CRAFTING PRODUCT DESIGN: DESIGNING CRAFT BACK INTO A PRODUCT DESIGN UNDERGRADUATE DEGREE PROGRAMME

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ABSTRACT:

Design programmes are undergoing continual pedagogical and curriculum development, especially as the role of the designer evolves and broadens and as new technologies become accessible and mainstream. As a relatively new academic option, product design at AUT was in a strong position to respond to these changes without the constraints of history and tradition. However as the programme became more established, an opportunity to reflect on the character, content and approach was appropriate. One result of this was consideration of the importance and contribution of 'craft' in the programme and how to make this more explicit. This has been achieved by presenting three thematic pathways to expose students to different design approaches. This paper outlines the structure of these pathways across the three-year programme. Specifically we discusses the pedagogical approach of the 'emotional' pathway, and present project case studies from each year of study to demonstrate how the 'emotional' theme is aligned with overall learning objectives to show the development of a curriculum that acknowledges the traditions of the past while embracing emerging disciplinary challenges for new design graduates.

Key Words: Authentic Learning, Craft, Design Thinking, Programme Development

INTRODUCTION

A Product Design undergraduate degree programme was established seven years ago (2008) at AUT University. Initially, pedagogical opportunities focused on supporting new approaches to teaching and learning, without the constraints of institutional history and tradition (Withell and Reay 2012). This included expanding the definition of a 'product' to encompass a broader range of 'designed' outcomes i.e. 'the product of' a creative design (thinking) process. Consequently, a design solution presented, or explored, may not necessarily be a tangible, physical 3D product outcome.

Delivering the next generation 'T-Shaped' (Brown 2010) collaborative designer requires the continual evolution of design curriculum. Industrial designers require broad general design knowledge across art, business and engineering disciplines (Norman and Klemmer 2014), in addition to expertise in Design Thinking (Brown 2010). Design professionals are increasingly expected to work in interdisciplinary teams, often working toward solving more and more complex problems. These design practitioners are expected, as promoters or agents, to play a deeper role in

informing society through intelligent thought and action capable of contributing to positive societal change (Whitely 1993, Shedroff 2009, Spangenburg et al. 2010).

This was emphasized in the AUT Product Design undergraduate programme by developing student capabilities in Design Thinking principles, methods and processes to support the broader role of design as a problem solving activity recognizing that graduates go on to employment in a variety of roles determined by their specialization, becoming design consultants, design leaders/strategists and design entrepreneurs (Withell and Reay 2011, 2012). To date the programme pedagogical approaches have emphasized the development of (1) discipline expertise, (2) transferable skills, and (3) values in an industry focused, authentic learning environment (Reay and Withell 2013).

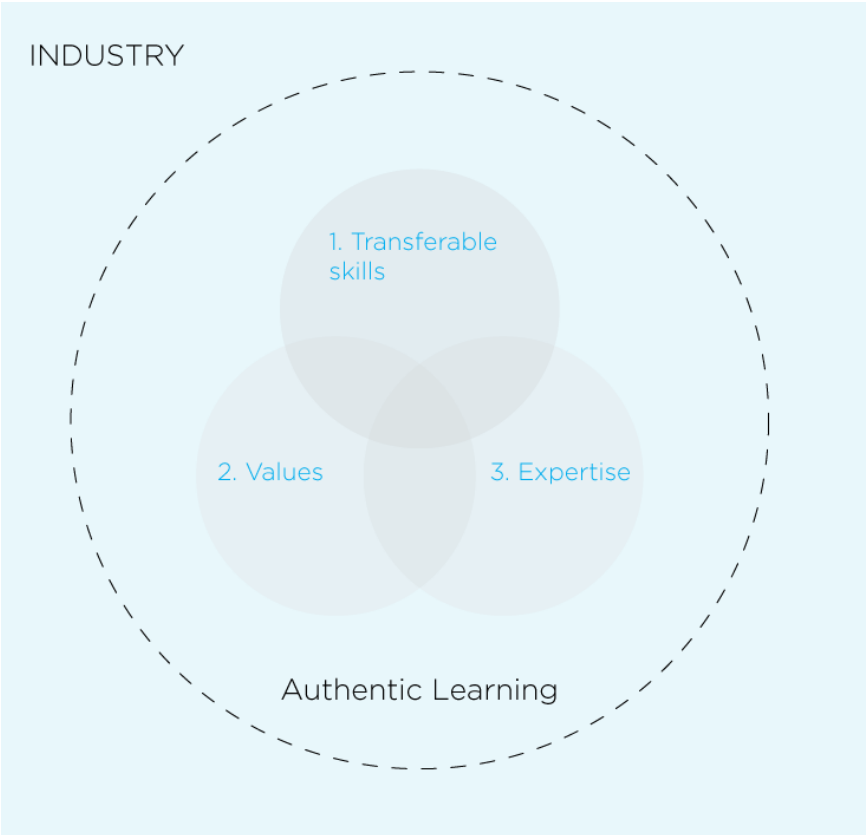


Figure 1: Learning *and Teaching Framework for Product Design graduate curriculum development at AUT* (from Reay and Withell 2013).

In the context of the undergraduate programme, "values" largely centers on students' being introduced to and encouraged to explore issues and opportunities associated with sustainability, recognizing that sustainability has emerged as core issue that designers must engage with, and embrace (Reay and Withell 2013). Students are exposed to introductory contents around sustainability in the first year, and explore these, both theoretically and through practice, and are asked to propose solutions to a variety of challenges that underpin the projects that are set as part of their course work. Throughout the programme, students are asked to consider moral and ethical obligations and to be responsible for their designs, acknowledging the potential social and environmental impacts of their work (Whitely 1993). As they progress through the degree they are more deeply exposed to the complexities of challenges the world faces. They are provided with

methods and process to make a positive contribution to these challenges (Reay and Withell 2013). Personal reflection is encouraged and considered a key aspect of learning in the relative safety of an extended academic environment, emphasizing that staff may encourage students to identify their personal values, not prescribe them. We believe this helps ensure that when students leave University they are better positioned to identify those organisations with values that align with theirs. Furthermore, they will be more likely to increase their employment prospects by more effectively articulating their values to future employers (Reay and Withell 2013).

Delivering the Brown's (2010) next generation 'T-Shaped' designer, was viewed as an opportunity to emphasis Design Thinking as a transferable disciplinary skill, while building greater capacity for a human centered approach to the design of products (Reay and Withell 2013).

Responding to the broad recognition of the potential for Design Thinking frameworks (i.e. IDEO) to help deliver solutions to potential 'wicked problems', product design programme at AUT has embedding a Design Thinking package of methods and processes that may be taught in a systematic way, and are valuable as an approach that underpins most product design projects. In this context, Design Thinking provide students with a skills package that will help provide some process structure during their design learning, as well as providing them with a set of transferable skills that can be successfully applied and used in a wide range of discipline situations, and capabilities that may be integrated into organizations and business outside of traditional design communities (Reay and Withell 2013).

Disciplinary expertise, which typically revolves around form and functional issues, is often viewed as 'product design'. However as outlined above, when a product is broadly defined as the outcome of a design process, this can be confusing for students in a new learning situation. For students at postgraduate level, it is common to commence their research projects with three loosely identified pathways as outlined by Reay and Withell (2013). These include a focus on a (1) craft project – where the student has a personal interesting in designing and making objects, often for home and usually with some entrepreneurial motivation or interest (e.g. furniture), (2) 'traditional' product design – where the outcome is highly targeted, underpinned by principles and methods of human centered design (e.g. medical device/equipment) and (3) design thinking led project where the outcomes are unknown and opportunities or solutions are induced from the application of a design thinking approach (e.g. social innovation project). For students' who have completed an undergraduate product design programme, and who are undertaking a year (or more) of advanced study, positioning themselves as researchers in a practice led research project can be intimidating, yet in an undergraduate programme the challenges for students to identify their interests and future design trajectory may be even more exaggerated, especially as students' often come to programmes with limited insight into the breadth and associated opportunities afforded through design. This is further amplified if the design (product) discipline embraces the suggest shift described by Norman and Klemmer (2014) as the need for design education to merge with "all the knowledge of the university". In this Norman and Klemmer (2014) describe design thinking skills as key to success for future creative leaders.

In an attempt to meet these new challenges the more formal design thinking curriculum developed helped emphasize human-centeredness, creativity and experimentation, integrative thinking and Design Thinking models and processes (Withell and Reay 2012).

Figure 2: "Design Thinking" Process Diagram. from Withell et al. (2012).

THINKING VS MAKING

The design thinking approach contradicts some aspects of a more traditional design education where effort (and assessment) was focused on the practical skills of the creative individual. As the programme established a strong platform to educate the 'T shaped' collaborative designer, based on a more contemporary approach to design education, this may have been at the expense of those students who wish to emerge from the programme as practice-led artisan/craft designers. Consequently, we have attempted to re-balance the programme and to more explicitly present a design future to students that represent a broader cross section of graduates. This resulted in the informal establishment three pathway options to help expose students to the breadth of the discipline and more effectively help them position themselves as design practitioners.

These pathways are outlined below:

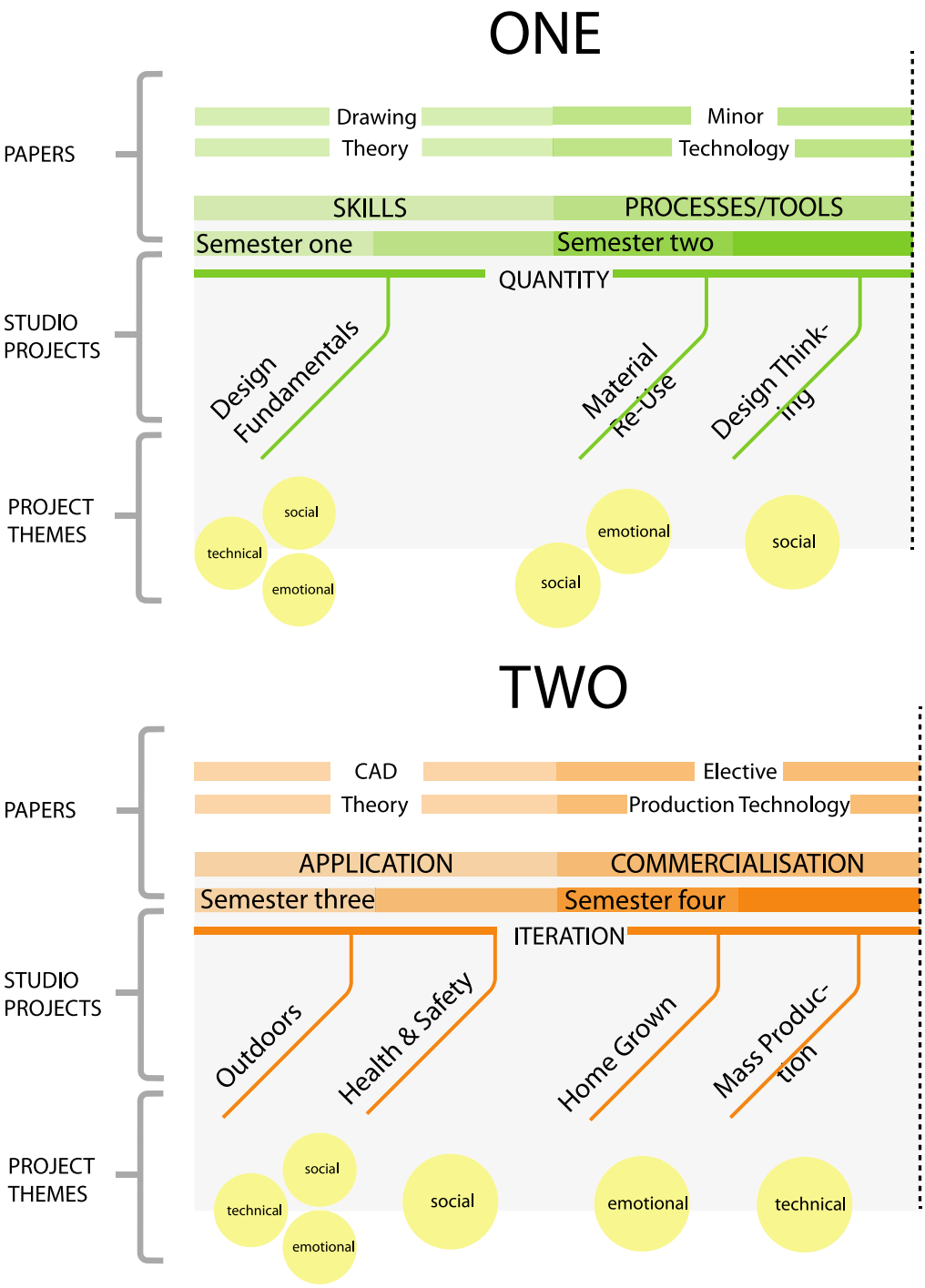
(1) 'emotional', describing an artisan design/craft/materials-led approach, placing significance on the aesthetic object;

(2) 'technical', focused more closely on technical/engineering product design e.g. mass-produced consumer or industrial goods; and

(3) 'social' utilising a human centered design focused 'design thinking' approach to deliver solutions to social issues such as health and wellbeing and education.

The emotional design pathway emphasizes aesthetics by developing a deeper understanding of form, materials and the use of experimentation and manipulation to generate 'accidental learning'

(Notar and Padgett, 2010), to help develop tacit knowledge or intuition (Douglass and Moustakas, 1985). In the technical and social pathways human centered/design thinking approaches are the entry into a project, to either solve a design problem where the outcome is more likely to be known (technical) or to explore a context (social). In contrast, the initial entry point into projects in the emotional pathway is that making, or practice is viewed as more critical to the process.



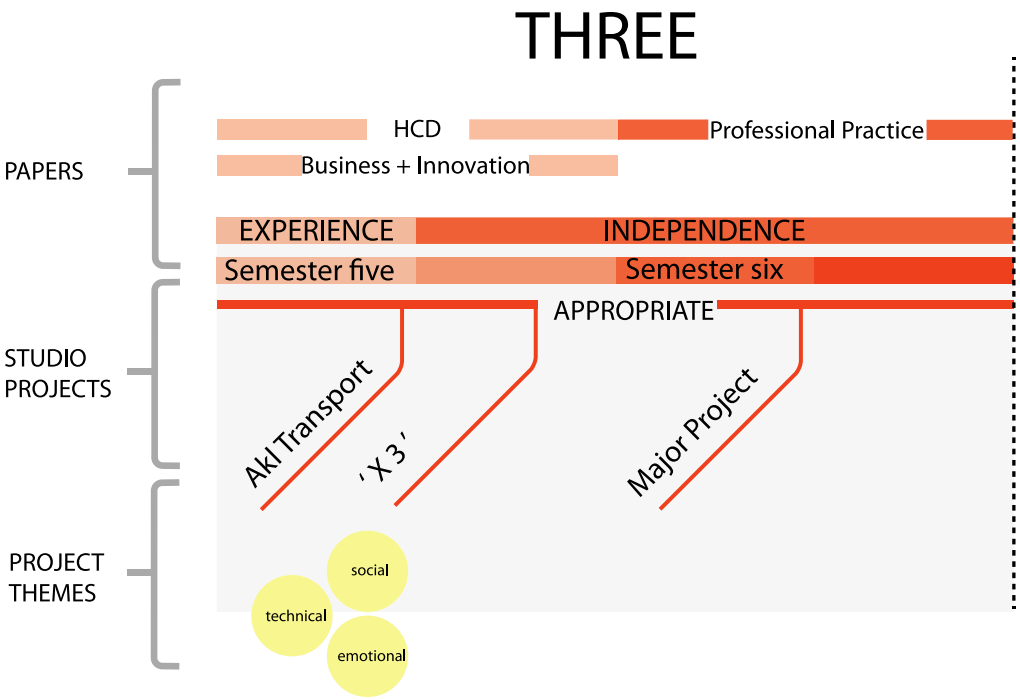


Figure 3: Journey map of the three-year undergraduate programme showing location of projects.

Throughout the three-year product design programme, all students are exposed to projects from the three themes (Figure 3). Each design project (studio) has been developed to staircase student learning through the programme. While a number of projects have multiple themes associated with them, and that in reality thematic concerns inevitably overlap, one explicitly focused artisan design/craft/materials-led (emotional) projects is situated in each year of study.

The three specific projects are "Material Reuse" (described in more detail below), "Homegrown" – a second year project undertaken in collaboration with a local artisan design store and "X3" a third year six week project where selected students are partnered with a industry representative to explore a specific furniture design brief with a artisan design company.

The first of these, Material Reuse, is considered the introduction to the emotional theme and the students first encounter with a full design brief that builds on the significant foundation work from semester one whilst emphasizing the importance of materiality and 'craft value'. An additional key consideration is that it is the first studio project where students are introduced to sustainability in practical terms (theoretical concepts related to sustainability are explored in non-studio papers). In this project students are asked to source and collect material samples from the waste stream and to identify significant aesthetic values, material properties and characteristics. In addition they undertake research into the life cycle (including practical and theoretic reuse) of the original products and their material components. Students are then asked to select the two materials that have the greatest creative potential, and using these design and construct an object for a central city apartment, specifically the VC's (Vice Chancellor) apartment. The Vice Chancellors apartment was selected as a context for the project as it represented a real world context and is an environment that is familiar to many of the students who live in central city apartments. Furthermore, the VC's apartment is frequently used as accommodation by high profile guests and

visitors to Auckland, and the university. This adds a high level of authenticity for the project as a selection of student works are installed in the apartment.

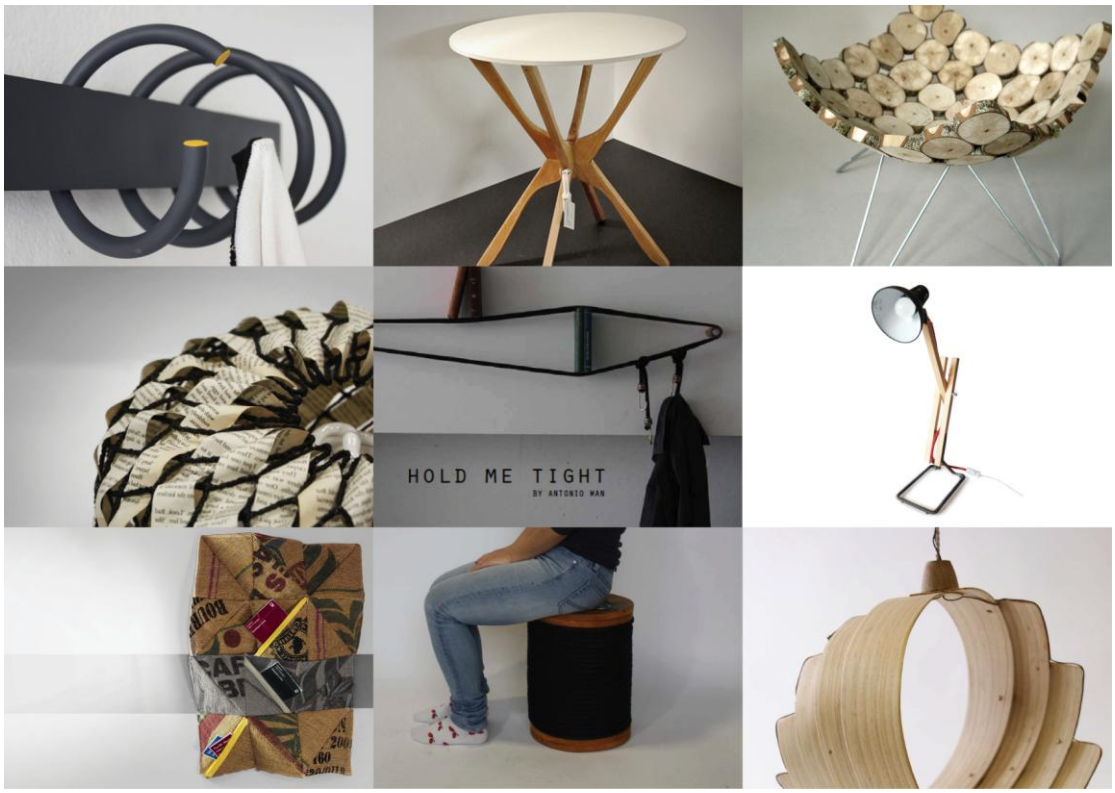


Figure 4: Examples of student work- Material Reuse.

Anecdotally students enjoy this project and the experimentation that is required for a successful outcome. For many they had limited experience of working with materials and this was regarded as a good way for them to be exposed to learning through doing. However, for many the more open nature of the brief is extremely challenging. Coming from a more regulated high school environment where students may be more commonly instructed what to make, the expectation for a design solution, or artifact to come out of experimentation is intimidating. Consequently, many students struggle with deciding what to make for a significant period. However, for all students confidence in the processes and their creativity coincides with an increase in overall confidence in their design and decision making ability. This is supported through collaborative critique sessions, showing of experiments and models as well as presentations by external designers bestowing the importance of experimentation in design. During the project, a field trip to a city rubbish/refuse collection center was as a way for students to gain an authentic appreciation for the volume of material that is disposed of daily in our city. Even for the more mature students, this was a powerful experience and helped to facilitate discussion focused on the importance of how products are made (at a practical level), through to a more philosophical exploration of the role of designers in contributing to a more sustainable future. This excursion also highlighted to students the huge volume of material with limited aesthetic and material value (mostly plastics) being returned for recycling, and reinforced the challenge of trying to secure materials with real aesthetic potential in the initial stages of the project.

DISCUSSION

This paper describes a re-articulation of the importance of practice as a key aspect underpinning pedagogy in a product design programme. This is viewed as critical in increasingly more complex design programmes, located in universities that traditionally value knowledge acquisition through means other than learning by hand. This may be confounded in product/industrial design programmes with an increasing dependence (and teaching) through three-dimensional digital visualization (CAD) (Allen et al. 2012), supporting rapid manufacture of artifacts using 3D printing. The efficiency gains associated with digital fabrication makes design students at risk of erosion of craft-skills and knowledge (Allen et al. 2012), which in turn represents a loss of contact with the essence of the materiality and three dimensionality. This is likely to be more exaggerated in the future with increasing numbers of students coming to university programmes with CAD skills and personal 3D printers, and a belief that technological advances make traditional approaches less relevant.

The map of a graduate's journey (Figure 3) helps to communicate to students the importance of a broad design education, and helps to re-balance the programme. The map itself very usefully explains how the curriculum was designed to facilitate student exposure to a diversity of topics and contexts, through a staircase of learning, and to help them identify what areas they may wish to focus or develop personal expertise in. Prior to the introduction of this more explicit communication there was uncertainty within the teaching staff as to how students would respond to these 'perceived' changes in the programme. Anecdotally the response has been positive, with students referring to the pathways in critiques and submissions, and conversations as to how they position themselves and their peers in relation to their design activity and future direction. They also appreciate that the three pathways are not mutually exclusive and that many projects/topics or areas of interest are a combination of all three. Finally, those students who are more interested in an artisan approach appear to be more validated and confident in their practice. This approach is supported at AUT through access of large, well appointed 3D fabrication labs (wood/metal/ceramic etc.) that are a vital ingredient to support the making message.

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