The Creativity Crisis

Po Bronson and Ashley Merryman

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The accepted definition of creativity is production of something original and useful. To be creative requires divergent thinking (generating many unique ideas) and then convergent thinking (combining those ideas into the best result). Creativity was first studied by Prof. E. Paul Torrance. In the 50 years since Torrance made his first creativity tests, scholars—now led by his colleague, Garnet Millar—have been tracking the children, recording every patent earned, every business founded, every research paper published, and every grant awarded.

Nobody would argue that Torrance’s tasks measure creativity perfectly. What’s shocking is how incredibly well Torrance’s creativity index predicted those kids’ creative accomplishments as adults. Those who came up with more good ideas on Torrance’s tasks grew up to be entrepreneurs, inventors, college presidents, authors, doctors, diplomats, and software developers. Jonathan Plucker of Indiana University recently reanalyzed Torrance’s data. The correlation to lifetime creative accomplishment was more than three times stronger for childhood creativity than childhood IQ.

Like intelligence tests, Torrance’s test has been taken by millions worldwide in 50 languages. Yet there is one crucial difference between IQ and CQ scores. With intelligence, there is a phenomenon called the Flynn effect—each generation, scores go up about 10 points. Enriched environments are making kids smarter. With creativity, a reverse trend has just been identified and is being reported for the first time here: American creativity scores are falling.

Kyung Hee Kim discovered after analyzing almost 300,000 Torrance scores of children and adults that creativity scores had been steadily rising, just like IQ scores, until 1990. Since then, creativity scores have consistently inched downward. “It’s very clear, and the decrease is very significant,” Kim says. It is the scores of younger children in America— from kindergarten through sixth grade—for whom the decline is “most serious.”

The potential consequences are sweeping. All around us are matters of importance that are crying out for creative solutions, from saving the Gulf of Mexico to bringing peace to Afghanistan to delivering health care. Such solutions emerge from a healthy marketplace of ideas, sustained by original ideas from people who are also receptive to the ideas of others.

It’s too early to determine conclusively why U.S. creativity scores are declining. One likely culprit is the number of hours kids now spend in front of the TV and playing videogames rather than engaging in creative activities. Another is the lack of creativity development in our schools.

Around the world, though, other countries are making creativity development a national priority. In 2008 British secondary-school curricula was revamped to emphasize idea generation. The European Union designated 2009 as the European Year of Creativity and Innovation. In China, Chinese schools are also adopting a problem-based learning approach.

Plucker recently toured a number of such schools in Shanghai and Beijing. When faculty of a major Chinese university asked Plucker to identify trends in American education, he described our focus on standardized curriculum, rote memorization, and nationalized testing. “After my answer was translated, they just started laughing out loud,” Plucker says. “They said, ‘You’re racing toward our old model. But we’re racing toward your model, as fast as we can.’ ”

What’s common about successful school programs is they alternate maximum divergent thinking with bouts of intense convergent thinking, through several stages. Real improvement doesn’t happen in a weekend workshop. But when applied to the everyday process of work or school, brain function improves.

So what does this mean for America’s standards-obsessed schools? The key is in how kids work through the vast catalog of information. Consider the National Inventors Hall of Fame School, a new public school in Ohio. The teachers came up with a project for the fifth graders: how to reduce the noise in the library. Its windows faced a public space and, even when closed, let through too much noise. The students had four weeks to design proposals.

Working in small teams, the fifth graders first engaged fact-finding. How does sound travel through materials? What materials reduce noise the most? Then, problem-finding— anticipating all potential pitfalls so their designs are more likely to work. Next, idea-finding: generate as many ideas as possible. Drapes, plants, or large kites hung from the ceiling would all baffle sound. Or, instead of reducing the sound, maybe mask it by playing the sound of a gentle waterfall? A proposal for double-paned glass evolved into an idea to fill the space between panes with water. Next, solution-finding: which ideas were the most effective, cheapest, and aesthetically pleasing? Fiberglass absorbed sound the best but wouldn’t be safe. Would an aquarium with fish be easier than water-filled panes?

Then teams developed a plan of action. They built scale models and chose fabric samples. They realized they’d need to persuade a janitor to care for the plants and fish during vacation. Teams persuaded others to support them—sometimes so well, teams decided to combine projects. Finally, they presented designs to teachers, parents, and Jim West, inventor of the electric microphone.

Along the way, kids demonstrated the very definition of creativity: alternating between divergent and convergent thinking, they arrived at original and useful ideas. And they’d unwittingly mastered Ohio’s required fifth-grade curriculum—from understanding sound waves to per-unit cost calculations to the art of persuasive writing. “You never see our kids saying, ‘I’ll never use this so I don’t need to learn it,’ ” says school administrator Maryann Wolowiec. “Instead, kids ask, ‘Do we have to leave school now?’ ” Two weeks ago, when the school received its results on the state’s achievement test, principal Traci Buckner was moved to tears. The raw scores indicate that, in its first year, the school has already become one of the top three schools in Akron, despite having open enrollment by lottery and 42 percent of its students living in poverty.

With as much as three fourths of each day spent in project-based learning, principal Buckner and her team actually work through required curricula, carefully figuring out how kids can learn it through the steps of Treffinger’s Creative Problem-Solving method and other creativity pedagogies. “The creative problem-solving program has the highest success in increasing children’s creativity,” observed William & Mary’s Kim.

It’s also true that highly creative adults frequently grew up with hardship. Hardship by itself doesn’t lead to creativity, but it does force kids to become more flexible—and flexibility helps with creativity.

Creativity has always been prized in American society, but it’s never really been understood. While our creativity scores decline unchecked, the current national strategy for creativity consists of little more than praying for a Greek muse to drop by our houses. The problems we face now, and in the future, simply demand that we do more than just hope for inspiration to strike. Fortunately, the science can help: we know the steps to lead that elusive muse right to our doors.