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## Assessing creativity in a 'New Generation' architecture degree



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THINKING SKILLS

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#### ABSTRACT

The creative aspect of architecture remains a contentious issue, especially in terms of teaching and assessing at the tertiary level. Whereas creativity is generally acknowledged as an essential component of the design process, where and how it fits into the overall structure remains open to contestation. This paper develops an argument that identifying creativity as an alternate to expertise, allows teaching, learning and assessment to focus on process and product, especially in the Design Studio context. To normalize assessment a scoring rubric based on observed leaning outcomes that accommodate the development of expertise and creativity as aspects of both product and process generated.

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#### 1. Introduction

The notion of how creativity becomes manifest in architecture has long vexed academic discourse because the definition of creativity as a professional attribute of architects remains elusive. Nearly a century ago Otto Rank (Rank, 1932) suggested a classificatory scale of creativity as a personal trait with three recognizable features: adapting to the social norms, rebelling against the social norms and moving beyond the social norms to satisfy an innate drive to create. Rank's theory retains some traction today: instruments such as the Revised NEO Personality Inventory (Costa & McCrae, 1992) are used to suggest that creative people are substantially more neurotic and somewhat more extroverted than non-creative people (Gelade, 1997). Interestingly, the study also indicated that creative people are less conscientious. More recently it has been argued (Lehrer, 2012) that rather than neuroses being the driver of creative thought, it is the ability to form unexpected neural links to connect hitherto unconnected stored data.

Mackinnon (1965) compared three "samples" of architects. Sample I consisted of highly creative architects; Sample II of architects with at "least two years of work experience and association with" highly creative architects; and Sample III of architects who had never worked with highly creative architects. Sample I architects actualized their creative potential, whereas Sample III architects resorted to the more conventional standards of society and of their profession". Sample II architects displayed an overlap of both groups. In Rankian terms Sample III architects are at the stage of having adapted to social/professional norms, while Sample I architects have progressed to operating beyond social/professional norms. MacKinnon sums up his study by stating that

Rank described the adapted man as one who most fully incorporates within himself the norms and dictates of society; 98% of our least creative Architects III check the adjective conscientious. He described the creative man, the artist, as one who in large measure creates his own reality; 98% of creative Architects I say they are imaginative. In describing the conflicted neurotic type, Rank observed, as many others also have, the relation of neurosis to civilization; the

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adjective checked most often, by 98% of our intermediate Architects II, is the adjective civilized (Mackinnon, 1965; p281).

Rather than leave Sample II architects as neurotic, Mackinnon argues that they are in a transitional stage. To suggest nowadays that amongst architects' conscientiousness is the opposite of imagination and that civility is a socio-professional interregnum between the two, would require more substantive support to say the least. Rank was strongly influenced by the emerging psychoanalysis of Freud and despite little of that theory retaining academic credibility (Crews, 1966), its influence is particularly evident in studies such as MacKinnon's where the focus of creativity being on the person rather than on the process or the product. One of the problems with studies that focus on the person rather than the process or product is that inevitably they are analyses of self-reporting. Both the self-reporting and the analysis of the gathered data are interpretative and contestable.

#### 2. Defining creativity

Creativity is widely considered to be a cornerstone of architecture, and most if not all university programs refer to it as a desirable graduate attribute or intended learning outcome (Williams & Askland, 2012) However, it remains a contentious and ill-defined concept, with a long history of propositions and contestations. As Jones, Rodgers, and Nicholl (2013) assert,

Despite the enormous amounts of research to understand better and support creativity in design . . . it is still difficult to locate any common agreement among researchers on operational definitions of what it means for a designed product, space, experience, service, or system to be 'creative' (Jones et al., 2013:1).

There is broad consensus that creativity involves a human process that leads to a product:

Creativity is the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context (Plucker, Beghetto, & Dow, 2004: 90).

Further, the notion of a person being creative has a deal of traction in current literature. Finally, there is growing support for an environment having agency in creativity (Sternberg, 2006; Suwala, 2012; Williams, Ostwald, & Askland, 2010). However, although person, place, process and product are generally considered key aspects of creativity, it is also noted that a creative person (Landry, 2012) working in a creative environment (either virtual (Bhagwatwar, Massey, & Dennis, 2013) or corporeal (Junaidy & Nagai, 2013), engaging a creative process (Paley, 2010) may, as Harold Osbourne points out, still not end up with a creative product (Osborne, 2012), which hints at a suggestion that the process and product may be as much accidental or incidental as it is intentional (Austin, Devin, & Sullivan, 2012) and that the tag creative is a socially constructed response to, rather than inherent in, the product.

Much of the contention surrounding the definition of creativity as a process results from the central place given to the occurrence of a significant event – the so-called 'creative leap', a sudden insight that is almost immediately recognized as a solution (Dorst & Cross, 2001). However, that recognition is necessarily retrospective and consequently not entirely or unquestionably reliable: even the creator who is aware that a creative act has occurred may not be able to articulate how (or why) it occurred. Moreover, they argue, studying creativity in design can be problematic because there can be no guarantee that a creative leap actually will occur during a design process.

The notion of a leap suggests the crossing of a gap, with an implied corollary of it being a leap into the unknown. In more prosaic terms, a creative leap refers to an unexpected association that crosses knowledge domains (Rouse & Morris, 1986). Although knowledge domains remain a vaguely defined abstraction, in general the term refers to neural networks associated by linked triggers. By way of illustration, experts possess and can readily access extensive and highly integrated bodies of knowledge within a domain where the layman will have one larger but less sophisticated domain (Alexander, 2003). Experts are adept at seeing the underlying structure of a problem, and are able to easily select appropriate procedures for solving it. Expertise differs from creativity in that the former is acquired through repetitive practice that establishes neural pathways and/or muscle memories, whereas the latter involves the access of cross-domain knowledge and hitherto untried procedural steps. Here the scale of creativity be-comes apparent: ranging from the creative leap made by an expert that is so small that only other experts will recognize it as such, to watershed epiphanies that change the world forever. Nonetheless, each is a leap and each is creative in that it deviates from a standardized procedure.

The proposed understanding of who can do such creative leaping has developed over time from the individual artistic genius of the past to the collaborated output of the collective of the present. Glăveanu (2010) sums up the development as a continuum from the He-paradigm, which sees creativity as inspired genius, via the I-paradigm, which argues that everyone is creative, to the We-paradigm, which sees creativity as cumulative, collaborative and contextual. Rather than seeing each of these paradigms as replacing the previous one, it may be more profitable to consider them as complementary and not necessarily exclusive.

To exploit a multi-faceted conception of creativity in the pedagogical context, the focus is returned to learning and teaching. There seems to be little doubt that in the first instance, the creative process is both cognitive and affective (Demirkan & Afacan, 2012; Oettingen, Marquardt, & Gollwitzer, 2012; Wang & Chen, 2012). Initially the ideation process involves propositions and responses ('if-then' statements) that draw on extant knowledge domains (Rutter et al., 2012;

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