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STEAMing Up Education

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ASCD's 68th Annual Conference and Exhibit Show Session Preview

"STEAM (Science, Technology, Engineering, Arts, and Mathematics) at Boston Arts Academy" presented by:



Ramiro Gonzalez,
Boston Arts Academy



Linda Nathan,
Boston Arts Academy



Mark Lonergan,
Boston Arts Academy

ASCD's 68th Annual Conference and Exhibit Show features more than 400 sessions on some of the most important topics in education. Built on the theme, "Learning: Our Story. Our Time. Our Future.," the Annual Conference and Exhibit Show will be held March 16–18, at McCormick Place in Chicago, Ill., and will inform, engage, help, and challenge educators from across the globe to better support student success. Below we hear from three Annual Conference presenters—Linda Nathan, Mark Lonergan, and Ramiro Gonzalez—whose interactive session, "STEAM (Science, Technology, Engineering, Arts, and Mathematics) at Boston Arts Academy," will be held on Monday, March, 18, 2013 from 1:00 to 3:00 p.m.

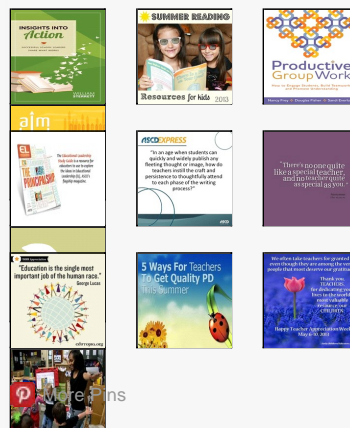
As educators, we want to help our students be well-adjusted, well-informed, and well-prepared for success when they walk out our doors. But it's tricky to prepare for the future in today's rapidly changing world. In the past several years it has become abundantly clear that our students need more than just traditional content knowledge and study skills to make it in today's workforce. The U.S. education system has been increasing the amount of content and high stakes testing with a special emphasis on the STEM fields of science, technology, engineering, and math. On top of this, our students need diverse experiences, creative problem-solving skills, teamwork skills, and the ability to communicate all of this to others to succeed in the working world. So how can teachers squeeze all this into their classrooms?

At Boston Arts Academy (BAA), like many other institutions across the U.S., we have adopted the STEM program and are working to create a learning experience that keeps the subjects more integrated and the lessons more student-focused rather than teacher-led. The science and math teachers have merged their departments to truly connect their subjects, but this is still only part of what our students really need to succeed.


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How could we integrate creativity, teamwork, and communication skills into the classrooms? We just looked down the hall for ideas.

Right across from a math class you might peer into a dance studio or theatre rehearsal. Just a short walk further you'll find the art studios or music practice rooms. Here amongst the music, the movement, and the artwork, you will find students using creative problem-solving, teamwork, and communication skills. The work done in art classes is often much more collaborative. This requires students to struggle together and build upon each other's strengths and challenges. Persistence, energy, and the willingness to take risks are noticeable in these classrooms, and the focus is always on improvement and collaborating to do one's best. The role of critique is paramount. Listening and exchanging ideas is also crucial.

Perhaps using an artistic approach to teaching is the key; how can we marry the arts experience with the STEM curriculum? Many individuals in the educational research and policy worlds, including U.S. Department of Education Secretary Arne Duncan, argue that an **"arts education is essential to stimulating the creativity and innovation that will prove critical to young Americans competing in a global economy."** BAA has chosen to add the "A" from the arts to go beyond STEM to "STEAM," and we are not alone. Executive and entrepreneur, John Tarnoff, supported the "A" skills in a 2010 editorial arguing that, "more and more companies are looking for skill sets in their new employees that are much more arts/creativity-related than science/math-related. Companies want workers who can brainstorm, problem-solve, collaborate creatively and contribute/communicate new ideas."

So what does STEAM look like in the classroom? That is the work we are currently undertaking here at BAA. It has come in many forms, from little adjustments in the daily lessons to creating entirely new courses. But across all of our STEAM classes, we are working to approach our content as artists, engineers, and designers. This sometimes means focusing less on the final answer and giving more attention to the process that gets you there. This also means giving teachers the flexibility and support to develop innovative classroom experiences and inviting in outside experts to work with our students. This means making sure that we have multiple modes of assessment in our courses beyond just the multiple choice test; for example, maybe exhibiting through an artistic form rather than on a worksheet. This means that we create time in our STEAM courses for students to take risks and think creatively and give them chances to learn from their mistakes.

Taking risks, making mistakes, and "mucking about" with problems are all part of the curriculum. Yes, getting the right answer counts, but learning to play with concepts and build together is equally important.

In our interactive session, **"STEAM (Science, Technology, Engineering, Arts, and Mathematics) at Boston Arts Academy,"** we will share sample lessons and projects that create interdisciplinary, student-centered learning experiences that push collaboration and risk-taking. Participants will leave with specific curriculum units and ways to infuse the STEAM pedagogy.

The world may be changing quickly, but so are our classrooms. As we merge the "A" into STEM, we hope to help our students find a passion for their academics as well as their arts, and to see how they are both intertwined as essential to their success. With STEAM, we take one step closer to ensuring that our students exit our doors not only with a diploma, but with a set of skills that will help them shape the future.

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