CREATIVITY IN CLASSROOM SETTINGS: MULTIPLE PATHS ARE THE RULE, NOT THE EXCEPTION

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This theoretical paper is driven by the question, "What does creativity look like in classroom settings?" It is motivated by my past experiences as a teacher: my stories and my students' stories as we struggled together within a restricted classroom environment to create enough space for our creativity to emerge and flourish. I suggest seven metaphors that can be used to describe creativity as it may apply to classroom contexts: overcoming obstacles, or creative desperation, divergent thinking, or thinking outside the box, assembling things in new ways, route-finding, expanding possibilities, collaborative emergence, and birthing, or originating.

THEORETICAL FRAMEWORK

Some truisms underlie the work of educators. For example, it is hard to predict how the future will look, or to decide precisely what knowledge will have worth. At the same time, it is important to remember that the future will be different and complex, and "future generations will understand differently" (Jardine, Clifford, & Friesen, 2003, p. 54). That is why students will need to be effectively cultivated in ways that prepare them to navigate the increasingly complex and ill-defined nature of life in the twenty-first century. According to Sawyer (2011), effective creative learning needs the collaboration of educators and learners while they are improvising together within the structures provided by the curriculum and the teachers. He indicated that we need to teach in a way that prepares our students to use what they learn creatively, and we also need to develop our students' thinking skills.

Researchers in creativity see it as an essential life skill and recommend that it should be fostered by the education system (Burnard & White, 2008; Craft, 2000; Sawyer, 2011). For example, Burnard and White (2008) suggested that creativity is needed to meet the multiple demands of life in the twenty-first century, which call for enhanced skills of adaptation, flexibility, initiative and the ability to use knowledge in different ways. They argued that, in order to foster creativity in classroom settings, teachers need to have pedagogical autonomy, professional agency, and a free space to work outside the safe, the known and the predictable. More importantly, teachers also need creative collaboration in genuine partnership with learning communities and amongst educators. Through this reconceptualization of pedagogy, Burnard and White indicated a hope that educators will reassert ownership of education and develop future learning and teaching practices that embrace, value and foster creativity. According to them, risk-taking is an essential element in creativity and learning. They argued that "in order to meet the future head on, teachers need to develop a willingness to be courageous, daring and reflexive" (p. 676).

However, before we can talk about reconceptualization of pedagogy for purposes like teaching for creativity or learning creatively and promoting creativity in classroom settings, it is important that we as researchers and educators address the question, "What does creativity look

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like in classroom settings?" To answer this question, this paper suggests a number of metaphors to describe the experience of creativity as it may emerge in classroom settings.

Recently I read a book titled *Seeing What Others Don't: The Remarkable Ways We Gain Insight*, written by Gary Klein in 2013. He concluded that there is more than one way we can get insights. Based on 120 real stories of people whose breakthrough insight into problems led to dramatic discoveries or solutions, he described five insight strategies: connections, coincidences, curiosities, contradictions, and creative desperation. These are embedded in his Triple Path Model, which consists of connections, contradictions and creative desperation; coincidences and curiosities are considered part of the connections path. For me, as an educator interested in exploring and promoting creativity in classroom settings, this Triple Path Model represents a launching point to start searching for and recognizing creativity in such settings; it offers a variety of lenses at a variety of levels and scales. According to Klein, "Multiple paths are the rule, not the exception" (p. 107).

Similar to Klein, I faced a challenge when I started to investigate the nature of creativity in classroom settings. I found that although scholars in the field of education have generated a strong literature base promoting learning for, fostering, and characterizing creativity (Haylock, 1997; Leikin, 2009; Silver, 1997), only a few of the current definitions of creativity are suited to the distributed and collective enterprise of the classroom. This does not mean that earlier accounts are wrong or unfruitful; on the contrary, they provide food for thought on creativity. They may, however, be incomplete given that they mostly restrict themselves to one path, vision, description, or experience of creativity. Because of such incompleteness, "people seem to be talking past each other" (Klein, 2013, p. 108).

A brief tracking of the origins and uses of the word *creativity* in different cultures indicates that this word reflects a kind of biological fruitfulness, which means to bring something new into being. This definition is why most scholars in the field of creativity suggest newness and fruitfulness as two criteria for judging creativity. The richness of the word *create*, which can be seen through its multiple synonyms, such as innovate, imagine, or inspire, requires a kind of description that can reflect such richness, and that is why it may be better to start to think of some metaphors for creativity that can encompass these different facets.

METHODS AND DATA SOURCES

Torrance (1988) claimed that although there have been many attempts to define creativity, it still defies precise definition. According to him, it seems unseen, nonverbal, and unconscious, but it also involves every sense and extrasensory perception. Despite such claims about creativity, when we want to study creativity, it seems unavoidable to approximate a description as a framework. What is creativity? Is it possible to think of a well-established definition that is widely accepted, and which is applicable in classroom settings?

Following Klein's (2013) steps towards his Triple Path Model of gaining insight, the focus here will be on how we gain insight, and not on what insight means. Klein used very simple words to describe the insight event as "unexpected transitions from a mediocre story to a better one" (p. 23). According to him, "the experience is more noticeable than the achievement" (p. 22). Therefore, it may be more appropriate to describe creativity in classroom settings based on the actions and doings of the classroom community while they are working on good problematic situations, ones that require a learner or a group of learners to "to develop a more productive way of thinking about [them]" (Lesh & Zawojewski, 2007, p. 782).

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Based on Tardif and Sternberg's (1988) claim that creativity in real life exists in many different forms, I conducted a review of literature on creativity in the field of education with a special concentration on creativity as it applies to classroom contexts. Based on this review, I developed a number of themes, which I then combined and recombined over successive iterations until I had seven themes in the form of metaphors that encompassed all of the literature I reviewed. I suggest that these metaphors can be used to describe creativity as it applies to classroom settings. I suggest metaphors to describe creativity in the field of education because metaphorical expressions can help us to explain, articulate, and define unfamiliar, complex and hard-to-define concepts or phenomena using familiar, concrete, and well-known expressions (Van Engen, 2008).

RESULTS

Based on an interpretive review of the literature about creativity, I suggest seven metaphors that can be used to describe creativity as it may apply to classroom contexts. This is an attempt to add to our understanding of this phenomenon, and consequently to transform our practice as educators by thinking about how to create and offer genuine classroom opportunities for students to exercise creativity; opportunities that have the potential to transform the classroom into a space of expanding possibilities. The seven metaphors are: overcoming obstacles, or creative desperation; divergent thinking, or thinking outside the box; assembling things in new ways; route-finding; expanding possibilities; collaborative emergence; and birthing, producing, originating, or making something new (Boden, 2004; Craft, 2003; Haylock, 1997; Norris, 2012; Sinclair, Freitas, & Ferrara, 2013; Starko, 2009).

Overcoming obstacles (creative desperation)

I chose overcoming obstacles because this metaphor suggests that the spark of creativity glimmers when we are confronted with a good problem. Craft (2003) used this expression as an aspect of little-c creativity, which, according to her, requires using imagination and therefore defies being judged based on a product-outcome. According to Silver (1997), problem-solving and problem-posing tasks can be used to foster creativity. Such tasks may include less structured, open-ended problems that permit the generation of multiple goals and multiple solutions. An extreme synonym of problem solving is creative desperation or escaping an impasse, which was suggested by Klein (2013) as an insight strategy that requires the discarding of a usual assumption or a preconceived understanding.

Divergent thinking (thinking outside the box)

According to Webster's online dictionary, divergent thinking is creative thinking that may follow many lines of thought and tends to generate original solutions to problems. There are four key components of divergent thinking which can be considered components of creativity; these are: fluency, flexibility, originality, and elaboration. According to Haylock (1984, 1997), divergent production tasks, including problem-solving, problem-posing and redefinition, can be designed to generate responses that can be judged by such criteria as flexibility, originality, and appropriateness. Such tasks should encourage diverging into creative strategies and explorations where students are thinking, feeling, and doing what real professionals do (Mann, 2006).

Assembling (things in new ways)

Creativity includes using what we have creatively, which, in turn, may require finding connections, combining ideas and information, and assembling things in new ways. Klein (2013) argued that our discoveries and our solutions to different problems are all based on the idea of combining and recombining pieces of information to produce new ideas or to understand anew.

Within the same paradigm, insight may eventually be gained by engaging with several events to discover a pattern or other relationship.

Boden (2004) defined creativity as combining familiar ideas in unfamiliar manners. It is a kind of constructing new tools and new outcomes, or new embodiments of knowledge. It constructs new social practices through new relationships, rules, communities of practice and new connections (Knight, 2002).

Understanding creativity as a process of combining; associating, connecting or assembling things or ideas in new ways can be the most convincing metaphor to describe creativity in reference to human beings. We can find this vision of creativity in more than one place in the field of education. For example, Tammadge (1979) described creativity in mathematics as "the ability to see new relationships between techniques and areas of application, some existing but some still to be created" (p. 151). Using what we have creatively includes finding connections, combining ideas and information, and assembling things in new ways.

Route-finding

Koestler (1964) argued that "the creative act is not an act of creation in the sense of the Old Testament. It does not create something out of nothing: it uncovers, selects, re-shuffles, combines and synthesizes already exciting facts, ideas, faculties, skills" (p. 120). This vision of creativity is very close to Craft's (2003) little-c creativity, which may be understood as navigating new pathways, maneuvering, charting a new path, discovering, uncovering, or tracing.

Expanding possibilities: being imaginative, asking questions, and playing

To be creative, according to Norris (2012), means "to be in a state of openness to the unknown, a place of possibilities, a place that a playful environment fosters" (p. 300). There are a considerable number of definitions of creativity that use imaginative activities and/or play to describe creativity. For example, Craft (2000) argued that one of the engines for little-c creativity is possibility; i.e., using imagination, asking questions, and playing. Craft described "possibility thinking" as "refusing to be stumped by circumstances, but being imaginative in order to find a way around a problem or in order to make sense of a puzzle" (p. 3). Roberge and Gagnon (2012) described creativity as "the ability to use imagination, insight and intellect, as well as feeling and emotion, to move an idea from its present state to an alternate, previously unexplored state" (p. 34). According to Huebner (1999), imagination is "at the core of educational phenomena, and it undergirds everything that the educator thinks and does… It shapes the possibilities from which choices for perceiving, knowing, and acting are selected" (p. 436). Children's imagination can best be recognized and promoted through their play, which in turn plays a vital role in enabling acts of creation and co-creation (Norris, 2012). Davis (1996) argued that creativity is a profoundly social phenomenon, given that children's play is "the locus of their incredible creativity" (p. 221).

Collaborative emergence

Imagination and play can be considered improvisational practices, because they involve uncertainty and unpredictability and because they are unscripted. Through the practice of improvisation, creativity may also be a collaborative emergence. Sawyer (1999) conceived of creativity as an emergent phenomenon that results "from the collective activity of social groups. Although collaborative emergence results from the interactions of individuals, these phenomena cannot be understood by simply analysing the members of the group individually" (p. 449). Martin, Towers, and Pirie (2006) suggested that doing and understanding mathematics are creative processes that emerge and should be considered at both the individual and the collective

levels. Sinclair et al. (2013) emphasized the social and the material nature of creativity in classroom settings. Their approach to creativity does not conceive of it as a property or competency of persons but as emergent from their actions and doings. Such measures, according to Sinclair et al. (2013), introduce or catalyse the new; are unusual, unexpected or unscripted; and cannot be exhausted by existent meaning.

Birthing (producing, originating, or making something new)

The word *creativity*, both in its origins and in most of its varied uses, reflects a kind of newness, originality, or novelty. In addition, the new thing that is brought into being is seen as something valuable, fruitful, effective, appropriate, etc. Although the majority of research about creativity supports the claim that originality and appropriateness are the characteristics most immediately associated with creativity, key dilemmas persist in determining to whom something is original and appropriate. For the purpose of describing creativity in classroom settings, both Baer (1997) and Starko (2009) suggested that a product or idea is original to the degree it is original to the creator, and it is appropriate if it meets some goal, purpose, or criteria within a sociocultural context. Craft (2000) conceived of originality as a vast spectrum; at one end there is originality for the originator, and at the other a paradigm-shifting originality.

CONCLUDING REMARKS

Following the argument that learners need to be better equipped to successfully navigate the increasingly complex and ill-defined nature of life in the twenty-first century (Wells & Claxton, 2002), there is agreement on the importance of creativity, and many support the need to reconceptualise pedagogy to teach for creativity and to support learning creatively in classroom settings.

Despite the good work in the field of creativity, it remains unclear how it might look in a classroom setting. This theoretical paper offers seven metaphors to support efforts to describe creativity as it may emerge in classroom settings. These metaphors can be considered design principles for educators to create and offer genuine classroom opportunities for students to exercise creativity; opportunities that have the potential to transform the classroom into a space of expanding possibility.

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