



Making Science Fun Again

4 ways to provide professional learning that's effective, impactful, and sustainable

BY KATIE FORSELL

“Why?” How many times a day do we hear that question from students? Sometimes, it's a flippant response to something we ask them to do, such as “Why do we have to learn this?” Most of the time, however, this question is sparked by their curiosity and eagerness to learn about the world around them: “Why is the sky blue?” “Why do birds fly south in the winter?”

Children are curious by nature. They are investigators who want to explore and learn how and why things work the way they do. The scientific method is practically innate, even in toddlers. When children observe something new or interesting in nature, for example, they start by questioning it. “Where do the stars go in the daytime?” “What are stars made of?” “When will the first star come out tonight?” They often look to an adult for an explanation, then they take that observation and information and form their own hypothesis (“I think it's because ...”).

If children are naturally curious about and interested in science, why isn't it the most prevalent and popular class in schools? And shouldn't every teacher love teaching science because children are so drawn to it?

A study by the Amgen Foundation and Change the Equation found that while teenagers are interested in science subject material such as biology, chemistry, and physics, they don't enjoy taking these classes in school. Even more concerning is evidence from a 2011 research report by Andreas Krapp and Manfred Prenzel, “Research on Interest in

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Science: Theories, Methods, and Findings," which suggests that students who have a high cognitive potential for science don't go on to pursue careers as scientists or engineers. Why? Because they lose interest when school no longer makes science fun or appealing.

Interest Stems From Fun

STEM jobs are expected to experience the highest growth over the next decade, and STEM occupations pay nearly double the average wage of non-STEM occupations. Yet students don't want to take these classes, and they are choosing different paths.

This means that elementary and middle school leaders and teachers have an important task ahead. We have to prepare students with the science content, skills, and strategies they need to be successful in school and in 21st century life. At the same time, we have to engage budding scientists and engineers and sustain their interest from elementary to middle school and beyond. How do we accomplish this? By making it fun to learn about science.

Without fun, students lose interest. And without interest, teachers struggle to engage students and help them build the knowledge and the skills required for STEM careers.

Making science fun isn't as easy as it sounds, however. Here's why:

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- **Teachers are always battling against the clock.** With rigorous standards and assessments for reading and math, they struggle to work time in for science. Many feel fortunate if they can teach one or two science lessons a week. When they do find time to squeeze in a science lesson, it might be completed in haste.
- **Not many elementary school teachers have science degrees.** As a result, many aren't as confident teaching science as they are other subject areas.
- **As grades progress, science topics become more complex, and science instruction becomes less fun.** At some point in elementary or middle school, students' curiosity about science begins to fade, we lose their interest, and science becomes "boring."

While the concept of making science fun is not new, the urgency is real. As we prepare for a future that promises self-driving cars, robot assistants, and outer space tourism, we need more students who are interested in science and engineering. Ensuring that teachers are equipped with the time and resources to teach science can make a difference, but the best way to make a significant impact is through teacher training.

Here are four ways to provide professional learning for teachers that is effective, impactful, and sustainable in science or any content area:

- 1. Make it meaningful.** No matter the subject, teachers crave professional learning that's purposeful and productive. They want to learn strategies, methods, and resources for science instruction. When training is meaningful and relevant, teachers are excited to return to their classrooms and teach, and that excitement is contagious. When teachers are enthusiastic about what they teach, students get excited, and learning becomes fun.
- 2. Make it continuous.** There is a difference between professional development and professional learning. Professional development is a one-stop shop: Teachers are given enough information to get started, and they are then sent

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back to their classrooms. With this approach, the problem is that teachers are overwhelmed with the new information and often struggle with implementation. In contrast, professional learning is continuous. It creates opportunities for teachers to develop and improve their practice over time.

3. Make it collaborative. Isolation is another factor that contributes to a feeling of being overwhelmed. Collaborative training, on the other hand, opens a forum in which teachers can exchange knowledge and experiences, share successes and challenges, and ask questions. This helps build confidence and eliminates feelings of isolation and frustration. Teachers are supported in working together toward a common goal: making science fun.

4. Make it hands-on. Teachers need time to experiment and play with the “why” and “how” of science through activities. They need to have fun as they learn from the process so they can take hands-on experiences back to the classroom. I have participated in training that allowed time only for browsing through lessons and training that provided time to actually do the lessons. The latter approach is much more impactful.

Schools can make science fun. When we invest in our teachers, we invest in our students. When teachers are well trained, they can effectively engage students, stoke their curiosity, and ignite a passion for learning. Science can spark students’ interest and imagination, become a lifelong fascination, and ultimately help them fuel a thriving economy. ●

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