to increase the percentage of school leavers attending Universities throughout the nineties, there were significant changes to the higher education remit that impacted all Universities, including those that were long established. Even with the newly created Universities taking on the 'heavy lifting', as he phrased it, Scott argued that rather than polytechnics becoming Universities, in fact it has been the other way around, and it is the 'socially engaged and entrepreneurial University that has become a model for 21st-century higher education', rather than the research-based, classical education model that formerly characterized Universities becoming the profile of the former Polytechnics.

In Australasia, the higher education system is currently facing a further re-evaluation of status as TAFE colleges and Private Colleges increasingly offer degree programs accredited by proactive Universities in the sector, such as the University of Canberra. Open access online programs, such as massive open online courses (MOOCs), as well as an increase in online degree programs run by established higher education providers through the Open University system, challenge prospective students to interrogate what is being offered by the different facilities and how it suits their needs.

However, the reality is that even in the UK, school leavers born in the late nineties, are unlikely to differentiate between 'so-called Shakespearean, red-brick and civic universities' [1], and with the myriad of degree offerings and suppliers, not necessarily comprehend what the differences in providers might mean, or even value any difference between the private college sector and the established degree provider Universities. The second reality is that without an imperative for their lecturers to undertake research, Private Colleges are better able to be more student focused. It is therefore relevant for higher education providers to question what prospective students are basing their choice of education pathways on. The issue discussed here is whether Universities are doing enough to ensure informed decision-making by students about those additional learning elements housed in University education that can impact the students' learning experience. More fundamental, perhaps it is to consider if Universities are genuinely maximizing what they can offer within an educational experience to the benefit of student learning and are they providing a clear point of difference to the private providers, both in reality and in the eyes and understanding of their customers.

If an applicant is driven by a desire to achieve a basic, current-industry aligned Product Design qualification rapidly in order to improve their immediate employment prospects, then potentially an accelerated program of study, with a four-semester year and industry based / connected lecturers not involved in research, whose sole focus is teaching and local industry practice, could potentially meet their needs. If this is the case, then arguably there is no obvious impediment to private colleges taking on this role for these customers. This should be a concern for Product Design as a discipline, especially in an increasingly competitive environment. More than 150 private providers now offer degree programs in Australia, with a significant impact on traditional higher educational models. In addition, for any faculty member still insistent that the provision at a University will be seen as 'better' by prospective students, the comparative costs are telling – attending private providers may be up to three times the cost of a University, and yet their student body is still growing. As an applied program that is still predominantly practice led and industry focused, and one that has only effectively become a University level discipline since the Polytechnics became Universities, there is an imperative for the Product Design academic discipline – more than most disciplines - to ensure significant differentiation between what is offered at University and through competing institutional models.

2 POINT OF DIFFERENCE

Although Product Design as a University discipline evolved out of technical colleges, it should now be mature enough to shake off any academic cultural cringe, and stop trying to compete with traditional disciplines on their research terms, rather than one driven by Product Design researchers themselves. Product Design researchers should objectively rethink the practices that developed out of commercial practice driven teaching strategies conceived during the discipline's early academic years. University Product Design education should be - and for commercial viability needs to be - markedly different then that available through a private provider and it has never been more timely for that difference to be clarified and re-enforced. As an academic group, Product Design educators need to seriously review and revitalise their teaching practice to reflect the current academic profile of University lecturers; be informed by the cutting edge research in the discipline; be connected by international collaborations formed through dedicated conferences and engage students based on innovations in learning and teaching developed through enhanced teaching scholarship.

There is a broad challenge for all disciplines in Universities in helping prospective students to recognise and appreciate:

1. Faculty qualifications - what qualifications do Faculty members have that are relevant to the students? Do prospective students value staff qualifications and do they understand what these mean? Are they aware of staff publications and do these have any relevance for them?
2. Research practice - how much dissemination of research practice to students and prospective students takes place? If thoroughly understood, would this aspect of the lecturers work be valued in its current form by prospective students, or seen as a distraction from teaching?
3. Lecturer's informed, international viewpoint - particularly in relation to school leavers. How valued is an internationally informed opinion and how would it be communicated and utilized?
4. Innovative practices in learning and teaching - understanding the impact of pedagogy and how differences in learning experiences affect lifelong learning. Are these innovations being maximized within the discipline, and is there evidence of a difference in graduate attributes?

These questions are more immediate for the applied disciplines and the fundamental question is how Product Design University education can offer a learning experience that demonstrates excellence and relevance in education based on the most significant points of difference for Universities listed.

3   A NEW PARADIGM

As the Product Design academic discipline becomes more established, a growing recognition of the value of the involvement of lecturers in real world design project collaborations as valid qualitative research outputs, is gradually allowing the fundamentals of the discipline to be reasserted. However, the lack of perceived value of this work to the prospective student themselves in comparison to the value of an offering with overtly industry focused / based lecturers needs to be addressed. If Product Design education in a University environment should be providing a more challenging, transformational learning experience, then it needs to seriously raise its game. Otherwise not only will students drain out into the private sector, but Product Design educationalists at Universities will miss an opportunity to create genuine learning experiences that prepare students as effectively in the future for the changing work environment they will be entering, as they were in the past. As the quote from the Sicilian classic, 'The Leopard' suggests: "If we want things to stay as they are, things will have to change" [2]. To provide graduates who are equipped to contribute to the world around them, then as the world changes, to provide equally appropriately prepared graduates, design education has to change. Design graduates are entering a design environment that is increasingly interdisciplinary and concerned with complex problems and systems. The challenges facing designers today working on situational design problems extend far beyond the derivative design tasks of the commercially constrained design practices that dominated the profession last century: "Collectively, designers are seeking to enhance human health, prosperity, and comfort while diminishing the conflicts between people and the global ecosystems we inhabit." [3]. In order to rise to the challenge of providing future designers with an outlook and understanding that prepares them for these aims, design educators need to draw directly on their own expertise in working on complex research projects and then, based on that expertise, design related educational experiences: "The researcher seeks to empower, transform, and emancipate individuals from situations that constrain their self-development and self-determination" [4]. Designers, by definition, work on projects where the outcome is not known and lecturers that inculcate the students with this way of working support their development. By not only informing their educational practice with their research, but more fundamentally designing learning experiences that involve students in research themes pertinent to the lecturer's own area of research maximises the abilities, experiences and enthusiasms of those lecturers for the benefit of the students. Rethinking pedagogy in this way provides the basis for meaningful learning experiences for students and clearly, and significantly, differentiates it from that offered by the private providers. This establishes an educational intent that looks beyond the immediacy of current commercial practice and towards enhancing human knowledge in the area of Product Design more broadly: "The primary purpose of applied research (as opposed to basic research) is for discovering, interpreting and developing methods and systems for the advancement of human knowledge on a wide variety of scientific and humanitarian matters relating to our world" [5]. In proposing a new model of Product design education, the aim is to provide mechanisms to create and support authentic learning experiences that break with outdated modes of learning, and overtly maximise what can be offered as significant learning supported by research expertise.

4 CHANGING PRACTICE

Innovations in pedagogy that create step change, rather than incremental change, require creative thinking. There are examples in education that provide direction, such as the Thomas Telford School in the UK: The Thomas Telford [6] was founded in 1991 by Kevin Satchwell (now Sir Kevin Satchwell) specifically to provide an effective educational model for children with a history of absenteeism and to do so it radically revised conventional educational practices and the organization of learning. The traditional school model was failing these pupils as the curriculum continued in their absence so that when they did attend, they were out of sync with other students and had missed important elements of the subjects. Satchwell proposed a schools system based on the individual. Each pupil follows an individual study plan that operates irrespective of his or her peers' progress and of year levels. Teachers focus on delivering their area of expertise in classes designed to allow for students to map a learning pathway through them. A revolutionary proposition at the time, this school

now attains high outcomes and has been replicated throughout the UK and provides the blueprint for a very new way of organizing school education. If this kind of objective and innovative thinking is applied to University Product Design education, then a new model could emerge that capitalizes the excellence in University research for the benefit of the students, is disengaged from the conventions of current educational organization – such as weekly lectures and seminars or studios run by individual lecturers – and maximizes the collaborations that are already in place as part of the integrated network Product Design lecturers have developed worldwide to address complex research projects in expert teams.

From trying as individual Product Design University departments to address all aspects of a research project in house, it is now possible – in fact it appears a marketing necessity – to identify a Product Design program specialisation that can be the basis for local and international research collaborations. Multiple Product Design lecturers, along with collaborators from related disciplines, such as Engineering, now commonly work together, bringing distinct profiles and specific research focus to the activity. This is where the point of difference between private providers and Universities is very clear. Lecturers at Private Colleges do not have the opportunities to collaborate across disciplines and across Institutions to provide the research informed education that University lecturers do. University Product Design educators are in a unique position in the market to offer learning at the research design education nexus and provide an inspiring, exhilarating learning experience beyond what is possible in non-University, ground level education. The example below suggests how this could be achieved.

4.1 Towards a research education design nexus.

"Education should reflect on its own paradigms, and envision what types of designers society will need in the future" [7]. The Product Design world has evolved since the changes to the higher education provision in 1992. There has been a globalization of markets, increased user / designer communication and a development of advanced manufacturing technologies that allow for design creativity and bring together computer science and user-centred design. Initially globalization appeared to lead the world into an amalgamation of markets and the mass production of mass-market products, to the detriment of the individual. However, in the last five years there has been a shift in focus, with a rapid rise in design for the individual based on a web of interconnected developments. Web 2.0, for example, where users and designers can interact more directly via the Internet is making an impact; designs that can be bespoke through an increased accessibility of electronics, and then the rise of digital fabrication as a realistic option as additive manufacturing (3D Printing) which began to mature as a process. This resulted in a personalization of product design that is a focus for many design lecturers and opens the door to cross-disciplinary collaborations and innovative areas of design research. This particular example of proposed innovative educational practice draws on these developments and is based on a research collaboration between Product Design and Engineering lecturers at Auckland University of Technology in New Zealand and Griffith University in Australia. It works towards a model of practice for significant, transdisciplinary learning that maximizes the research expertise of Product design and Engineering University education and is built around the AUT / Auckland Hospital Design for Health and Wellbeing Lab shown in Figure 1.
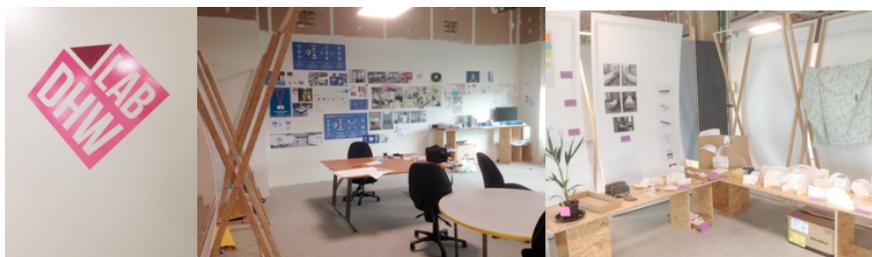

Figure 1 (a) (b) and (c) AUT Auckland Hospital Design for Health and Wellbeing Lab (S.Reay)

There is a synergy of expertise between the design thinking for clinical applications work in Product Design research at AUT in the Design for Health and Wellbeing Lab, the design education for Engineering students drive in the Engineering departments at AUT and Griffith University, and the research into advanced technology applications for clinical practice in Industrial Design research at Griffith. The collaborators share research, and work on cross-disciplinary objectives that transcend faculty divisions and the physical distances between the researchers involved. In this case, Design for Health and Wellbeing provides the vehicle for collaboration that respect the individual specialisations

of each lecturer in cutting edge research to create an enhanced synergistic response to the complex issues the context provides.

The existing paradigm is that this research informs the teaching practice of each department, with design approaches taught in the AUT Engineering program, design thinking embedded in the AUT Product Design department, CDIO and creative engineering taught within the Griffith Engineering program and advanced technology a driver for curriculum in the Industrial Design program at Griffith. Students do benefit from the research the lecturers undertake, but for them it is localized to the lecturers they work with in conventional studio based courses in each department.   The transdisciplinary research experience of the lecturers is not reflected in the curriculum or pedagogy of the individual programs. But what if it was? What would that look like? How could a University education in Product Design be elevated by the research collaborations of the lecturers to be directly informed by that cutting edge and cross faculty and cross campus research?

If, as predicted, there are to be fewer students achieving a University entrance score in 2020, and with increased competition from Private Colleges, then finding the answers to these questions may provide the basis for a new paradigm for Product Design education in breaking the conventions of current teaching and lifting the game of the academic discipline to lead the practice of other disciplines, rather than trying to emulate outdated modes of educational thinking, or competing at the lowest level for mass education divorced from best practice in student learning.

Imagine a University semester long course that immersed the students in the research practice of the lecturers. Imagine students working across Universities and across disciplines to navigate their project pathway informed by the expertise of each lecturer and department. Imagine them working, much as in the Thomas Telford model, to maximize their learning and in conjunction maximize the individual expertise of the researchers, who would be freed to become the consultative expert who provides lectures relating to their expertise and perspective of an overarching research theme in the same way as the Thomas Telford team do, and where the support for a student would come from the person best placed to help them, not just the closest. The student experience would be released from the chains of conventional learning based on imposed uniform organizational structures that bear little relation to the reality of design ideals and support proactive, empowered learning.

The barriers to implementing this type of learning activity are considerable. For a start, spending time at another University, which may be overseas, would add to the cost for the students concerned, but with the rise in Private Providers in spite of their higher costs, students have already proven themselves willing to invest in their education if they see the value of it. Furthermore, many students do choose to take on study periods overseas. From the University point of view, it would require revolutionary thinking in relation to every aspect from assessment to administration. However, the potential benefits are equally significant. From a marketing point of view, University education would lift itself out of the doldrums of direct competition by providing a clear point of difference, and one that finally maximized the research imperative of the lecturers, and the network of cross disciplinary and cross campus collaboration, for undergraduate education. This type of educational model would provide that overt value to prospective students, bringing the time and effort lecturers invest in research back into the domain of the student experience and would be directly relevant to the quality of the educational experience.

5 CONCLUSION

"We need to rebuild systems themselves. In doing that job, new designs, innovative engineering, and community technologies….the future demands that we not only improve the new, but restore and reimagine what we already have" [8].

Current University Product Design education does need to take a good, hard look at itself. It is no longer new, or in transition, and if it is to be regarded as first class, educators need to decide how its performance should be characterized. In doing so, Product Design University education needs to maximize its differences, and overtly develop its academic discipline, with a defendable identity and integrity that provides the basis to develop new learning practices that maximizes what it is, can be and should be. Dee Fink [9] describes 'significant learning' as changing students' perspectives rather than adding to their knowledge base, and challenges tertiary educationalists to interrogate the learning experience they provide to ensure students are engaged in transformative learning that alters their very

outlook and understanding. The model of accelerated learning offered by industry based private colleges does not provide a model for transformative learning. The point of difference for University education in an applied discipline is in looking up and out, rather than at the immediate and the past. This requires creating a proactive curriculum, rather than a reactive one. Education that provides new direction for the discipline, refreshes industry practice and hauls it up over the barriers of current practice and convention and launches it on a new path informed by the cutting edge research. This will be found in the foundation of lecturers with international and cross-disciplinary collaborations, knowledge of global environments and informed by conference participation. It should be characterised as innovative, refreshed, pertinent learning fuelled by advances in learning and teaching research informed from the University. If the discipline is to respond to the changes outlined by Fuad-Luke in Design Activism [10] as needed for positive future design practice, then lecturers have to start to build and develop scaffolding for 'cohesion and capacity' to build 'resilience and enable future adaptation', by creating proactive learners, those who can step back from the immediate and look more broadly, more openly, more creatively at challenging situations and make positive contributions to a collaborative, informed design approach. For example, Eindhoven Department of Industrial Design, organises its workspaces thematically to promote shared learning and shared expertise and Hummels, in Open Design Now [7], advocates that "Faculties, departments and schools have to think both physically and virtually about workspaces that enhance collaboration" with a hybrid digital and physical environment that is "always available all over the world" but it still anchored to a single base point and therefore restricted to the influence of the lecturers in that place and the research focus there. This model as a provocation proposes elevating themed learning outside the boundaries of the disciplines, the faculties, the Universities and even individual countries to create innovative pedagogy based on a bouncing ball project approach where the students bounces rather than the project.

Product Design education has spent too long trying to be accepted, too much energy adapting pedagogy and research practice to ways other disciplines can recognise in a drive to be accepted, but the academic discipline is now mature enough to stop and take stock – and the rise of the private providers provides that impetus. Design and Engineering are both concerned with looking to the future and now is a time to come together and make their relationship work effectively - not as an uneasy partnership where elements of each others practice are subsumed into the disciplines, but with a transdisciplinary vision that shows a new way forward for new learning practices in Universities that differentiate them from private providers and supply students with a truly transformative education based on a research education design nexus. A potential next step would be to design short collaborative curriculum experiments, building on the design for health and wellbeing research network, to bring researchers and students together from a range of locations and disciplines around a common problem. This would highlight the challenges and opportunities for future collaborations and provide starting points for renewed educational practice.

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