PRESIDENT'S COLUMN

HOW DO *YOU* APPROACH A CHALLENGE?

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Creativity is not just the purview of musicians or other artists—creative problem solving is an excellent example of creativity. If you solve problems, pursue opportunities, or address challenges, you frequently engage in the creative process. As educators, clinicians, researchers, and leaders in academic general internal medicine, we are clearly faced with challenges all the time—how do you approach those challenges?

In medical school, many of us learned that typical responses to a challenge are fight, flight, or freeze. However, an additional uniquely human response is to innovate or engage in creative thinking. Creative thinking simply means looking at something in a new way. Gurus in the business world coined the term breakthrough thinking and have described a process by which innovation occurs through creative thinking. When I first started learning about this process, I was excited to know it is universal, meaning it is something we all engage in, albeit in different ways. Creativity is not just the purview of musicians or other artists—creative problem solving is an excellent example of creativity. If you solve problems, pursue opportunities, or address challenges, you frequently engage in the creative process. As educators, clinicians, researchers, and leaders in academic general internal medicine, we are clearly faced with challenges all the time—how do you approach those challenges?

Research on the creative problem-solving process identifies distinct activities that use specific and unique skills that we all possess to come up with innovative solutions. In this month's *Forum* article, I hope to give you some background on, insights into, and resources for creative problem solving that we can use individually and collectively in our careers.

Alex Osborn, founder of the Creative Education Foundation, first developed creative problem solving in the 1940s, along with the term *brainstorming*.[1] Together with Sid Parnes, he developed the Osborn-Parnes Creative Problem Solving Process. In the creative problem solving process, you are asked to understand the difference between "divergent" and "convergent" thinking, and then learn to separate the two. *Divergent thinking* is the generation of as many potential solutions to a challenge as possible; in other words, thinking very broadly. *Convergent thinking*, on the other hand, is narrowing down the possible solutions by critically evaluating the options and choosing the most promising one (or ones). Research has shown that meaningful solutions are most often generated through the use of both divergent and convergent thinking, although not when used simultaneously. One is not better than the other; both are necessary for viable solutions.

The Creative Education Foundation (CEF) describes the following four core principles of the creative problem solving process:

1. **Divergent and convergent thinking must be balanced.** There needs to be a clear understanding of how divergent and convergent thinking differ. Each way of thinking needs to be done separately, meaning that people need to be able to consciously shift between the two ways of thinking. The key is knowing when to practice each one, and how to balance them effectively.
2. **Ask problems as questions.** Rephrasing problems and challenges as open-ended questions with multiple possibilities makes coming up with solutions much easier. Problem statements tend to generate limited responses, or none at all.
3. **Defer or suspend judgment.** Judging solutions "on the fly" tends to shut down idea generation or divergent thinking. The appropriate and necessary time to judge ideas is during the convergence stage, not the divergent one.
4. **Focus on "Yes, and," rather than "Yes/No, but."** Language matters when you're generating information and ideas. "Yes, and" affirms people's ideas

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and encourages them to expand their thoughts. Using the word "but"—preceded by "yes" or "no"—typically ends conversation, and often negates what's come before it.

We engage in the creative problem-solving process (probably without realizing it) every day as we face challenges big and small, and we all have preferences for how we engage in the process. I first learned this when I participated in different leadership programs, and now have integrated these ideas into much of my current work. Research around creative problem solving helps us understand these four distinct and sequential steps within the process.

The following four steps engage either divergent or convergent thinking:

Step 1. Clarify/Identify your goal, desire, or challenge. You may assume, incorrectly, that you know what the problem is and immediately begin to implement solutions. Such assumptions may lead you to solving the wrong problem and in some cases making a given situation worse. Convergent thinking is useful for identifying the problem. When you have clarity around the problem, collect information about it and ask questions that will generate solutions.

Step 2. Ideate. To ideate is to form an idea of, imagine, or conceive. This is the divergent thinking step in the creative problem-solving process. The goal is to generate (brainstorm, ask what if we…) multiple potential solutions that respond to the challenge questions from Step 1.

Step 3. Develop. The development stage requires a switch to convergent thinking. The goal of this stage is to critically evaluate all potential solutions and converge on the most viable one (or ones). Consider whether potential solutions meet your needs and criteria, and decide whether they can be implemented successfully. Examine strengths and weaknesses of each and determine which solution is the best "fit."

Step 4. Implement. This is the action phase of creative problem solving. Identify resources needed, determine actions you will take to implement your solution(s), decide who will do what by when, ensure all involved in the solution understand the plan and accept it, and push the "go button." Continuous monitoring of implementation activities and evaluation of whether your solution is actually solving the problem will help ensure success.

Each of these steps requires unique skills that people already possess. However, most of us prefer some modes of thinking over others. For example, we may naturally tend to use divergent thinking rather than convergent, or prefer action rather than discussion. As I learned more about the creative problem-solving process, it was eye opening for me to understand my preferences for Steps 2 and 4—ideating and implementing.[2] I realized that I tend to overuse these preferences, often coming up with lots of ideas and moving to implement them without having clarity on the problem I was solving or working with a well-developed plan on how to move the idea forward! This helped explain a lot of the frustrations I had as a team leader and helped me understand my colleagues' preferences that were different from my own. The reality is that each of the steps is critically important. Using the principles of the creative problem-solving process has given me some really important insight and an important tool that I have used in my work whenever I'm facing a challenge.

References

1. The CPS Process. http://www. creativeeducationfoundation.org/ creative-problem-solving/the-cps-process/. Accessed December 2, 2018.
2. https://foursightonline.com. Accessed December 2, 2018. **SGIM**