

## **ASSESSING CREATIVITY: PROPOSITION**

**Hedda Haugen ASKLAND, Michael J OSTWALD and Anthony WILLIAMS**  
The University of Newcastle, Australia

### **ABSTRACT**

The assessment of creative works is one of the more contentious issues facing contemporary design educators. This situation was first recognised by Donald Schön [1] in his early work on formative assessment in studio environments, and it is a problem that has, since that time, been explored by a range of scholars [2, 3]. In a recent study on architectural education in Australasia, Ostwald and Williams [3] argue that the rise of quality assurance mechanisms for assessment and teaching has placed particular pressure on traditional assessment methods and processes. Traditional assessment practice has often relied on the assessors' subjective judgement along with a tacit understanding of what is creative. This practice is inappropriate from a quality assurance perspective. However, it dramatises the contemporary shift in thinking about assessment processes, to include legal and managerial expectations. Regardless of whether these changes in educational culture are reasonable or not, the fact remains that there is increasing pressure on teaching and assessment processes, with particular issues facing the assessment of creativity. This paper discusses the issue of assessment in design education and proposes a general conceptual framework for assessing the creative works of design students. The framework, which has been developed as part of an ongoing project, is discussed in the context of design academics' and students' perceptions of creativity and their experiences of assessing creativity or having their creative works assessed.

*Keywords: Assessment, design education, conceptual development, creativity*

### **1 INTRODUCTION**

The assessment of creative works remains a problematic proposition despite the efforts of many scholars who have sought to clarify and then respond to key concerns [e.g. 1, 2]. One of the problems related to the assessment of creativity is the lack of a clear, unambiguous definition of the term. As a discipline, design has no common approach to the concept and creativity remains a divisive topic [4]. The fuzzy, or often non-existent definition of creativity, along with undue expectations of precision and specificity related to marking creative works, represents a weakness in the assessment systems of many design schools. As a result, students often do not know what is expected of them and many experience frustration, unease and enhanced stress in relation to their creative tasks [3]. A related problem concerns the pressure placed on traditional assessment methods as a consequence of the rise of quality assurance mechanisms for assessment and teaching [3]. Traditional assessment practices tend to be based around a combination of subjective judgement and tacit understandings. Such practices and assumptions are inappropriate from a quality assurance perspective. Moreover, they position the assessment process first as a legal and managerial process, and only thereafter as a teaching and learning practice. Whether or not this is a reasonable situation is beyond the scope of the present paper, but the fact remains that there is increasing pressure on teaching and assessment processes in regard to the demonstrability of fair and effective assessment of creativity.

This paper explores the issue of the assessment of creativity in design education and presents a general model of the process. It forms part of the ongoing Australian Learning and Teaching Council (ALTC) funded project *Assessing Creativity: Strategies and Tools to Support Teaching and Learning in Architecture and Design*, which is set to complete in October this year.<sup>1</sup> The paper is based on data

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derived from semi-structured interviews with 14 design academics and focus groups with students at three Australian universities.<sup>2</sup> It is divided into three main parts: first, it provides a brief discussion about assessment and learning, which is related to a general conceptual framework of the assessment process. Second, it discusses creativity in relation to the proposed framework and relates this to current issues of assessment as identified through the semi-structured interviews with design academics. Third, based on the observation that assessment of creativity in design requires consideration of the concept as it relates to the discipline, a proposition is forwarded that argues for a multifaceted conceptualisation of the concept.

## **2 THE ASSESSMENT PROCESS – A GENERAL MODEL**

Assessment serves a range of purposes, including certification and accreditation, selection, assuring quality and maintaining standards, motivation, description, and improving learning and teaching [5]. The focus for this paper, however, is assessment as the process of setting apart ‘appropriate standards and criteria and making judgement about quality’ [6:151]. More specifically, it approaches assessment as ‘the making of judgements about how students’ work meets appropriate standards’ [7:1]. The authors adopt the perspective elucidated by David Boud and his colleagues in the ALTC report *Assessment 2020*, in which assessment is identified as a central feature of teaching and an integral part of the curriculum. Assessment, Boud and his associates [7:1] argue, ‘powerfully frames how students learn and what students achieve. It is one of the most significant influences on students’ experience of higher education and all that they gain from it.’

Assessment and assessment practices have a huge impact on the quality of learning; it plays a key role in fostering learning and in the certification of students [7:1]. Hence, it goes without saying that assessment practices must reflect the desired learning outcomes of any discipline. Assessment is intimately linked to a university’s or a faculty’s mission and goals [8:3] and assessment tasks define what is regarded as important for learning. The modes of assessment—summative and formative—guide learning by establishing the agenda for learning, directing attention to what matters, fostering student self-regulation, providing information about progress, and encouraging reflection [6]. As such, assessment should develop students’ ability to make informed judgements; it should support the construction of reflexive learners and inform the process of fostering new practitioners [7].

These arguments indicate the importance of acknowledging the wider context within which assessment and aspired higher education outcomes are placed. Various groups, including policy makers, professional associations, industry groups and communities more generally, have a vested interest in the education of graduates who have particular attributes and skills. Community standards, professional bodies and accreditation agencies may explicitly and implicitly foster, regulate or constrain the development of these attributes to ensure graduates that fulfil the requirements of particular industries and society more generally. By explicitly articulating core skills and attributes, universities, faculties, industry and professional bodies ‘set the agenda for what is to be taught and assessed in a programme of study’ [9:29]. Thus, the assessment process should ensure that these skills and attributes are addressed and, moreover, provide an indication to the various stakeholders of how graduates are positioned in relation to essential skills and attributes.

In this context, of externally driven or aspirational performance criteria, so-called ‘graduate attributes’ have received considerable attention in recent years. Graduate attributes refers to ‘the qualities, skills and understandings a university community agrees its students should develop during their time with the institution. These attributes include but go beyond the disciplinary expertise or technical knowledge that has traditionally formed the core of most university courses. They are qualities that also prepare graduates as agents of social good in an unknown future’ [10, cited in 11:1]. Graduate attributes draw on the perspective and agenda of a number of stakeholders, not least the university or faculty itself. As explained in The University of Newcastle’s Graduate Attributes Policy [12], the graduate attributes ‘reflect the University’s scholarly values in relation to teaching and research, the employability of its graduates and its partnerships with the community.’ The domains of graduate

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<sup>2</sup> The interviews and focus groups explored staff and student perceptions of creativity and experiences of either assessing creativity or having creative works assessed. The project team is half way through the data collection process, with further interviews and focus groups to be conducted in the period of March-April 2011. The framework presented here represents an intermediate stage and subsequent analysis will further inform the issues discussed.

attributes—that is, the graduate abilities that transcend disciplinary outcomes—are mapped and integrated into the teaching and assessment of all undergraduate curricula. This process is illustrated in Figure 1, which presents a general model of the assessment process. The model represents a generally accepted approach to assessment, in which there is a clear correspondence between desired learning outcomes/graduate attributes, subjective aims, the curriculum, intended learning outcomes, teaching and learning activities, assessment tasks and assessment methods.

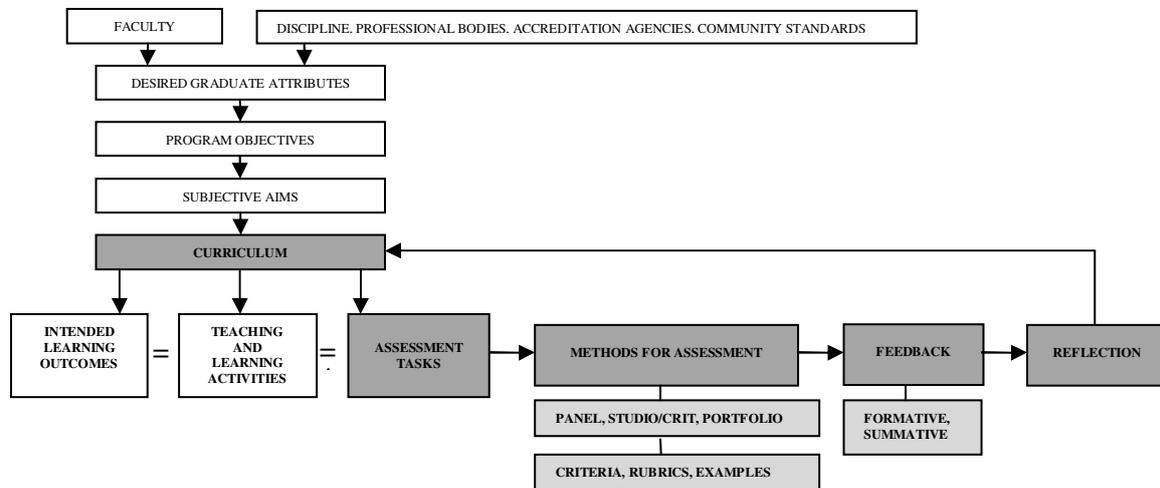


Figure 1. A general model of the assessment process [adapted from 8:16, 9:30]

The model suggests a way of understanding the various stages of the assessment process and illustrates the many factors that should be considered when designing a curriculum, planning assessment tasks and choosing methods for assessment. It illustrates the importance of individual disciplines to acknowledge the greater context of which it is part, as well as the need for systematic and strategic alignment of assessment tasks and methods with the curriculum, the more general subject aims and program objectives, the intended learning outcomes, and the teaching and learning activities. The model also demonstrates the ongoing process of transformation and negotiation, whereby the reliability and validity of the assessment tasks are considered in light of the feedback provided to and from students and the reflection resulting from the assessment process. The examples of assessment methods (panel-, studio/crit-, portfolio-assessment) and the associated assessment tools (criteria, rubrics, examples) are drawn from the primary data collected in relation to the study of which this paper forms part. These will not be considered here, rather, the focus of the remainder of the paper is on the issue of creativity in design education.

### 3 CREATIVITY AS AN INTENDED LEARNING OUTCOME

Creativity is emphasised within design education and it is a stated learning outcome of the discipline. It also forms part of the more general graduate attributes of a range of Australian universities, including The University of Newcastle, The University of Sydney, The University of Adelaide and The University of South Australia, amongst others [13]. The University of Newcastle's Graduate Attributes Policy [12] states that the University's graduates 'will be enabled to apply logical, critical and *creative* thinking to the advancement of knowledge and understanding' [authors' emphasis]. Similarly, the Faculty of Architecture at The University of Sydney states that their graduates will be able 'to think critically, *creatively* and imaginatively' [14, authors' emphasis]. Based on the conceptual framework presented above, these graduate attributes should be reflected in the program objectives, subjective aims of specific courses and the curriculum. Furthermore, they should be part of the intended learning outcomes, teaching and learning activities and the assessment tasks. Indeed, all the academics who have participated in this study argued that creativity forms part of the programs and courses that they teach and that it is an important skill to develop and foster. As one of the participants' observed, developing the students' creative abilities is important as it represents a tool with which the students can meet future challenges. He claimed that: 'in architecture, like a lot of other professions, the situations that you get placed in are varied, so you can't give the students every single situation, you've simply got to give them some situations and give them the tools to solve it.'

Despite the importance of creativity as a design tool and its subsequent position as a key learning outcome, many of the academics interviewed explained that they do not assess creativity. Often, it is simply assumed that creativity is present in the final product. Creativity is seen a necessary bi-product of the process that the students go through; that is, for the students to arrive at a design solution to an assessment task, they will have to engage in a creative process. Expressing a sense of embarrassment over the lack of direct consideration of creativity, one of the academics said that: '[w]e don't actually have a weighting for [creativity]! It's assumed that [students] have [creative ability ...] we just assume that creativity is there.' In a similar fashion, another participant explained that he does not formally weight creativity as 'it's just so integrated. How do you assess it as an individual thing? And it happens in all facets of what a student might produce, it's very evident. I don't think it needs to be assessed independently. I think you can look at the design, and if it's a wonderful design, then it will be creative. One can't exist without the other.'

The interviews reveal that creativity is often assessed and marked indirectly through consideration of the process leading to the final product. Academics often value a 'creative approach'; that is, they will give credit to students who take risks and expand the boundaries of what they are doing. As one participant explained: 'the more [the students] challenge [the brief], and the more risks they take, the more there is to gain. And so it's not called creativity *per se*, but I think that's where the zone of innovation and creativity is thought to exist, in the taking of risks and the expanding of thinking and expanding the boundaries of the way we do things. So it's factored in that process and the development, and the way they pose the problem and try to tackle the problems [...]. So [creativity is] probably there [in the assessment], but it's not explicitly categorised as creativity as such.'

The lack of direct engagement with creativity as an assessment criterion can be drawn back to two interconnected issues: (a) the taken-for-granted relationship between creativity and design and the subsequent lack of engagement with the term; and (b) the lack of a clear definition of the term. The term creativity is widely used and has attained many different meanings. It is often associated with novelty and originality, yet folk-perceptions, stereotypes and scientific theories create a complex picture in which ideas of creativity range from being a personal trait of selected few or a common human characteristic, something inert and spontaneous or conscious and rational, something that occurs through isolation, or as something that results from dialogue and engagement. The abstract and ill-defined character of the term is evident in the graduate attributes discussed previously. In the various graduate attribute policies of Australian universities, creativity is referred to as a thinking skill, a research skill, a personal trait, a problem solving skill, a characteristic of quality research and as a feature of scholarship [13].

The interviews and focus groups reveal a similar lack of clarity at the disciplinary level. Staff and students pose a range of understandings in which creativity is perceived as reflecting process, desire, aesthetics, efficient and practical solutions, problem solving, products, originality, innovation, novelty, free expressions, reinterpretations, imagination, lateral thinking, flow, personal traits, mastery of field, and transformation. Some replace the concept of creativity with other terms, such as design intelligence, mobilisation of knowledge, unobvious answers, commentary on the future, and innovative spatial trajectory. This practice causes an illusion of conceptual stability and, though it may appear to solve the conceptual problem, it carries potential for confusion and may increase ambiguity and reduce the validity and reliability of the assessment system.

One of the consequences of replacing the concept of creativity is that, whereas the graduate attributes suggest that the mark a student has received should be a reflection on particular core attributes and skills—in this circumstance, creativity—there may not have been consideration of creativity as such. This can be exemplified by a quote from one of the academics who explained that he avoids using the term creativity in his teaching and assessment. Instead, he adopts Michael Speaks' concept of 'design intelligence', which refers to the attempts to find inventive solutions. This concept, he argues, is 'similar to creativity, in formulation, but it's not the same.' Moreover, the act of replacing the concept does not necessarily solve the practical problem of assessing creativity, and what to assess and how to assess remains unclear. As the academic cited above explained, 'you can't assess [it]. When I assess, I'm not actually assessing for design intelligence. Most of the time what I'm assessing for is that [students] are able to identify an idea, and they are able to articulate it verbally and architecturally [...] My emphasis is on how well [students] are able to get their idea, and express their idea, and how consistent the project stays to the development of the idea [...] The main focus of assessing, for me, is the clarity and the development of the ideas, through the architectural project.' This statement reflects

a highly considered approach to assessment. It is supported by provision of assessment criteria, as well as information provided in tutorials and lectures, a practice that is common across the spectrum of participants. However, it can be argued that rubrics, criteria and briefing lose some of their functionality due to the inconsistent use of words and the interchanging and overlapping nature of concepts. This may be confusing to both tutors and students. In fact, when asked how their creative works are assessed, students across the three universities express uncertainty; they do not have a clear understanding of how creativity is assessed and how it relates to other concepts that they engage with through their courses.

The difficulties of identifying and articulating what creativity is about in the context of design education was highlighted by one of the academics who argued that: 'I have this hunch that creativity is something as nebulous as health. And if we think about health, we can very easily come up with a series of conditions that will make us sick, whether it's being locked in a dark, damp place, with you know, no sunlight and poor nutrition, and for sure you'll get sick. But you can't really come up with a [definition], people have tried [...] so I have a hunch that creativity is something like that, that we can imagine a system that would stifle creativity, but it would be hard to really make a system that would ensure it, ensure that you are creative.' As a stated learning outcome and an integral part of design curricula, valid assessment requires articulated teaching and learning activities and clear assessment tasks that align with the idea of producing creative outcomes. However, as the citation above suggests, there is no clear answer to how design academics may teach, foster and promote creativity. This is a reflection of the confusion and ambiguity surrounding the term; how can you teach and assess something you cannot define? These observations call for a consideration of what creativity means in the context of design education.

#### **4 PROPOSITION**

Morgan, O'Reilly and Parry [9:145] argue that '[c]reativity has different meaning in terms of practical outcomes in different disciplinary and professional settings'. Differences often reflect the 'pre-eminence of form or function in creative activity' [9:145], and certain dimensions may be given different prominence depending on the discipline. All disciplines do, however, seem to share the idea that for creativity to emerge there has to be a blend of theoretical understanding, technical competence, lateral thinking and critical analysis, problem solving and concept generation, and innovation [9:145]. This commonality suggests that it should be possible to arrive at an overriding, inter-disciplinary conceptualisation of creativity. Such a conceptualisation has to be broad enough to allow disciplinary variation at a more detailed, practical level where disciplinary knowledge, boundaries, values and standards guide creative agency.

Based on an extensive review of the literature, a symposium with 22 senior academics, and 39 short written responses from senior design academics and creativity researchers to the question of 'what is creativity', we have proposed in previous publications [e.g. 4] that creativity, in the context of design education, has to be seen as a human potential with a progressive nature. Creativity, we argue, is not solely an outcome of a linear problem-solving process, nor is it the result of individual's skills and abilities seen in isolation. Rather, creativity results from an ongoing process of negotiation and transformation of problems and sub-problems, solutions and sub-solutions. This process is framed by experiences, knowledge, skills and personalities brought to the problem by an individual or a group, as well as by the context in which the problem is placed and to which it responds. Accordingly, understanding creativity as it relates to design and design education requires acknowledgement of process and product, as well as the social and individual aspects that guide these; that is, creativity is a complex and multifaceted phenomenon that incorporates factors related to person, product, process and press (environment) [15].

By adopting such a multifaceted approach and educating students about the complexity of creativity as a concept, as a phenomenon and as practice, design academics may go some way to resolve the ambiguity that exist in relation to creativity in design, and, subsequently, positively inform design education and practice. However, assessing and teaching creativity also requires an open dialogue with students through which they can engage with the concept and the creative tasks they have been set to do. Students have to critically engage in a process of self- and peer-assessment and learn through such formative assessment processes about themselves as creative agents, the creative processes they engage in, the various factors that influence their creative opportunities, and the (relative) value of the creative product. As with any other aspects of learning that are subject to assessment, students must

have the opportunity to familiarise themselves with the particular (discipline-specific) concepts they relate to. This does not suggest the need for a simplistic definition of the concept; indeed, any efforts to define the concept of creativity as it relates to the discipline of design must acknowledge the complexity at stake. It is not the purpose of the project on which this paper is based to arrive at a final conclusion on what creativity is in relation to design or how creativity forms part of design processes. It is acknowledged that there may not be one single answer to these questions, and any attempts at defining creativity in design have to be aware of the level of variation that exists within the discipline itself. We propose the idea about a multifaceted approach to creativity as a common framework, an umbrella, under which more specific understandings and definitions related to the various sub-disciplines can be proposed.

## 5 CONCLUSION

The purpose of this paper is to begin the process of leading discussion and thinking about how creativity forms part of a broader assessment framework. It argues that assessment practices must be considered in terms of the greater context in which they are positioned. Moreover, it claims that valid assessment requires an acknowledgement of and alignment between curriculum, intended learning outcomes, teaching and learning practices, and assessment tasks. Valid assessment of creativity requires an understanding of what creativity means in the context of design education, how it forms part of educational practice, and how it may be assessed in an open and direct manner. The project on which the paper is based will continue to explore the concept of creativity and work on a best-practice model for assessing creativity in design education. The project ultimately aims to create a conceptual framework for understanding creativity, to generate a set of shared terms and concepts, and propose a set of best practice models that can be used when assessing the creative component of students' work.

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