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In this Issue

Creativity
in the Classroom:
Schools of Curious Delight



Creativity in the Classroom: Schools of Curious Delight is a book by Alane Jordan Starko, a professor of educational psychology at Eastern Michigan University. The book, which was updated with a new edition in 2014, summarizes a large body of creativity research and offers practical strategies for applying research findings in support of student creativity in the classroom. While the focus of the book is on fostering creativity in K–12 settings, its recommendations are applicable to a wide range of learning environments and experiences—particularly in areas related to the arts. All quotes for this Translations piece are taken from *Creativity in the Classroom* unless otherwise noted. Additional sources are cited below. Copies of *Creativity in the Classroom* are available through major literary providers. For more, please see Professor Starko’s blog at creativiteach.me.

ADDITIONAL SOURCES

Brookhart, Susan M. “Assessing Creativity.” *Educational Leadership* 70.5 (2013): 28–34.

Burkus, David. *The Myths of Creativity: The Truth about How Innovative Companies and People Generate Ideas*. San Francisco: Jossey-Bass, 2014.

Sawyer, Keith. “The Cognitive Neuroscience of Creativity: A Critical Review.” *Creativity Research Journal* 23.2 (2011): 137–154.

Sawyer, R. Keith. *Explaining Creativity: The Science of Human Innovation*. New York: Oxford University Press, 2012.

Szekely, George E. *Encouraging Creativity in Art Lessons*. New York: Teachers College, 1988.

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WHAT THE RESEARCH SAYS

WHAT IS CREATIVITY?

There are many definitions of creativity, but most are built on two basic concepts: originality and appropriateness. Originality refers to novelty—using one’s imagination, thinking outside the box, making something never before seen. Originality is often what first comes to mind when people think about creativity, especially in the context of the arts. To be thought of as creative, however, an idea also has to be appropriate to a particular task, meaning it is useful or valuable, serves a purpose, or solves a problem. An idea can be considered creative, for example, if it offers a novel solution to a problem encountered in everyday life or provides a new answer to a question within a discipline of study; in many cases, creativity is needed to see a situation in a way that allows a new question to be asked. In the context of the arts, creativity scholars often focus on the usefulness of works of art as a form of self-expression, allowing an artist to communicate his or her thoughts and feelings with an audience. More broadly, some view usefulness as meeting a goal or solving a problem as defined personally by the artist, which could simply be a desire to manipulate and explore the aesthetic qualities of a medium or art form.

It is important to remember an idea must be both original and appropriate to a task in order to be considered creative. It is possible for something to be well crafted or attractive, but it may just repeat something that has been seen or heard before. On the other hand, it is possible for something to be imaginative, but not especially useful or valuable—there may be many good, practical reasons why something has not been done before.

HOW DOES CREATIVITY WORK?

When we think of creativity, we often think of a sudden flash of insight. Research, however, suggests a much more complicated process at work. Creativity is believed to flow from a balance of complementary thought processes. Some authors, for example, note creativity relies on primary thought processes—which are uninhibited, impulsive, and free of censorship—as well as secondary thought processes—which are realistic, practical, purposeful, and guided by conventional restraints. Creativity is also believed to involve episodes of divergent thinking, in which many ideas and many solutions are generated, interspersed with periods of convergent thinking, which focuses on using existing knowledge to make judgments about which idea might provide the best answer.

In fact, recent research has invalidated the commonly held notion that creative people are “right brain” thinkers, while “left brain” thinkers are more logical. Researchers have found areas in both hemispheres of the brain are activated while people are engaged in creative tasks, and there is no evidence of a single area of the brain used for creativity alone. After reviewing the research, Starko concludes: “Such studies provide support for the notion that the cognitive processes used in creative thinking are not unique, nor do they represent a specialized area of the brain. Instead, they are likely to be combinations of ordinary cognitive processes utilized to do extraordinary things.” (69)

Contemporary conceptualizations of the creative process integrate divergent and convergent thinking. A recent model, which creativity scientist Keith Sawyer developed based on a synthesis of models and research, breaks the process into eight stages—which can overlap, cycle over again, or occur out of order:

- 1 Find the problem
- 2 Acquire the knowledge
- 3 Gather related information
- 4 Incubation
- 5 Generate ideas
- 6 Combine ideas
- 7 Select the best ideas
- 8 Externalize ideas

This model emphasizes the role of convergent thinking—using knowledge and experience, thinking critically, manipulating and evaluating ideas—in the creative process. According to this perspective, creativity results from long periods of hard work and involves a number of incremental, mini-insights into how to solve a problem rather than a single “magical moment of insight.” (Sawyer 2012, 140) The model also highlights how creativity occurs within a specific context, which requires a base of knowledge and understanding of the facts, concepts, and skills used within a particular discipline.

It is important to note there is no universally accepted theory of creativity and, as Starko suggests, “there remains the question of whether any single theory, or even any conception of creativity, can encompass the multiple creative activities of human beings across many cultures.” (94)

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There is basic agreement, however, among several major theorists about a number of important points. Starko identifies three key areas of agreement:

- 1 Creativity requires time, persistence, and motivation.
- 2 Creativity builds upon a foundation of knowledge and skills related to a particular discipline.
- 3 Creativity is supported by strategies, processes, and habits of mind—which, at least to some extent, can be taught and improved.

WHAT ARE THE CHARACTERISTICS OF CREATIVE PEOPLE?

Research has also examined traits commonly found among creative people. Here again, there is no formula for what makes someone creative. Traits vary from individual to individual, as well as from one area of study to another. Similarly, no single trait leads to high creativity. Instead, creativity results from complex interactions of personal characteristics as well as other factors, including elements in the surrounding environment and one's own past experiences. Despite this complexity, research has identified a number of common personal characteristics that are believed to contribute to individual creativity:

CURIOSITY – Creative people tend to wonder about the world and how it works. A strong sense of curiosity is particularly important in some of the early steps in the creative process, especially finding an interesting problem to solve.

CONNECTEDNESS and METAPHORICAL THINKING – Creative people are often skilled at making something new by taking an idea from one context and applying it to a seemingly unrelated area. Thinking about how something in one area is like something in a completely different domain can lead to new insights and perspectives for solving a problem.

FLEXIBILITY – Creative people are often able to escape fixed ways of thinking to look at problems from multiple points of view and to generate a wide range of possible solutions. Less flexible thinkers are more likely to fixate on a single solution, which may not lead to a productive approach.

LOGICAL THINKING SKILLS – Systematic thinking supports several steps in the creative process, including finding the problem, gathering related information, and selecting the best idea. Logical thinking helps to ensure that ideas are not only original, but appropriate and useful to the situation at hand.

INDEPENDENCE IN JUDGMENT – Independent decision-making is essential for generating ideas that differ from others'. Creative people are able to apply their personal standards to evaluate which of their ideas are best suited to a particular situation. Independent thinking can be particularly challenging for young people. Starko observes that students can sometimes be particularly susceptible to others' influences; many younger students look for approval from their teachers, while older students may seek to conform to their peers.

WILLINGNESS TO TAKE RISKS – Creative people must be willing to deal with negative consequences when pursuing ideas outside of the norm. They risk investing huge amounts of time and personal resources in ideas that may not be successful or accepted by others. Handling these challenges requires confidence, courage, and willingness to risk failure.

PERSEVERANCE, DRIVE, and COMMITMENT – When creativity is understood as a lengthy process instead of a single moment of inspiration, the need for perseverance, drive, and commitment becomes more evident. First ideas tend not to be the most creative, requiring commitment to a process of generating and evaluating more remote ideas. Creative people often need to persevere through the emotional ups and downs of the creative process, the outcomes of which remain ambiguous while in the midst of it.

Starko emphasizes “we have a special obligation to dispel the common notion that really creative or really smart people do not have to work hard, or that if you are good enough ideas will come quickly.” (112)

Perseverance, drive, and commitment relate closely to intrinsic motivation. Research shows that motivation stemming from an individual's personal interests, enjoyment, and engagement supports creativity. Conversely, some forms of extrinsic motivation—such as competition and conditional rewards—have been found to impede creativity under certain circumstances.

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WHAT THIS MEANS FOR EDUCATORS

Starko recommends three overarching strategies for developing creativity:

- 1 Teach the skills and attitudes of creativity
- 2 Teach the creative methods of the discipline
- 3 Develop a creativity-friendly environment

TEACH THE SKILLS AND ATTITUDES OF CREATIVITY

Starko recommends teaching explicitly about what creativity is, including the nature of the creative process, the lives of creative people, and strategies and techniques useful for generating creative ideas. One group of strategies, for example, facilitates divergent thinking. Teachers can focus learners' attention directly on the four types of divergent thinking: thinking of many ideas (fluency), thinking of varied ideas (flexibility), thinking of unusual ideas (originality), and adding to ideas to make them better (elaboration). As a way of encouraging learners to engage in different types of divergent thinking, Starko suggests using questions such as "How many ways can you think of to..." to encourage fluency or "How can we build on this idea?" to promote elaboration. Another group of strategies serves to support creativity through the use of metaphors and analogies in which "ideas from one context are transferred to another in a search for parallels, insights, fresh perspectives, or new syntheses." (171) Starko recommends inviting students to make simple comparisons between like subjects (such as how a bird is like an airplane), then progressing to observations about more dissimilar objects (such as how a feather is like grass), and finally, making connections between concrete and abstract concepts (such as how happiness is like fire). (173)

TEACH THE CREATIVE METHODS OF THE DISCIPLINE

In addition to teaching the facts and concepts of a field of study, help learners find and solve authentic problems using methods appropriate to their discipline. Starko, using artist George Szekely's book *Encouraging Creativity in Art Lessons* for inspiration, highlights several strategies that support identifying and investigating problems of interest for individual learners:

EXPLORE the ENVIRONMENT – Create a rich learning environment with diverse resources and stimuli for learners to explore. Ask questions to promote focused observation and investigation of the larger world outside of the learning space. Model the process of finding problems for learners by being an active participant within the discipline and sharing stories about one's own work, including both struggles and successes.

INVESTIGATE IDEAS and MATERIALS – Provide time to experiment and play before selecting a problem for further exploration. Encourage learners to identify a range of possible ideas for further development, even if only some of them can be pursued immediately.

RECORD IDEAS – Invite learners to maintain a journal of ideas to illustrate how ideas can evolve over time and to demonstrate how many ideas never lead to a finished product.

Starko stresses it is vital for learners to practice identifying problems to solve and ideas to explore as part of the creative process. As she writes, "If the teacher selects the problem and how it should be solved, the end products (although potentially providing the opportunity for students to practice artistic techniques) are more a reflection of the teacher's creativity than the students'. It is the teacher's idea, the teacher's selection of materials, and the teacher's clear set of instructions; the students merely provide the labor. In such a class, students do not experience art. When teachers present preplanned problems and designated solutions, they shortcut one of the keys to creativity: finding important and interesting problems to solve." (202) Within the context of the visual arts, for example, these ideas are comparable to the principles of Teaching for Artistic Behavior, a choice-based approach to arts education that regards students as artists and offers authentic choices for exploring their personal needs and interests. In these settings, students are given substantial time and space to pursue their own ideas and freedom to select the materials with which to explore. (See teachingforartisticbehavior.org for more information.)

DEVELOP A CREATIVITY-FRIENDLY LEARNING ENVIRONMENT

Create an atmosphere that encourages flexible thinking, seeking and solving problems, risk taking, and intrinsic motivation. Promoting intrinsic motivation is especially challenging in classroom settings. Research shows that constraints such as evaluation, surveillance, reward, competition, and lack of choice can reduce intrinsic motivation and negatively influence creativity. While these factors are prevalent in classroom settings, there are ways to minimize their negative impacts. Evaluation, for example, can help students improve their creativity when the criteria for judging the work is clear, feedback offers specific information about the strengths of the work and opportunities for improvement, and the entire process happens within an environment that is supportive of change and improvement.

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As a start, originality can be incorporated into scoring rubrics as one of the criterion used to assess student work. At a more advanced level, assessment expert Susan M. Brookhart (2013) has developed a scoring rubric that provides feedback ranging from “imitative” to “very creative” along multiple dimensions, including the variety of ideas that a work explores, the variety

of sources that a work draws upon for other ideas, how ideas are combined, and the degree to which the work communicates something new. Understanding the criteria by which a work is judged is a step toward self-evaluation on the part of learners, which is an important part of the creative process.

WHAT THIS MEANS FOR THE ARTS EDUCATION COLLABORATIVE AND ITS CONSTITUENTS

Creativity in the Classroom explores how to support creativity across the curriculum in multiple content areas, including language arts, social studies, science, and mathematics. The arts are addressed but are not the sole focus. Given the broad scope of the book, it is remarkable how consistently the recommended strategies for promoting creativity in the classroom align with the principles of high quality arts education put forth in *Qualities of Quality: Understanding Excellence in Arts Education*, a research study conducted by Project Zero at the Harvard Graduate School of Education. (See www.artedcollaborative.org to download a Translations issue that covers *Qualities of Quality*.) According to the arts education experts interviewed in that study, one of the primary purposes of quality arts education is to foster broad dispositions and skills, especially the capacity to think creatively. Respondents viewed creativity as a prolonged process involving periods of forming ideas, exploring possibilities, and reflecting critically—a perspective supported by current research.

While the arts obviously offer rich opportunities to nurture creative attitudes and skills, it is also clear educators must design arts experiences with these outcomes in mind. Simply demonstrating technical skill in an artistic medium or following a set of narrowly proscribed instructions requires little or no originality on the part of the learner. Arts activities designed primarily for enjoyment lack the necessary level of purpose and process to allow learners to practice true creativity. A singing game, for example, may be fun and provide learners with practice in matching pitch, keeping a steady beat, and working to achieve a goal.

While these are common objectives in a music classroom, we can't assume the activity fosters creativity. The activity would have to change significantly, possibly to include a component where students experiment and then evaluate the merit of their choices.

In response to the *Qualities of Quality* report, the AEC developed a list of questions to ask when evaluating an arts education program. Several of these questions align closely with the theories and recommended practices highlighted in *Creativity in the Classroom*; the questions offer a starting point for reflection on the degree to which arts experiences are designed to foster creative skills and attitudes:

Are students encouraged to take risks and make mistakes?

Are students encouraged to participate in artistic decision-making?

Are students solving real artistic problems?

Does the educator empower students to find information, synthesize it, and experiment with artistic processes to present it in a new way?

Does the educator encourage students to be engaged in the investigation of ideas, issues, feelings, aesthetics, and other aspects of the human experience?

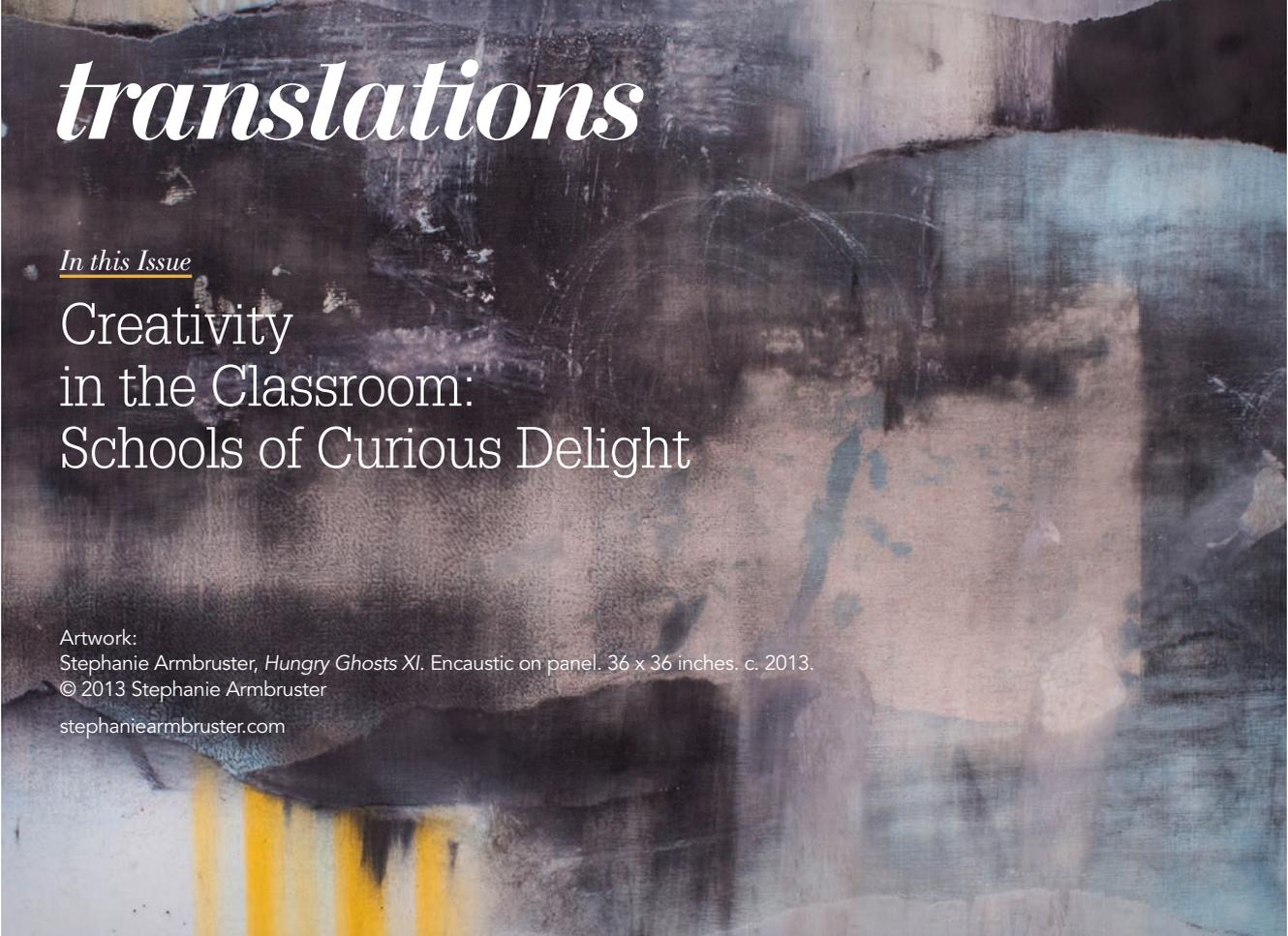
Do students raise questions, offer ideas, consider others' ideas, express feelings, share work, engage in constructive critique, and reflect on processes and products?



We strengthen education by making the arts central to learning through collaboration, research, and advocacy.

401 Liberty Avenue, Suite 1840
Pittsburgh, PA 15222

www.artsedcollaborative.org

An abstract encaustic artwork on panel, featuring a complex composition of dark, textured brushstrokes in shades of black, grey, and brown. A prominent, lighter blue and white area on the right side suggests a landscape or architectural form. The overall effect is one of depth and layered meaning.

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Artwork:
Stephanie Armbruster, *Hungry Ghosts XI*. Encaustic on panel. 36 x 36 inches. c. 2013.
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