

# Art could help create a better 'STEM' student

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Science, technology, engineering and mathematics (STEM) have become part of educational vernacular, as colleges, universities and other institutions strive to raise the profile of the areas of study and the number of graduates in each field.

Now a project from the University of Houston College of Education Urban Talent Research Institute encourages the incorporation of creative endeavors to attract more and better STEM students.

"There is not a unanimous consensus on what STEM is and there is little research on what it means to support STEM," said Jay Young, a University of Houston College of Education Ph.D. student specializing in [educational psychology](#) and individual differences. Young, whose own academic studies were in physics and who taught high school math, does not doubt the need to encourage more STEM students. He does, however, doubt the methods for getting there.

"The federal government considers STEM natural sciences, while the National Science Foundation includes social sciences," he said.

"Supporting STEM [education](#) should also mean increasing the quality of the graduate. That is where STEAM comes in."

STEAM takes STEM efforts and incorporates art (the "A" in STEAM is for "Art"). Young's research focuses on how to incorporate creativity into STEM education with the implication that doing so will increase the quality of STEM graduates. He says STEM studies are about problem solving, and creative endeavors are exercises in problem solving.

"When an artist is painting, he is trying to solve a problem—how to express what is being felt. He experiments with colors, technique and images the same way a scientist or engineer experiments with energy and signals," he said. "There is more than one way information can be taught just like there is more than one way problems can be solved."

Young is a recipient of a Fellowship in Education Evaluation, Assessment and Research (FEEAR) sponsored by UH and U.S. Department of Education. Through an internship at the Children's Museum of Houston, Young is evaluating an afterschool program at the museum which integrates art and STEM.

"Creative thinking and problem solving are essential in the practice of math and science," he said. "Incorporating art into math and science will not only help students become more creative and better problem solvers, it will help them understand math and science better."

Young's research is guided by faculty adviser and Interim Associate Provost for Faculty Development and Faculty Affairs Rick Olenchak,. He directs the UH Urban Talent Research Institute and studies issues surrounding talent development and giftedness, as well as mentoring and creativity.

Recently, Young and eight others associated with the Urban Talent Research Institute presented research findings to the National Association of Gifted Children conference in Indianapolis.

Provided by University of Houston

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