Creative and Critical Thinking

“Much education today is monumentally ineffective. All too often we are giving young people cut flowers when we should be teaching them to grow their own plants.”

—John W. Gardner

The U.S. entertainment industry has long made a profit by taking comedic (and sometimes serious) jabs at schools and the educators who work in them. The majority of such films and television shows suggest that, for the most part, school is irrelevant to students’ lives.

In many cases, sad to say, that insinuation has proved true. Students study, write papers, calculate equations, take tests, and ultimately graduate. Once in the “real world,” however, these once-successful students find themselves ill-prepared for university education or the workforce.

Most educators today think that teaching should help advance student understanding, not merely stuff students’ heads with knowledge. Other educators argue that without a deep base of content knowledge, students are simply incapable of thinking creatively and critically about a subject.

Defining Understanding

Understanding is the power to make experience intelligible by applying concepts and categories. This definition mirrors Howard Gardner’s (1983/2003) definition of intelligence: “the ability to solve problems, or to create products, that are valued within one or more cultural settings” (p. x).
Teachers must give students cognitive tools that they can use to solve real-life problems and manage change. These tools fall into two key categories: creative thinking and critical thinking.

Creative and critical thinking are complementary and equally important, maintains Donald J. Treffinger in his 2008 article “Preparing Creative and Critical Thinkers.” “Creative thinking involves searching for meaningful new connections by generating many unusual, original, and varied possibilities,” he writes.

Generating possibilities alone doesn’t necessarily help us solve problems, however. According to Treffinger, we must also

- Organize and analyze possibilities.
- Refine and develop the most promising of those possibilities.
- Prioritize and choose certain options.

In other words, we must also be critical thinkers.

**Why Thinking Skills Matter**

Why do critical and creative thinking skills matter? Consider the following:

- Does our education system encourage higher-level, critical thinking and reward students who engage in it as much as it needs to?

  “The core problem is that our education and training systems were built for another era, an era in which most workers needed only a rudimentary education. It is not possible to get where we have to go by patching that system.” (National Center on Education and the Economy, 2007, p. xix)

- Does our education system prepare students for tomorrow’s workforce as well as it needs to?
“Any job that depends on routines—that can be reduced to a set of rules, or broken down into a set of repeatable steps—is at risk. If a $500-a-month Indian chartered accountant doesn’t swipe your comfortable accounting job, TurboTax will. The routine functions are increasingly being turned over to machines.” (Pink, 2005, p. 44)

- Who do our graduates need to be?

“The best employers the world over will be looking for the most competent, most creative, and most innovative people on the face of the earth and will be willing to pay them top dollar for their services.” (National Center on Education and the Economy, 2007, p. xviii)

“Creativity, innovation, and flexibility will not be the special province of an elite. It will be demanded of virtually everyone who is making a decent living.” (National Center on Education and the Economy, 2007, p. 25)

**A Balanced Approach**

Clearly, if students are to succeed in school and beyond, schools must help them achieve greater creative- and critical-thinking skills. However, this doesn’t mean that teachers must focus on creative and critical thinking at the expense of content knowledge. Rather, they should be viewed as two sides of the same coin.

In his book *Why Don’t Students Like School?*, Daniel T. Willingham (2009) notes, “Much of the time when we see someone apparently engaged in logical thinking, he or she is actually engaged in memory retrieval…. When faced with a problem, you will first search for a solution in memory, and if you find one, you will very likely use it….That’s not to say that all problems are solved by comparing them to cases you’ve seen in the past. You do, of course, sometimes reason, and even when you do, background knowledge can help….Much of what experts tell us they do in the course of thinking about their field requires background knowledge, even if it’s not described that way” (p. 28–30).

In *The Knowledge Deficit*, author E. D. Hirsch (2006) gives a practical example: “The factual knowledge that is found in books is the key to reading comprehension. A
deficit of factual knowledge and the deficit in language it entails are the causes of the so-called fourth-grade slump that many children experience” (p. 10).

He goes on to write, “While it is true that proficient reading and critical thinking are all-purpose abilities, they are not content-independent, formal skills at all but are always based on concrete, relevant knowledge and cannot be exercised apart from what psychologists call ‘domain-specific’ knowledge” (Hirsch, 2006, p. 12).

Still, content knowledge alone does not necessarily amount to understanding. Researchers like Grant Wiggins and Jay McTighe are clear that knowledge is useful but understanding—the novel application of knowledge—should be the goal of education.

As the National Center on Education and the Economy writes in its 2007 report *Tough Choices or Tough Times*: “Creativity requires both deep knowledge and technical expertise with one area and very broad knowledge of many, apparently unrelated, areas. It depends on being able to combine disparate elements in new ways that are appropriate for the task or challenge at hand. Thus, it relies heavily on synthesis, the ability to see patterns where others see only chaos. It will happen only in circumstances where the creator is allowed to fail many times in order to succeed only once” (p. 30).