What Your Colleagues Are Saying . . .

This is the book PBL educators have been waiting for! Whether you are starting out on your PBL journey or have been at it for years, this book is full of helpful ideas, tactics, and exemplars—the kind of book that never even makes it to the shelf because you are constantly using it. Jennifer Pieratt knows how to help educators realize their own potential to facilitate powerful PBL experiences for all students. This book is a window into her years of expertise and experiences.

—Emily Liebtag, Vice President, Advocacy
Getting Smart

For someone new to teaching or to project-based learning, this workbook simplifies the process without letting go of essential elements that make the project a valuable educational experience.

—Marcia LeCompte, Retired Montessori Teacher
Dufrocq Elementary School, Baton Rouge, LA

This book is an excellent tool for any educator wanting to implement project-based learning in their classroom. It provides a step-by-step guide that takes you through the thought process—from posing the question for the project, to the planning that is involved before implementing the project, the process for implementing the project, assessment of the project, and the background resources needed to begin the process.

—Ellen Asregadoo, Teacher
Public School 190, Brooklyn, NY

It is inspiring to see how our students can make a positive impact on our world when we as educators empower them through project-based learning. This book provides the necessary structures, supports, and encouragement to shift to these dynamic practices so that we can better serve all learners. I have witnessed firsthand the incredible transformation when educators shift practice to embrace the complexities of real-world challenges, and I am excited that this resource will help to spread these powerful learning opportunities to better serve all learners.

—Devin Vodicka, Superintendent and Chief Impact Officer
AltSchool, Oceanside, CA

In her introduction to Keep It Real With PBL, *Jenny Pieratt describes her commitment to be direct with teachers about developing engaging and strong PBL experiences for their students. She has done just that, combining her deep experience from varied perspectives—PBL teacher and colleague, coach, consultant—to provide a straightforward but detailed path to developing high quality PBL opportunities for learners. Jenny is at once optimistic and realistic, encouraging and pragmatic. While this book is designed for teachers just starting out in PBL work, experienced PBL teachers will benefit from the thoroughness of Jenny's descriptions of planning and implementing strong PBL experiences—and will almost surely be introduced to useful new resources as well.*

—Rick Lear, Former Senior Director for
School Design and Implementation, New Tech Network
Former Interim Executive Director, Envision Learning Partners

KEEP IT REAL WITH PBL

A Practical Guide for
PLANNING
PROJECT-BASED
LEARNING
SECONDARY

JENNIFER PIERATT

CORWIN

CORWIN
A SAGE Publishing Company

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2455 Teller Road
Thousand Oaks, California 91320
(800) 233-9936
www.corwin.com

SAGE Publications Ltd.
1 Oliver's Yard
55 City Road
London EC1Y 1SP
United Kingdom

SAGE Publications India Pvt. Ltd.
B 1/I 1 Mohan Cooperative Industrial Area
Mathura Road, New Delhi 110 044
India

SAGE Publications Asia-Pacific Pte. Ltd.
18 Cross Street #10-10/11/12
China Square Central
Singapore 048423

Printed in the United States of America

ISBN 978-1-5443-6937-2

Acquisitions Editor: Ariel Curry
Development Editor: Desirée A. Bartlett
Associate Content Development Editor: Jessica Vidal
Project Editor: Amy Schroller
Copy Editor: Amy Hanquist Harris
Typesetter: C&M Digitals (P) Ltd.
Proofreader: Dennis W. Webb
Indexer: Jean Casalegno
Cover Designer: Gail Buschman
Marketing Manager: Margaret O'Connor

This book is printed on acid-free paper.

20 21 22 23 24 10 9 8 7 6 5 4 3 2 1

Contents

Visit the companion website at
resources.corwin.com/keepitrealPBLsecondary
for downloadable resources.

Note From the Publisher: The author has provided video and web content throughout the book that is available to you through QR (quick response) codes. To read a QR code, you must have a smartphone or tablet with a camera. We recommend that you download a QR code reader app that is made specifically for your phone or tablet brand.

Videos may also be accessed at **resources.corwin.com/keepitrealPBLsecondary**

List of Resources on the Companion Website

Chapter 1

- The Main Course, Not Dessert
- Problem-Based Learning (PrBL)
  - "'Isn't Problem-Based Learning Easier Than Project-Based Learning" and 10 Other Myths About PrBL
- P21 Framework
  - Creativity and Innovation
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- "Teacher Tech Tools" is a website created for teachers by a fifth-grade teacher, Camille Nunnenkamp, to help them feel both comfortable and inspired to leverage technology in their classrooms. Teacher Tech Tools houses grade-level specific sample projects in which technology is used to assess students' evaluation and creation skills within a project. Each project example includes a step-by-step tutorial of the application or technological platform used for easy implementation in your classroom.

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Acknowledgments

People often ask how I first got involved in PBL, and I always smile thinking of my eighth-grade student, Michael D. Thank you to Michael for teaching me about PBL, being the first to believe in me, and nudging me to go find my people.

To the secondary teachers who are facing so many barriers in this work but who continue to fight to find ways to make it work, especially the maverick PBL teachers at AOMS and CHMS in Carlsbad, California; to those whose work is featured in this book—Kate Therriault, Aaron Sottile, Jen Stillittano, Gifford Asimos, Ashley Crawford, Leslie Frazee, Nicole Moersh, and Beth Riis; and to my forever friends and colleagues of High Tech High North County: Thank you for sharing your projects, quotes, feedback, and your continued support of my work.

Thank you to the entire editorial team at Corwin, in particular the design team who executed my crazy (chicken scratch) ideas and made this book beautiful.

While there were many people who supported me in my PBL journey and in writing this book, I would like to acknowledge the incredible men in my life.

Thank you to a few prominent mentors: Rick Lear, Rob Riordan, Jim May, Isaac Jones, and Jacob Adams—I cherish every thoughtful conversation we had. To my two dads, thank you for your incredible model of hard work and passion; I hope you can see it bleed through this book! And Mike, Papa Mendes, and Papa Ray—thank you for reminding me to always keep my eye on what matters most.

Thank you to my husband, Greg. I believe the definition of a man is one who can stand beside a woman, but a *real* man is just as proud to stand *behind* her—thank you for being that for me. I adore that you know every acronym in this book and can speak about every school I have touched. Your love, support, loyalty, and encouragement have never gone unnoticed.

And to my son, Landon: Thank you for every time you ask about my work and also for every time you ask me to *stop* my work to play with you in the street or at the fields—you have given me the gift of presence and perspective. I hope I have instilled in you the drive to dream big, work hard, and cheer wildly when you achieve. May we always be each other's number-one fans; thank you for being mine throughout this journey.

Publisher's Acknowledgments

Corwin gratefully acknowledges the contributions of the following reviewers:

Ellen Asregadoo
Fifth-Grade Teacher
Public School 190
Brooklyn, NY

Randy Cook
Science Teacher
Howard City, MI

Christine Landwehrle
Assistant Superintendent
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Introduction

Letter to Secondary Teachers

This workbook reflects the project-planning process I have developed from my experience in the trenches of project-based learning (PBL) over the past decade. From my time as a founding teacher at High Tech High North County to serving as a school development coach for New Tech Network and national faculty member of PBLWorks, I know firsthand how challenging designing projects can be, especially for secondary teachers with large caseloads of students and short class periods to engage in meaningful teaching and learning. When I set out to support teachers independently through my company, CraftED, I committed to honoring the reality every secondary teacher faces: standards, assessment, the need for structure, the lack of resources to implement PBL, and the lack of collaborative planning time with colleagues.

Too often there is a disconnect between the romantic ideals of PBL and the real challenges that are in front of teachers—a classroom full of 25 to 30 students with diverse needs, multiple "preps" in your schedule, dwindling amounts of planning time, a caseload of 150 students, district pacing guides, lack of resources, and forever-changing curriculum implementation. I became inspired by the notion that my close (nonteacher) friend offered up when she said, "Hey, I just did a quick search on Twitter of that PBL thing you keep talking about, and it seems like there are a lot of 'pains' related to PBL. I know you well enough to know that people love you when you are raw, so give them what they want—just keep it real, girl." And so began my personal PBL #realtalk campaign—no fancy frameworks, no more jargon, no more ignoring the challenges and fears of teachers being asked to do this work. I WANT TO KEEP IT REAL!

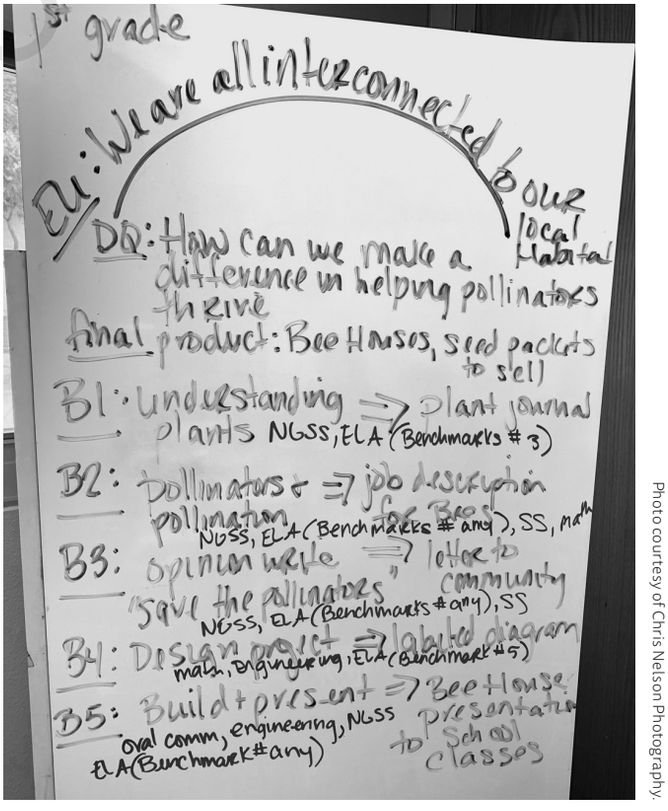


Photo courtesy of Chris Nelson Photography.

● **FIGURE 0.1** **Jenny's previous project-planning process**

Photo courtesy of Chris Nelson Photography.

● **FIGURE 0.2** **Jenny presenting at Lake Elementary, Vista Unified School District, California**

The first step of my #realtalk mission was to address head-on that while planning frameworks can be helpful, they also can be overwhelming—especially when they are multiple pages long! When I worked for PBL organizations, I was provided resources to support teachers with project planning. Truth be told, though, I never used them; I always "went rogue." So I attempted to codify how I held teachers' hands in the planning process. For two years, that process worked, but it was pretty ugly. Teachers would leave my planning sessions with large poster papers or whiteboard snapshots covered with my signature umbrella arch, chicken scratch writing, and tons of arrows and sticky notes (see Figures 0.1 and 0.2). This book is an attempt to tidy up that planning process so teachers can document it in a clearer and more efficient way.

How to Use This Book

This book is designed to be interactive and support teachers through the iterative process of project planning. To aid in this process, there are several icons incorporated throughout the book to call out important tips, resources, and tools:

#realtalk sound bites that honor the challenges to implementing PBL.

Tips and resources to support the project planning process.

Planning forms to guide you through planning your project.

Key terminology and acronyms in PBL.

Exercises to help you reflect and process throughout your project plans.

Chapter 1

The What and Why of Project-Based Learning

An Overview of Project-Based Learning (PBL)

Project-based learning (PBL) is one of many trends currently sweeping across the educational landscape, hoping to revolutionize how students learn. Despite being dressed up as a new and innovative approach to teaching and learning, PBL has actually been around, in a variety of forms, since the turn of the twentieth century. Dating back to the work of great progressive thinkers such as John Dewey, Vygotsky, and Piaget (Pieratt, 2011), PBL is hardly new. In *Experience and Education,* Dewey (1938) laid the foundation for PBL by explaining that when learning is relevant to the world and the experiences of the child, education becomes more meaningful and thus engaging.

A leading organization of PBL, PBLWorks, defines *PBL* as [an experience in which]

> students are pulled through the curriculum by a meaningful question to explore, an engaging real-world problem to solve, or a challenge to design or create something. . . . To demonstrate what they learn, students create high-quality products to present their work to other people. (Hallermann, Larmer, & Mergendoller, 2011, p. 5)

PBL can occur in any school setting (home, public, charter, private, etc.) and at any grade level (preK–higher education).

PBL typically includes the following:

- Teacher-designed learning experiences related to grade-level standards
- A real-world connection to classroom learning, such as community issues with local audiences
- Hands-on and active learning activities
- Student engagement, as a result of the integration of student interests
- A focus on twenty-first century skills (such as collaboration or oral communication)
- Incorporation, possibly full integration, of a variety of content areas
- Assessments throughout the project with feedback and reflection

#realtalk: "PBLs" isn't a thing. Project-based learning is a way of teaching and learning—it is not singular, and it is not plural; it is an ongoing and comprehensive mode of instruction (pedagogy). If you want to talk about more than one project, you can call it "PBL units" or "PBL projects," but please not PBLs!

While this list is not exhaustive, it may begin to provide you with a more vivid picture of what project-based learning looks like in action. To deepen this knowledge, it is helpful to understand the many ways in which PBL is different from the traditional approach to teaching and learning:

- The role of the teacher shifts to a ***facilitator*** of learning. In PBL, lessons are not traditional in nature. Although teachers may "stand and deliver" a lecture or a small lesson here and there, they are more commonly ***orchestrating*** the execution of their well-thought-out plans for student discovery during the actual class time with students.
- Because students are often exploring "real-time" issues, the teacher and student often ***learn together***. In this same vein, textbooks are rare in PBL because the content is quickly outdated for what students are learning in the project.
- Students often display more ***ownership*** over their learning, including task management, because of the process of a project.
- Regardless of age or content, students are frequently provided opportunities to develop a variety of twenty-first century skills, such as ***collaboration*** and ***communication***.
- PBL is ***flexible***, meaning the framework allows teachers and students to be responsive to student and community needs and interests.
- Assessment is frequent throughout a project and includes ***feedback*** from the teacher mid-project so that the student has opportunities to grow over the course of the project. PBL is action-oriented, meaning students are expected to ***DO*** something with their knowledge by applying it or inspiring others to do something.
- PBL pushes beyond rote memorization and requires students to ***dig deeper*** in their learning and think through application and innovation of new ideas/solutions.

It is critical to understand the difference between a project and PBL as a pedagogy. Check out *The Main Course, not Dessert: How Are Students Reaching 21st Century Goals? With 21st Century Project Based Learning* by Larmer and Mergendoller (2010). In it, the authors use the analogy of a main course (the "meaty" learning that happens in the middle) and dessert (the fluffy project that happens after all the learning occurs) to talk about this important difference. You can find the link to it on our companion website (resources.corwin.com/keepitrealPBLsecondary).

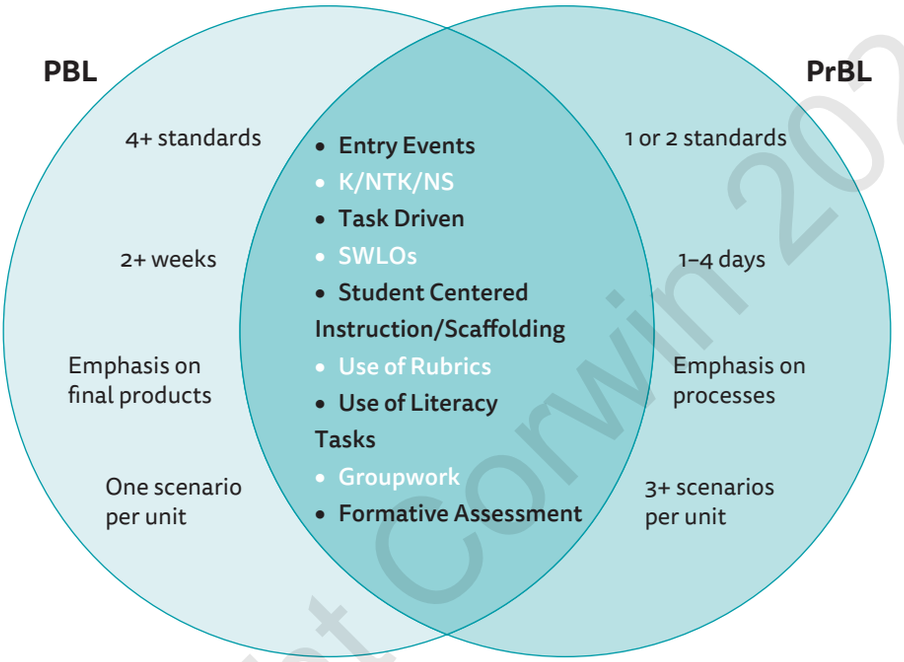
PrBL Versus PBL

What are the differences between problem-based learning (PrBL) and PBL? In *Necessary Conditions*, math expert Geoff Krall (2018) explains:

> Similar to problem-based learning, project-based learning ties the content to a real world context by providing the challenge

that makes the math content necessary. The key differences between the two are the length of time required and the level of authenticity [or real-world connectedness]. (p. 87)

Figure 1.1 is a helpful diagram to show the main differences between these two similar yet different pedagogies: While a problem or series of problems may be incorporated into a project, PBL has fundamentally different characteristics—namely, focusing on process and product, and increased number of standards and time dedicated to learning.



● **FIGURE 1.1** **PBL versus PrBL**

Source: Geoff Krall, used with permission.

Why PBL?

So if PBL has been around for a century, what seems to be driving the mainstream momentum of this pedagogy sweeping across our schools?

Workforce Readiness

The U.S. Department of Education writes,

> There is growing consensus that America's students need to be prepared to compete in a world that demands more than just basic skills. Today, about a third of American students require remedial education when

***Tip:* If you are a math, science, or foreign language teacher interested in PBL, you may consider starting first with designing a problem-based learning unit to prepare you for diving into PBL. You may find that PrBL gets to some important shifts in student-centered learning (inquiry, problem-solving, collaboration, communication, agency, etc.), while providing a balance of content coverage and practice with specific skills.**

> they enter college, and current college attainment rates are not keeping pace with our country's projected workforce needs. (n.d., para. 3)

This concern, shared by many educators, policy makers, and prominent business figures, led to the development of the P21 framework. The framework outlines the following outcomes as twenty-first century skills that schools should be fostering within students: creativity and innovation, critical thinking and problem-solving, communication, and collaboration. More information on these individual skills can be found on the companion website. While many pedagogical theories may address *some* of these skills, PBL often serves as a favored vehicle for addressing all of these skills. Miranda Reagan (2015) highlights the following ways in which PBL offers the additional benefits of preparing students with other essential twenty-first century skills:

- *Creativity (applying knowledge to solve authentic problems)*
- *Collaboration (effectively and respectfully interacting with others)*
- *Communication (listening, speaking, and combining ideas)*
- *Critical thinking (approaching a problem from a fresh perspective)*
- *Technology application (discovering and applying new technologies in a useful way)*
- *Analytical applied writing (writing for a purpose)*
- *Growth mindset (risk-taking)*
- *Authentic audience (communicating results in a way that gives purpose to learning)*

#realtalk: PBL (project-based learning), PrBL (problem-based learning), DTK (design thinking), IB (International Baccalaureate), CGI (cognitively guided instruction), IQB (inquiry-based learning), STEM (science, technology, engineering, math)—put 'em together and you have buzz-phrase acronym soup! Each of these frameworks provides a unique approach to teaching and learning, and with each of these comes its own host of pros and cons. It's important to think about why you are choosing PBL over one of these other frameworks for your students. And if you are choosing to combine multiple frameworks, consider how you will uphold fidelity of each of those unique instructional approaches.

Of the variety of frameworks currently in schools, PBL is one of the more robust—both in structure and time. Because all learning happens within the course of a project, it can be all-encompassing, meaning it is large enough to apply, scaffold, and assess a variety of skills (and content) over the course of completing a project.

Innovation

Often connected to workforce readiness is innovation, or the idea of developing our graduates into change agents who will help keep our country competitive in the global marketplace. In a 2018 report, the United States fell out of the top-10 list, ranking 11th among innovative countries (Jamrisko & Lu, 2018). With economic and political implications tied to innovation, a growing sense of urgency is building to rethink what and how students are learning in school. Tony Wagner (2015) writes,

> With well-designed pedagogy, we can empower kids with critical skills and help them turn passions into decisive life advantages. The role of education is no longer to teach content, but to help our children learn—in a world that rewards the innovative and punishes the formulaic. (para. 10)

As a result, schools are thinking deeply about how they can foster innovators. Because PBL is grounded in the creation of a student-developed product, it is a framework that easily fosters creativity, ingenuity, and problem-solving while also upholding the rigor of content expectations.

Student Achievement

Data from 2015 PISA international math and science assessments indicated that U.S. students continue to rank around the middle of the pack and behind many other advanced industrial nations (DeSilver, 2017). And with performance data publicly available, it is a topic at the forefront of every teacher and school leader's mind.

John Hattie conducted a study in 2014 that looked at the effectiveness of factors in teaching and learning. And while he did not look specifically at PBL, he did look at critical components that make up PBL and pointed to them as being highly effective for improving student learning, including feedback, building on prior knowledge, and questioning. Larmer (2016a) writes about Hattie's findings:

> Good teaching is not merely to know how to use specific instructional techniques, but when to use what approach, and to mix and match in service of student learning. Hattie writes that good teaching "combines, rather than contrasts, teacher-centered teaching and student-centered learning and knowing." Projects provide fertile opportunities to do this, pulling together disparate instructional practices—cooperative learning, didactic instruction, peer tutoring, the meta-cognitive strategies of student planning and self-monitoring, woven together with regular formative evaluation and feedback. (paras. 12–13)

So while there are many small moves teachers can make to improve student learning, PBL provides a promising framework to drive such practices. There are a variety of other reasons why PBL continues to gain interest by school leaders and teachers—from new standards (CCSS and NGSS) that lend themselves to real-world application to engaging disenfranchised students through voice and choice in projects.

Intro to HQPBL

As PBL moves away from progressive pockets and becomes a more mainstream pedagogical practice, there is an increasing danger in diluting this approach to teaching and learning. Eager to hop on the PBL bandwagon, schools may claim to adopt PBL without the necessary training, support, and structures to successfully engage in this work. For example, under the guise of "student driven," teachers will often take a hands-off approach to teaching. Without calibration and reflection on this term within PBL, students can be left without critical direction and structures needed to make it a successful teaching and learning methodology. For this reason, there is a pressing need to uphold fidelity to quality.

Leading PBL organizations such as PBLWorks, New Tech Network, High Tech High, and Expeditionary Learning have created their own definition of quality PBL; however, in 2018 a steering committee was created to develop the framework for high-quality project-based learning

(HQPBL), which attempts to take these many existing definitions of exemplar projects and distill them into basic principles. The HQPBL framework includes the following:

- *Intellectual challenge and accomplishment.* Students learn deeply, think critically, and strive for excellence.
- *Authenticity.* Students work on projects that are meaningful and relevant to their culture, their lives, and their future.
- *Public product.* Students' work is publicly displayed, discussed, and critiqued.
- *Collaboration.* Students collaborate with other students in person or online and/or receive guidance from adult mentors and experts.
- *Project management.* Students use a project management process that enables them to proceed effectively from project initiation to completion.
- *Reflection.* Students reflect on their work and their learning throughout the project.

To learn more about this collaborative effort, visit the companion website at resources.corwin.com/keepitrealPBLsecondary.

#realtalk: While these definitions, checklists, and frameworks are helpful for teacher calibration of quality and continuous improvement, it is important to focus on what matters most to *you* and *your students.* Pick one of these components of quality to focus on in your first project and then continue to build on other layers of quality as you reiterate and improve.

As John Dewey (1938) once said, "The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative." This is a powerful reminder that while PBL can be a transformative engine for teaching and learning, it must uphold quality to ensure deeper learning.

As you move forward in your project planning, continue to come back to your *why* for PBL—why is it the mode you choose for your instruction for your students?

Journal: Check out this video by Simon Sinek (2009) on the Golden Circle framework to help you understand your *why* for PBL. After viewing, reflect on why you think PBL could be a promising framework for your students.

To read a QR code, you must have a smartphone or tablet with a camera. We recommend that you download a QR code reader app that is made specifically for your phone or tablet brand.

online resources Video can also be accessed at resources.corwin.com/keepitrealPBLsecondary

But they aren't ready!

If you are thinking to yourself that this sounds great in theory but that your students don't have the skills and they just aren't ready to do PBL yet, know that you are not alone. This is a common concern among teachers of all grades, serving all demographics of students. In *Culturally Responsive Teaching and the Brain,* Zaretta Hammond (2015) explains (related to the widening achievement gap between African American, Latino, and White students) that we often do the following:

- Underestimate what disadvantaged students are intellectually capable of doing
- Postpone more challenging and interesting work until we believe they have mastered "the basics"
- Deprive students of meaningful and motivating context for learning and practicing higher order thinking processes

PBL can be a vehicle for providing students from all backgrounds with both the content and skills they need to achieve at high levels in their life. If you are feeling apprehension about your students' skills and their ability to do PBL, trust that this book will provide you with a step-by-step guide to scaffold meaningful learning for your students and that every one of your students is capable and deserving of such quality learning experiences. To learn more about making PBL accessible to all levels of students, check out the companion website (resources.corwin.com/keepitrealPBLsecondary).