Creativity and the Standards

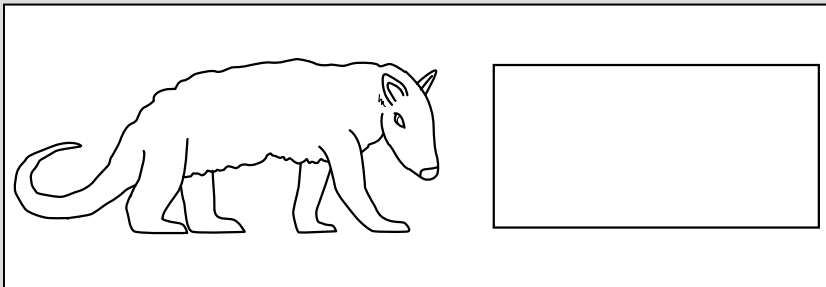## Table of Contents

What Educators Need to Know about Creativity

Creative Warm-Up

Look at the drawing and imagine the story behind it. Let your imagination flow freely with little concern for "getting it right." Surprise yourself!

In an age when assessing knowledge of facts has never been easier, many countries are emphasizing and testing students for factual knowledge. Today, problems have never been more complex (e.g., the worldwide economic meltdown), and many countries no longer teach skills that strengthen creative problem solving. Teachers know that creative thinking is important, but there are so many standards to cover and so little time to do it. Somewhere along the line, we as teachers have bought into the belief that standards and

creativity cannot coexist. The foundation of this book is to challenge that belief. First, we should discuss what educators need to know about creativity, and then we should look at ways to foster creativity in the classroom while also teaching standards-based lessons.

Think back to the creative warm-up. Did you come up with a story that you feel good about? Do you think your idea for a story would be different from one your next-door neighbor would create? Or did you base your answer on what you felt we expected from you? If you think your story is creative, what makes it creative? What is creativity? Can creativity ever be defined? We think it can. Creativity transcends traditional concepts in order to create transformational ideas that are appropriate for the task at hand.

The student-created poem that follows fits the description of creativity. The student had to creatively introduce an endangered species to his class.

"Who Am I?

I am white with black spots

I turn color depending on the season

I use sounds and scrape against the dirt to communicate

I am also known as the *Panthera uncia*

Do you know who I am?"

(Hint: Use the gray and bold letters to find out the species.)

Consider the following assignment in which students produced something creative based on research they completed. An eighth grade student researched the abolitionist John Brown and wrote a thirty-one page book, *Diary of a Strong Abolitionist*, borrowing the style from Jeff Kinney's *Diary of a Wimpy Kid*. Figure 1.1 is an excerpt from the student's book.

Figure 1.1 Student Sample Excerpt
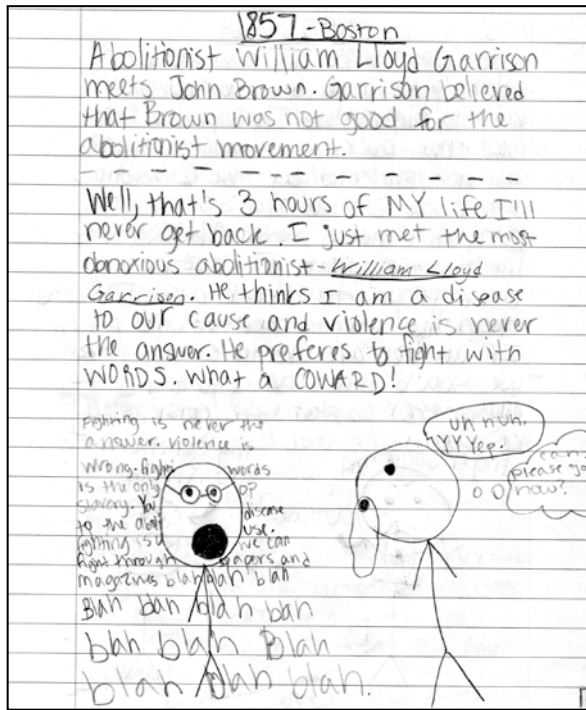
Notice the voice and anachronism the student uses to describe how John Brown felt about William Lloyd Garrison. The facts are true—Garrison actually said this about Brown. However, the inclusion of this fact is a product of the student's research. And the student found a way to creatively express it in today's language. What makes students generate creative products like these? More importantly, how can teachers spark creativity in all their students?

The International Center for Studies in Creativity at the University of Buffalo describes the need for students to be able to think creatively. The article states, "There were less than ten technical and social inventions between A.D. 1 and A.D. 1800. Contrast that to the last 210 years, during which time we have seen the creation of more than 25 life-altering technological and social inventions. Inventions that have enhanced the nature and quality of our lives, such as computers, antibiotics, airplanes, the Internet, genetic engineering, organ transplants, automobiles, lasers, telecommunication, etc." (2012, 1).

Around the globe, societies approach the education of students differently. Lately, some societies have been leaning toward teaching content and then evaluating knowledge by using standardized tests, both important pieces of the puzzle in education. Other societies where teaching content has been prominent now seek to strike a more equal balance to include the teaching of creative thinking. The question on many educators' minds is, how do we do both?

Everyone Has Creative Potential

Creativity is needed by *everyone*. Everyone can learn to be more creative, and there is always room for improvement. The prevalent thought today is that some people are creative and others are not, as if a selected few are given the magical gift. Those of us who don't possess this gift must be content to carry on with the mundane life ordained for us. This type of thinking is wrong. Creativity is something that everyone can achieve, albeit at different levels. It is like a muscle—the more it is exercised, the stronger it becomes (Conklin 2011).

In this book, we will reference creativity in two ways—*extraordinary* creativity and *ordinary* creativity. Extraordinary creativity is the kind we attribute to Einstein, the Beatles, and Picasso. What these individuals produced was life changing. Ordinary creativity is typically the kind of creativity that we can see in our students and ourselves. Creativity is measured on a spectrum. That is, input is presented to the prisms of your students' minds, and a spectrum of creative thinking emerges (see Figure 1.2). Wherever your students are on that creativity spectrum, we will help you lead each of them to a higher level.

Figure 1.2 Creativity Spectrum
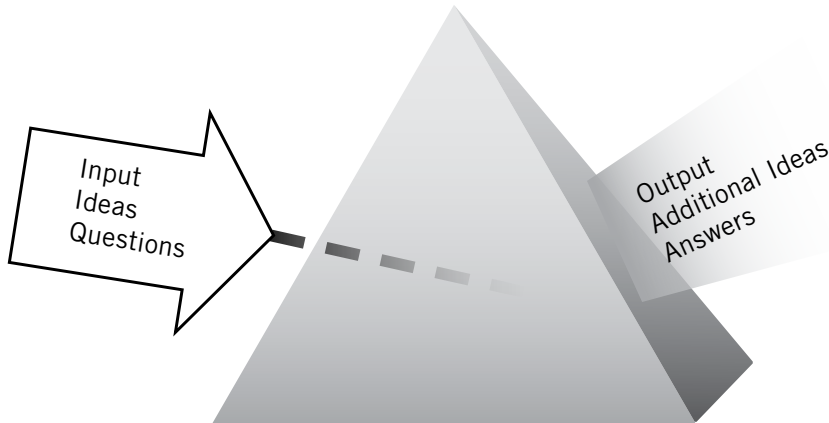
On this subject, the "Full Spectrum"—a term coined by TED (Technology, Entertainment, Design)—of creativity was the theme at the annual TED 2012 Conference in Long Beach, California. Full Spectrum, according to TED, "is a term we've adapted to mean the rich use of multiple technologies, formats, and approaches for the most powerful impact on an audience" and inherently includes the discussion of creativity as many of the TED presentations focused on the creative process. There is likely no place on Earth where creativity is so prized. From 2006 to 2012, more than 1,000 TED presentations have been compiled into one video book (TED 2012). As a source of imagination for smart teachers, you can't beat this resource.

Whether we are children or adults, we are all capable of becoming more creative. And who knows? If we are lucky, we might even witness extraordinary creativity in some of our students.

What Is Creativity?

Creativity is work. Michael Michalko defines creativity as the "consequence of your intention to be creative and your determination to learn and use creative-thinking strategies" (2006, xvii). It is largely the product of hard work on behalf of the creator. It involves applying oneself in order to produce something—whether that be Michelangelo exploring different techniques using his paintbrush or a student sketching an imaginary plant that could survive in a specific habitat.

Creativity requires perseverance and grit (Lehrer 2012). Creative people still have to work hard to achieve products. Ideas don't just mysteriously float around in the sky and latch onto a person. Often, a person struggles with a problem for a while before finding the right answer. Failure is not a bad thing, and it plays an important role in creativity. Legend has it that Thomas Edison said that he did not fail 2,000 times when trying to create electric light. Instead, he learned 2,000 ways not to make it. It's these perceived "failures" that lead us to success (the 2,001st time!). After a fire destroyed his laboratory, Edison said, "There is great value in disaster. All our mistakes are burned up. Thank God we can start anew" (quoted in Clemmer 2012, 16).

A person may be focusing on ideas or writing sentences that get deleted over and over. But when the right answer is found, the person knows it immediately. The solution is clear. This experience is the same for our students. In societies where acquiring knowledge is immediate through the use of various forms of media, students must be given opportunities to struggle. They can be presented with unanswerable questions, open-ended questions, and opportunities to brainstorm. Students also need a safe place to fail, and this does not mean failing grades. It means failing at finding the answers right away or having an experiment not work out the way it was intended it to. Failure in this sense means learning to tackle difficult tasks and keeping at it, not knowing what the final answer might be. If students never grapple with difficult tasks, they will not learn perseverance and grit.

Creativity demands rigorous thinking within the context of play and fun. The fact that people can enjoy rigorous work is what makes the work tolerable and attractive. There is a huge payday at the end—whether the payoff is the production of something creative or the benefits that come from practicing

Strategies that Promote Fluency

Creative Warm-Up

Ask as many questions as you can about this picture, questions that cannot be answered just by looking at it. A poor question would be, "Is the clown on his hands and knees?" You can see from the picture that he is. Make your questions as different from each other as you can—don't just ask questions about the clown's clothes. Give yourself five minutes to think of as many questions as you can.

Fluency is the ability to think freely. To be a fluent reader, as all classroom teachers understand, one must be able to read with speed, accuracy, inflection, and excitement. To be a fluent thinker, one must freely produce an abundance of ideas.

Most creative thinking begins with generating ideas—lots and lots of them. The emphasis is on quantity, not quality, because the more ideas you have to work with, the better the chances of finding a solution. Some people refer to this action of generating ideas as "forced creativity." When students are freed from searching only for the "best" or "correct" answer, they become fluent with ideas (The Creativity Centre 2012). Their ideas flow from free-thinking, fast-moving thought processes. Students might generate the following answers to the creative warm-up. Any of these ideas could then be used for a writing activity based on the picture:

- Why did the clown decide to wear that outfit today?
- How come his mother let him get so close to the lake?
- Who does this clown look like in his family?
- What powers lie beneath the water that the clown wants to possess?
- What made the clown overcome his fear of the water?
- Is the water's reflection used to check his makeup?

Were you as fluent as this example?

Once the ideas are listed, careful analysis of the most useful ideas is necessary, but in the beginning, teachers should not worry about spelling, grammar, how words are used, or whether they are quality ideas.

Being fluent with ideas will help students once they enter the workforce. Companies need fluent thinkers to produce new products and improve their existing ones. Fluent thinkers are better problem solvers because they have the ability to generate ideas for improving processes and products (ITS 2012). Students should know why teachers want them to fluently produce ideas. But they need to understand that fluency is not making long lists for the sake of making long lists. Statistics tell us that the possibility of producing quality ideas will improve as the lists get longer (Ask the Inventors 2012). The more ideas we have, the better the chance we will produce something useful.

Under fluency, we have identified four strategies, all of which emphasize fluently generating ideas:

- brainstorming
- negative brainstorming
- SCAMPER
- attribute listing

The differences among these strategies are not as great as in later chapters, but they make an excellent introduction to the first phase of creative thinking.

Brainstorming

Shawn Cirkiel, a renowned chef and owner of three restaurants in Austin, Texas, often brings his staff together to talk about food with the goal of creating a new dish. The most fun way to create new dishes, according to Cirkiel, is by tossing ideas back and forth with his staff. They first look to the market. If farmers have figs today, Cirkiel and his staff go back and forth talking about how they could use figs in a dish that evening. Perhaps there is blue cheese that needs to be eaten, so the conversation turns to ways to use blue cheese in a dish. Brainstorming is a team effort in this case. Once everyone's ideas are exhausted, the staff edits them to make the ideas streamlined and consistent. The idea for a dish has to function within the confines of the restaurant. The dish depends on the skill of the chef, the flow of the kitchen, and the ability of the servers to sell it to the customers. And based on what is available in the market, what is found in the refrigerator, and several ideas the staff presents, a perfect dish is born (Cirkiel, pers. comm.).

Effective brainstorming is a tool that helps people generate ideas for solving problems. Brainstorming can help businesses survive amongst competitors. It can aid both military generals as they look for new ways to fight wars and statespersons as they look for new ways to avoid wars. Such thinking ability is clearly useful to students, too. *What will be your topic for the science fair? What is the best way to solve this math problem? In what ways can we keep the peace between our feuding friends?*

Brainstorming can produce a lot of ideas. It is fluency at its best. The more ideas that are generated, regardless of quality, the better the chances of finding a solution. On the other hand, there will also be a lot of "bad" ideas produced in a brainstorming session. This is to be expected.

To begin, there needs to be something to brainstorm about. This should be based on a problem or the need for a solution. And this problem or need should be as focused as possible. For example, if an author is asked to brainstorm ideas for a new book, that is too broad to brainstorm. But if an author is asked for ideas for a story set in Egypt for middle school students, then the topic is focused enough to work with. The problem or need is narrowed down and the author has a better chance of producing a good idea for the book.

However, be aware of what hinders productive brainstorming. Placing students into groups to brainstorm can sometimes hinder productive ideas. Students might feel too intimidated to openly share with some students, especially if the other students are good at brainstorming. Also, the pressure that everyone expects great things of them can hinder their ability. But this doesn't mean that we shouldn't use groups when brainstorming. When we do use groups, it is important that students are placed with partners or in small groups where they feel comfortable sharing ideas. To achieve the most successful group brainstorming, students must first understand the rules for group brainstorming, which should be presented and discussed with the class before the session begins.

Rules for Brainstorming

- Don't criticize the ideas of others. This breaks the flow of creative thinking.

- Think of as many ideas as you can.

- Don't edit ideas.

- Wild, funny, or even silly ideas are welcome. Sometimes these are the best ideas.

- Build on what others have to say. It is often the suggestions of others that bring a huge improvement.

- Keep a record of your ideas. You might want to return to what you were thinking.

- Begin to judge your suggestions only when you cannot think of any more ideas.

Initially, brainstorming should be done as a whole-class activity with the teacher demonstrating or modeling the process. Have sentence strips, sticky notes, or index cards available to record students' ideas as you brainstorm as a class. First, present a problem to the class. Ask the class to brainstorm solutions to the problem. Reinforce each student's ideas, regardless of quality—it's quantity that counts at this stage. Write ideas on sentence strips, sticky notes, or index cards. Remind students that you will not judge their ideas at this stage as the class brainstorms. Once enough ideas have been shared, it is then time to evaluate the ideas for quality. Show students how to evaluate these ideas into *good*, *better*, and *best* categories. You can tape the index cards, sticky notes, or sentence strips to the board, placing the ideas into these categories so that students can see your thinking. Change your mind as you evaluate these ideas, showing that the cards can be moved around the more you analyze them. At the end of this whole-class brainstorming, you should end up with only one or two ideas in the *best* category.

Then, have students brainstorm individually on sentence strips, sticky notes, or index cards. Encourage students to make long lists of ideas. When they have made adequate lists, divide students into pairs to evaluate each other's ideas. Partnering students might produce even more ideas, so allow time for students to share. Remind students that they should not judge their ideas during this time. Allow enough time for ideas to be written down. Next, allow students to form small groups or meet with new partners to share these ideas. More ideas can be added as students share with each other. Then, tell groups to place the ideas into the category of *good*, *better*, or *best*. Students should move their sentence strips, sticky notes, or index cards into these categories as they discuss them. By the end of the activity, only one or two ideas should remain in the *best* category. After a reasonable amount of time, tell the pairs to reveal the ideas they feel are most useful among those that they have placed in the *best* category. Finally, a solution can be chosen.

Standards-Based Activity 1

Mathematics Standard: Uses whole number models (e.g., pattern blocks, tiles, or other manipulative materials) to represent problems

Place paper, pencils, and a variety of math manipulatives on student desks. Tell students they are going to brainstorm a list of ideas as a class. Remind them of the rules for group brainstorming. Then, write the number 5 on the board. Ask students how many ways they can show this number using the manipulatives. As students share answers aloud, write the ideas on index cards and tape them to the board. After a few minutes of brainstorming, tell students that they will now judge the ideas. Using student input, place each idea under the *good*, *better*, or *best* category. Repeat this activity using another number, but have students brainstorm individually on sentence strips, sticky notes, or index cards. Then, divide students into pairs. Have them share their ideas with partners and write down new ideas as they come to mind. Once time is up, have students categorize their ideas into the *good*, *better*, and *best* categories. Finally, have students share their best ideas with the class.