

## Excerpt from: Marshall Memo 435

### Creativity Can Be Taught

In this important *Newsweek* cover story, Po Bronson and Ashley Merryman report that while Americans' average I.Q.s has been rising 10 points each generation (the so-called Flynn effect), creativity has been *falling* since 1990, with the steepest declines among children from kindergarten to grade 6. Part of the problem, say the authors, is that we assume creativity is a gift that can't be taught. "While our creativity scores decline unchecked," they say, "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."

How do we know creativity is declining? From a massive study using the well-regarded Torrance assessment, which asks people to generate ways of using everyday objects differently and/or improving them. And why is it declining? Researchers aren't sure yet, but one likely suspect is the amount of time young people are mesmerized by television and video games. Another is that schools have devoted less time to creative activities in recent years – unlike many other countries, which are making a concerted effort to develop creativity in schools. But isn't creativity innate – either you have it or you don't? And shouldn't schools be sticking to basics to prepare students for the 21<sup>st</sup> century and let "gifted" students develop creativity in the art room? Wrong, wrong, and wrong, say Bronson and Merryman. Creativity is "part of normal brain function" and *can* be developed, they contend, and it's important in all subject areas from music to engineering. "The argument that we can't teach creativity because kids already have too much to learn is a false tradeoff," they say. "Creativity isn't about freedom from concrete facts. Rather, fact-finding and deep research are vital stages in the creative process." Students can, in fact, meet and go beyond today's curriculum standards through more creativity-based instructional approaches.

Bronson and Merryman also puncture the notion that creativity is exclusively a "rightbrain" activity. Here's the sequence of mental activity that occurs when a person solves a problem:

- Focusing on obvious facts and familiar solutions to see if the answer lies there;
- If not, scanning and evaluating remote memories for unseen patterns and alternative meanings;
- Zeroing in on a promising idea – the "aha!" moment;
- Evaluating that idea – is it worth pursuing?

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"Creativity requires constant shifting, blender pulses of both divergent thinking and convergent thinking, to combine new information with old and forgotten ideas," say Bronson and Merryman.

Yes, some people are innately better at divergent thinking than others, they say, but creativity training that aligns with the new insights from brain science can be remarkably effective. "Creativity can be taught," says California State University/San Bernardino professor James Kaufman. The key is alternating between intense divergent thinking and intense convergent thinking several times. "Real improvement doesn't happen in a weekend workshop," say Bronson and Merryman. "But when applied to the everyday process of work or school, brain function improves."

What would this look like in a school? Here's a problem posed to fifth graders last year

at the National Inventors Hall of Fame School in Akron, Ohio – a school that devotes threequarters

of each day to project-based learning: Reduce the noise in the library, whose windows face a busy public space. Working in small teams, students had four weeks to come up with proposals. Here’s how they proceeded (with plenty of support and guidance along the way):

- Fact-finding – How does sound travel through materials? What materials reduce noise the most?

- Idea-finding – Generating as many ideas as possible – drapes, plants, large kites hung from the ceiling to baffle sound, masking the outside noise with a gentle waterfall, double-paned glass, filling the space between panes of glass with water, an aquarium with fish as the barrier, etc.

- Solution-finding – Which ideas are the most effective, most affordable, and most aesthetically pleasing? Safest?

- A plan of action – Building scale models, choosing fabric samples, figuring out who would take care of plants and fish over vacations, etc.

- Problem-finding – Anticipating all potential problems so their designs are more likely to work;

- Presenting the plan – The audience was teachers, parents, and an outside expert.

In the process, students had fun, came up with great ideas to solve a real-world problem, and mastered large chunks of Ohio’s required fifth-grade curriculum, including understanding sound waves, per-unit cost calculations, and persuasive writing. The school’s state test scores soared this year. “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?“”

Here are some of the other activities at different age levels that have successfully developed creativity:

- Preschool – Role-playing and acting out characters helps children see things from a different perspective.

- Middle childhood – Creating paracosms, or fantasies of entire alternative worlds.

- Fourth grade on – As the curriculum becomes more content-rich, it’s helpful if teachers are willing to entertain unconventional answers and “detours of curiosity.”

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It’s a myth that creative people are depressed, anxious, and neurotic, say Bronson and Merryman. The reason creative students sometimes drop out is that they become discouraged and bored in creativity-stifling schools. In fact, a gloomy mindset shuts down creativity. People who score high on creativity assessments tend to be more confident about the future, have stronger relationships, and deal better with setbacks. It’s uncreative people who are at risk. In a sidebar at the end of the article, Bronson and Merryman sum up specific advice for educators and parents:

• *Forget brainstorming.* Research at Yale University in 1958 showed that brainstorming actually reduces a team’s creative output; the same people, working individually, can come up with more and better ideas.

• *Imagination exercises don’t work.* It’s a myth that all you have to do is let your natural creativity run wild. There’s much more to being creative than that.

• *Don’t tell someone to be creative.* “Such an instruction may just cause people to freeze up,” say Bronson and Merryman. Here’s a better approach from University of Georgia

professor Mark Runco: “Do something only you would come up with – that none of your friends or family would think of.” Using this approach, he’s doubled people’s creative output.

- **Reduce screen time.** For every hour spent watching TV, says University of Texas professor Elizabeth Vandewater, overall time on creative activities like fantasy play and art projects drops as much as 11 percent.
- **Exercise.** “Almost every dimension of cognition improves from 30 minutes of aerobic exercise,” say Bronson and Merryman. “The type of exercise doesn’t matter, and the boost lasts for at least two hours afterward.” But this works only for people who are physically fit. For those who aren’t, fatigue counteracts the benefits.
- **Get immersed in a passion.** “Kids do best when they are allowed to develop deep passions and pursue them wholeheartedly – at the expense of well-roundedness,” say Bronson and Merryman. American Psychological Association researcher Rena Subotnik has found that children who dive into one area and become expert in it have better self-discipline and handle setbacks more effectively.
- **Forget the suggestion box.** Formalized suggestion boxes and e-mail surveys actually stifle innovation, says ESCP Europe Business School Isaac Getz, because employees often feel that their ideas will be lost in the bureaucracy. Toyota’s plant in Georgetown, KY has been highly successful because it implements up to 99 percent of employees’ suggestions.
- **Take a break.** Multitasking has been shown to undermine focus and productivity, but it’s a good idea to shift from one creative project to another.
- **Explore other cultures.** Living abroad, being exposed to people from other countries, or even watching a slide show about another culture helps people be more adaptable and flexible. “The Creativity Crisis” by Po Bronson and Ashley Merryman in *Newsweek*, July 19, 2010 (p. 44-50), <http://www.newsweek.com/2010/07/10/the-creativity-crisis.html>