Where Creativity and Curriculum Meet

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Sam writes imaginative stories, Chanda designs new dresses to make, Olivia composes tunes on the piano between practicing her scales. These children would likely be described as creative by most people. And yet no matter how much admiration these three earn through these accomplishments, in many classrooms, their creativity is not likely to be recognized and valued within the context of schooling, even if they do well academically. This is because, despite the volume of education-focused research and writing that has been done on creativity [for a survey, see (Fasko, 2001)] since the groundbreaking work of J.P. Guilford (Guilford, 1950) and E. Paul Torrance (Torrance, 1962, 1974), the link between creativity and academic achievement still does not seem apparent (Plucker, Beghetto, & Dow, 2004). That is, many teachers don’t realize the various forms and manifestations of creative thinking, and how creativity may be integrated into the curriculum in ways that can build both creative thinking and academic learning. A brief look at some implicit views of creativity—those constructed by people, but not based on any empirical evidence or scientific inquiry (Sternberg, 1985)—reveals some of the barriers that can affect children’s development of creative thinking and expression in the classroom. We then introduce, as a possible antidote, a theory of intelligence that incorporates creative thinking as an equal contributor to cognitive ability, along with analytical and practical thinking, and an accompanying assessment battery currently under development that aims to provide useful tools for the assessment and understanding of creative,
analytical, and practical thinking in the classroom setting.

Implicit theories are forces whose hidden power should be recognized, particularly in the classroom. Students bring their own abilities and personalities to the classroom. Teachers provide subject knowledge and create the atmosphere and context for learning. But in addition, very importantly, teachers establish attitudes and values in the classroom, based on their implicit theories, and these aspects may crucially affect whether a child’s abilities will flourish, flounder or retreat during the hours of schooling. That is, the mechanism of these implicit views is generally unconscious, but often expressed explicitly in actions and judgments that convey values and expectations. Implicit theories about children’s creativity, though possibly never consciously expressed or systematically exercised, influence children’s actions and choice of expression when the adults who are prominent in their lives (e.g., parents and teachers) exercise their implicit theories through approval and disapproval of certain modes of expression (Runco, 1989; Runco & Johnson, 1993, 2002). As John Baer demonstrated in his study of the effects of a rigid curriculum on students’ creativity, the expected effect of curtailed creativity due to the curriculum were not borne out, and in fact even worked against expectation, supporting the idea that curriculum possibly impacts creativity less than other factors, such as the attitudes, expectations and values of the teacher (Baer, 2003).

While it has been noted that schools generally undervalue creativity (Sternberg, 2003), it has also been found that teachers’ implicit definitions of creativity and creative behavior are often uniquely different from the behaviors exhibited by students whom experts would define as creative (Dawson, et al., 1999). For example, in a small study, students who performed well on the creativity subtests of a maximum performance assessment were not rated as exhibiting creative behaviors by their teachers (Skiba, Tan, Sternberg, & Grigorenko, in press). In a separate study, it was found that teachers’ implicit views may even make them biased in favor of uncreative behavior—openly valuing relevant responses over uniqueness—in the classroom (Beghetto, 2007). The definitions of creativity are numerous, but not oppositional; rather, different definitions tend to focus on different aspects of this complex construct. However, the essential aspect of creativity, as explicitly defined by researchers, and that all of the major definitions hold in common, is that it results in products (e.g., ideas, stories, objects) that are
both novel (i.e., original) and useful (Feldhusen & Goh, 1995; Guilford, 1950; Sternberg, Lubart, Kaufman, & Pretz, 2005). What, then, constitutes creative thinking or creative behavior in the classroom that can also contribute to learning the curriculum?

Attempts to incorporate creativity into academic learning may be mitigated by a definition of creative behavior that focuses less on specific cognitive processes and more on familiar, broadly defined thinking skills. The theory of successful intelligence (Sternberg, 1999) provides such a foundation for understanding both the role of creativity, its possible manifestations in the classroom and some ways it may be applied to academic domains. This theory of intelligence is particularly useful for the classroom because it defines intelligence as a combination of broadly defined abilities that can be nurtured as well as assessed in the classroom setting while addressing curriculum material (Sternberg & Grigorenko, 2007). Specifically, Sternberg defines successful intelligence as the ability to succeed according to one's own definition of success in one's own context or situation, through a balanced use of analytical, practical and creative thinking. He delineates these three types of thinking as follows: Analytic intelligence is involved when skills are used to analyze, evaluate, judge, or compare and contrast. Practical intelligence is involved when skills are utilized, implemented, applied, or put into practice in real-life contexts. It involves individuals applying their abilities to the kinds of problems they confront in daily life, at work or at home. Creative intelligence is involved when skills are used to create, invent, discover, imagine, suppose, or hypothesize. The difficulty presented by these constructs is that they can be hard to distinguish at times, often being called upon in combination for various tasks. However, the great value of these ideas to the areas of teaching and learning is that they can be applied and understood in terms of many classroom activities. For example, with the topic of history, the identification of causes and effects will require students to employ primarily their analytical thinking skills; asking them to use their knowledge of history to address a current issue or solve an immediate problem will call in large part upon their practical skills; asking them to show their understanding of historical facts, personalities and cultures through story-writing will draw upon their ability to think creatively.

When incorporated into and encouraged in the classroom curriculum, and systematically used as a learning tool, the application of teaching for
successful intelligence has been shown to improve children’s academic performance (Grigorenko, Jarvin, Tan, & Sternberg, 2008; Sternberg, 2003). In fact, it has been demonstrated that when students are taught curriculum content using instruction methods that draw specifically upon their patterns of creative, practical and analytical abilities, they outperform students who were instructed in conventional ways (i.e., that draw primarily on analytical and memory abilities) (Grigorenko, Jarvin, & Sternberg, 2002).

Related to the practice of teaching according to the concepts of successful intelligence is the accompanying idea of assessment for high abilities or giftedness using the very same theory. That is, matching assessment and teaching based on the idea that high abilities in various areas will become apparent when they are nurtured in school. Currently, when identifying those whose exceptional ability may be nurtured or challenged at a higher level, or who show exceptional promise, many types of assessments are used, from pure achievement measures (such as standardized state test scores) to GPA, to standardized cognitive ability tests, to teacher nomination, to various combinations of all of the above. Sometimes (perhaps even more often than not) these choices are largely a matter of convenience, efficiency and cost (Mandelman, Tan, Aljughaiman, & Grigorenko, in press). However, it is important to recognize that such choices reflect values—we supposedly want to assess what matters.

In 2004, in response to a need to broaden the definition of giftedness and capture the wider range of abilities recognized as being important, a project was launched to develop a new assessment for giftedness (Chart, Grigorenko, & Sternberg, 2008). This assessment—the Aurora Battery—is currently under development at the Yale University Child Study Center. Based directly on Sternberg’s theory, it attempts to capture individual’s abilities in creative, practical and analytical thinking—strongly advocating the idea that to identify these potentials in students can contribute to their overall best achievement (success however it is defined within their given life situations), both in school but more importantly in the larger world of society. The battery consists of a group administered paper and pencil test, a teacher rating scale, a parent interview, a self-scale and a one-on-one observation schedule that would be done with a clinician. These various parts offer choices for types of assessment to best suit the needs of a school and a child, and abilities can also be targeted. Beyond its structure and its intended
Versatility, the battery redefines what should be valued in education and the theory provides scaffolding for teaching. Creativity, in this battery, is recognized as an equally important contributor to the expression of intelligence and to overall success in life. Though often overlooked, sidelined, or only minimally addressed in school, creativity, the theory asserts, matters, and has a vital reason for being in the classroom.

Making creativity explicit, then—explicitly defined, explicitly practiced within the curriculum, explicitly valued and explicitly evaluated—is a first step to the proper recognition and development of creativity as an equal contributor to learning, school achievement, and success (however defined). Part of this recognition and development is, by necessity, assessment. As a theory-based assessment battery, Aurora addresses several of these goals. Its parent theory, the theory of successful intelligence, provides a broad definition of creativity that can be applied to curriculum subjects, thereby offering a sound alternative to teachers' implicit views of creativity. And the use of Aurora asserts the certain value of the forms of intelligence it assesses: analytical, practical, and creative. Most importantly, Aurora represents a new instrumental window on intelligence and what abilities constitute giftedness (i.e., memory, analytical, practical, and creative abilities); at the same time, it can serve as a much-needed catalyst for new views of creativity, and how it may be measured and developed.

**References**


Beghetto & J. C. Kaufman (Eds.), *Nurturing Creativity in the Classroom*.


