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21st Century Skills: Rethinking How Students Learn

By James Bellanca and Ron Brandt (Eds.)

John Barell; Linda Darling-Hammond; Chris Dede; Rebecca DuFour; Richard DuFour;

Douglas Fisher; Robin Fogarty; Nancy Frey; Howard Gardner; Andy Hargreaves; David W.

Johnson; Roger T. Johnson; Ken Kay; Cheryl Lemke; Jay McTighe; Alan November; Bob

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Study Guide

This study guide is a companion to the book *21st Century Skills: Rethinking How Students Learn* by James Bellanca and Ron Brandt (Eds.). *21st Century Skills* unites education authorities from around the globe and asks them to examine a daunting challenge facing today's educators: how to equip students with the skills to succeed in the 21st century.

This guide is arranged by chapter, enabling readers to either work their way through the entire book or to focus on the specific topics a particular author addresses in his or her chapter. It can be used by individuals, small groups, or by an entire team to identify key points, raise questions for consideration, assess their own practices, and further develop their instruction.

We thank you for your interest in this book, and we hope this guide is a useful tool in your efforts to create promote 21st century skills in your school or district.

Foreword

21st Century Skills:

Why They Matter, What They Are, and How We Get There

Ken Kay

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1. Ken Kay, president of the Partnership for 21st Century Skills, presents the organization's Framework for 21st Century Learning. What does he identify as the starting point for the framework? Why, according to Kay, are student outcomes so important?

2. Why, according to Kay, do we need a new model for education in the 21st century?

3. Are the 21st century skills the framework identifies incorporated and routinely assessed in your school/district curriculum? Why are the skills essential for all students today and not just an elite few?

4. What new 21st century themes does the framework identify? Why is mastery of these themes critical for student success?

5. How much progress has your state/district/school made in moving from the *vision* of 21st century learning to a thorough understanding of and commitment to the *outcomes* of 21st century learning?

Chapter 1
Five Minds for the Future
Howard Gardner

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6. What are the *five minds* described in Howard Gardner's chapter? What minds are cognitive and which deal with the human sphere?

7. What is the *disciplined mind* and how can 21st century skills help to advance it?

8. Why does Murray Gell-Mann consider the *synthesizing mind* to be the most valued? What does Gardner say in regard to Gell-Mann's claim?

9. Why does Gardner suggest that *creating* is not merely a cognitive feat? What two responses does Gardner give when asked how to cultivate creativity?

10. What are the two threats to *respect* as described by Gardner, and why, according to Gardner, is *respect* crucial in our "interconnected" world?

11. What does Gardner mean by this statement: "The ethical individual behaves in accordance with the answers that he or she has forged, even when such behaviors clash with self-interest" (p. 21)? Why does Gardner think an *institutional culture* is an "important step … toward an ethical career and citizenship" (p. 23)?

12. What are the two minds to be most confused? What are some examples of tension between them?

13. What does Gardner say about integrating the five minds into one person? What mind (or minds) do you think most describes you?

Chapter 2

New Policies for 21st Century Demands

An Interview With Linda Darling-Hammond (by James Bellanca)

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1. What are the intellectual demands of the 21st century as described by Linda Darling-Hammond?

2. What, according to Darling-Hammond, separates the United States from top-scoring nations? What are *pendulum swings*?

3. How are testing programs different in the United States compared to top-scoring nations?

4. What are the four national policy changes Darling-Hammond suggests and how should they be implemented? How does *resource inequity* (p. 48) relate to the policy changes?

5. What three practices should school leaders engage in to "enable excellent teaching in every classroom" (p. 45)?

Chapter 3

Comparing Frameworks for 21st Century Skills

Chris Dede

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1. How can a lack of clarity about the nature of 21st century skills be problematic? What is a "digital disorder" (p. 53)?

2. How did 20th century problem solving differ from 21st century problem solving?

3. Compare and contrast the current major frameworks for 21st century skills presented in Chris Dede's chapter. What are the advantages and disadvantages of each?

4. Compare and contrast the current conceptual frameworks for digital literacies. What are the advantages and disadvantages of each?

5. What types of metrics are used to assess 21st century skills? Does your school or district use any of these? Which would you like for your school or district to use?

6. What are the five types of *benchmarking* the National Governors Association suggests implementing to assure success for U.S. students (p. 72)? Which of these do you think will be most difficult for your state to implement?

7. What is the "metacognitive challenge for the 21st century skills movement" (p. 73)? How does Dede think *21st Century Skills: Rethinking How Students Learn* is helping to reconceptualize education for the 21st century?

Chapter 4

The Role of Professional Learning Communities in

Advancing 21st Century Skills

Richard DuFour and Rebecca DuFour

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1. What are the ways in which traditional schools must evolve to become professional
    learning communities that teach 21st century skills?

2. According to the authors, if schools are to teach students 21st century skills, what *must*
    educators do (p. 81)? What is one of the most critical components of successful
    implementation?

3. In what three ways do the authors suggest that PLCs should implement 21st century skills
    in the future?

4. What ways do the authors suggest to make PLCs the norm in education? What *tools* are
    powerful levers for change? Which of these tools are used in your school or district?

5. Why do the authors suggest a professional learning community is the best place to teach
    21st century skills?

Chapter 5

The Singapore Vision: *Teach Less, Learn More*

Robin Fogarty and Brian M. Pete

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1. What are the four interrelated components of the *Teach Less, Learn More* framework?

2. What is meant by *Teach Less*? What is an example of teaching less?

3. What are the two types of critical questions raised in Singaporean PLCs? What are some examples of each?

4. What are the steps in the flowcharts that show PLCs' thinking about the Teach Less, Learn More concept?

5. What two crucial questions about the teaching and learning process does the Learn More concept address?

6. What are the elementary and secondary school examples of the Teach Less, Learn More framework?

7. Why do the authors suggest that the Teach Less, Learn More initiative is "neither more nor less of the same" (p. 112)? What challenges do they envision with this process in regard to advancing school cultures to the 21st century way of thinking?

Chapter 6

Designing New Learning Environments to Support 21st Century Skills

Bob Pearlman

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1. What does Bob Pearlman mean when he says students are *digital natives*? How does this change the skill students prefer—and need—to learn in the 21st century?

2. Why does the author suggest that *project-based* and *problem-based learning* are the keys to learning in the 21st century?

3. What questions must 21st century schools address to prepare students for their 21st century lives? What are the design criteria for these schools?

4. What does the author mean by the statement "The signature characteristic of 21st century schools is *students at work*" (p. 127)? How does this differ from the way students learned in the 20th century?

5. What are the five schools in the United States and the United Kingdom that exemplify the best of the new learning environments? What are the characteristics of each?

6. Compare and contrast the five schools. Which school would you most want to mirror your school after?

7. How can you shift your school into a *new learning environment* that supports 21st century skills?

Chapter 7
An Implementation Framework to Support 21st Century Skills

Jay McTighe and Elliott Seif

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1. What are the five interrelated components of the 21st century framework as presented by the authors? What are the characteristics of each and what two important questions in regard to 21st century outcomes do they answer?

2. What are the ten research-based learning principles presented by Jay McTighe and Elliott Seif?

3. What are the three guidelines a 21st century curriculum and assessment system should encompass? What are the characteristics of each?

4. What are the five indicators of expected student experiences as they achieve 21st century outcomes? What instructional resources and guidelines should be used to assure students experience 21st century outcomes?

5. What resources, if any, does your school or district currently use to support 21st century skills? Do these resources abide by the guidelines in table 7.2 (p. 169)?

6. What questions do the authors suggest will secure alignment of 21st century skills in a school or district? How do you think these questions will advance your school or district in achieving 21st century outcomes?

Chapter 8

Problem-Based Learning: The Foundation for 21st Century Skills

John Barell

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1. What are the skills crucial to living and learning in the 21st century, according to John Barell (as cited in Walser, 2008)? What other skill does he suggest should be added to Walser's list? Why?

2. What is problem-based learning and what are the key elements of it? Why does the author believe that problem-based learning (PBL) is a strategy to prepare students for their 21st century lives? What are the serious questions raised by a PBL approach?

3. What does problem-based learning look like in the classroom? Have you used a PBL learning approach in your classroom? Provide some examples. If you haven't, what are ways in which you can incorporate it?

4. What are the two important *ingredients* to ensure students learn from a PBL unit?

5. Why is inquiry important in PBL and what is its role? What competencies must students have to promote inquiry? What questions can be asked to foster student inquiry within a PBL unit?

6. What seven steps should teachers take when creating PBL curricula?

7. How can PBL be enhanced through 21st century technology? How can you enhance your own curricula through PBL and 21st century technology?

8. What evidence confirms the effectiveness of a PBL approach? What else does the author suggest needs to be done in order to provide deeper insight into PBL?

Chapter 9

Cooperative Learning and Conflict Resolution:

Essential 21st Century Skills

David W. Johnson and Roger T. Johnson

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1. What are the four important challenges of the 21st century as described by David W. Johnson and Roger T. Johnson? What are the characteristics of each?

2. How does cooperative learning and constructive controversy affect these four challenges?

3. How does online interaction impact face-to-face relationships? How does it affect a person's *identity formation*?

4. In what ways is an online identity different than a face-to-face identity?

5. Which of the four challenges do you think will be hardest to help your students overcome? Which one will be the easiest? How will you help your students cope with them?

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Chapter 10

Preparing Students for Mastery of 21st Century Skills

Douglas Fisher and Nancy Frey

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1. What are the three ways the authors suggest to respond to the extreme shifts in technological advancement and student needs for the 21st century?

2. Reflect on the Project Tomorrow survey results (p. 225). What do you think about the students' recommendations? Could you foresee your school implementing any of them?

3. Revisit table 10.1 (p. 227). What are the advantages and disadvantages of using each of the tools in class? Which of these tools do you currently use with your students? Which would you like to use in your classroom?

4. Does your school have a courteous policy? If so, compare and contrast it with the authors'. If not, draft one that incorporates the use of 21st century tools.

5. What are the four components of the gradual release of responsibility model? Describe the characteristics of each. What are the aspects to look for in classrooms using this model?

6. What are some examples of independent learning tasks you use in your classroom?

   How can 21st century tools be incorporated into these tasks?

Chapter 11

Innovation Through Technology

Cheryl Lemke

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1. What are the three innovations of 21st century learning that Cheryl Lemke presents in her chapter?

2. What are the seven principals of multimedia and modality?

3. Why is visual literacy important in the 21st century curriculum? List the three strategies teachers might consider when using technology to build visual literacy.

4. What learning contexts should educators tap into that are available to students outside the classroom? How can these contexts be integrated into classroom learning?

5. What does it mean to democratize knowledge? How does this concept connect to formal and informal learning?

6. How has the growth of Web 2.0 tools changed the way students interact with the Web? Explain the difference between participation and collaboration.

7. Describe the three ways that educators think about learning, according to researcher Kai Hakkarainen and his colleagues. How do these three views play out in your school or district?

8. Based on the Metiri Group's framework, how ready is your school for 21st century learning? What steps can you take to move this process forward?

Chapter 12

Technology Rich, Information Poor

Alan November

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1. Why does simply putting technology in students' hands not count as 21st century instruction? What do students really need?

2. What is the *spray-and-pray* model of planning? What effects can this model have on schools? Describe your own experiences with the spray-and-pray model.

3. List the big picture trends that Alan November lists in his chapter. Based on these trends, what skills must students learn? Are your students learning these skills?

4. November makes the point that "the real revolution is not the laptops and the wiring. The laptops we buy today will soon be replaced" (p. 280). How can you make sure your curriculum focuses on what students need to know while being flexible with the delivery?

5. How can your students become more responsible for their own learning? What are the benefits of this shift? What difficulties do you foresee?

6. What role does collaboration play in your school or district? Are your students going to be prepared for the collaboration they'll face in the coming years?

Chapter 13

Navigating Social Networks as Learning Tools

Will Richardson

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1. What are *network literacies*, according to Will Richardson? Why are they crucial to developing new pedagogies and preparing students for the future?

2. How does the shift from a read-only Internet to a read/write Internet change how educators should approach the Web? How can your classroom take advantage of this new ability to safely connect and communicate with the world?

3. List some of the pitfalls of sharing work online. Have you or your students encountered these before? How can you help students learn to avoid these pitfalls?

4. Why is it important to seek out connections beyond those that support your current worldview? What are the effects of not doing so? What fundamental skills—that have been taught for centuries—does this concept tie to?

5. Are teachers in your school or district learners first and teachers second? Why is this important? How can you move in this direction?

6. Discuss the pros and cons of using your real name online. What does Richardson say in regard to this?

Chapter 14

A Framework for Assessing 21st Century Skills

Douglas Reeves

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1. How does assessment of the 21st century differ from standardized assessments? How about 20th century rules of secrecy versus the 21st century approach of openness? Has this realization been reflected in the testing regimen of your school or district?

2. What is the 21st century take on the individual versus team results? How does this reflect the collaboration that is taking place via technology around the world?

3. List five of the essential core realms for the assessment of 21st century skills. How do these realms interrelate?

4. Consider the "Design Your Ideal School" assessment on p. 316. Think through the process—does anything surprise you? How does your ideal school compare to your current school? What do you think your students will describe as an ideal school?

5. What limits does the "Design Your Ideal School" assessment have? How can you circumvent these limits?

Afterword

Leadership, Change, and Beyond the 21st Century Skills Agenda

Andy Hargreaves

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1. What four major change imperatives do educators face in the 21st century?

2. Andy Hargreaves identifies four stages or "ways of change" that have occurred in many developed countries since the 1960s. What are these four ways of change and what metaphor does Hargreaves use to describe these stages?

3. List some characteristics of the First Way. What are its legacies—both positive and negative?

4. List some characteristics of the Second Way. What are its legacies—both positive and negative?

5. List some characteristics of the Third Way. Why was this new way needed? How do 21st century skills fit into the Third Way?

6. List some characteristics of the Fourth Way. How does it build upon the Third Way? How do teachers and leadership operate in the Fourth Way?