

How to Turn Your Classroom into an Idea Factory

By Suzie Boss

The following suggestions for turning K-12 classrooms into innovation spaces come from [*Bringing Innovation to School: Empowering Students to Thrive in a Changing World*](#), published in July by Solution Tree.

How can we prepare today's students to become tomorrow's innovators? It's an urgent challenge, repeated by President Obama, corporate CEOs, and global education experts like Yong Zhao and Tony Wagner. Virtually every discussion of 21st-century learning puts innovation and its close cousin, creativity, atop the list of skills students must have for the future.



If we're serious about preparing students to become innovators, educators have some hard work ahead. Getting students ready to tackle tomorrow's challenges means helping them develop a new set of skills and fresh ways of thinking that they won't acquire through textbook-driven instruction. Students need opportunities to practice these skills on right-sized projects, with supports in place to scaffold learning. They need to persist and learn from setbacks. That's how they'll develop the confidence to tackle difficult problems.

How do we fill the gap between saying we must encourage innovation and teaching students how to actually generate and execute original ideas? The answers are emerging from classrooms across the country where pioneering teachers are making innovation a priority. Their strategies vary widely, from tinkering workshops and design studios to digital gaming and global challenges. By emphasizing problem solving and creativity in the core curriculum, these advance scouts are demonstrating that innovation is both powerful and teachable.

Across disparate fields, from engineering and technology to the social and environmental sectors, innovators use a common problem-solving process. They frame problems carefully, looking at issues from all sides to find opportunity gaps. They may generate many possible solutions before focusing their efforts. They refine solutions through iterative cycles, learning from failure along with success. When they hit on worthy ideas, innovators network with others and share results widely.

In the classroom, this same process corresponds neatly with the stages of project-based learning. In PBL, students investigate intriguing questions that lead them to learn important academic content. They apply their learning to create something new, demonstrate their understanding, or teach others about the issue they have explored. By emphasizing key thinking skills throughout the PBL process, teachers can guide students to operate the same way that innovators do in all kinds of settings.

Here are eight tips to borrow from classrooms where teachers are reinventing yesterday's schools as tomorrow's idea factories.

1. WELCOME AUTHENTIC QUESTIONS.

Good projects start with good questions. Listen closely to students to find out what makes them curious. Instead of presenting them with ready-made assignments, invite student feedback when you are designing projects. Make sure your driving questions for projects involve real-world issues that students care about investigating.

2. ENCOURAGE EFFECTIVE TEAMWORK.

Projects offer an ideal context to develop students' collaboration skills, but make sure teamwork doesn't feel contrived. If projects are too big for any one student to manage alone, team members will have a real reason to rely on each other's contributions. Teach students how to break a big project into manageable pieces and bring out the best ideas from everyone on the team. Offer them examples of innovations (from the Mars rover to the iPad) that wouldn't have been possible without team efforts.

3. BE READY TO GO BIG.

Innovators have a tendency to think big. They know how to use social networking tools to make a worthy idea go viral. Encourage students to share their projects with audiences beyond the classroom, using digital tools like YouTube or online publishing sites. Help them build networks to exchange ideas with peers and learn from experts around the globe.

4. BUILD EMPATHY.

Innovation doesn't happen in a vacuum. Innovators who have empathy can step outside their own perspective and see issues from multiple viewpoints. Approaching a problem this way leads to better solutions. Teach students strategies for making field observations, conducting focus groups or user interviews, or gathering stories that offer insights into others' perspectives.

5. UNCOVER PASSION.

Passion is what keeps innovators motivated to persist despite long odds and flawed first efforts. Find out what drives students' interests during out-of-school time, and look for opportunities to connect these pursuits with school projects. Ask students: When you feel most creative, what are you doing? What tools or technologies are you using? Their answers should set the stage for more engaging projects.

6. AMPLIFY WORTHY IDEAS.

In today's flat world, where access to information is ubiquitous, innovation can happen anywhere. Opportunities to support good ideas are also getting flattened. Philanthropy and venture funding, once reserved for the wealthy, have been crowdsourced with online platforms like Kiva (www.kiva.org) and Kickstarter (www.kickstarter.com). To participate fully in the culture of innovation, students need to be able to do more than generate their own ideas. They also need to know how to critically evaluate others' brainstorming and decide which ones are worth supporting. Develop classroom protocols for students to critically evaluate each other's ideas. They may decide to throw their collective energy behind one promising idea or pull components from multiple teams into a final project.

7. KNOW WHEN TO SAY NO.

Being a critical thinker also means being able to spot ideas that aren't ready for prime time. Bold new ideas may have bugs that need to be worked out. An approach that appears to be a game-changer may be too expensive for the benefits it affords or may have unanticipated consequences. Give students opportunities to look for potential pitfalls and know when to say no.

8. ENCOURAGE BREAKTHROUGHS.

Will students come up with breakthrough ideas in every project? Probably not, but you can encourage them to stretch their thinking by setting ambitious goals. What would students be able to do or demonstrate if they were truly operating as innovators? Provide them with real-world examples by sharing stories of innovators from many fields, including social innovators who tackle wicked problems like poverty or illiteracy. Share the back stories of breakthroughs to show how much effort went into each inspired idea. Let students know they can't expect to reach breakthrough solutions to every problem they tackle. Finding out what doesn't work can be a useful outcome, too. Genuine innovation is indeed rare—but worth recognizing and celebrating when it happens.