



Table of Contents

About the Author	ix
Foreword	xi
Introduction	1
Part I	
Setting the Stage	9
Chapter 1	
Coming to Terms With Innovation	11
The Evolution of Innovation	12
Innovation Unleashed	14
The Urgency to Innovate	18
Creativity Shortfall	21
Student Interest as a Catalyst for Innovation	23
Action Step	24
Borrow This Idea	25
Chapter 2	
Seeing Educators as Innovators	27
Model Innovators	29
Your Innovation Profile	31
Borrow This Idea	35
Chapter 3	
Growing a New Global Skill Set.	37
Welcome Authentic Questions	38
Encourage Effective Teamwork	40
Be Ready to Go Big.	41
Incorporate Further Key Practices	43

Borrow This Idea	50
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Part II

Building the New Idea Factory 51

Chapter 4

Seeding Innovation 53

Encourage Grassroots Ideas	53
Seeding Ideas: How to Get Started	56
Strategy Spotlight: Be Opportunistic	57
Borrow This Idea	60

Chapter 5

Integrating Design Thinking Throughout the Curriculum. 61

Develop an Innovative Curriculum	65
Find an Opening	67
Design Thinking: How to Get Started	69
Strategy Spotlight: Think in Metaphors	71
Borrow This Idea	75

Chapter 6

Making Room for Thinkers 77

Reframe School as an Innovation Workshop	79
Thinking Space: How to Get Started.	82
Strategy Spotlight: Take Time to Mess Around.	82
Borrow This Idea	88

Chapter 7

Taking Advantage of Technology 91

Grow Opportunities	92
Engineering: How to Get Started	95
Strategy Spotlight: Learn to Fail	96
Borrow This Idea	100

Chapter 8**Gaming for Real Learning 101**

Reengage Learners With Games 104

Gaming: How to Get Started 106

Strategy Spotlight: Look for Crossroads 107

Borrow This Idea 110

Part III**Moving From Thinking to Doing 111****Chapter 9****Spreading Good Ideas 113**

Use Networks for Innovation 116

Help Good Ideas Go Viral 118

Borrow This Idea 119

Chapter 10**Taking Action 121**

Find Your Edge 122

Develop Common Processes 125

Remove Barriers 126

Find Allies at the Edges 127

Practice Innovative Teaching 128

Encourage Innovation in Informal Learning 129

Showcase Results 129

Patience, Persistence, Potential 130

Afterword 133**Appendix A****Additional Resources 135**

Design Thinking 135

Digital Gaming 136

Innovation and Invention 136

Project-Based Learning	137
Social Innovation	138
Appendix B	
Innovation Rubric	141
Appendix C	
Discussion Guide	143
Part I: Setting the Stage	143
Part II: Building the New Idea Factory	144
Part III: Moving From Thinking to Doing	147
References and Resources	149
Index	159

Coming to Terms With Innovation

On a chilly weekend each January, about five hundred teachers, school leaders, students, and others come together for EduCon, an event known for sparking deep conversation about thinking and learning. Hosted by Science Leadership Academy, a public high school in Philadelphia with a national reputation for excellence, each EduCon focuses on a different theme. In 2011, it was innovation. At the Friday-night kickoff event at the Franklin Museum, a panel of esteemed thinkers demonstrated the difficulty of coming to terms with this word that we hear with such great frequency.

Frederic Bertley, vice president of science and innovation at the Franklin Institute, launched the discussion by sharing a collection of quotes about innovation:

- Steve Jobs, Apple cofounder—“Innovation distinguishes between a leader and a follower.”
- Margaret Wheatley, expert on leadership—“Innovation is collaboration.”
- President Barack Obama—“Innovation is how we make our living.”
- Ben Franklin, legendary innovator—“When you’re finished changing, you’re finished.”

Of course, these are just a handful of the definitions that get tossed around. Some days it feels as if we’re at risk of innovation overload, with marketers of everything from breakfast cereal to hair products claiming to be innovators. But definitions matter, especially when you’re trying to set the stage for innovation. This chapter will help you clarify your understanding of innovation and understand why it’s considered such an urgent goal for today’s students.

The Evolution of Innovation

John Kao, a self-described innovation activist (as well as an angel investor, jazz pianist, psychiatrist, and former Harvard Business School professor), is an excellent guide to understanding this territory. He reminds us that innovation is not static. It's an evolving concept. In *Innovation Nation*, Kao (2007) outlines four historical stages of innovation:

- 1.0—We begin with the tradition of individual inventors following their curiosity and practicing what Kao calls the “artisanal model of innovation.” Think Ben Franklin and his kite or the Wright brothers tinkering with their flying machine.
- 2.0—The industrial era of innovation brings us thinkers like Thomas Edison and Henry Ford, who set up idea factories and centralized research labs to improve industry.
- 3.0—Deinstitutionalized innovation opens the era of the innovator-entrepreneur financed by venture capital. Entrepreneurial communities, like Silicon Valley, expand through open networks enabled by Internet and digital collaboration.
- 4.0—Global diffusion of innovation brings us to today. New ideas are originating anywhere and everywhere. Innovation is flattened.

Across these eras, Kao defines innovation as “the ability of individuals, companies, and entire nations to continuously create their desired future . . . It is about new ways of doing and seeing things as much as it is about the breakthrough idea” (2007, p. 19).

Steve Johnson (2010), in *Where Good Ideas Come From*, also endorses a definition that is deliberately expansive. By *innovation*, he simply means good ideas. Looking broadly helps him see the common processes and patterns that give rise to innovation in all sorts of contexts. “The poet and the engineer (and the coral reef) may seem a million miles apart in their particular forms of expertise, but when they bring good ideas into the world, similar patterns of development and collaboration shape the process” (Johnson, 2010, p. 22).

Innovation expert Clayton Christensen adds more complexity to the definition by introducing the concept of disruptive innovation. Disruption often comes from new, lower-cost products like personal

computers or mobile phones, which challenge and eventually take over more established products. Apple's earliest personal computer, for instance, didn't begin to compare in computing power with the high-priced minicomputers or mainframe computers then on the market. "All it had to do was make a product that was better than the customers' other alternative, which was no computer at all," Christensen explains in *Disrupting Class* (Christensen, Horn, & Johnson, 2011, p. 73). Eventually, such disruptions move "up market," transforming the whole space. The once-disruptive technology becomes the new normal.

Like technologists, social innovators also look for opportunities to disrupt old patterns. They tackle social and environmental challenges with strategies more often found in the business world than in the non-profit sector. But their goal is social good rather than bottom-line benefits. Instead of operating traditional charities such as soup kitchens to feed the hungry, social entrepreneurs might launch restaurants that double as job-training sites for the chronically unemployed. Greyston Bakery in Yonkers, New York, captures this way of thinking with its tagline: "We don't hire people to bake brownies. We bake brownies to hire people." Social entrepreneurs are also clever at tapping new funding sources to make good ideas sustainable. TOMS Shoes, for instance, gives away a pair of shoes to a child in need for every pair purchased. For children growing up in the developing world, shoes promote better health by providing a barrier against soil-transmitted diseases and infections. Although some social innovators are well-known for their breakthrough ideas—such as Nobel Laureate Muhammad Yunus, credited with developing the global concept of microlending—many are quietly hard at work on important issues in their communities. In their own backyards, students can find accessible role models who are tackling difficult problems, fine-tuning solutions, and spreading good ideas. These problem solvers help students understand that there's a need for innovators across society.

Consider a social innovator like Gary Maxworthy. After a successful career in the commercial food industry, he volunteered to work with a local food bank. He was amazed by what he learned from the experience. In California alone, where he lives, some five million people can't afford the food they need. The problem isn't food scarcity. California produces more than half the nation's fruits, nuts, and vegetables. Maxworthy discovered that tons of produce are left to rot each year because there's no system for salvaging less-than-perfect fruits and vegetables. Meanwhile, food banks never have enough fresh produce to nourish the hungry.

Bringing a fresh perspective to these issues, Maxworthy reframed the problem of feeding the hungry. He helped design a new, statewide distribution system called Farm to Family that solves two problems at once: growers get a reliable way to dispose of the slightly blemished produce that they would otherwise pay to send to the dump, and food banks get a centrally managed supply of nourishing, fresh food. More than one hundred million pounds of produce annually are distributed to needy families through this award-winning program. His approach illustrates a strategy common to innovators: they recognize opportunities that others overlook.

Students are also capable of this kind of thinking. Two fourth graders at an elementary school in Southern California recently made headlines for convincing their school to start a lunch recycling program. The girls were troubled by the amount of untouched food that went into the trash each day. Determined to do something about it, they started by gathering data to fully understand the issue (developing their research skills). They graphed the results, showing the value of five hundred discarded items a week (putting math skills to authentic use). Then they advocated to change the system with a letter-writing campaign (applying language arts skills) that eventually attracted the interest of the mayor. As a result of their proposal, students' unopened leftovers are now deposited on a common table in the school cafeteria and collected by a social service agency that feeds hungry families.

Students who have acquired an innovator's mindset learn that they can apply problem-solving strategies in almost any context. The application part is essential. By implementing their food recycling solution, students in the previous example discovered that they have the ability to put good ideas into action now. They don't have to wait to be adults to start making a difference.

It shouldn't be surprising that the very meaning of innovation continues to evolve. That makes sense to Chris Lehmann, founding principal of Science Leadership Academy and host of EduCon. He says, "Innovation on some level is evolution not revolution. It's the idea of taking something and making it better. It's about deepening and enriching."

Innovation Unleashed

In 2010, the U.S. Department of Education awarded \$650 million in competitive grants through its Investing in Innovation Fund, known as