

# Invention Education in Action: Helping students develop an Innovation Mindset while learning STEM skills

## Q&A with **Alaina Rutledge**, V.P. of Education R&D, and **Britt Magneson**, Executive V.P., National Inventors Hall of Fame



### **What is invention education, and how is it symbiotic with STEM education?**

Invention education does not replace STEM education or even augment it. Instead, it answers the “so what?” question. It provides relevance to STEM by helping students gain a

current understanding of what it means to be an innovator. Innovators are makers, scientists, researchers, problem solvers, creators, and entrepreneurs. Invention education therefore spends a significant amount of time not only developing skills that build the mindset of an innovator, but helping students develop an identity that says, “I am an innovator” or “I am a problem solver.”

### **What impact can invention education have on students’ college and career readiness?**

Generating solutions for society’s complex problems will require the development of a diverse workforce that is committed to technological and social innovation. That’s why invention education promotes soft skills like problem solving, collaboration, persistence, and confidence. These are all habits of mind that you can’t measure with an SAT.

The research is clear that students need to have these skills in addition to what’s normally taught in STEM and other subjects, because they’re already connected to devices that are essentially akin to having a calculator and every encyclopedia right in their pocket, if they need to do basic math or look up information. Students need to learn soft skills if they are going to tackle the complexities of tomorrow’s workforce, and invention education helps them develop those skills.

### **How does the National Inventors Hall of Fame work with districts to bring invention education to STEM learning?**

Through our relationship with hundreds of National Inventors Hall of Fame inductees, we have learned that there are thousands of pathways that lead to innovation and invention. There is no one-size-fits-all path to becoming

successful. There are, however, common themes and experiences that were keys to success for a majority of our Hall of Famers. We call it the Innovation Mindset®. This mindset involves collaboration, application of STEM concepts, creative problem solving, entrepreneurship and an understanding that moments of failure are necessary on the path to success.

We offer a variety of programs to districts that provide authentic, hands-on opportunities to help students develop this Innovation Mindset, through STEM activities that position inventors as role models. These include our in-school grade banded program Invention Project for PreK–8, our flexible summer program Camp Invention for grades K-6, the virtual version of the same called Camp Invention Connect for hands-on learning at home, and our afterschool program Club Invention for grades 1-6.

We directly work with teachers through our professional development program to demonstrate and model how to incorporate invention education into their daily classroom experience, whether in literacy, social studies, or mathematics.

### **Can any school or district teach invention education?**

Yes, because we’re teaching the basic qualities that are foundational to every type of learning. All learning requires that you try something new, with the understanding that you might fail, and if something doesn’t work, it’s okay. The next step is to ask why. It’s all about building confidence in students and developing their persistence so that they become the driver of their own learning. Everything about invention education is beneficial.



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