

QUICK TIPS TO CREATIVITY IN SCIENCE

PART 1: COMMON CREATIVITY MYTHS

MYTH 1: CREATIVITY IS A FIXED TRAIT - A SIGN OF GIFTEDNESS

Response: Creativity is not just something you're born with. Creativity can also be taught. According to the 2014 article, "Nurturing Creativity in Education" by Paul Collard and Janet Looney, "researchers still consider that personal traits, or dispositions, are correlated with creativity. But they also believe that all individuals can develop capacity for everyday creativity, including divergent thinking and the ability to generate new ideas or develop skills for creative problem solving over time."

MYTH 2: CREATIVITY MEANS BEING ABLE TO COME UP WITH LOTS OF NEW AND DIFFERENT IDEAS.

Response: Creativity does not mean just being able to think outside-the-box all the time. According to Collard and Looney, "Various commentators have criticised...that the number of ideas a person generates and how unique or uncommon they are do not reveal their value or usefulness....Rather, the most creative people seem to be those who are able to arrive at the 'best' solution in the shortest period or with the greatest simplicity."

MYTH 3: CREATIVITY CANNOT BE ASSESSED SINCE CREATIVITY IS OPEN-ENDED EXPLORATION.

Response: Although open learning (doing something without a defined result or outcome) is a condition necessary for creativity to bloom, open learning should not be without borders or feedback. Without feedback or borders, how can a student know if their ideas are good or how to deepen or broaden their ideas. According to Collard and Looney, "Relatively little attention has been given to the quality of creative products in schools.... Indeed, in the realm of creativity, teachers...may resist any approach that resembles classic assessment of learner attainment.... To some extent, this may reflect teachers' desire to avoid discouraging learners' self-expression. At the same time, learners receive little guidance on how they might improve or deepen their work."

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TIP 1: STRUCTURE OPEN LEARNING

If creative ideas is about having the best solution to a problem (and not just having lots of them), then make open learning goal oriented. Provide context to the project at hand and impose constraints to the solution. For example, a solution to reducing fossil fuel use is not just to put up more wind farms and solar cells. Have students also factor in human and environmental costs to doing so as well as the convenience of fossil fuel use too. Then, we can truly see whether or not the solution is the best fit for the problem.

TIP 2: ASSESS CREATIVITY

To start, develop a rubric that assesses creative process and product. Beyond just checking off boxes and making sure a certain number of pictures or words are used, have your rubric assess how students are coming up with their ideas. Or, at the very least, have your rubric provide feedback on that process (if not a mark).

TIP 3: FIND SMALL WAYS TO PRACTICE CREATIVITY

If creativity can be developed, then start by giving students practice in developing creative solutions to things that are happening in the classroom. For example, asking students to find another way to test a concept or measure a variable (one that comes to mind is asking students how McDonald's determines the calories in their burgers). Or, have students develop a better version of a current solution. The point is, creativity doesn't need to be reserved for big projects - they can also be used in the everyday.

REFERENCES

Collard, P., & Looney, J. (2014). Nurturing Creativity in Education. *European Journal of Education*, 49(3), 348-364. doi:10.1111/ejed.12090