



THE DEMOCRATISATION OF DESIGN AND DESIGN LEARNING: HOW DO WE EDUCATE THE NEXT-GENERATION DESIGNER

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Democratisation of technology has changed how design is practiced, produced, 'made', accessed, traded, taught, and learned. Crowdsourcing platforms tap into the creative domains of designers and have changed how business is conducted. Collaborative practices and the rise of the citizen designer are shifting the role of the designer in the creation process. At the same time, the culture of design learning is changing. Massive Open Online Courses (MOOCs) offer free education to everyone. First trials of translating design education's signature pedagogies into the MOOC environment started. With significant changes challenging the traditional design demographic, and how design is taught and learned, how can we educate the next generation designer? This paper provides some insight by presenting an international view from both design educators, and program leaders, on the future of design education.

Keywords: Design future, Design education, Design practice.

Introduction

More designers choose to engage in the social and public innovation sector, applying their creativity and expertise towards transformational opportunities that have a greater impact on society, tackling complex economic, environmental and social problems. As a result, a more expansive view of design has developed (Brown, 2013), extending the popular understanding that designers largely create products and take care of their visual aesthetics (Brown and Wyatt, 2010; Ramirez, 2011). At the same time, more and more people have edged into the creative domain of designers, by offering design services online via crowdsourcing platforms, such as 99designs.com or DesignCrowd.com.au. The democratisation of technology has changed the way in which design is practiced, produced, 'made', accessed, and traded, and how design is taught and learned. Everyone can be a designer. Lupton (2006) describes this phenomenon: 'Just as professional designers want to become authors, publishers, ... and fabricators, members of the so-called "general public" want to try their own hands on designing spaces, making furniture, building Web sites, editing video, modifying software, and so on'.

Concurrent with these developments in the design industry, the educational landscape is changing dramatically. The culture of learning is ever changing. Massive Open Online Courses (MOOCs) offer education for everyone, free of charge, assuming a fast enough Internet connection is available. Although hands-on design classes are still rare to find in the massive open online learning environment, it can be predicted that soon design education will no longer be absent from MOOC platforms. With significant

changes challenging the traditional understanding of how and by whom design is practiced, and how design is taught and learned, how can we educate the next generation designer?

The Democratization of Design – The Making in the Hands of Amateurs?

Technology continues to become accessible to more and more people. This democratization of technology allows the bringing of ‘your own’ voice and ideas to the public domain. Specifically, ‘social media tools, which place creation, publication, and critique in the hands of web users, have been recognised as having a role in democratising creativity, making the means of production and distribution accessible to most of the developed world’ (Allen et al., 2012). With regard to design, notable platforms, such as 99designs.com and designcrowd.com.au (marketplaces for graphic design, including logo design, web design and other design contests), or crowdspring.com (marketplace for custom logo design, web design, graphic design, industrial design and writing services), tap into the creative domains of designers and have changed how business is conducted. Anyone can now offer and access design expertise from a virtual standpoint. Platforms such as Elance.com, or Odesk.com, where anyone can hire freelancers with varying degrees of expertise in a plethora of areas, including design, allow for the building of short-term or even long-term virtual designer-client relationships. Perryzucker (2009) states that this “cloud” design world’ has ‘reduced the designer-client relationship to a few mouse clicks’.

Critics question the quality of work created by amateurs who penetrate the design market (Perryzucker, 2009; Howe, 2009) causing ‘the blurring of the boundaries between amateur and professional design practice’ (Massanari, 2012). Advocates see the advantage in co-creation or the user-centred design participation process and welcome the “open-source” dialogue that invites the audience into the creative process’ (Duffy and Partners, 2008). Shaughnessy (2013) describes the change:

Thanks to the internet, everyone is now a designer – or at least has a view on what good design is. This has changed the design landscape profoundly. Smart designers have worked this out and now function as partners rather than suppliers, often working alongside experts in other fields – sharing expertise rather than imposing it.

Everyone is a Designer – The Rise of the Prosumer

Proactive consumers, or ‘prosumers’, have long been predicted to influence production and ways of making things (McLuhan and Nevitt 1972; Toffler 1980). Digital fabrication laboratories (Fab Labs), maker and hacker spaces are now part of a global initiative of workshops providing personal digital fabrication. These workshops are often community-operated workspaces that unite people with common interests in designing and creating products. They provide open access to technologies and workshops to encourage open and free knowledge sharing. These workshops empower people, educate and facilitate the creation of almost anything (Nunez, 2010; Gershenfeld, 2012).

This trend towards the creative community, open-source, peer-to-peer networking, and collaborative working has been described as being part of a ‘Third Industrial Revolution’ (Anderson, 2012). The empowerment of people in this process goes beyond proactive consumerism. Anyone can be a designer and can pursue commercial and private endeavours within Fablabs, and/or maker spaces (Troxler, 2010). Few design areas remain unaffected by the rise of the do-it-yourself (DIY) culture and the way in which products are created. The development and growth of 3D printing technology, which is accessible to ‘all’ as part of Fablabs, for example, are said to democratise manufacturing (TNO staff, 2013). Product designers and engineers are directly affected; the public are now able to develop and produce products according to their wants and needs. The fashion design industry may soon be on the verge of a major change, with companies such as Electroloom trying to make fashion and design even more accessible: ‘Our vision of a desktop 3D printer is one that enables anyone to design and create unique articles of

apparel' (<http://www.electroloom.com>). Although this vision might not become a reality quickly, the idea of self-printing, ready-to-wear clothes on demand exists and will surely be further developed.

The Citizen Designer – Bottom-up Innovation

Participatory design processes, such as crowdsourcing or co-creation, have seen a growing symbiosis between companies, organisations and the general public, spreading across a wide range of sectors (Sanders and Stappers, 2008; Bason, 2010). Co-creation, for example, has become increasingly popular in the social and public innovation sectors, to address complex, global problems (Bason, 2010; Mahy and Zahedi, 2010). The public, alongside designers, engage in distributed innovation processes to enable bottom-up innovation (also called grass root innovation) (Chilvers and Longhurst, 2013, p.6). According to Robertson and Sobol (2011), more designers want to engage in solving global problems of health care, inequality, poor education and challenges to the environment. Designers have become co-creators to the people, who benefit from the service, product or process being developed or improved because they are actively participating in the creation process. This is different from user-centred design, where the end-user, or customer, is the subject of observation as a source for development or improvements (Sanders and Stappers, 2008). This more expansive application of design (Brown, 2013) has significantly changed the role of some designers. 'The omnipotent designer is no longer omnipotent' (Shaughnessy, 2013). Chmela-Jones (2013) supports this view: 'the design profession is adapting to participate in new forms of practice that embrace multi-dimensionalism and the role of citizen participation in the design process' (p.35).

Overall, the democratisation of design will not go away, but will allow more 'non-designers' to become involved in idea generation, development and production of products, services or processes. Designers will need to adjust and find their role within the crowd, with whom they are sharing this creative domain.

Democratisation of Design Learning

Design education needs to respond to the changing role of design and designers. This is particularly the case with traditional design institutions which give high priority to 'individual performance and control of outcomes' (Davis, 2008). The studio-teaching model, where design learning is based on a dialogical approach of one-to-one interaction between student and educator, reflective practice and the development of a community of practice within the studio, has been challenged in some institutions. Ever-increasing student numbers and rising economic pressure are leading to an unbalanced student-teacher ratio, and in some cases is leading to the total abandonment of the more traditional studio-teaching approach (STP, 2009; Hart, 2011).

At the same time, the ever-increasing focus on online education is quickly becoming a major phenomenon worldwide. Coupled with the increasing availability of Massive Open Online Courses (MOOCs), a serious stir is beginning to develop in the more traditional academic world, even questioning the actual role and usefulness of universities as a whole. There is a profound change looming, with regard to how higher educational institutions deliver content and how their students learn. 'MOOCs provide a solution for democratising higher education, offering courses free of charge to people all over the world' (Born, 2014). Platforms such as Coursea, edX, and iversity.org theoretically allow anyone with an Internet connection to access content and receive an education from a university, some of which are considered elite institutions (Jaggars, 2013).

However, MOOC courses in the design domain are still rare to find. The few available are mainly theory-based, or broader in their application of design; for example, Human Factors and Culture in Design; Introduction to Light, Color, and Life and Creativity, Innovation and Change. Although the hype around MOOCs appears to have bypassed design education, the Massachusetts Institute of Technology

(MIT) has recently announced its first free online courses in game design (Toppo, 2014). From the statement provided, it becomes clear that design has not yet been overly present on MOOC platforms, perhaps down to the specific learning culture with which design education is traditionally associated. The Creative Director of MIT's Education Arcade said:

We know that the stuff that has caught on most with MOOCs are things that can be assessed through automated testing. We know we're not the only ones trying to think about more project-based MOOCs, but we also know that it hasn't advanced very far. (Toppo, 2014)

Clearly, institutions are in the process of experimenting with ways to integrate technology-enabled learning, engaging various delivery platforms and act on issues such as social media integration, in response to the newfound learning behaviour of many students, including their mobility. Despite some early developments, general directions and strategies for online design education are yet to be fully developed, researched or implemented. Nevertheless, it seems unlikely that design education will remain absent from MOOC platforms for much longer, and will soon have a stronger presence in the online domain in general. With significant changes, challenging the traditional understanding of how, and by whom, design is practiced, taught and learned, design educators need to find the answer to the question: how can we educate the next generation of designers?

The Future of Design Education: Research Methods

A pragmatic research paradigm was chosen, enabling the researcher to select methods that suit the real-world practice nature of the situation. Interviews were used to explore perspectives from ten design educators and design program leaders (DE) from three countries, providing an international perspective: three from the United States (US), six from Australian universities, and one from the United Kingdom (UK). Interviews are, according to Punch (2009), 'a very good way of accessing people's perceptions, meanings, definition of situations and construction of reality' (p.144); hence, they go 'beyond the spontaneous exchange of views as in everyday conversation, and become a careful questioning and listening approach with the purpose of obtaining thoroughly tested knowledge' (Kvale, 2007 p.7).

Each participant was asked similar questions, in order to explore the theme of 'what and how do we teach the next generation of designers?'. The interviews took the form of semi-structured professional conversations (Kvale, 2007). Embedded within questions pertaining to 'adjusting design programs to ongoing changes in technology and the design area in general', participants were asked: How do you see the future of design education five or ten years from now?

Interviews were recorded and transcribed by a professional transcription service. The software programme NVivo 10 was used to code and theme the interviews, and each interview was coded openly before grouping the themes into higher-level codes for ease of understanding and classification. A reflexive qualitative thematic analysis was used to combine codes where applicable, and an independent researcher was used to code the interviews.

Views on the Future of Design Education

The ten design educators and design programme leaders, referred to in the following as 'respondents', have expertise in a wide range of areas, including graphic design, digital media, design thinking, design research, visual communication, interactive media design and interior design, and one participant has particular expertise in photography. The discussion on the future of design education presented a wide variety of different viewpoints, which are presented in the following.

The respondents posed interesting opinions on technology and how this will affect the future of design education. There was an acknowledgement, and almost resignation, that technology will continue to influence what, and how, design education is provided in the future. In particular, the notion of offering

design education fully online was not strongly supported by the respondents, with three respondents firmly believing that design education needs face-to-face interaction, in addition to online education. For example one of the respondents said:

For me design education is discussing, it's showing people things. It's looking over their shoulder while they work. It will be a very sad day if all design education goes to be 100% online, simple as that. I think it's a tragedy. (DE3)

Four respondents discussed the importance of social issues, for the future of design education, in particular developing a social responsibility in students. They believed that it was important to be sensitive to social issues, and, correspondingly, to be more integrated into society itself. One respondent noted:

I see the future of design education going more towards addressing social issues. So Bauhaus was a social movement and I think that's probably the future for design where we start getting integrated more into society and creating the solutions for the problems for design itself. (DE1)

Two respondents also spoke of the need to be aware of global 21st-century issues, and the importance of educating design students to become 'global citizens'. One respondent stated:

We are in a global world and students need to be global mentally, they need to know what's going around and they need to know what's happening very far from them and that this is also their business. (DE8)

Another major theme, which arose from the discussions of the future of design education, was the importance of thinking, and, more specifically, critical thinking, with three respondents mentioning this. A scenario was described as follows by one respondent:

We need to create a space for the students to think and that's where the future of design is. ... I think maybe the future is media independent ... and the essence of design is actually the thinking and the conceptualisation in creating solutions that are complete and experience-based and creating that experience of design and then connecting to bringing that strategic focus into design. (DE7)

Another common theme in the discussion was the integration of interdisciplinary, trans-disciplinary, and multidisciplinary education with one respondent noting:

The other thing is that in terms of teaching designers, our tertiary courses need to engage much more with other disciplines ... The design profession is changing and we need to be part of the discussions with accountants and engineers. (DE9)

However, two respondents commented on the difficulties in implementing collaboration across disciplines, mainly because of logistical and structural challenges within their institutions.

There was a common thread throughout the interviews, in that respondents commented on the increased complexity of problems, and the broader knowledge and skill base needed by design students to respond to these more complex problems. One respondent noted how there had been a shift from problem solving to problem framing, calling for greater and wider skills, and how this was already reflected in their 'package'. The respondent stated:

Solve the problem was last century kind of thinking. Now we're in the new century and the students need to know how to frame the problems, the issues whatever they are. There is need of many different skills, so the business acumen research methodology, global thinking, critical thinking. All of that is part of the package here that we try at least to give them. (DE4)

An interesting theme, related to changes in design education, was how changes in the industry affect design education, now, and in the future. This was expressed in the following comment:

Changes in the graphic design industry, because of things like Elance and the fact that for \$40 you can buy a web template that is better than anything any of us could design in weeks and weeks the nature of graphic design is changing and the fact you can get free fonts everywhere and the fact that everybody has access to a personal computer is that traditional skills of a graphic designer have been devalued and they're getting more and more devalued in the last 5 years, it's very noticeable. ... So we've rewritten the program to encourage them to act more as entrepreneurs rather than service providers for hire. (DE3)

The respondents spoke of many new areas that would potentially affect the future of design education; but the importance of teaching design fundamentals was noted as being 'critical' to three respondents as is illustrated by the following two comments:

I think that the fundamentals will never go away. (DE7)

[Students] have to implement their solid design training and critical thinking skills in order to adapt to these new environments and scenarios. (DE10)

Although not expanded upon in detail by respondents, research was noted as 'important for the future of design education'.

Conclusion

The democratisation of design has changed the way designers work, how items are produced, how people engage with the sector, how it is accessed and by whom it is produced. A greater need for designers to engage in social and public innovation processes has also led to the application of more participatory design processes, which can involve the general public, or people who would benefit from the service, process or product developed. Although these changes have not quite made designers entirely redundant, the changes are significant, and any further future democratisation will increase, rather than decrease, the effect. Shaughnessy (2013) points to the fact that 'the role of the traditional designer is changing – and indeed in many cases vanishing'.

These changing realities require rethinking of what it is that design education has to offer to students. What needs to be taught? What cannot otherwise be accessed or achieved via self-study? In what way will design education be offered to students? A variety of viewpoints were presented, in response to the research question 'How do you see the future of design education in five to ten years' time?'. Common responses included the importance of 'critical thinking' and 'design thinking', sensitising students towards social issues and their own social responsibility, interdisciplinary/multidisciplinary involvement, preparation of students for industry, and research and technology. It was interesting to note that while all respondents mentioned change, in the design industry in general terms, only one respondent noted the severity of these changes (referring to crowdsourcing) affecting design education, and a resultant alteration of the design curriculum, to help students to become more entrepreneurial.

Technology was identified as a continuing major impact factor on design education and was subliminally noted as a threat, rather than an enabler. There was a consensus, and a strong belief, that design education does not work well in an online environment. Some design educators felt strongly about the need to teach design fundamentals, regardless of future developments.

As Brown (2013) points out, design is 'no longer the province of the lone practitioner, design has become a broad, collaborative process' (Brown, 2013). Design educators and design programme leaders share this view, and unanimously see teamwork as an important part of design education, particularly for improving student flexibility and understanding the significance of collaboration and the limitations of an individual. It was also socially useful for students' improved accountability and gave students an

understanding of how different designers brought differing views. At the same time, some educators highlighted the well-known fact that silo mentality and other institutional boundaries can still be a hurdle when setting up collaborations across various disciplines.

A shift to a more social focus, within project work, was recognisable in all institutions. Critical and creative thinking skills were highlighted as the ‘master skill’ that students needed to develop in order to equip themselves for a future in the industry. As Welch (2011) states, design students ‘need the mental set that will position them to embrace the social, political and economic challenges’ and they must develop ‘creative thinking skills essential in developing the resilience needed to survive - and even thrive - in this volatile and uncertain future’.

Overall, there was an underlying discomfort when design educators and design programme leaders reflected on current and upcoming changes in the design profession; but neither democratisation of design nor democratisation of design learning were seen as a threat to the traditional design teaching and learning model. Indeed the advancement of self-production technologies, empowering more non-designers to enter the design domain and trends towards the creative community, open-source or peer-to-peer networking have not been mentioned or reflected upon deeply in these interviews.

Design educators and design programme leaders felt confident about the widening of the design field to include more social and public innovation endeavours. It was evident that design education, now and in the future, should focus on educating ‘critical minds and creative thinkers’, a skill that cannot be attained from online courses or in self-study mode. Nevertheless, more changes will occur, and teaching students how to respond to client briefs, even to those with the finest social skills, will not be sufficient. Teaching students design fundamentals, which can be picked up from Lynda.com, will not be sufficient either.

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