

# PROJECT BASED



# TEACHING

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# Introduction



*Every aspect of school change depends on highly skilled teachers for its success.*

—Linda Darling-Hammond

There's no question that Project Based Learning (PBL) is gaining traction as a key instructional strategy, both across the United States and around the globe. Reasons for introducing PBL are numerous and can differ from one school system to the next. Across a wide range of contexts, however, there's growing recognition that today's complex world puts new demands on students as they prepare for college, careers, and active citizenship. Those demands won't be met without a fundamental shift away from traditional, teacher-centered instruction and toward more innovative, student-centered teaching and learning.

For schools ready to make that shift, PBL offers a proven framework to help students be better equipped to tackle future challenges. Through academically rigorous projects, students acquire deep content knowledge while also mastering 21st century success skills: knowing how to think critically, analyze information for reliability, collaborate with diverse colleagues, and solve problems creatively. In the process of engaging with PBL, students learn to ask good questions, be resourceful, manage their time, meet authentic deadlines, and persist through challenges. When done well, PBL fosters self-management and self-directed learning. These are precisely the competencies that will enable students to thrive in the future they will help shape.

Along with new demands on students come fresh challenges for educators. Relatively few teachers had the chance to experience PBL as students when they were younger, and teacher preparation programs are only just starting to include PBL methods. Without prior experience or professional training, many teachers face a steep learning curve. They may wonder if introducing PBL means starting from scratch with lesson planning, assessment, and daily classroom routines. They worry whether they will be able to cover the required curriculum if they make time for PBL. Newcomers to PBL often ask, “What changes with PBL? What stays the same in my classroom? And how do I know if I’m doing it right?”

The Buck Institute for Education (BIE) has helped thousands of teachers gain confidence with PBL through face-to-face workshops, and online resources and books have reached countless more educators around the globe. *Setting the Standard for Project Based Learning* (Larmer, Mergendoller, & Boss, 2015) was written in response to the groundswell of interest in PBL. The goal with that book was to help teachers and school leaders design and implement PBL *well*, regardless of their location or school context. Students from every ZIP code and background deserve to benefit from high-quality PBL experiences.

*Setting the Standard for Project Based Learning* introduced a framework for Gold Standard PBL. Informed by research and extensive input from teachers and school leaders, the Gold Standard sets a high bar when it comes to academic rigor. That’s important, because poorly executed PBL can be a waste of valuable learning time. We’ve seen too many so-called projects that focus on fun and hands-on activities but fail to address significant learning goals. When PBL is done well, on the other hand, the stage is set for a deep dive into meaningful academic content. Project Based Learning involves sustained inquiry into challenging questions or problems. Students need to not only learn content but also be able to apply it. By definition, Gold Standard PBL is “main course” learning—not dessert.

To accomplish consistently deep and meaningful learning, Gold Standard PBL calls for seven Essential Project Design Elements (see Figure 0.1):

- Challenging problem or question
- Sustained inquiry
- Authenticity
- Student voice and choice
- Reflection
- Critique and revision
- Public product

**Figure 0.1** Essential Project Design Elements for Gold Standard PBL



Emphasizing these elements from start to finish in a project helps ensure that the learning experience will be worth the investment by students and teachers alike. These elements set the stage for project success whether you use PBL all the time or only occasionally during the school year.

*Setting the Standard for Project Based Learning* also introduced a set of seven Project Based Teaching Practices but did not explore them in depth. Feedback from teachers, school leaders, and instructional

coaches indicates a desire for more. Educators shifting to PBL want more examples of high-quality projects in action. They want to see not just final, polished results of student learning but more of the day-to-day instructional practices that teachers use along the way to support and engage all students in this type of learning. They want to hear other teachers' strategies for making enough time and space for PBL within their curriculum. This book and a related series of free videos provide a much more detailed look at what's happening in PBL classrooms from the perspective of the Project Based Teacher (see [www.bie.org](http://www.bie.org)).

## Project Based Teaching Practices

For students to succeed with PBL, teachers may have to make major shifts in instructional practice. This is especially true for those who have taught in traditional settings, relying primarily on direct instruction, textbooks, and tests. Instead of being the all-knowing expert who transmits knowledge, the PBL teacher is a well-informed coach, facilitator of learning, and guide through the inquiry process. Rather than holding all the answers, Project Based Teachers encourage active questioning, curiosity, and peer learning. They create learning environments in which every student has a voice. They have a mastery of content but are also comfortable responding to students' questions by saying, "I don't know. Let's find out together." (See Figure 0.2.)

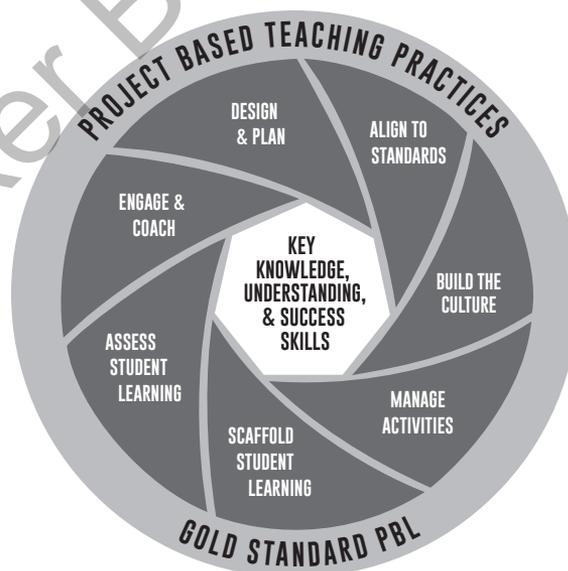
The shift to Project Based Teaching often happens gradually as teachers identify and adopt strategies that help their students succeed. Unless you are teaching in a wall-to-wall PBL school, where students are consistently learning through projects in every content area, you will likely alternate between PBL and more traditional instruction throughout the school year. For example, many teachers set a realistic goal of doing at least two projects per semester.

Personalized learning, an increasingly popular trend in education, is compatible with and shares many student-centered instructional practices with PBL. Although PBL acknowledges the importance of student voice and choice, personalized learning puts even more of a premium on students' individual interests, skills, and developmental

needs (Jobs for the Future & the Council of Chief State School Officers, 2015).

Schools that focus on personalized learning also tend to emphasize a competency-based progression toward mastery of content and skills. They may make use of individual learner profiles that describe each student's strengths and areas for growth, or they may award badges for mastery of specific competencies. In addition, students may have time built into their regular class schedules to pursue individual interests through passion projects or "Genius Hour" experiences. To encourage personalization, schools may use a blended learning approach—combining face-to-face instruction with online learning—to give students more control over when, where, and how they learn. Some schools are also exploring a combination of personalized learning and PBL—with students pursuing individual interests for part of the day and taking part in more collaborative, standards-based projects at other times.

**Figure 0.2** Project Based Teaching Practices for Gold Standard PBL



Regardless of whether projects are done by teams or individually, if the projects are of high quality—with teachers paying attention to Project Based Teaching Practices—all of these PBL experiences have the potential to be high points of the school year for you and your students.

In the chapters ahead, you will gain insights into each of the seven Project Based Teaching Practices that support student success. For each practice, you will discover a wide range of practical strategies and hear teachers reflect about their classroom experiences. Just as student voice is essential to high-quality PBL, teacher choice is embedded in effective Project Based Teaching.

**Build the Culture:** Classroom culture conveys an ethic of care, an emphasis on excellence, and a sense of shared intention. The right culture builds students' independence, fosters collaboration, encourages a growth mindset, supports risk taking, encourages high-quality work, and builds inclusiveness and equity. In many ways, culture is the fuel for student voice and choice, sustained inquiry, and persistence. Positive culture doesn't get built with a one-day team builder. It's an ongoing effort to create an inclusive community of learners.

**Design and Plan:** Intentional design of the learning experience sets the stage for students and teachers to capitalize on the full potential of PBL. Essential Project Design Elements provide a blueprint for the project, including planning for both formative and summative assessment. Teacher decisions at the design stage include curating resources and, potentially, connecting with experts or community partners. Project Based Learning plans allow room for student voice and choice but keep the project from becoming unwieldy.

**Align to Standards:** By aligning projects to meaningful learning goals, teachers ensure that PBL is academically rigorous and has an emphasis on priority standards and higher-order thinking. What's more, students understand *why* they're learning what they're learning and how PBL relates to the world beyond the classroom.

**Manage Activities:** A well-managed PBL experience enables students to get to deep learning and develop the teamwork and self-management skills that will serve them in life. Project management

strategies focus on productivity and efficiency, but PBL is not about following a recipe. A well-managed project allows for sometimes “messy” learning.

**Assess Student Learning:** Assessment ensures that students work toward mastery. It’s not about “gotchas” or sorting but about growth. PBL requires a balance of formative and summative assessment, including both team and individual feedback. Feedback comes from multiple sources, including peers, experts, and audiences along with the teacher. Students have time to improve and refine their work based on comprehensive feedback.

**Scaffold Student Learning:** Scaffolding creates conditions so every student can succeed with the project and master learning goals. In an equitable classroom, students’ prior learning experiences, language fluency, or reading levels are not barriers to success.

**Engage and Coach:** Engaging and coaching strategies bring out the best in students. Coaching strategies use questioning, modeling, and reflection to build intrinsic motivation and help students achieve their learning goals. A caring, trusting relationship between teacher and students is the foundation for successful PBL.

The closing chapter offers advice and reflections from teachers who have made the shift to PBL. Their experiences show us that PBL gets better with practice. Becoming a skilled Project Based Teacher doesn’t happen with one project; it’s an ongoing process of professional learning, supported by effective school leaders, instructional coaches, and teaching colleagues. Although many day-to-day classroom practices do change with a shift to PBL, teachers are often relieved to discover that they can make effective use of tried-and-true resources and strategies within the context of PBL.

What doesn’t change with the introduction of PBL is the critical importance of a caring teacher in the lives of students. Indeed, when teachers begin to implement PBL, they often say that they get to know their students better as a result. A common refrain among teachers who have made the shift to PBL is “Doing projects with my students reminds me why I went into teaching in the first place.”

## Meet the Teachers

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Project Based Teachers from across the United States have opened their classrooms for this book and for the companion series of videos. They teach across grade levels and content areas, and they work in schools that vary widely when it comes to student demographics and socioeconomics. You will hear them describe how they use specific Project Based Teaching Practices to support student learning. Unless otherwise indicated, their stories are based on interviews or personal correspondence with the authors or video crew.

Teachers whose stories are woven throughout this book include a math teacher from an urban high school, an elementary teacher whose students include a number of English language learners, a suburban middle school science teacher who wants her students to become well-informed citizens, a chemistry teacher in a high school where a high percentage of students have special needs, and many more. Some teachers work with students who will be the first in their families to attend college. Advocates for educational equity, these teachers see PBL as the best way to prepare *all* learners for the future. You will hear, too, from instructional coaches who play important supporting roles in helping Project Based Teachers build their confidence with new strategies.

Across different contexts, these educators share a belief that their students will rise to the challenges of PBL. High expectations for all are an integral part of the PBL culture. As one high school humanities teacher regularly tells her students, "I believe in you."

## Special Features

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This book also includes special features to deepen your understanding of Project Based Teaching Practices and strategies to help PBL take hold in your community:

- **Gold Standard Indicators:** Each chapter describes what Gold Standard Project Based Teaching Practices should look like in action, with indicators from the Buck Institute for

Education's Project Based Teaching Rubric (included in full in the Appendix).

- **Try This:** Watch for these descriptions of activities to support PBL in your context. Try these ideas with your students and colleagues and then reflect on the results.
- **Coaches' Notebook:** How can instructional coaches and teacher leaders support PBL? Veteran coaches offer suggestions to improve practice and build teachers' confidence with Project Based Teaching.
- **On Your PBL Bookshelf:** Recommended readings are offered to deepen your understanding of each Project Based Teaching Practice.

## Appendix

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The Appendix includes two more resources that will help you continue to develop your capacity as a Project Based Teacher.

- **Project Based Teaching Rubric:** The complete rubric for Project Based Teaching Practices is included for reference. A continuum of criteria is included for each of the seven practices for the Beginning PBL Teacher, the Developing PBL Teacher, and the Gold Standard PBL Teacher. Intended as a tool for professional growth, the rubric is a useful tool for self-reflection, in professional development, or as part of collegial conversations about PBL.
- **Sample of Completed Student Learning Guide:** Teachers make many design decisions to set the stage for Gold Standard PBL. To help readers envision the planning involved in an academically rigorous project, the Appendix includes a completed student learning guide for one of the project examples discussed in this book (Revolutions on Trial). To download a blank student learning guide for use in your own project planning, visit [www.bie.org](http://www.bie.org) and search "Student Learning Guide."