PERCEPTIONS OF CREATIVITY AMONGST UNIVERSITY DESIGN TUTORS

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Abstract: This paper describes the perceptions and views of creativity amongst a selection of UK-based design tutors. The paper presents the findings of research that has questioned a total of 16 design tutors in architecture and industrial design in a leading UK university that specialises in design education. The researchers adopted a semi-structured interview approach and collected a series of rich insights into how design tutors conceptualise creativity, and how they perceive their role in developing creativity in their students. The findings show perhaps unsurprisingly that design tutors clearly value creativity whilst, at the same time, they find it very difficult to define and conceptualise. They were also unable to articulate how they helped their students develop their own creativity. The findings also reveal that the design tutors would value understanding creativity more in order to improve their teaching.

Keywords: creativity, perceptions, design tutors, university design education

1. Introduction

Creativity is a powerful label. In Western societies it epitomises success, the 'modern', and trends for novelty and excitement. Whether linked to individuals, enterprises, cities or regions creativity establishes immediate empathy, and conveys an image of dynamism. Creativity is a positive word in societies constantly aspiring to innovation and 'progress' (European Commission, 2009). Creativity can also be a major driver of economic and social innovation and it is an essential feature of a post-industrial economy. Despite interest in the concept of creativity there are issues in how it is conceptualized. The term has been so overused and applied to so many contexts that it's meaning has become diffuse and misinterpreted. Indeed even within the design disciplines it is an often ill-defined term. It has been estimated that more than 80 definitions exist in literature (Dasgupta, 1994). Most definitions of creativity do however contain two important concepts, value and novelty (Barron, 1988; Runco, 2007; Cropley, 2001). Creativity can be a crucial factor when designing products (Chakrabarti *et al*, 2004; Gero, 1993). It can also facilitate innovation, support problem solving, and enable

companies to increase greater market share (Ottosson, 1995). Without creativity in design there is no potential for innovation (Amabile, 1996). Furthermore, the importance of education in developing creativity has been stressed by many (Amabile, 1983; Robinson, 1999; Cox, 2005).

2. Creativity in design

The Cox review of creativity in business within the UK suggests that future designers will require a breadth of knowledge in engineering, technology and business as a means of facilitating the fusion of skills necessary in creating new ways of thinking as well as creating successful new products and services (Cox, 2005; Kelley, 2001). Within most disciplines of design practice be that graphic design, architecture, product design, furniture design or engineering design, creativity is routinely viewed as the most outstanding criterion to achieve (Christiaans and Venselaar, 2005). The term "creativity" is commonly used in the context of four main research areas. That is, in the context of the "creative process", the "creative product", the "creative person" and the "creative environment" (Murdock and Puccio, 1993; Basadur *et al*, 2000). Creativity and, in particular, creativity in design has been defined using variations of these four research areas (Boden, 1991; Kim, 1990; Gero and Maher, 1993). Several of these studies offer viewpoints to support creativity as residing solely in the finished product whereas others believe that creative processes undertaken by the creator are a key ingredient in the development of creative products (Gero, 1996). Sarkar and Chakrabarti (2011) propose that all stakeholders, including designers, engineers, managers, entrepreneurs, and others, involved in product development need to be creative. It is widely acknowledged that creativity plays a significant role in many types of business and is especially important in the design and development of new products. Creativity is a crucial factor in the successful design of new products and is a key driver of innovation (Chakrabarti *et al*, 2004). Thus, creativity initiates innovation, it helps in resolving design issues, it can support a company in gaining a larger market share, and ultimately creativity can help designers and manufacturers develop new products better and faster (Ottosson, 1995; Molina *et al*, 1995). The importance of creativity and the many stakeholders outlined above implies creativity is part of a socio-cultural system (Csikszentmihalyi, 1996). Creativity viewed as a socio-cultural system is interesting in the context of design education, where the system is made up of a domain (design), the field (design tutor) and the individual (student). This is discussed in section 4, but for now we discuss creativity in design education.

3. Creativity in university design education

The importance of creativity in the cultural and creative industries and the significant contributions that creativity adds to the UK's overall GDP cannot be overstated. Universities also make a significant contribution to these industries through their research and the education of their students. Indeed Scharmer and Kaufer (2000) suggest that universities are the birthplaces and hubs for communities of creation. Cropley (2001) argues that education is pivotal; it can be extremely successful in facilitating creativity but equally it often hinders the development of skills, attitudes and motivation necessary for the production of novelty. According to Reid and Petocz (2010), subject areas in higher education demonstrate their interpretations of creativity through their specific disciplines but their understanding of the concept can be quite varied, even within the design subjects. Irrespective of discipline most tutors believe creativity to be important. This view could be challenged however as many critics have argued that most universities have favoured traditional educational methods that promote orthodoxy as a result of favouring linguistic and logic-based disciplines, rather than what Gardner calls 'intuitive' intelligences such as creativity (Cropley, 2001; Biggs, 2007).

4. Creativity and the role of the design tutor

Contemporary conceptualisations of creativity view creativity as more of a social act rather than an individual act. One of the first advocates of this approach was Stein (1953) who theorized that creative outcomes should not only be novel, but had to be "accepted by a group" (Stein, 1953: 319). Influenced by the work of Stein, Amabile's seminal work also stressed the social nature of creativity and made explicit reference to the importance of people and their creative skills (Amabile, 1983). Socio-cultural approaches to creativity, explain that creative ideas or products "do not happen inside people's heads, but in the interaction between a person's thoughts and a socio-cultural context" (Csikszentmihalyi, 1996: 23). This approach also stresses the social judgements of the creative act by someone other than the creator. By implication, the university tutor and other individuals who work with the tutor, and influence the tutor's decision-making processes, make up the field for the students' creative outcomes and socially validate and encourage students' creativity. Since it is the field (the tutor) that provides the individual (student) access to the domain, in educational settings, it is the tutor who provides the student access to the creative dimension of the academic subject (Csikszentmihalyi, 1996). The way the subject is taught and the criteria against which the students' learning is evaluated have an impact on developing student creativity. Although Claxton (1998) argues that creativity cannot be trained or taught, he does believe that it can be cultivated or facilitated, and this we argue has implications for design educators. Claxton's view of learning as enculturation is linked to what Csikszentmihalyi (1996) calls a "congenial environment" whereby creativity can flourish. This is also linked to a creative climate (Ekval, 1996). Learning as enculturation, climate and environment can be said to conceptualise creativity from a socio-cultural perspective. This in turn, emphasises the role of the tutor of design within the system, and the need to try and identify the design tutors' epistemological beliefs related to creativity. A tutor's readiness (*i.e.* ability and willingness) to engage in educational practices that facilitate the development of skills necessary for creativity is dependent on the tutor's epistemology, which is defined as the set of beliefs that one has about the nature of knowledge and its acquisition. This set of beliefs has an influence on the cognitive processes of thinking and reasoning (Hofer and Pintrich, 1997; Schommer, 1994), and harbours the tutor's conceptions about learning and teaching. This respectively affect the tutor's perceptions of tutor-student roles in the learning process, as well as the tutor's decision making processes related to preferred ways of educating (Chan and Elliot, 2004). Therefore, the tutor's epistemological beliefs that are related to 'what is creativity' and 'how creativity develops' influence the tutor's choices that are related to pedagogic strategies and practices (Chan and Elliot, 2004; Hashweh, 1996) which consequently impact students' creative potential. Thus, the authors' key aim here is to investigate design tutors' beliefs about creativity and in particular how they facilitate creativity in the university design studio.

5. Perceptions of creativity study

In fostering creativity it is essential to start with understanding what creativity involves and what factors allow for it to happen. Despite the enormous amounts of research to understand better and support creativity in design (Bonnardel, 2000), it is still difficult to locate any common agreement amongst researchers on operational definitions of what it means for a designed product, space, experience, service or system to be 'creative'. Given the importance of creativity in our post-Fordist economy, and the role of tutors' in facilitating creativity as part of a socio-cultural system, this paper explores the viewpoints of 16 design tutors at a leading design university in the UK. The study asks a number of questions in relation to creativity and whether or not tutors believe it is an essential characteristic in design graduates. Exploring the role of the design tutor, we believe, is key to understanding creativity within the context of design education at undergraduate level.

There have been a number of studies that have looked separately at tutors' beliefs and creativity (for example see Fryer, 1996; Diakidoy and Kanari, 1999; Nicholl and McLellan, 2008). The study presented here, however, makes an original contribution to this field as there have been no studies that have explored design tutors' conceptualisations of creativity in design and, in particular, the facilitation of creativity in design education at undergraduate level. Using a semi-structured interview approach, which is a highly useful method for uncovering new insights (Robson, 2002) whilst being an excellent mechanism for identifying general patterns in descriptive studies (Saunders *et al*, 1997) the questions posed to the design tutors probed their beliefs about creativity. This study entailed a number of corresponding objectives, namely:

- How design tutors conceptualise creativity.

- Whether design tutors think they possess creativity themselves and whether it is important that they do.

- Whether design tutors see creativity as important and/or valuable in design education.

- How design tutors view their role in facilitating creativity and how they manage this in a university setting.

- Whether design tutors would like to know more about creativity and improve their teaching for creativity.

Given the stated aims and objectives of the study, a series of questions were posed to 16 design tutors. The questions asked, in order, were as follows:

1. Do you consider yourself to be creative?

2. *How do you conceptualise creativity in students, what is it, can it be defined?*

3. Do you think creativity is an essential attribute for your students to possess?

4. Do design students join the university as "creative individuals" or do you think it is what you do as a tutor that develops their creativity as a cognitive skill?

5. Do you think your teaching methods promote creativity in your students?

6. Do you think having some knowledge of creativity and how to improve it would be of some interest in improving your teaching?

7. Have you ever read anything regarding creativity and how to improve it as an attribute within your students?

8. If not have you learnt to be creative, and how have you learnt to teach your students?

9. What is more important in HE design education - a. teaching the students an awareness of precedents and the work of past individuals and their vocabulary or b. teaching innovation and creativity?

10. Do you think creativity is valued within your discipline?

In summary, the list of questions above are ordered to tell a story of looking at creativity from an individual perspective to a socio-cultural perspective, where design tutors may have a role as educators and/or practitioners. Thus, how do the design tutors view their role as educators of design?

Can the findings from this study be used to help inform and shape the future teaching of design education?

6. Findings

The first question asked each tutor if they considered themselves to be creative. 10 of the 16 design tutors replied with a firm "*Yes*" (Figure 1). The design tutors justified their claims of being creative by stating things like "*...I come from a creative family...*" (Tutor 2), "*Whenever I do one of these management personality tests I am always in the creative category*" (Tutor 3), "*I believe myself to be a creative thinker that can pull disparate ideas together through synthesis and I am good at seeing possibilities*" (Tutor 7), and "*To the average person on the street, I am probably highly creative...*" (Tutor 8). Conversely, a small number of the design tutors were much more circumspect in their responses to this question and replied "*No*" to this question. The reasons they gave included "*No. Enzo Mari in his 'vaffanculo' talk defined creativity as the 'door of hell'*" (Tutor 9), to "*Not as creative as I would like. I seem to inherently restrict myself...*" (Tutor 10), and "*...there appears to be a tangible pressure in society for one to become creative and as such it has become a term used by an increasing unspecified and growing sector of the population. Consequently, I like to refrain from describing myself as creative*" (Tutor 11).

Question 2 asked each tutor how they conceptualise creativity in students, what is it, and can it be defined? Some tutors' answers imply that creativity can indeed be defined and it ranges from "*Imaginative responses to a design brief...*" (Tutor 1) to something that "*...adds value*" (Tutors 2 and 6), "*...is inventive*" (Tutors 3 and 8), and includes "*quirky solutions*" (Tutor 4). A number of tutors, on the other hand, tended to respond in a negative manner and generally suggest that creativity cannot be defined. Their comments ranged from "*Creativity is difficult to define (but we know that already, don't we?). I don't even try*" (Tutor 11) to "*I don't think of creativity as a thing, something that can be isolated and witnessed*" (Tutor 13), and "*I don't believe I can define creativity*" (Tutor 14). Question 3 asked, is creativity is an essential attribute for your students to possess? 13 tutors stated that creativity was an essential or a vital attribute (Figure 1). Once again the responses were variable, "*Absolutely, they won't be able to function on the course without being creative*" (Tutor 1) and "*definitely, it is vital that students have a creative mind to be able to apply skills and knowledge that they are taught in class and put to good use in their projects*" (Tutor 6) whereas other tutors tended to add caveats such as "*...it (creativity) is not the ONLY essential attribute*" (Tutor 11) and "*Yes, but I don't think that creativity is an essential attribute for our students to possess*" (Tutor 13). Three tutors, interestingly, didn't think it was an essential attribute at all.

Question 4 asked each design tutor whether their design students joined the university as "creative individuals" or if it is what they do as a tutor that develops their students' creativity? All the tutors tended to agree that students joined the university as "creative individuals" and that their creative capacity was further enhanced during the duration of their studies at university. For example, Tutor 1 believes students "*...start with some creative skills and we build on them*", Tutor 5 stated "*It is a combination of what we do here as teachers and what the students do...*", whereas Tutors 12 and 16 agreed that "*we are all born creative*", and Tutor 11 suggested that "*...the responsibility is for the tutors to help students develop their creativity*". Question 5 asked the tutors if they thought their teaching methods promoted creativity in their students? In their responses, almost all of the tutors felt that their teaching methods positively promoted creativity in their students (Figure 1). The methods the tutors adopted in the promotion of creativity, however, ranged from "*...challenging the students regularly through tutorials and reviews*" (Tutor 3) to "*...I try to create some sort of story with the students built out of concepts*" (Tutor 4) and "*I tend to simply take students to a situation of unease and discomfort. I think in this way the student learns to challenge his or her own thoughts, observe*

more carefully, and build their confidence..." (Tutor 8). Several tutors focussed on specific methods and tasks in their responses including "*The type of creative tools that I use with students include mind-mapping, brainstorming and the DeBono's 6 thinking hats* (Tutor 11) and "*...in project work I try to encourage idea generation and exploration rather than pursuit of the safe option*" (Tutor 14).

Q1. Do you consider yourself to be creative?

Q3. Do you think creativity is an essential attribute?

Q5. Do your teaching methods promote creativity?

Q6. Would some knowledge of creativity improve your teaching?

Q7. Have you read anything regarding creativity?

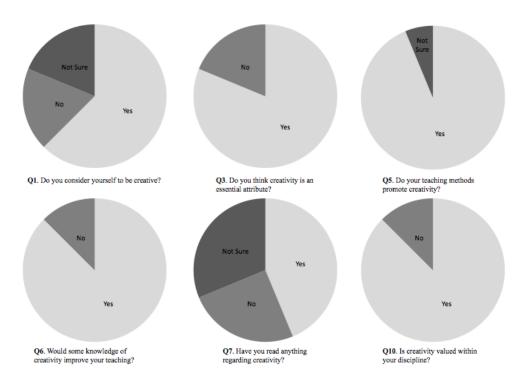**Q10. Is creativity valued within your discipline?**

Figure 1. Design Tutors' Responses Summary

The responses to question 6, do you think having some knowledge of creativity and how to improve it would be of some interest in improving your teaching, had almost all of the tutors agreeing that having some knowledge of creativity and how to enhance or improve it would be beneficial in their teaching (Figure 1). Question 7 asked each tutor if they have ever read anything regarding creativity and how to improve it as an attribute within their students? Over half of the tutors had not read anything on creativity or were not sure (Figure 1). "*No, nothing springs to mind...*" stated Tutors 1 and 2. "*No although if I had more time I would as it is important...*" answered Tutor 4, and "*I can't recall reading anything specifically on creativity...*" remarked Tutor 8. Of those that said yes, they referred to the work of authors such as Donald Schön, Arthur Koestler, Bryan Lawson, Norman Potter and Nigel Cross, which tended to be more about the design or creative process. Others stated they had "*...read plenty about creativity...*" (Tutor 13) and "*...the importance of creativity...*" (Tutor 15) but they couldn't list anything in particular. Question 8 asked the tutors how they have learnt to be creative and how they have learnt to teach their students? The responses here were all very similar and they included things like the importance of experience, learning to be creative through doing, learning on the job, understanding what works in certain situations, trial and error, past projects, and by watching more senior colleagues. Question 9 asked the tutors what they felt was more important in university design education – (A) teaching the students an awareness of precedents and the work of past designers, or (B) teaching innovation and creativity? Here, there is little difference in the responses from the tutors. Five tutors stated (A) is most important, five believe (B) is most important, and six think (A) and (B) are equally important.

Question 10 asked the design tutors whether they think creativity is valued within their discipline. Fourteen of the sixteen tutors believe that creativity is valued within their discipline and in their university department. However, there are two tutors who disagreed believing creativity is not valued within their discipline and their department (Figure 1). Their comments included "*In my discipline, creativity is valued less than rigour*" (Tutor 8) and "*...creativity appears to be seen as something to promote and to celebrate by some in my discipline; but it is viewed as a destabilising force by others...*" (Tutor 15).

7. Conclusions and future work

This study has found a number of interesting results related to the perceptions of creativity amongst university design tutors, in particular:

- Design tutors clearly value creativity.

- Design tutors find creativity very difficult to define and conceptualise.

- Design tutors find it difficult to articulate whether they teach for it.

- Design tutors would value understanding creativity more in order to improve their teaching.

In general, the 16 design tutors we interviewed found it difficult to define and conceptualise creativity even amongst those that believe themselves to be creative. Moreover, there were nine different definitions of creativity from the 16 design tutors interviewed including three tutors who believe that creativity cannot be defined. These definitions varied considerably from aesthetic-based descriptions (*i.e.* beauty, elegance) to more politically related definitions such as "challenging conventions" something Csikszentmihalyi (1996) states as being important. Other definitions included "freedom from hegemony", to more value-driven descriptions such as "striving for coherent solutions" and "solving real world problems". The majority of the design tutors we interviewed believe that creativity is an essential or vital attribute for their students to possess. However, several of this majority also stated that creativity is not the only essential attribute. It would be interesting to investigate what other attributes design tutors deemed important and if there was a hierarchy of importance and where creativity featured within such a hierarchy.

The design tutors agreed unanimously that students usually join the university as "creative individuals", and that their creative capacity can be further enhanced over the duration of their studies at university. Thus, tutors acknowledged they had a role within a socio-cultural system (Csikszentmihalyi, 1996). Asked whether they thought their teaching methods promoted creativity in their students provoked a variety of interesting responses. Some suggested "the challenge of the project" promotes creativity and "learning through doing", interestingly, an approach to learning advocated among others by Dewey (1938). Other tutors stated the design project much less but tended to focus on the role of the educator in empowering the students through teaching independence and self-direction. In other words, although tutors viewed their role as important, there was not a consensus and they were not able to articulate fully, the precise nature of their role. Again, this would be interesting to probe in future studies.

A number of the design tutors admitted that, on reflection, they might have deficiencies in their knowledge and approach to creativity. Also, a number the tutors spoke of needing some clarity as to what constitutes creativity (even those who said they have read extensively on the subject). Some of the tutors pointed out that reading about creativity is entirely different to being creative in practice. Again, this is interesting given the previous comments on creativity as solving real life problems, and

the wider debates about situated cognition (Brown *et al*, 1989). One or two tutors have read extensively on the subject of creativity, and clearly see the benefit of this to their own and their students' performance. A number of tutors who had read on creativity tended to cite books that were more about the design process. However, the majority of the tutors either could not recall what they had read, or stated that they hadn't read any books on creativity. This might explain why there is such a varied response in the tutors' conceptualisations of creativity. This is a key finding albeit from a relatively small sample.

Another important finding is that the tutors see creativity being formed by the continuous application of knowledge through projects (*i.e.* learning through doing). Designers express their creative abilities through the vehicle of design not through reading. Whether the outputs and processes of the projects demonstrate creativity is another matter, many designers use tried and trusted methods perhaps leading to orthodoxy. Brown *et al* (1989) argues that creativity is reliant on a deep knowledge of the field, and 10 to 15 years is generally recognised as the time taken to be truly creative. Students at university have perhaps only studied design meaningfully for half that time, so investment in knowledge by way of reflection on precedent and the work of other designers is part of this building of knowledge. Several tutors made similar points here including, *creativity is impossible without the acquisition of knowledge and skills and that without a good knowledge base you will end up with wilful nonsense*. This raises the question, how do tutors develop knowledge and skills of the domain, as well as providing opportunities to use this knowledge in creative ways when solving design problems? This is the complex nature of creativity as conceived by Amabile's model (1983).

Interpretations of creativity appear to be dependent on environmental conditions. Most tutors interviewed believe that creativity is valued within their discipline (*i.e.* design) and within their university departments. This is interesting based on the general feeling of pedagogue critics that Higher Education is more aligned to logic-based, linguistic and social science disciplines, where the traditional lecture-based pedagogy prevails, which is relatively straightforward and light in terms of allocation of resources. Many systems within Higher Education lean more towards quantitative rather than qualitative methods. The negative criticism of the education certificates (in their various guises) and the fact that a number of the design tutors dropped out before completion would suggest that these courses are perhaps not considering the specific educational needs and context of the design tutor, other than when the tutor is teaching in a 'traditional' way. In summary, it would appear that many aspects of creativity in design, its definitions and its processes remain shrouded in mystery (Snodgrass and Coyne, 1994). This begs the question, if we don't know what creativity is how can we learn it and develop it in our students, our universities, and in ourselves? Future work planned in this area includes the expansion of the study to conduct a multi-site case study of design tutors throughout the UK and collect upwards of 100 design tutors' responses involved in undergraduate design education. Moreover, in light of the data collected thus far the authors plan to expand the research further to explore a number of the emergent themes articulated in this study.

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