

# Developing Creativity Across All Areas of the Curriculum

Joseph S. Renzulli  
University of Connecticut

*Imagination grows by exercise.*  
Somerset Maugham

This short article 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. A website where several typical activities, along with teacher's guides, will provide you with ready-made activities that you can use with your students (see link at the end of this article). This section uses a "learn-by-doing" approach and will prepare you for the more advanced challenge of developing your own activities. The second part of the article will focus on using the basic principles of creative thinking to develop your own activities. In this section you will be asked to examine any and all topics that are part of the regular curriculum or prescribed curricular standards and to design and infuse creative thinking activities into standards based curricular 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.

## Basic Principles and Start-Up Activities

Three Major Starting Points. Although a great deal has been written about fostering creativity in classrooms, relatively few basic teaching strategies have been effective in encouraging creative development. 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 student performance is usually evaluated in terms of the correctness of a particular answer and the speed and accuracy with which youngsters respond to verbal or written exercises. Thus, the types of problems raised by the teacher or textbook and the system of rewards used to evaluate student progress cause most youngsters to develop a mindset that is oriented toward zeroing in on 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 impressionable young minds also need opportunities to develop their rare and precious creative thinking abilities. Divergent production provides these opportunities as it 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 literally have enabled people to change the world; and we can do more in our schools to prepare young people to bring about changes in small or large ways. The real problems humanity confronts do not have the kinds of predetermined or "pat" answers upon which a great deal of traditional instruction

focuses. Yet we give our students very few opportunities to practice letting their minds range far and wide over a broad spectrum of possible solutions to open ended questions or problems. The philosopher Alan Watts (1964) has talked about these two kinds of thinking in terms of what he calls the “spotlight mind” and the “floodlight mind.” The spotlight mind focuses on a clearly defined area and cannot see the many alternative possibilities or solutions to a problem that may exist outside that well-defined area.

### **A Quick Overview of the Strategies**

In most cases, the first thought that comes to mind in seeking the solution to a difficult problem is seldom the most original idea. 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 there are some cases on record of highly creative products that have resulted from sudden inspirations, research on creativity in both children and adults strongly supports the fluency principle. Studies by Archambault (1970), Paulus (1970), and Baer (1996) have shown that initial responses to a given problem tend to be the more common or ordinary ones and that the greater the number of responses generated in a problem solving situation, the higher the probability of producing an original response (original in the sense that fewer students come up with that response). Therefore, a hypothetical curve of creativity for a given task or activity would show a gently sloping incline with an increase in originality being related to an increase in the number of responses. For example, if we asked a group of students to list all of the utensils that people might use to eat with, their initial responses would no doubt include common utensils such as forks, spoons, and knives. But if we encouraged them to increase their lists by using their imaginations (“Suppose you didn’t have any forks or spoons. What could you use?”), students would begin to explore some possible alternatives. They might suggest such items as sharpened sticks, shells, and bottle caps. If we compared the lists of several youngsters, we would find that most of the initial answers are quite common and that most of the students have given the same responses. As the lists grow longer, we would find more divergence occurring, and the probability of a youngster’s producing an original response increasing. In other words, quantity generates quality and 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 and, indeed, in most real life situations as statistical rarity. If everyone in our example above says that knife, fork, and spoon are eating utensils we would not consider these responses to be statistically rare. But if only one student said that a bottle cap could be used as an eating utensil we can consider this response creative because of its statistical infrequency in this particular problem-solving situation.

The questions you raise in your classroom can capitalize on the fluency principle by including a number of activities that generate a large number of responses. In opposition to the techniques of convergent production discussed earlier, these exercises should have no “right” or predetermined correct answer. Rather, they should be designed to encourage the student to produce a large quantity of responses, and, hopefully, practice in this mode of thinking will help free the learner from previously acquired habits of mind which predispose him or her to rely mainly upon recall and convergent thinking.

The basic technique for increasing fluency of expression is called brainstorming. The first step in this process is to 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 verbalize all thoughts and ideas that come to mind, no matter how silly, way-out, or wild the ideas may be. The best way to promote free-wheeling and offbeat thinking is to value quantity and withhold criticism and evaluation until students have exhausted their total supply of ideas related to a given problem. At that time you may then ask students to explain a response if you are unclear about the relevance of the response to the problem being addressed. This practice, known as the principle of deferred judgment (or unevaluated practice) simply means that judgment is deferred until the individual has had an opportunity to explore several possible answers or solutions to a given problem. The principle of deferred judgment, first elaborated upon by Osborn (1963), has consistently been shown to be an essential ingredient for creative thinking. Several researchers, (Amabile, 1985; Baer, 1996), have found evidence to support this claim. The main purpose of unevaluated practice is to free children from the fear of making mistakes.

The following is a list of general questions (adapted from Arnold, 1962) that can be used to spur students' thinking during brainstorming sessions:

#### Other Uses

- Can it be put to other uses as is?
- Can it be put to other uses if it is modified?

#### Adaptation

- What else is like it?
- What other ideas does it suggest?
- What could you copy?
- Whom could you imitate?

#### Modification

- What new twist can you make?
- Can you change the color, size, shape, motion, sound, form, and odor?

#### Magnification

- What could you add?
- Can you add more time, strength, height, length, thickness, value?
- Can you duplicate or exaggerate it?

#### Minification

- Can you make it smaller, shorter, lighter, lower?
- Can you divide it up or omit certain parts?

#### Substitution

- Who else can do it?
- What can be used instead?
- Can you use other ingredients or materials?
- Can you use another source of power, another place, another process?
- Can you use another tone of voice?

#### Rearrangement

- Can you interchange parts?
- Can you use a different plan, pattern, or sequence?
- Can you change the schedule or rearrange cause and effect?

### Reversibility

Can you turn it backward or upside down?

Can you reverse roles or do the opposite?

### Combination

Can you combine parts or ideas?

Can you blend things together?

Can you combine purposes?

These are only some of the questions that teachers and students can use to stimulate creative thinking during brainstorming. Once students have learned the basic brainstorming technique, you should encourage them to approach each activity with an idea-finding frame of reference. As a general rule, you should always encourage students to go as far as they can to come up with many answers to an open-ended question and use probing questions such as the above to extend brainstorming activity.

The full-length chapter can be found at:

Renzulli, J. S. (2017). Developing creative activities across all areas of the curriculum. In R. A. Beghetto & J. C. Kaufman (Eds.), *Nurturing creativity in the classroom* (2nd ed., pp. 23–44). Cambridge University Press.

[New Directions in Creativity Activities](#)