Strategies for Developing Creativity Activities

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Imagination grows by exercise.
W. Somerset Maugham

This chapter will deal with two aspects of providing teachers with guidance about encouraging more creative thinking in their classrooms. The first part will focus on a few basic principles and strategies underlying creativity training and how these principles and strategies can lead us in the more practical task of developing creativity training exercises.

The second part of the chapter will focus on using the basic principles of creative thinking to develop your own activities. In this section you will be asked to examine topics that are part of the regular curriculum and to infuse creative thinking activities into those topics. This section is purposefully designed to develop your own creativity, and by so doing you will not only be enriching the regular curriculum for your students, but you will also be modeling the creative process for them.

Part 1: Basic Principles and Start-Up Activities

Three Keys to Success

Understand Convergent and Divergent Production

The starting point for teachers who would like to promote more creative behaviors in their students is a basic understanding of the difference between convergent and divergent production. In most traditional teaching-learning situations, major emphasis is placed on locating or *converging* upon correct answers. Teachers raise questions and present problems with a predetermined response in mind, and students are usually evaluated in terms of correctness. The system of rewards used to evaluate student progress causes most youngsters to develop a mindset that learning is about finding the “right” answer as quickly and efficiently as possible. Although this ability has its place in the overall development of the learner, most teachers would agree that young minds also need opportunities to develop their precious creative thinking abilities.

Divergent production is a kind of thinking that is characterized by breaking away from conventional restrictions on thinking and letting one’s mind flow across a broad range of ideas and possible solutions to a problem. These are the kinds of thinking that enable people to change the world; and we can provide opportunities for divergent thinking to prepare young people to bring about changes in small or large ways.

Create a Classroom Atmosphere That Supports Creativity

A second important factor in encouraging more creative thinking in the classroom is crafting a classroom atmosphere where divergent thinking is valued. You should model divergent thinking by asking open ended questions, accepting many possible answers, and generating your own divergent responses. In describing the role of teachers in this regard, Starko (1995) emphasized the distinction between teaching for the development of creativity versus creative teaching. She concluded that effective teachers who develop students' creative thinking use techniques that "facilitate creative thinking across disciplines and provide a classroom atmosphere that is supportive of creativity" (p. 17). Training in divergent thinking is also associated with increased creativity, involvement in creative activities, and positive feelings toward school (Rose & Lin, 1984; Torrance, 1987).

The success of any creativity training program depends on the amount of freedom and flexibility that exists in the classroom. The very nature of creativity requires that students be allowed to express their thoughts and ideas in a warm and open atmosphere. You should encourage their students to play with ideas, laugh, and have fun without worrying about being graded or evaluated when they are engaged in creativity training activities. Extrinsic motivators can undermine students' creativity, whereas intrinsic motivation can improve students' performance on creative tasks (Amabile, 1996; Lepper, Greene, & Nisbet, 1973).

The most important aspect of a creativity-supportive classroom is respect for children's ideas, questions, and products. You should show interest, acceptance, and excitement toward student responses and avoid expressions of shock, surprise, annoyance, or disinterest. Above all, never laugh at or make light of a youngster's responses, and discourage teasing from other students. Healthy amusement and friendly competition will help promote a supportive atmosphere, but ridicule and scowls will have a negative effect. Demonstrating your own creativity by participating in activities will also help students see that you value your own creative behavior, which will encourage them to begin to display their own creative thoughts.

If you show generous praise for quantity and unusualness of responses, students will quickly recognize the types of behavior that you value and they will strive to achieve these types of behaviors. Because an increase in fluency will almost always result in a corresponding increase in originality, begin by giving generous praise to the sheer quantity of response, with comments like, "Wow, what a lot of ideas! Can you think of a few more?" At the same time, avoid comments that are "killers" of creativity, such as, "Don't be silly" or "That's impractical."

A final consideration in the creation of a free and open classroom atmosphere is the acceptance of humor and playfulness. When you purposefully ask youngsters to strive for clever and unusual responses, a good deal of healthy noise and whimsical behavior is likely to result. Creativity time should be a fun time, and playfulness, impulsiveness, humor, and spontaneity are all part of having fun.

Model Creativity in the Act of Teaching

The third and perhaps most important element is for teachers themselves to be creative, not in the sense of becoming artists or inventors, but in *the creative act of teaching*. Therefore, the second part of this chapter will discuss a method for applying the basic strategies of creativity training to curriculum modifications in the classroom. Gandhi once said, “You must be the change you wish to see in the world.” I would like to modify this quote slightly by saying that: “You [the teacher] must be the change that you wish to see in your students.” In other words, the things you do in your teaching will reflect examples of the creative process in action.

A Quick Overview of the Basic Principles and Strategies

The first idea one has for solving a difficult problem is not usually the most original. Therefore, *fluency,* defined as the ability to produce several ideas or possible solutions to a problem situation, is an important condition for creative production. The fluency principle, which underlies the development of most creativity training, maintains that fluency is a necessary, though not sufficient, condition for originality. Although some highly creative products have resulted from sudden inspirations, studies have shown that initial responses to a given problem tend to be the more ordinary ones and that the greater the number of responses generated in a problem solving situation, the higher the probability of producing an original (i.e., rare) response (Archambault, 1970; Paulus, 1970; and Baer, 1996). For example, if we asked a group of students to list all of the utensils that people *might* use to eat with, they would no doubt begin with common utensils such as forks, spoons, and knives. But if we encouraged them to use their imaginations (“Suppose you didn’t have any forks or spoons. What *could* you use?”), students would begin to explore alternatives. They might suggest such items as sharpened sticks, shells, and bottle caps. If we compared the lists of several youngsters, we would find most of the initial answers present on every list. As the lists grow longer, we would find more divergence occurring, and the probability of a youngster’s producing an original response increasing. Research has shown that individuals who produce a large number of ideas are more likely to produce ideas that are more original (Bousfield & Barclay, 1950; Derks & Hervas, 1988; Runco, 1986). Originality is defined in research as statistical rarity. If everyone in our example above says that knife, fork, and spoon are eating utensils, these responses would not be statistically rare. But if only one student suggested a bottle cap, this response could be considered original because of its statistical infrequency in this particular situation.

You can capitalize on the fluency principle by asking questions and proposing problems that elicit many divergent responses. Unlike “convergent” practice, these exercises should have no “right” or predetermined answer. Rather, they should be designed to encourage students to produce many, varied responses. Hopefully, practice in this mode of thinking will help free the learner from his or her habitual reliance upon recall and convergent thinking.

The basic technique for increasing fluency of expression is called *brainstorming*. To begin, provide students with a problem that has many possible alternative solutions. Brainstorming can be carried out individually or in group sessions. During the early stages of a brainstorming activity, students should write or say *all* thoughts and ideas that come to mind, no matter how silly the ideas may be. During this stage, praise quantity and withhold all evaluation (positive or negative) of the actual ideas until students have exhausted their total supply of ideas related to a given problem. Only after all ideas are listed would you ask students to explain any unclear responses or ask about reasonableness if generating solutions to a real problem. This practice, sometimes called unevaluated practice, means that judgment is deferred until the individual has had an opportunity to explore several possible answers or solutions to a given problem, and is valuable for idea generation (Amabile, 1985; Baer, 1996; Osborn, 1963). The main purpose of unevaluated practice is to free children from the fear of making mistakes.

Divergent thinking during brainstorming sessions can be encouraged through the use of intentional questioning. For example, Arnold (1962) developed the "SCAMPER" technique to spur students' thinking. Each letter in SCAMPER prompts a set of questions. For example, P stands for "Put to other uses" and prompts questions such as "Can it be put to other uses as is?" and "Can it be put to other uses if it is modified?" Once students have learned the basic brainstorming technique, you should encourage them to approach each divergent thinking activity with an idea-finding frame of mind, and perhaps keep a prompter such as SCAMPER visible to help them generate as many ideas as possible.

Getting Started

If you have not previously carried out creativity training activities, a good way to get started is to walk students through an activity that demonstrates the difference between convergent and divergent thinking. The following sample activity has been purposefully designed to teach this distinction.

> *Today we are going to begin practicing a different kind of thinking. This kind of thinking will help us learn how to explore many different kinds of solutions to a given problem. Some problems and questions have only one right answer, but there are also many problems and questions that have hundreds of possible answers.*
>
> *Suppose I asked you, "Who was the first president of the United States?"* (Wait for an answer and write it on the white board.)
>
> *Are there any other possible answers to this question?* (General conclusion should be negative.)
>
> *Now suppose I were to ask you, "What are all of the possible ways that you might have come to school this morning?"* (List responses on the white board.)

Students will probably give some fairly common responses ("walk," "bus," "car," "bicycle"). At this point, you might say:

Remember, I said all of the possible ways that you might have come. Use your imagination. Let your mind wander, even if you think the method for coming to school is silly or unusual. 'How about by donkey or pogo stick?' (Add these to the list on the board.) You can emphasize this point by grabbing a yardstick and improvise a few hops to demonstrate a pogo stick. Students will no doubt become a little noisy at this silliness, and it is very important to laugh along. If you hush them, the atmosphere of freedom you want to create will be lost, and they will subjectively think that this new kind of thinking is the same old "right answer" game.

This point is extremely crucial to introducing creativity training to your students. By suggesting the donkey and the pogo stick, you have accomplished three very important objectives. First, you have conveyed the idea that answers need not be practical or realistic. Second, you have let youngsters know that you will accept these kinds of answers. Third, and most important, you have let the youngsters know that you are capable of some way-out ideas.

After your examples, students may give a wide variety of answers. Let them call out their answers (rather than raising hands) as you write them on the board. Prompt students if necessary:

Are there any other ways that you might come to school?
How about on an airplane or in a rocket?

At this point, offer generous praise for participation. Enthusiastic comments such as "great," "fantastic," and "wow, so many ideas!" will help youngsters open up. Do not call on students who are not taking part. It takes some youngsters longer than others to trust this type of atmosphere. The main idea is to let students know that you like what is going on and that you are having fun. When the flow of responses begins to slow down, say:

Let's go one step farther. Suppose you could change your size or shape. Can you think of some other ways that you might possibly come to school?

If no one responds, say: *Could you make yourself very tiny and come in your brother's lunch box? Could you change to a drop of water and come in through the drinking fountain? Could you come in as an App in your friend's cell phone?*

Continue as long as the youngsters are generating responses. When you call a halt, say:

I guess there really are many questions and problems that have several possible answers. How was this question different from the one about the first president of the United States? Do you think this kind of thinking is fun?

This activity is an excellent way of teaching students the difference between convergent and divergent thinking without dwelling on the rituals of a formal definition.

Next, you might want to say: *From time to time, we are going to be working on some activities*[1] *like the one we just did. The main purpose of these activities will be to practice answering questions and solving problems that have many possible answers. We will be using our imaginations to come up with some clever new ideas.*

Encouraging Self-Evaluation

One of the underlying purposes of creativity training is to help youngsters learn how to evaluate their own creative products. In the real world, people often judge things in terms of the degree to which they, as individuals, are satisfied with the things they do. Teachers can help students to become self-evaluators by giving them opportunities to judge their own work and to modify their work when they are not satisfied with it. This can be done with larger projects and with idea-generating activities. For example, you might say: *"Of all the different ways we thought of to come to school today, which one(s) do you think were the most original?"*

When students look to you for judgment, you can prompt self-evaluation with questions like, *"What do you think about it? Why?", "What things (criteria) are important to you?"*, and *"How would you compare it to the work you did last time?".* Encourage students to evaluate their own ideas, such as by ranking them or selecting the ones they like best. This does not mean that you should not make suggestions or ask questions, especially about the relevance of a response to the problem or question at hand. Students should always be given an opportunity to explain relevance in their own words. Since there are no right answers to grade in creativity exercises, they provide a real opportunity for students to develop self-evaluation techniques.

Peer evaluation can also be a source of informal feedback, and it should be related to the type of product involved. For example, if the task is to write a humorous ending for an unfinished story, the amount of laughter the ending elicits is the best kind of feedback that one can receive.

Part II: Creativity Applied: Developing Your Own Activities Through an Infusion-Based Approach to Curricular Modification

An Infusion-Based Approach is one in which teachers (1) examine opportunities to create and select highly engaging open-ended activities *related to particular topics, (2) infuse these activities into the curriculum to make the topics more interesting, and (3) provide support and encouragement for individuals and small groups who would like to extend their pursuit of the teacher-designed activities.* Our goals are to minimize boredom and school "turn-offs" and to improve achievement and creative productivity by infusing what I call the 3 Es—Enjoyment, Engagement, and Enthusiasm For Learning

[1] Additional activities are available at no cost at https://gifted.uconn.edu/wp-content/uploads/sites/961/2023/06/New-Directions-in-Creativity.pdf.

into the culture and atmosphere of a school, the tool bags of teachers and administrators, and the mindsets of students. If appropriate technology is available to students, some of these activities should take advantage of creativity-supportive apps, programs, and websites. The enrichment platform Renzulli Learning (https://renzullilearning.com/) can assist teachers in this regard by matching individual student interest and learning profiles to curricular topics.

To generate options for students, teachers begin with a curricular topic and brainstorm ideas for infusing creative thinking into learning, practice, and/or assessment activities, keeping in mind the following guidelines:

1. The activity has a relationship to one or more regular curriculum topics.
2. There is not a single, predetermined answer or solution to the problem raised in the activity.
3. The activity consists of something students do rather than sit and listen to.
4. The activity is fun for most students.
5. The activity should lead to some form of product development on the parts of students who show an interest in the topic.
6. The activity has various levels of challenge to which interested students can escalate if they would like to creatively extend the interest through follow-up activity.

For example, to infuse creative opportunities into the memorization task of learning the names of all the states and capitals in the United States, a group of teachers brainstormed several activities and then let each student choose an activity. Some students interested in music chose to develop a rap version of their state's official anthem. Another group interested in history decided to develop historic site maps and travel brochures. A third group used state-shaped cookie cutters to make an edible map, using chocolate bits to designate the locations of each state's capital. This group was so enthusiastic that they extended their work by starting a small cookie-making business (see Guideline #6 above). They visited other classrooms, accepted donations that were used to buy supplies for the school store, and provided brief historical facts and points of interest about the states when they sold the cookies.

Conclusion

Society advances through innovation and the economic, social, and cultural success of any country are based on the creativity of its people. The demand for creativity and innovative thinking is increasing, and educators have the opportunity to help our young people to become the innovative thinkers of tomorrow. There is a vast amount of research that clearly and unequivocally shows these skills can be enhanced and taught. There is a young Thomas Edison, Rachel Carson, and George Washington Carver in every school in the world, and the kinds of teaching discussed in this chapter describe easy-to-learn instructional practices that will find and nurture the creative potential that is so desperately needed to make the world a better place. Teachers must become the change they wish to see in their students and administrators must give teachers the license to blend creativity development into the standard curriculum. New

and better ideas lead to the kinds of innovation we need in our rapidly changing world. What happens in classrooms on a daily basis can play an important part in contributing to the world's reservoir of creative and productive people.

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