

Springer Book

"Creative Contradictions in Education: Cross Disciplinary Paradoxes and Perspectives"

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Creativity is a paradoxical construct. One reason it's paradoxical is because its definitions tend to be elusive for many people, yet everyone knows creativity when they see it. Numerous other contradictions are present in characterizations of creativity. For instance, most people tend to equate creativity with originality and 'thinking outside of the box,' however creativity researchers note that it often requires constraints (Sternberg & Kaufman, 2010). Some people view creativity as being associated with more clear-cut and legendary contributions, yet creativity researchers have long recognized more everyday and subjective forms of creativity (Craft, 2001; Stein, 1953). People also tend to associate creativity with artistic endeavors (Runco & Pagnani, 2011), yet scientific insights and innovation are some of the clearest examples of creative expression. Although there is general consensus amongst creativity researchers on the defining criteria of creativity, minority views persist from the artistic domain, which view any definition as being too constrictive.

These paradoxes carry over into educational contexts. Consider, for example, mathematics. A sizeable body of literature suggests that learners do not typically experience mathematics as a creative subject (Burton, 2004), yet research mathematicians often describe their field as a highly creative endeavor (Sriraman, 2009). Similarly, educators may feel that content standards stifle their students and their own creativity, yet creativity researchers have argued that such standards can serve as the context for classroom creativity (see Beghetto & Kaufman, 2010). These contradictions place educators in a difficult situation. Consequently, many find themselves feeling caught between the push to promote students' creative thinking skills and the pull to meet external curricular mandates, increased performance monitoring, and various other curricular constraints (Beghetto, 2013). The tensions experienced from these contradictions raise several non-trivial questions for educators, including:

- *Are some subject areas not well suited for creative teaching and learning?*
- *At what point does creativity become too disruptive and counterproductive to teaching and learning?*
- *Can (and should) playful learning and academic rigor coexist in the same learning environment?*
- *Do the costs of incorporating creativity in the classroom outweigh the potential benefits?*
- *Is creativity best thought of as an educational goal or a means to attaining some other educational ends?*
- *Is cultivating creativity best approached as a curricular or extra-curricular activity?*
- *Is it possible to reconcile the pressure to have students' reproduce existing knowledge with efforts aimed at helping students develop their*

ability to produce new knowledge (i.e., moving from consuming to creating content)?

- *Should classroom creativity be approached at the individual or group level?*
- *Should teachers take a more improvisational approach to teaching, if so when, how, and at what potential cost?*
- *What are some of the most promising approaches for supporting creativity and are these approaches compatible with academic learning?*
- *What do teachers risk when they attempt to teach for and with creativity?*
- *What is the relationship between teaching with creativity (creative teachers) and teaching for creativity (creative students)?*
- *What role can (and should) creativity play in the everyday curriculum?*
- *What role might the arts play in the standard curriculum?*
- *What, if any, link is there between the creative imagination and the memorization of factual knowledge?*
- *When and how might teachers move from asking known-answer questions to embracing the unexpected?*
- *When is conformity appropriate and when is divergence needed?*

These questions lack clear answers and mirror the types of questions other researchers have raised (e.g., Mayer, 1999). Indeed, although the field of creativity studies is more than 60 years old, many of the same creative contradictions in education faced by researchers today were faced by the first wave of creativity researchers in the 1950's and 60's (e.g., Barron, 1969). What is different is that there has been a great proliferation in the field of creativity studies – the field is now comprised of experts representing multiple disciplines, countries, and methodological approaches. Neuroscientists, for example, have an increased interest in “aha/eureka” moments theorized by the Gestaltists, with research funding being directed at laboratories that may better inform us on the nature of creativity, and whether or not it can be “engineered.”

At present, the field of creativity studies is perhaps best thought of as a transdiscipline. This means that the study of creativity does not belong to any one discipline and that the study of creativity can inform and be informed by multiple disciplines. The transdisciplinary nature of creativity presents an opportunity to examine the paradoxes facing creativity in education with fresh, multidisciplinary eyes. This is the purpose of the proposed volume. More specifically, the purpose of this volume is to bring together leading cross-disciplinary experts to weigh-in on the creative contradictions in education. Not only will these experts identify and describe key creative contradictions in education, they will provide fresh cross-disciplinary insight into how these paradoxes might be resolved or better addressed.

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Creative Contradictions in Education: Cross Disciplinary Paradoxes and Perspectives

Ronald A. Beghetto & Bharath Sriraman

BRIEF GUIDELINES

Initial Draft: October 1st, 2015

Chapter Length: Chapters should fall in the **7,000 to 10,000** word range (including references).

Style guidelines: See attached “key style points” and “sample chapter” for guidelines (e.g., heading levels, etc).

BRIEF DESCRIPTION OF PROJECT

Creative Contradictions in education is a provocative collection of essays by International experts who tackle difficult questions about creativity in education from a cross-disciplinary perspective. The contributors to this volume will examine and provide fresh insights into the tensions and contradictions that researchers and educators face when attempting to understand and apply creativity in educational contexts. Contributors will draw from existing empirical and theoretical work, but push beyond “what currently is” and comment on future possibilities. This includes challenging the orthodoxy of traditional conceptions of creativity in education or making a case for maintaining particular orthodoxies.

Example questions addressed by contributors to this volume, include, but are not limited to:

- *Why are creative contradictions more likely in some subject areas as opposed to others? Why, for example, do learners often experience mathematics as an exercise in rote memorization, yet mathematicians describe their field as highly creative?*
- *Is creativity best thought of as an educational goal or a means to attaining some other educational ends?*
- *Is it possible to reconcile the pressure to have students' reproduce existing knowledge with efforts aimed at helping students develop their ability to produce new knowledge (i.e., moving from consuming to creating content)?*
- *Is creativity always a good thing? What are the costs to incorporating creativity in the classroom? Do the benefits outweigh these risks?*
- *What, if any, link is there between the creative imagination and the memorization of factual knowledge?*
- *Does creative teaching and learning require a radically new pedagogical approach?*
- *When might conformity be appropriate and when is divergence needed?*
- *When and how might teachers move from asking known-answer questions to embracing the unexpected?*
- *What are some of the most promising approaches for supporting creativity and are these approaches compatible with academic learning?*

CHAPTERS & CONFIRMED CONTRIBUTORS

Note: [] = Placeholder title/description based on contributor's area of expertise/previous work/brief email comments -- final title/description forthcoming.

INTRODUCTION

Ronald A. Beghetto, University of Connecticut, USA

Bharath Sriraman, University of Montana, USA

This section of the book will provide an overview of the topic, chapter contents, and goals of the book.

PART I: UNCOVERING CONCEPTUAL ISSUES & BARRIERS

Chapter 1

Big-C versus little-c Creativity: Definitions, Implications, and Inherent Educational Contradictions

Dean Simonton, UC Davis, USA

Little-c creativity can be defined as the joint product of originality, utility, and surprise. Big-C Creativity is then defined as the joint product of Originality, Utility, and Surprise as collectively judged by experts in the creative domain. Although it is not immediately apparent, these two definitions imply an inherent conflict in the contribution of education to the development of persons capable of either form of creativity.

Chapter 2

[Contradictions in Creativities and Education]

Pamela Burnard, University of Cambridge, England

[In this chapter Dr. Burnard will draw on her extensive research on creativity to examine contradictions in compositional, improvisational, collaborative, intercultural, communal, empathic and digital creativities. This chapter may also draw on her research that has examined the spaces between education and industry, creative partnerships, creative learning and teaching, assessing creativity and the sociology of music education.

Chapter 3

Content matters: Why Nurturing Creativity Is So Different in Different Domains.

John Baer, Rider University, USA

This chapter will address the question, Why are creative contradictions more likely in some subject areas as opposed to others? Specifically, the chapter will focus on the domain specificity of creativity and what that means for how to teach for creativity in different domains.

Chapter 4

Working on the edge of subject areas - creativity as a driver of expansion

Lene Tanggaard, Aalborg University, Denmark

Traditional conceptions of creativity in education often see it as a radical approach to teaching and learning, moving beyond the traditional classroom. In this paper, I will draw upon a recent study of teaching experiments in a Danish High School context in which creativity were connected closely to each subject area and seen as a driver of expansive learning. In this sense, creativity becomes more ordinary and tied to everyday learning in the classroom than usual and it becomes equally relevant for arts and for mathematics. In the chapter, it will be discussed how creativity seen as a driver of expansion of the classroom challenges current conceptions of creativity as something radically new and innovative.

Chapter 5

The Nature of Creativity: Mayflies, Octopi, and the Best Bad Idea We Have

Jeffrey K. Smith and Lisa F. Smith, University of Otago, New Zealand

Pablo Tinio, Montclair State University, USA

Definitions of creativity often include the notion that there is some sort of product that is viewed as novel and useful within a given context (Plucker, Beghetto, Dow, 2004). Some authors (e.g., Cropley & Cropley, 2014) extend this argument to put the onus of demonstrating the utility of the product on the developers. We argue that this puts too much baggage on the concept of creativity and ultimately detracts from efforts to include it in an educational setting. We argue instead that creativity is fundamentally ephemeral (a mayfly); that once the idea comes into existence, the creativity is essentially gone. It's creation negates its creativity. The process of bringing an idea into existence is what creativity is. The rest of it is just working on that creative idea. Working with a creative idea requires skill, perseverance, and the ability to adapt to the context (the octopus). But working with the idea, playing out its possibilities, and judging its fundamental quality (is it "the best bad idea we have"?), while critical to the process of realizing a creative idea's potential, is *not* creativity itself, but a separable set of very important skills and dispositions. But since they are not the heart of creativity, we need to disambiguate them from creativity, and get our house in order. In this chapter, we examine what a more limited (refined?) definition of creativity means for education, both teaching and learning.

Chapter 6

Subordinated and rebellious creativity at school

Maciej Karwowski, Academy of Special Education, Poland

[In this chapter Dr. Karwowski will examine what seems the paradoxical concept of subordinated creativity – describing how it can be functional from the perspective of the school (similar to the concept of creative metacognition). In

this chapter he will also introduce a new typological model for creativity, suitable for application in educational settings].

Chapter 7

The difference that makes a 'creative' difference in education

Vlad Petre Glaveanu, *Aalborg University, Denmark*

The perspective of creativity as rooted in difference (Glaveanu & Gillespie, 2014) opens up new questions for researchers and educators concerning the sharing of perspectives and, most importantly, the role of contradiction between perspectives within the educational act. While differences of perspective between students, teachers, or students and teachers, can be considered a precondition for the emergence of new and valuable ideas or practices, this condition is necessary but not sufficient. The process of engaging with difference in a productive or creative manner includes, in turn, being aware or, recognising, and valuing different perspectives, but this process itself doesn't explain how exactly novelty emerges in classroom settings. Furthermore, not any kind of difference fosters creativity under any circumstances. The present chapter addresses this question based on a series of theoretically-informed empirical examples.

Chapter 8

The measure and mismeasure of creativity

Todd Lubart, *University of Paris Descartes, France*

[This chapter will explore debates on how to measure creativity in school, and whether it should be measured].

Chapter 9

[Five Common Dilemmas Faced by Teachers of Creativity]

Mark Runco, *University of Georgia, USA*

[This chapter will draw on Dr. Runco's extensive expertise on creativity and examine key contradictions that teachers face when attempting to incorporate creativity in the classroom].

PART II: PRATICAL APPLICATIONS & PROMISING DIRECTIONS

Chapter 10

People, Passions, Problems: The Role of Creative Exemplars in Teaching for Creativity

Robert Root-Bernstein, Michigan State University, USA

Michele Root-Bernstein, Michigan State University, USA

The goal of educating for creativity must be active understanding (rather than passive knowledge). To understand is to have the capability to re-create, which trains the ability also to create. Creative process includes problem-finding as well as problem-solving. Creative process requires practice. Best practice involves the emulation of creative people and the variety of strategies they use to discover challenges and solve them. Certain contradictions divide the classroom from “real-world” creativity: the emphasis on problem-solving rather than problem-raising, on objective expertise rather than subjective synthesis of skill and knowledge, on finding the solution rather than paths to multiple solutions. These contradictions may be overcome when curricula center on exemplary people who make a difference, why they get excited by the challenges they pursue, and how they parlay audacity into focused learning and invention. The more successful methods students can learn to emulate, the greater their probability of making the leap from recreating to creating for themselves.

Chapter 11

[Playful Learning, & Creative Contradictions in Education]

Kathryn Hirsh-Pasek, Temple University, USA

With a collaborator to be named

[This chapter will draw on play research to address the creative contradictions in education. Dr. Hirsh-Pasek is the author of, *Einstein Never used Flashcards: How children really learn and why they need to play more and memorize less*, (Rodale Books), which won the prestigious Books for Better Life Award as the best psychology book in 2003]

Chapter 12

Tensions in creative thinking skills and academic learning

Cyndi Burnett, Buffalo State University, USA

This chapter will address the question, Why are creative contradictions more Academics and practitioners are developing an increasing repertoire of approaches to encourage and support the development of creative thinking skills in children. However, many of these approaches require the adoption of new teaching practices that don't necessarily fit with the dominant pedagogical paradigm. This chapter will explore how teachers and administrators address

these tensions, and whether creative teaching can be embraced within existing systems or require a revolutionary approach to succeed.

Chapter 13

Creativity in Arts Education? Mum is the word or the wild card that got stuck in the deck

Anna Houmann, Lunds University, Sweden

Working within the field of creativity can be difficult within a context of the arts. Just mentioning the word could get you in to trouble. One thought is that in arts education we don't talk about creativity in fear of losing the "magic" about it. The arts are per se a creative context so why bother defining it, describing it, or even researching it? It just *is*. [In this chapter, Dr. Houmann discusses this tension and provides examples of work that gives creativity a voice in Music Teacher Education].

Chapter 14

Creative Imagination in Memorization in Mathematics Learning

Ai Girl Tan, *Nanyang Technological University*, Singapore

Creative imagination and memorization are complementary abilities in learning mathematics (Vygotsky, 2004). These complementary abilities engage "movement" in learning mathematics between "realities" (e.g., personal and social experience, emotion, and cultural practices) (see also Dewey, 1938/1997). Creative imagination in memorization "embraces" forces of contradictions (e.g., differentiation, convergence, and emergence) (see Tan, 2013; Tan, in press). Possibilities as the core of creative learning in mathematics unfold in purposeful, playful, non-structured, social, and ethical activities (see Craft, 1999).

Chapter 15

[Contradictory beliefs of mathematics teacher educators]

Per Haavold and Alv Birkeland, *University of Tromsø*, Norway

[This chapter will examine contradictory beliefs that mathematics teacher educators hold when it comes to the construct of creativity.]

Chapter 16

The Paradox of Serious Fun

Anthony Middlebrooks, Ph.D., University of Delaware, USA
Nat Measely, Director and Master of Fun, The Fun Dept. USA

This chapter examines the contradiction that “serious” learning and positive affect, the fancy way of saying fun, are incompatible in and around the classroom. Despite the fact that pedagogies considered fun are often unique, highly interactive, and impactful; the fun descriptor is perceived as a badge of levity, thus limiting the use application of effective educational approaches. This is a particular problem for those trying to help students develop their creative thinking identity and capacity, as well as those utilizing creativity to enhance learning.

Chapter 17

[Avoiding Dogmatic Traps in Creativity and Education Through Visual Metaphors]

Don Ambrose, Rider University, USA
Editor, Roeper Review

[This chapter will explore how teachers, the school system, and misguided reformers often become trapped within a single worldview and think they are being creative. They might be creative to an extent but they are limiting their creativity by confining their thinking within a single root metaphor. The chapter will discuss ways in which the use of visual metaphors will provide an opportunity for deeper creative understanding].

CODA

Common themes, unique insights, and future directions

Ronald A. Beghetto, University of Connecticut, USA
Bharath Sriraman, University of Montana, USA

This section of the book will provide a synthesis of key themes and unique insights drawn from the chapters included in the book. Future directions for research, theory, and practice will also be highlighted.