NEW DESIGN IS BIGGER AND HARDER – DESIGN MASTERY IN A CHANGING WORLD

Mark BAILEY, Mersha AFTAB and Trevor DUNCAN
Northumbria University, Newcastle Upon Tyne

ABSTRACT

Design-led, transformative innovation, with social or commercial value, is achieved through an increasingly complex and diverse spectrum of contexts requiring a broad range of specialist knowledge and skills. Delivering such innovation is rarely a solo-act. It is collaborative and multidisciplinary. Such innovation capitalises on scientific and technological discovery as well as business know-how and context-specific specialist knowledge all given meaning through design. At its best, it redefines the way we live, the way we create value and the way we craft our future selves. It relies on both individual growth and a willingness and ability to work with others to venture into the unknown.

The traditional models of design mastery, however, focus on the development of advanced level individual knowledge and practice. This paper establishes principles for Post Graduate education in Design Innovation within the context of design's changing and expanding role.

Keywords: Design, Masters, New Mastery, Design-led Innovation, Innovation Design

1   INTRODUCTION

The roles of the designer and the design disciplines have changed over the decades as the practices of design have evolved and the social, cultural and political contexts in which designers have operated have shifted. The likes of McCullagh [9], Gardien & Gilsing [8], Verganti [16] and Yee, Jefferies and Tan [17] have all charted changes in the role and influence of the design function for organisations [2]. The changing nature of design itself has been additive; the development of new tools for designers has arguably meant little reduction in the usefulness of the 'old' tools. Similarly, the changes in territories and context have required acquisition of new knowledge and skills in addition to those that are core to traditional models of design. The new models of design need to address these bigger trends and transformations. The authors reflect on the implication of this on design education and propose ways in which it could respond to this changing landscape.

1.1 Background and methodology

Currently the suite of MA Design programmes at Northumbria University comprises education in design management and design (with specialisms in industrial, fashion, graphic, performance products, service, interior design etc.). Although these programmes provide students with the ability to reflect and apply knowledge in their individual contexts and specialisms, the opportunity exists to better align them to the needs of contemporary design theories and practices. Operating alongside these is a cross-faculty programme in multidisciplinary innovation. Determined from literature, direct engagement with employers and users of design and through an auto-ethnographic and semi-structured interview approach the authors have reflected on these programmes and explored the gaps between what they offer and what masters of design in the future will need.

2   STARTING POINTS

Jonathan Ive is famously quoted as saying *"Design is not important. Good design is important."* And whilst it is hard to argue with this, it is worth considering what we mean by good design, and whether good design on its own is enough. We are all familiar with good designs that have been commercial flops or failed to deliver the societal benefit that they promised (Microsoft web TV plus; Betamax, Sony; The Newton, Apple; Cocaine, Redux Beverages; eVilla, Sony, and Pippin, Apple/Bandai etc) because they haven't been supported by the appropriate, sustainable business model, manufacturing

capability or delivery strategy required to enable them to flourish. Traditionally, design in isolation is seen to provide a service to new product development but today this position of design is being challenged. Recent research in mapping innovation practices in multinationals confirmed *"it is possible to operate as an individual but the complexity of today's issues is making this very difficult for inventors. The concept of a designer working in a garage and making sense of form and function has been transformed into multidisciplinary teams where we see designers working with physiologists, engineers, scientists etc."* (p. 81) [2] Hence, good design alone is of little value.

Berkun [5], defines innovation as delivering 'significant positive change' whilst another popular definition [6], suggests that it is 'bright ideas realised'. Taken together, we can see a role for design in these definitions (through the creation of ideas), but we can also see gaps in what design has to offer in terms of 'change' or 'realization', which rely on a complex interplay of context, specific factors if they are to be achieved. Press & Cooper [12] agree that innovation in new products and new markets is most important for top executives. Therefore, it is unreasonable to expect that designers acting alone, could make a significant contribution in the delivery of change other than in the creation of beautifully resolved ideas. It is even more unlikely that a young designer with only a Bachelors degree, often achieved in isolation from the real-world demands of business, could affect such change.

Press and Cooper (2003, p. 17) [12], state that *"...Design and innovation are complementary, design being a core element of technical or product innovation yet also broader in its influence on product. Innovation is also broader than design in terms of management areas in which it can occur alone. Together design and innovation are in effect the drivers of any successful business".* For design to have relevance in society, its purpose and application must surely be the creation of 'significant positive change'. It follows, therefore, that design education's focus must shift to encompass innovation. We must adjust our focus to Design Innovation. And, we have established that innovation relies upon a mixed discipline collaborative approach; this in turn means that new mastery must promote multidisciplinary cooperation as well as the development of personal, discipline specific expertise.

2.1 Design Innovation Education

Bachelors education for designers is relatively mature, the 'Competency Model' developed and described by TU/e [14] is indicative of that which is covered by many of the more established undergraduate programmes which focus on the development of knowledge, skills and attitude achieved through practice and demonstrated through projects. These are given relevance by the context of application, in the best cases through interaction with real-world situations through 'live' industry-linked projects and internships. These curricula generally have a fairly narrow 'band-width' focusing on specific design disciplines; Industrial Design, Fashion Design etc. In the case of TU/e, this is Industrial Design Technology.

This brings us to the role of post-graduate education in Innovation Design. Typically, the designer who attains mastery in their chosen design subject demonstrates this through their graduating, or dissertation, project; their 'masterpiece'. When the context of application has a narrow bandwidth such mastery is comparatively easy to identify and assess. For example, a master designer of furniture can demonstrate their mastery by value-creation in the production of multiple designs of chair suited to multiple use scenarios exploiting a variety of materials and production methods (Innovation). Through their designs they may express new design processes, knowledge and know-how (Research). The chair will represent a tangible manifestation of their tacit knowledge, demonstrating what they know about how they think with both their head and their hands (Reflection). A challenge for Mastery in Design Innovation is that it requires a broader expression, connectivity with other disciplines, methods, approaches and contexts, making the masterpiece less readily interpreted.

2.2 The Designer Innovator

As the importance of innovation has increased, so too have the descriptions of the designer as a letter-formed individual; T-shaped, X-shaped, Y-shaped; have all been tried. These descriptions have all acknowledged two things; the increasing need for designers to have the ability to collaborate across disciplines, and the importance of deep, core knowledge. McCullogh [9] in exploring the notion of the T-shaped, identified a need for designers to ensure that they have a strong 'vertical stack' before venturing too far into the domains of others through their horizontal reach (within the educational setting, one could argue that this is the role of a good Bachelor degree in establishing core design

competencies). Neumeier [11], whilst acknowledging the important role that 'T's' have to play, extolls the virtues of the 'X-shaped' individuals who connect and lead. Importantly, he stresses the importance of the individual's strengths and the development of their personal, high-level 'meta-skills'; "*Whether a T or an X, you still have to develop your own skills, create your own thought processes, and spend time alone in the "dragon pit" – the space between what is and what could be. In the dragon pit, a master's degree won't help you. Only mastery itself.*"

This lays down a clear challenge to those who run such Masters degrees. Neumeier's [11] focus on 'self' chimes well with Vanderbilt's [15] adoption of Sinek's [13] Golden Circle, 'What, How and Why' model in proposing the 'whY-shaped' individual. He places emphasis clearly on the individual's purpose (or 'Why') in employing their specific skills and knowledge and in establishing the connections that they make. Sinek [13] is clear that we can only lead meaningful change if we (or our organisations) do so with a clear sense of purpose or set of shared values. Similarly, we have seen in our own research [4] that multidisciplinary team success is only achieved once the team establishes a clear, shared purpose and translates this into a vision before embarking on delivering the vision through creative possibilities.

Supporting the development of clear personal purpose as a designer within the constructs of a clear institutional purpose for design innovation education (delivering significant positive change) is a compelling principle upon which to build.

3 PRINCIPLES FOR NEW MASTERY IN DESIGN

Against this changing landscape then, we have established three clear principles:
- Design on its own is not enough; what the world needs is Design Innovation. Our new mastery needs, therefore, to deliver this.
- We know that innovation is dependent upon individuals combining their knowledge and skills with those of other disciplines and that, in order to do this they must learn about themselves in relation to others; they must learn to collaborate and work in multidisciplinary teams.
- Only design innovators with a clear sense of purpose will bring about meaningful change; our programmes need to focus on developing designerly purpose.

The expanding reach of design theories and practices suggests that we need to be able to develop this mastery across a broad spectrum of design disciplines. This spectrum spans from 'design-thinking' to 'design doing' and recognizes the absolute value of the associated range of knowledge, skills and competencies (and the doing in thinking and thinking in doing!). The expression of that output is given relevance by the context in which it is applied – an authentic application in the 'dragon-pit'.
- Context relevance is the fourth principle upon which programmes of Design Innovation should be founded.

3.1 Designerly Purpose

At the heart of this new mastery are learners and their developing designerly purpose; as an individual, as a member of an organisation and as a member of society. In considering what dimensions contribute to the developing designerly purpose we can look to Adair's 'task-team-individual' model for Action Centred Leadership [1]. For the individual to develop and understand their purpose as a designer, they need to develop an awareness of their personal values, to test these in context through an established task purpose and to do this in relation to others.

Whilst our individual values may be firmly engrained, our designerly-purpose is not static; it is shaped by our experience and the tacit knowledge we derive from it. Building on Sinek's model, 'How' we express our designerly purpose is important to the development of it through reflective cycles [7] and this is equally relevant whether we are a design-doer, thinker or researcher (or, as is most typical, combination of all three). 'What' we do, establishes the sphere of influence in which our designerly-purpose is manifest. Figure 1 illustrates one such tapestry where the 'why' (purpose), 'how' (design doing/design thinking/design researching) and 'what' (design output) interplays to define the individual value of a designer.
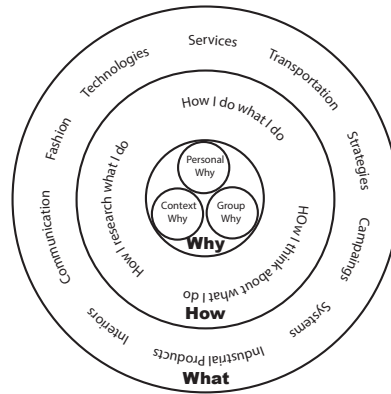
Figure 1. Illustrating value of a designer (Source: Adapted from Sinek (2013))

Acknowledging that our students at Masters level already have their core competencies as designers, what then do they need to learn in order to establish their designerly-purpose and to be able to create a masterpiece suitable of demonstrating the mastery that would satisfy even Neuemier [11] and, more importantly, equip them to affect significant positive change for the betterment of society (our purpose!)?

4 CONCLUSION

The influence of the changing landscape of design has caused us to reflect upon Masters education in design. We have concluded that, in order to nurture graduates who can bring about significant positive change we need to focus on the development of their individual designerly purpose and provide them with the contexts within which to explore and demonstrate their mastery of Design Innovation. Therefore, we propose the application of the above stated principles and the following key knowledge blocks as required for the delivery of new mastery.

4.1 Key Knowledge for Design Mastery

Simplistically, we can think of Innovation Design mastery existing on a horizontal doing-thinking spectrum where the students (design doers/design researchers/design thinkers) learn with and from each other (Figure 2). The horizontal spectrum provides the context situations through which they develop and demonstrate their mastery.

Figure 2. Doing-thinking spectrum

Irrespective of where they position themselves on the doing–thinking spectrum, the three knowledge blocks of Innovation, Research and Reflection will underpin their study and deliver the principles.

1. Reflection will underpin the students' purpose, their 'Why' in relation to themselves, their discipline and their colleagues. It will provide an understanding of themselves in relation to those with whom they work and in relation to their own learning and development, their values and behaviours. It will promote a hunger for continual personal development.

2. Research will support the 'How'; the curiosity to identify what new knowledge the masters student needs in order to complete the task at hand; the knowledge to create and execute a research plan that enables them to access the data that will provide that new knowledge; the capacity to synthesise that data into meaningful insights and the creativity to apply those insights to give meaning to them.

3. Innovation will deliver the 'What' in the context of application. It will deliver value-creation through the ability to make connections and collaborate, advanced creativity and strategic thinking and the leadership potential to turn ideas into realised solutions.

These core knowledge blocks are relevant to the designer anywhere along the spectrum, but they have little value unless they are exercised in context relevant to the individual. And none of this is worth a thing, unless they are tested in the 'dragon-pit' of real-world situations. For this reason, students pursuing new-mastery, at any point along the spectrum, will work collaboratively with each other and with commercial partners. Previous research with Design Innovation students [4] established the value of addressing business challenges rather than design briefs in pursuit of innovative solutions and this is very much the case here; anchoring the creative practice in a real-world context where its value can be measured.

4.2 Assessing New Mastery

The linear model presented above is, of course, far too simplistic. Contexts of application will span the doing-thinking spectrum and students' will develop their mastery in a 3-dimensional way dependent upon their own designerly purpose and an individual learning contract. Assessment has to reflect this and this is where a Portfolio of Practice [3] supported by a learning contract comes into play. Already in use at Northumbria University, the Portfolio of Practice provides students with the opportunity to provide a factual account of what has been done and to reflect upon what has been learned as a result. The learning contract, agreed with specialist academics with expertise in the discipline relevant to the student, is informed by the requirements of the context of application.

4.3 Impact

Understanding the impact and currency of our knowledge helps us assess the Mastery of students. The core of the knowledge required to support this assessment model is both robust, stable and industry relevant having been developed and refined through our existing programmes and research. It is continually refreshed and validated through the direct engagement that our students, academics and alumni have across the design disciplines and sectors.

The impact of the knowledge that we share can be seen in the changes that our alumni affect and the careers that they enjoy. It does not end at graduation; their knowledge is developed further through professional practice and comes back to us through collaborative projects, research activities and return to study at doctoral level for some of our graduates.

These fundamental principles for New Mastery are as relevant to our programmes, where they are, in part, already being piloted, as they are for other institutions and practice-based subjects. Masters who know themselves, their discipline and how to create value through this knowledge by working with others hold the key to significant positive change.

REFERENCES
[1] Adair, J. *Leadership and Motivation: The Fifty-Fifty Rule and the Eight Key Principles of Motivating others,* 1990 (London, Talbot Adair Press).
[2] Aftab, M. *Design as a functional leader: a case study to investigate the role of design as a potential leading discipline in multinational organisations,* 2013 (PhD, Northumbria University).
[3] Bailey, M. Working at the edges -liberating creative multidisciplinary participation by curriculum and assessment design. *ADM-HEA Networks Journal Feature Article*, 2010, 11(Sept).
[4] Bailey, M., Smith, N. & Aftab, M. Connecting for Impact - Multidisciplinary Approaches to Innovation in Small to Medium Sized Enterprises (SMEs). In.*DRS/Cumulus Conferenece 2013: The 2nd International Conference for Design Education Researchers.* Oslo, Norway, 14-17 May 2013.
[5] Berkun, S. The challenges of innovation. *The Myths of innovation.* 2010 (California, O'Reilly Media Inc.).
[6] Dye, P. Bright ideas for dark days. *Inspire and Innovate*, 2014, Retrieved on 27-1-2014, from http://www.theguardian.com/inspire-innovate/bright-ideas.
[7] English, Stuart G. Enhancing the Reflective Capabilities of Professional Design Practitioners. In: *Undisciplined! Design Research Society Conference 2008*, Sheffield Hallam University, Sheffield, UK, 16-19 July 2009.

[8]   Gilsing, F. & Gardien, P. 'Walking the walk: Designing the Next Generation Design Organization', *The Design Thinking Conference.* Santa Monica, 2013 of Conference Design Management Institute.

[9]   McCullagh, K. Riding the flux: Design is changing in myriad ways. Are you? *Core77,* 2007, Retrieved 24-2-2014, from http://www.core77.com/reactor/07.07_flux.asp.

[10]   McCullagh, K. Is it time to rethink the T-shaped designer? *Core77,* 2010. Retrieved 17-1-2014, from http://www.core77.com/blog/columns/is_it_time_to_rethink_the_t-shaped_designer_17426.asp.

[11]   Neumeier, M. Why T-shaped people are valuable but insufficient in an age of nonstop innovation. *Innovation Culture,* 2013. Retrieved on 3-1-2014 from http://lockwoodresource.com/finding-x-why-t-shaped-people-are-valuable-but-insufficient-in-an-age-of-nonstop-innovation-by-marty-neumeier/.

[12]   Press, M. & Cooper, R. *The Design Experience: The Role of Design and Designers in the Twenty-First Century,* 2003 (Hants, Ashgate Publishing Limited).

[13]   Sinek, S. *The Golden Circles. 2013* (New York: Simon Sinek) Retrieved 12-1-2012 from http://www.startwithwhy.com/About.aspx?n=1.

[14]   Overbeeke, et al. *Educational Model,* 2004. Eindhoven: Technische Universiteit Eindhoven. Retrieved 2-01-2013 from http://www.tue.nl/en/university/departments/industrial-design/education/exchange-program/educational-model/.

[15]   Vanderbilt, R. Skills first, or purpose first? A call for Y shaped individuals. *Plus Projects,* 2013. Retrieved, 12-1-2014, from http://plusprojects.tumblr.com/post/55705512353/skills-first-or-purpose-first-a-call-for-y-shaped.

[16]   Verganti, R. Radical Design and Technology Epiphanies: A New Focus for Research on Design Management. *Journal of Product Innovation Management*, 2011, *28*(3), 384-388. Retrieved 2-1-2014 from http://dx.doi.org/10.1111/j.1540-5885.2011.00807.x.

[17]   Yee. J., Jefferies, E. & Tan, L. *Design Transitions*. 2013. (Amsterdam: BIS).