Discussion Guide

Bringing Innovation to School describes innovation as a process that is both powerful and teachable. Discussions with colleagues will help educators deepen their understanding of innovation and consider how they might equip students with a new set of skills to tackle 21st century challenges. This guide is intended to encourage productive conversations about the challenges and opportunities of teaching innovation.

Part I: Setting the Stage

Chapter 1: Coming to Terms With Innovation

1. Chapter 1 begins with several famous quotes about innovation. Which comes closest to your current understanding of this term?
2. John Kao describes innovation as an evolving concept with four historical stages. What role do you imagine your students playing in shaping the next stage of innovation? What new skills will they need to think innovatively and put ideas into action?
3. This chapter describes the efforts of several social innovators. Are you familiar with social innovators who are working to improve your community or solve a problem that you care about? What makes their problem-solving approaches innovative?
4. In discussing the creative strengths measured by the Torrance Test, the author suggests that these behaviors—being energetic, talkative, unconventional, humorous, and lively or passionate—might be labeled as disruptive in traditional classrooms. Do you agree? Discuss specific strategies you have used to encourage student creativity. What results have you seen?

Chapter 2: Seeing Educators as Innovators

1. This chapter suggests that the first step in teaching students to innovate is making sure that educators have opportunities to be innovators themselves. Do you consider yourself an innovator? Describe something you have done that demonstrates one or more of the traits of innovators as outlined in this chapter.
2. How has the culture of school encouraged you to innovate or limited your ability to try new ideas in the classroom?

Chapter 3: Growing a New Global Skill Set

1. This chapter outlines a problem-solving process that innovators use. Where in this process do you see natural connections to the classroom? For example, a language arts teacher might see "refining ideas" as closely connected to how students improve their writing through peer editing and revision. What other connections do you notice?
2. In the story about Dots in Blue Water, teacher Michael Baer explains how he designed a project around a student's question. How might you incorporate more student voice into the design of inquiry projects?
3. Discuss the "smart team" qualities that researchers have identified (such as being open minded and sharing criticism constructively). How do you teach, model, or encourage these teamwork skills? How do you build a classroom culture that reinforces effective collaboration?
4. Several empathy-building activities are described in this chapter. Which of these seem appropriate for your classroom? What other activities do you use to encourage students to consider issues from multiple perspectives?

Part II: Building the New Idea Factory

Chapter 4: Seeding Innovation

1. This chapter describes several action research projects underway in Albemarle County Public Schools. If you had funding available to investigate a research question, what would you propose? Who would be your ideal collaborators for an action research project?
2. District administrator Becky Fisher emphasizes the importance of "growing the seeds" of innovation projects. What processes does your learning community have in place to evaluate action research and disseminate effective ideas? How does your school culture encourage educators to learn from small mistakes so they are not repeated?

Chapter 5: Integrating Design Thinking Throughout the Curriculum

1. This chapter describes how the design thinking process is being used within the standards-based curriculum. Discuss how you might remodel a traditional unit so that it is framed as a design challenge. How might design thinking lead students to acquire deeper content knowledge or proficiency with 21st century skills?
2. Immersive professional development experiences give teachers opportunities to learn about design thinking by doing it. What would motivate you to learn more about design thinking? What would you need to know before introducing this process to students?

Chapter 6: Making Room for Thinkers

1. This chapter describes a "tinkering studio" elective offered at St. Gregory School in which the process of innovating is as important as the final product. How might you assess student work in this context? What would you expect students to know, produce, or be able to do as a result of their self-directed learning experience?
2. Two strategies are offered for creating more flexible learning opportunities: (1) find room in the physical space of school or (2) find room in the schedule. Discuss these options. What are the challenges and opportunities of each, given your context?

Chapter 7: Taking Advantage of Technology

1. This chapter introduces an emerging technology—the tabletop digital fabricator—that is being introduced to elementary schools as part of a children's engineering curriculum. Discuss the potential benefits for students being able to rapidly produce physical models of their ideas (or as Glen Bull puts it, "to see their concepts make the trip from an initial conceptual idea to a final physical form"). What do you do now to help students make their thinking visible?
2. Teacher Paula White describes engineering as "a process for solving problems and a language to explain thinking." Do you agree with her statement that teaching children about engineering fits naturally into the elementary curriculum? Discuss how this approach might lead to deeper understanding of core math and science concepts.

Chapter 8: Gaming for Real Learning

1. This chapter describes what students accomplished by playing an alternate reality game called the Black Cloud, in which they analyzed real-time data about pollution in their neighborhood. Game play also involved conducting interviews, making videos about local environmental issues, and advocating for practical solutions. How do these activities—connected to standards in a high school English class—challenge your understanding of gaming?

2. For middle school teacher Chad Sansing, games offer just one possible hook to engage learners who are at risk of disconnecting from school. He acknowledges that designing high-interest projects *with* students requires him to relinquish control over the curriculum. "This is really hard for teachers," he says, but is a necessary part of developing an innovative mindset as a teacher. What do you think of his comments?

Strategy Spotlights

Part II introduces five innovation strategies: (1) be opportunistic, (2) think in metaphors, (3) take time to explore, (4) learn to fail, (5) look for crossroads.

1. Which strategies seem most suited to teaching and learning? Discuss how you might introduce one or more of these strategies during a project to inspire or motivate students.
2. The strategy of learning from failure has been cited throughout this book as a way that innovators frequently work. In education, however, failure has negative connotations that may be difficult to overcome. How might you create safe opportunities for students to take intellectual risks, learn from mistakes, and improve their work through revision? Discuss changes that may be needed in formative assessment, project timelines, student reflections, peer review, or grading practices to encourage a "fail safe" environment for learning.

Part III: Moving From Thinking to Doing

Chapter 9: Spreading Good Ideas

1. Mike Town, the teacher who developed the successful Cool School Challenge, acknowledges the difficulty of turning the spark of an idea for the classroom into a sustainable model. Discuss the barriers that keep you from acting on innovative ideas. What kind of support would help you move ideas forward?
2. This chapter includes examples of teachers who expanded on innovative ideas through their professional networks. How do you make use of your professional network now? How do you use social media for collaboration? Discuss situations in which your network has helped you improve on an idea.

Chapter 10: Taking Action

1. This chapter suggests seven action steps to move forward with an innovation agenda. Do you agree with the author's observation that innovators often begin with small, doable first steps? Which step (or steps) do you feel ready to take now?
2. Discuss the phrase "learning at the edge." What does this expression mean to you when you think about your context for teaching and learning? Can you identify potential allies at the edge of your school and community to enlist in an innovation agenda?
3. What ideas from this book will you bring into your work in education? How will your students benefit from what you have learned?