The Design Studio, Models of Creativity and the Education of Future Designers

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ABSTRACT

The design studio is integral to design education. It plays an important role in the training of future designers, representing a key space for experimentation and creative activity. In contrast to other elements of design education, the studio gives students first-hand experiences of the design process and the practical aspects of designing. It introduces them to the concept of creativity and gives them experiences of and knowledge about the creative design process. This paper discusses the problems facing the contemporary design studio through an exploration of its development and its relationship to the "romantic" notion of creativity. The paper argues that there is a paradox implicit in current educational practice which is due to the design disciplines’ continual fascination with the romantic model of creativity; a model which understands creativity as an, innate, spontaneous ability that cannot be taught or assessed.

Keywords

The design studio, creativity, design, romanticism, design education, assessment

INTRODUCTION

During the last fifty years, architectural and design education have become increasingly focussed around the idea of the design studio. The design studio has been described as being ‘the heart of architectural education’ [5: 63], as the ‘key place for all [design] educational activities’ [23: 65], and as ‘central to the pedagogy of architectural education’ [19: 241]. In relation to architectural education, Mark Wigley proposes an educational model wherein ‘[e]verything is organized around the design studio as it should be’ [24: 17, emphasis added]. The design studio represents a mode of teaching and learning that encourages creative endeavour, imagination and experimentation, critical thinking, contemplation and collaboration [7]. As such, the studio provides ideal opportunities for students to develop a range of skills required by the design profession. However, the educational benefits of the studio have been repeatedly challenged in recent years. There is no consensus view as to what the design studio is and how it can best achieve its aspired learning outcomes [6, 16].

As de la Harpe et al. [6: 38] explain, the studio is scrutinised on issues such as ‘best practice in studio; characteristics that are valued and need to be retained, as well as characteristics that need to be discarded; and strategies for change in studio cultures’ [see also 7, 10]. The studio has been criticised for creating an unhealthy ‘clannishness’ between students [5: 65], for encouraging professional isolation [2], for being so internally focused that students are separated from the world in which design is produced [15], and for promoting a singular form of enculturation at the expense of education [22]. The critique reflects the historical origins of the studio as a specialist education associated with distinguished masters.

This paper explores some of the challenges facing the studio through an exploration of its historical origins and its connection to the romantic model of creativity. The paper is divided into two main parts. It begins with an exploration of the historical development of the design studio as a space for teaching and learning. The paper will then trace the changing theories of creativity and discuss how historical perceptions of creativity are reflected in the studio. It is argued that some of the current problems in the design studio, especially as they relate to assessment, can be traced back to a lack of clear alignment between
contemporary studio practice and contemporary models of creativity.\footnote{1}

**THE CHANGING NATURE OF THE DESIGN STUDIO\footnote{2}**

Historically, design was taught according to an apprenticeship or indenture model wherein the student was taught the art of the discipline under the guidance of a mature practitioner. During medieval times, boys around the age of 13 with recognised talent, a suitable background, innate intelligence and natural ability could be offered an apprenticeship. The apprenticeship would normally last around seven years, during which the apprentice learnt though observation, repetition and copying of standard works. When the apprentice could demonstrate the foundation skills of the discipline he would be included in basic design and construction processes. The apprenticeship was typically, as Kostof \cite{11: 80} observes, ‘followed by three or more years of improvement as a journeyman, a time spent on the job gaining practical experience in different types of work.’ This period was a period of travel and observation. It was distinguished from the apprenticeship as a period of learning as the journeyman would be entrusted with responsibility of small projects. Medieval journeymen would be qualified when they could ‘present evidence of the breadth of their practical abilities and knowledge of architecture, in the form of either a completed project or a documented work’ \cite{16: 8}. However, as Kostof \cite{11: 80} stresses, though the apprentices’ technical skills were acknowledged at this stage, they were still expected to seek out patrons that would further educate them in the social and cultural aspects of the profession.

One of the first alternatives to the apprentice model, and the initial version of the design studio, was developed in the 17th and 18th centuries. This refers to the establishment of a range of institutions that were dedicated to the specialist education of arts and architecture; the so-called Académie des Beaux-Arts, later known as the École des Beaux-Arts. These schools took exceptional students and trained them to become artists and architects. Central to the Beaux-Arts model were the atelier or the studio. The atelier was, at least superficially, ‘a large space that had some of the characteristics of an artist’s studio or a craftperson’s workshop’ \cite{16: 8} and which operated under the supervision of a master architect. Here the students would produce designs in response to competitions and commissions earned by the master. Students would emulate the masters’ work until his gifts were recognised in the students.

Central to the atelier model was individual student projects. It relied on the ability of students to work independently on their project, whilst at the same time remain in close proximity, and identify with, ‘a larger group occupying the same physical and conceptual space’ \cite{16: 9}. An important part of the atelier model was formal and informal critique, which ‘promoted a particular educational experience based around an intellectual hothouse environment where periods of intense creativity were periodically suspended for passionate debate about design’ \cite{16: 9}. However, the atelier experience was not only about education; it was also about enculturation, about observation and mimicking social and cultural values and behaviours of professional role models \cite{16: 9, 146}. The atelier experiences came to represent an important rite-of-passage for architects of the time, familiarising the students with the profession’s values and norms, beliefs and practices.

A later version of the atelier model is the modernist ‘Bauhaus’ model. In contrast to the Beaux-Arts model which had no set curriculum and, subsequently, no clear structure for learning, the Bauhaus model introduced both a curriculum and a structure of study. This model did, however, remain strongly connected to the idea of a charismatic leader and to the concept that critique is a time to learn and to socialise, maintaining the excluding and exclusive character of particular ateliers.

The atelier model represents the first academic tradition of architecture and design. The second tradition became prominent during the 19th century as a response to the rise of the major industrial economies of England and France. With industrialisation and the advent of mass production, there was a call for new educational methods that could more quickly and efficiently train apprentices. Accordingly, there was a sustained growth of technical training across many fields, breaking the long protected technical knowledge held by various associations, guilds and lodges and allowing a greater inclusion of successors. The typical 19th century approach to technical education was founded upon the apprenticeship system’s three-fold themes of observation, repetition and demonstration. This was supplemented with a conceptual framework that identified and classified the various skills and knowledge required. Importantly, rather than replacing the apprenticeship model, technical education operated in parallel with it. Accordingly, a typical architectural student would work in an office during the day but attend classes at a technical college in the evening. Whereas the atelier models privileged the art of architecture and

\footnote{1}{The paper forms part of the Australian Learning and Teaching Council (ALTC) funded project entitled Assessing Creativity: Strategies and Tools to Support Teaching and Learning in Architecture and Design, which considers the assessment of creativity in higher education in Australia. The project aims to arrive at a model of creativity and a set of strategies for assessing creativity in design education. The project is ongoing but is set to finish at the end of 2011.}

\footnote{2}{This section is based upon the discussion ‘A historical perspective’ published by Ostwald and Williams as part of the book Understanding Architectural Education in Australasia \cite{17}.}
emphasised the process of enculturation and socialisation, the technical model focused on intricate sequences of skills and demonstrations of competencies.

Despite the development of the two academic traditions, variations of the apprenticeship model remained common into the 20th century. The first design discipline to make the final move to the learned academies was architecture, later followed by interior design, industrial design, fashion design and landscape design. The transition of architectural education from the industry setting occurred in stages that largely coincided with the development of the profession itself. In an effort to separate itself from engineering and to evolve as a profession in its own right, architecture ‘took the strategic step of claiming that their primary expertise was the art of design’ [16: 10]. To maintain this position, architecture (later followed by the other design disciplines) had to adopt appropriate teaching methods. As a result, the École atelier model spread as a principle characteristic of the profession’s educational needs, establishing the studio as a central element of architecture and design education.

The contemporary design studios reflects its historical origins in its ongoing emphasis on the design project, in the prevailing role of a pedagogical approach that encourages the development of primary solutions for further resolution, and in the continuous weight placed upon studio culture and enculturation. However, there is no longer one distinct model of the studio, and despite the level of importance accorded to the studio in design curricula and the resources supporting it, there is no single definition of a ‘studio’. Embodied in the modern concept of the studio are ‘a physical teaching space, a teaching “mode”, a curriculum model, a form of facilitation, an assessment type and a feedback mechanism’ [16: 146].

During a study of architectural education in Australasia, Ostwald and Williams [16, 17] found that the types of studios operating in this region range from ‘the fully integrated studio with a cohesive and amalgamated curriculum that is taught in a space that provides students with 24 hour access to facilities and a place to work collaboratively’ to a system ‘wherein students have timetabled hours in groups, but effectively make an individual appointment (within these hours) to talk to a tutor in that staff member’s office’ [16: 146]. In the middle of this continuum is an approach where the studio ‘is a timetabled tutorial session where students come together to interact with their tutor in a space which, physically at least, resembles a classroom’ [16: 146]. Accordingly, there is vast variation in the physical and practical nature of the modern design studio. The notion of ‘the studio’ in many respects reflect a pedagogical approach or philosophy that has a focus on design, facilitates creative thinking, is centred on a project, is concerned with integration, and promotes enculturation. Regardless of the form of the studio, it provides the students with regular opportunities to interact with each other and an experienced instructor over an extended period of time. It is a place where students can get individual direction on their projects and feedback on progress. According to Ostwald and Williams [16: 147], this very opportunity for interaction is today seen as the fundamental benefit of the studio experience, more so than the physical environment.

After its initial introduction to academia, architecture and design education have gone through tremendous changes as tertiary educational disciplines. In Australasia, the last fully integrated studio system was abandoned in the late 1990s and at present no school of architecture offers courses that run traditional atelier studios. Studio teaching is today supplemented with lecture programs or similar, large scale teaching approaches. Moreover, most programs rely on shared teaching with other disciplines that run in parallel with studio teaching. Some studios are multi-disciplinary and multi-cohort. These changes to educational practices have partially ameliorated the common criticisms of the design studio, though as illustrated in the introduction of this paper, issues related to the studio continue to be debated.

**Challenges facing the modern design studio**

In conjunction with the concerns of isolation and singular enculturation there are more practical challenges and criticisms facing the studio. In the discipline based study of architectural education in Australasia, Ostwald and Williams [16] found that the studio is today under serious threat due to three particular issues. Firstly, there is a problem associated with the growing number of students. As student numbers have continued to rise, academics find themselves with insufficient space to accommodate appropriate studio culture and there are insufficient staff numbers to support the large class sizes. Secondly, students appear to give greater priority to paid work than to their education, and, as a result of this, are regularly absent from classes and contribute to a diminished studio culture [see also: 8, 25, 26]. Thirdly, the individualistic nature of studio culture and the focus placed upon complex, heuristic activities suggest that assessment of students’ work inevitably becomes subjective. Though assessment of design generally reflects long-established best teaching practices, it often relies upon the individual assessors’ intuitive understanding of creativity and their taste [4], subsequently failing to meet the heightened expectations of universities and students for systematic, fair and transparent assessment. The first two challenges facing the studio have been explored elsewhere [e.g. 7, 8, 16, 17, 25, 26], and further consideration of these issues are beyond the scope of this paper. Instead, in what follows, we will consider the third challenge facing the design studio and explore how the different models of the design studio are paralleled by changing notions of creativity.
MODELS OF CREATIVITY: ROMANTICISM AND RATIONALISM

The development of the design studio in many ways reflects the gradual move from what is commonly referred to as a ‘romantic’ approach of creativity towards a ‘rationalist’ approach. Romanticism and rationalism represent the two historically dominating models of creativity. These models can be traced back to pre-Christian perspectives, though they have re-emerged throughout history in various guises as, for example, modernism (rationalism) and expressionism (romanticism).

Romanticism in this context refers to the belief that ‘creativity bubbles up from an irrational unconscious, and that rational deliberation interferes with the creative process’ [20: 15]. The romantic model of creativity, also referred to as the inspirational and mystical model, can be traced back to the teachings of philosophers such as Plato (429–347BCE) and Plotin (204–270CE). Both Plato and Plotin attributed creativity to a superhuman force; Plato argued that a creative person would only be able to create what his Muse dictated, whilst Plotin maintained that art could only be beautiful when descended from God [20, 21]. As Sawyer [20: 12] explains, to Plato and Plotin, ‘[t]he artist’s job was not to imitate nature but rather to reveal the sacred and transcendent qualities of nature. Art could only be a pale imitation of the perfection of the world of ideas’. A later version of the romantic model is embedded in Immanuel Kant’s (1724–1804) ideas about aesthetics. In the Kantian notion of creativity, the creative individual is seen to ‘possess an extraordinary innate “gift” that is beyond the grasp of mere mortals’ [4: 100]. In line with Plato and Plotin, the Kantian perspective of the artist emphasises the myth of romantic agony; that is, divine inspiration as being the result of an artists’ undisciplined and unfettered agonised searching [4, 14].

The spiritual aspect of the romantic model is opposed by the rationalist belief in creativity as a process or product ‘generated by the conscious, deliberating, intelligent, rational mind’ [20: 15]. The rationalist perspective can also be traced back to ancient Greece, more specifically to the writings of Aristotle. Aristotle emphasised that conscious work, rationality and deliberation is required in order to complete creative inspirations. In his view, creativity was potentially more quotidian and it included the creation of uncomplicated or predictable objects as acts of creation. It was, however, first during the European Renaissance that the romantic idea of special talent or unusual ability, as manifestations of an outside spirit, was seriously challenged. This epoch valued reason above all, and the emerging rationalist model of creativity emphasised reason, knowledge, training and education as essential to creativity. Philosophers of the time, such as the English philosopher Thomas Hobbes (1588–1679) discarded the idea of the invocation of the Muses, arguing that it was a foolish custom ‘by which a man, enabled to speak wisely from the principles of Nature and his own meditation, loves rather to be thought to speak by inspiration, like a Bagpipe’ [20: 15].

An important change embedded in the rationalist model is the transferral of creative ownership from an external source to the individual actor; what had previously been identified as the divine attribute of great artists and artisans was now recognised as an attribute of their own [1: 18]. Whereas the romantic model proclaimed that the creative individual ‘had a genius’ (that is, a mystical power of protection and good fortune bestows creative ability onto the individual), the rational model spoke of the creative agent as ‘being a genius’ [9]. By the end of the 18th century, the discussion of creative ownership had resulted in four generally accepted distinctions. These include: (a) genius and the supernatural is separate; (b) genius, although exceptional, is potential in all human beings; (c) talent and genius are distinguished from one another; and, (d) the potential and exercise of a genius depend on the political circumstances of the time [1: 22].

These have, as Albert and Runco [1: 22] assert, ‘become the bedrock of our present-day ideas about creativity’. They have had vast implications for issues related to the teaching and learning of creativity and creative skills, allowing the idea of creativity as a skill or ability that can be promoted or fostered to be developed.

The design studio, romanticism and rationalism

If we trace the roots of design education as far back as we have traced the models of creativity, its origin in romanticism is undeniable. In the epic tradition of Greek poetry, it is implied that the first Greek architect, Daedalus, did not require any formal education; his talent was innate. Similarly, there is no account of the education of the architects of the ancient Egyptian empire, with inscriptions of the time suggesting that knowledge was passed down from the gods through the Pharaohs, their terrestrial counterparts [12, 13, 16]. There are, however, accounts in both Egyptian inscriptions and in the Homeric myths of design knowledge being passed down from father to son, or uncle to nephew. The practice of master and pupil relations that were not constrained by family ties grew during the Roman times, and the idea the ideal student should be both naturally gifted and open to instruction took hold. The apprenticeship model which followed and the Beaux-Arts model draw on the ancient idea of the student learning from a master, thus reflecting the idea of romanticism of particularly talented individuals, ‘geniuses’.

The romantic idea of creativity as a gift is evident, in different ways in each of the three main traditions underpinning design education. The apprentice model of vocational education is founded upon the concept that creativity is at least partially innate and that it cannot be wholly taught; only those who show natural giftedness may be chosen as an apprentice and it is only through close association, observation and mimicking of the master’s work the apprentice can allow their natural
abilities to be shaped in appropriate ways. The Beaux-Arts studio model and what is described as ‘cognitive apprenticeship in higher education’ [3] is based on the idea that a person’s creativity can be enabled, strengthened or developed in larger groups and through long and direct association with a talented patron. As with the apprentice model, the Beaux-Arts studio model emphasises creativity as a characteristic of an elite few, but a characteristic that is capable of being shaped. The last tradition, the reproduction model and competency-based teaching models in vocational education, is founded upon the idea that creativity is not innate, and that it can be taught en masse, but the assessment of this creativity typically retains connections to the romantic past. For example, most basic assessment is through reproduction of standards derived from the work of past practitioners [3]. Similarly, for higher levels of creative endeavour, there is rarely a component of the curriculum that contains any teaching directly associated with supporting the development of creativity; thereby reinforcing the latent romanticism of the model.

The tenacity of the romantic notion of creativity as a gift is paradoxical within contemporary teaching milieus as it places creativity beyond the realms of teaching and learning. Indeed, educational approaches in general disregard the idea of creativity as innate and spontaneous. Within educational discourses, creativity is in large part seen as a trait that can be taught, promoted and fostered. Creativity is seen as potential in all human beings and the idea that children should be able to develop their potentialities to the fullest has transformed educational practices. Pedagogical emphasis is today placed on the role of creativity both as a tool for learning and as a desired educational outcome (in terms of enhanced creative ability and performance) [see also: 18]. Thus, within educational circles, a holistic approach that reflects the rationalist model of creativity dominates.

Educational approaches that seek to enhance creative performance and that adopt creativity as a tool for learning resemble the pedagogical approaches of the design disciplines. There has been a move toward student-centred approaches to learning which emphasise problem-based and enquiry-based curricula, and there is an increased emphasis placed on investigative work and inventiveness. Why is it, then, that the design studio is under threat when other disciplines are increasingly adopting similar student-centred, project-based modes for teaching and learning?

**The problem of assessment**

To answer this question, it is necessary to acknowledge the ongoing, yet often subconscious, role of the romantic model of creativity in design. Although design education has typically adopted the rationalist perception of creativity, a degree of subjectivity and individualism remains prevalent, particularly in relation to assessment. Indeed, it is in terms of the question of assessment that the studio is falling under increasing pressure within the contemporary educational climate. Current assessment processes in design tend to be reliant on subjective methods of assessment. Although there is a growing regional trend to develop marking criteria for design and to adopt a complex combination of quality assurance and assessment protocols to provide a level of objectivity, there is a clear distrust within the discipline of this trend and it has often led to further problems [16].

A common method for assessing design is by using expert panels, typically consisting of architectural academics and practitioners. The panel evaluates and provides feedback and a mark or grade. Although the use of expert panels serves to limit the unpredictable nature of subjectivity in design assessment, primarily though the distribution of authority and blame across a group, problems remain. What is often an unstated issue in discussion about panels is the question of criteria. Some panels rely on explicit criteria that contain detailed assessment protocols and marking rubrics. In these circumstances, subjectivity is apparently limited (or at least the degree of subjectivity is controlled within certain parameters). However, at the other end of the scale are panels that receive no preset criteria and that rely on the assessors’ implicit understanding of the task at hand and of creativity (which, directly or indirectly, are assessed as part of a students’ work). This latter practice may work for experienced assessors, and at a particular level of design education, but at other levels and when less experienced assessors are involved, some assessment criteria are necessary. Furthermore, in each of these cases, the language of the assessor is central to the assessment process; if the students cannot understand the criteria for assessment, it is unlikely that they will view the process as an objective one [16].

The question of marking criteria and, not least, consistent and appropriate language is at the core of the critique of studio assessment and is one of the key problems facing design education today. Traditional methods for assessing design are failing to fulfil regional and national quality assurance standards for teaching and learning, and students express concern and dissatisfaction with the process of assessing design [16]. As Ostwald and Williams [16: 155] explain: ‘[s]tudents often have little confidence in their own designs, have a low level of understanding of the discussion and advice they hear in crits, and are unable to articulate how they can improve their work. The compounded uncertainty arising from this situation leads to much of the stress and pressure associated with the design studio’. The problem is twofold: firstly, the traditional role of the master and the idea of an individual with superior gifts or talent remain present in the contemporary studio model, allowing subjective assessment. Efforts to rectify this issue through rigorous assessment protocols lead to the second problem, namely the problem of language and the difficulties of arriving at a common understanding of both the
assessment criteria in general and of creativity specifically.

Creativity is the raison d’être of architecture and design and students’ creative efforts are, directly or indirectly, assessed. This is, however, not always stated. Moreover, students and staff often hold different understandings of what creativity is, further adding to the problem of assessment. The ambiguities surrounding creativity can further complicate the students’ experience of the design studio, many struggling to respond to the tasks they are presented with and experiencing difficulties finding a balance between form and function, originality and appropriateness, demonstration of creativity and demonstration of knowledge. Expanding our understanding of creativity as it relates to design and developing a disciplinary definition of the term will alleviate some of the pressure placed on the design studio as a mode for teaching and learning. Moreover, it may alleviate some of the frustration and dissatisfaction experienced by both students and staff in relation to teaching, learning and assessing creativity, allowing a more detailed and consistent discourse on the issue.

CONCLUSION

Design will always carry its romantic legacy and perhaps the very nature of design means that it will always embody a higher level of subjectivity in both delivery and assessment than other disciplines. Subjective elements will to some extent be reflected in design solutions as a designer brings his or her (embodied) experiences, values and ideas to the design situation. Whether or not this should be called talent, genius, identity, habitus or subjective empiricals is beyond the scope of this paper, as is the question if these are qualities shaped by nature or nurture. However, if the design studio is to survive in the current educational climate – which emphasises quality assurance, transparency and objectivity – a better alignment between contemporary studio practice and contemporary models of creativity is required. By further developing the rationalist framework for teaching and assessing design and developing a rationalist model of creativity that acknowledges the role of subjective empirical, and by arriving at a disciplinary agreement of what creativity is, the problems associated with subjectivity may be addressed and the design studio as a contemporary mode for teaching and learning be improved.3

REFERENCES


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25. Williams, A., Askland, H.H. and Ostwald, M.J. Changes in students’ attitudes toward architectural education AISBEE (All Ireland Symposium on Built Environment Education), Belfast Campus, University of Ulster, 2010.