EAB

Project-Based Learning

District Leadership Forum

District Leadership Forum

Michelle Berger
Research Associate

Olivia Rios
Senior Research Manager

Table of Contents

1) Executive Summary

Key Observations

Profiled districts implement one of three different models of project-based learning (PBL): blended PBL teaching methods, PBL courses, or PBL tracks. **District B** and **District C** use a blended model to deliver PBL to students. At these two districts, administrators train all teachers on PBL techniques. As a result, students experience PBL regularly in traditional classrooms. Teachers rely on their judgment to decide whether to assess students through PBL or traditional means. **District D** and **School E** use specific courses to deliver PBL to students. Some students take a combination of PBL courses and non-PBL courses, while other students do not take any PBL courses. Only teachers leading PBL courses receive training on PBL techniques. These teachers assess students in their classes through PBL. Finally, **School A** uses a designated track to deliver PBL to students. Only the team of teachers assigned to the PBL track receive training on PBL techniques. At this time, students in these courses take traditional exams and finals. However, contacts report potentially ending that practice so that students demonstrate content mastery exclusively through PBL.

Implement PBL to provide students with an opportunity to conduct in-depth exploration of course topics through applied learning, which promotes student engagement. Contacts at all profiled districts report that PBL courses provide students with an opportunity to apply their learning in an authentic setting, which deepens their understanding of the course content. At **School E**, contacts report that applied learning through projects cannot cover as many standards as traditional coursework. For this reason, some teachers at **District B** and **District C** express concern that the PBL model will not sufficiently prepare students for standardized tests. However, contacts describe numerous benefits from applied learning. For example, contacts at **District B** and **District D** attribute increased student engagement to PBL course participation.

Encourage teachers to explore the connection between academic standards and the application of those standards to design projects that assess students' content mastery in an applied setting. At profiled districts, teachers design PBL units or courses around standards that relate to a real-life issue, organization, medium, or activity (i.e., an authentic audience). PBL experts recommend that teachers identify an authentic audience for students' projects to increase student engagement and learning.[1] Teachers at profiled districts create rubrics that relate directly to the standards covered in the project. Then, teachers at profiled districts rely on exit tickets or other formative assessments and final project deliverables to score students in accordance with the rubric. In this way, teachers at profiled districts use PBL to assess students and measure content mastery.

Develop teachers' PBL skills through initial professional development sessions and subsequent, wraparound supports. All profiled districts work with outside consultants (i.e., **New Tech Network**, **PBLWorks**, **SaviLabs**) to train teachers on how to use PBL in their classrooms. In initial professional development sessions, consultants train teachers on effective PBL instructional tactics and coaching on successful project design. To continue teachers' professional development throughout the year, all profiled districts designate at least one administrator to support teachers assigned to PBL courses. These administrators coordinate with community partners and help teachers research and design year-long projects.

1) Boss, Suzie. "Focus on Audience for Better PBL Results," *Edutopia*. February 14, 2014.

2) Implementation and Stakeholder Engagement

Motivations and PBL Models

Project-Based Learning Provides Opportunities for In-Depth Content Mastery and Improved Student Engagement at Profiled Districts

Contacts from profiled districts report that administrators implement Project-Based Learning (PBL) to improve pedagogy. PBL assesses students on content mastery through projects completed over an extended period, ranging from a week to a semester. For these projects, students investigate and respond to a real-world question, problem, or challenge (i.e., an authentic audience).[2] Applied learning in an authentic context increases student engagement and understanding.[3] Contacts at **School E** report that applied learning through PBL greatly expands students' knowledge of the standards that the projects target.

At **District B** and **District C**, students experience PBL as an integrated component of their education (i.e., PBL is one of many tools that teachers use to bring effective, innovative instruction into the classroom). Therefore, teachers may forego traditional assessments in favor of PBL for an entire course or individual unit within the course. Administrators at District B encourage teachers to opt for PBL instead of traditional assessments as often as their instructional design allows.

At **School A** and **District D**, teachers who teach PBL courses assess students' content mastery entirely through PBL. At **School E**, teachers who teach PBL courses primarily assess students' content mastery through PBL. However, at this school, these teachers also continue to administer traditional tests so that administrators can compare student performance to traditional classrooms.

2) "What is PBL?" *PBLWorks*. https://www.pblworks.org/what-is-pbl. Accessed May 30, 2019.
3) Boss, Suzie. "Focus on Audience for Better PBL Results," *Edutopia*. February 14, 2014.

To help administrators consider and implement new instructional models, EAB's **Principles of Teaching Excellence Resource Guide** provides three research-backed frameworks for teaching excellence.

Three Models to Deliver PBL to Students at Profiled Districts

Method	**Blended Teaching Methods**	**PBL Courses**	**PBL Track**
	At **District B** and **District C**, administrators encourage all teachers to use PBL techniques in their classroom whenever possible.	At **School E** and **District D,** students can opt in to PBL courses. Teachers of these courses exclusively use PBL as an instructional tactic. These courses count for core content area credit.	At **School A**, some students opt-in to a PBL track. Students enrolled in this track take exclusively PBL courses.
Assessment	Teachers may assess students through projects or through traditional exams at their discretion.	Students do not take traditional exams in these courses. They still take traditional exams in other, non-PBL courses. At School E, administrators translate students' final score (guided by rubrics) into a grade for the students' transcript.	Students take traditional exams so administrators can compare student achievement in PBL courses to traditional courses. Administrators encourage teachers to de-emphasize the importance of these exams to students to ensure that students focus on PBL.

Replacement of Traditional Assessments Does Not Account for Administrators' Decisions to Implement PBL at Profiled Districts

At profiled districts, PBL initiatives create some opportunities for students to demonstrate content mastery through projects. However, interest in alternative assessments did not primarily drive administrators' decision to implement PBL. Rather, contacts cite motivations such as student engagement and instructional quality.

Professional Development Serves as the Foundation of Successful PBL Implementation at Profiled Districts

The implementation process for PBL initiatives varies at profiled districts based on the delivery model that administrators choose. PBL implementation took the most time at **District B** and **District C** because administrators trained all teachers on PBL. At District B, administrators trained all teachers because they identified applied learning as a district-wide priority.

At District C, PBL began as a grassroots initiative among teachers, but administrators used two large grants (exceeding two million dollars) to scale the practice to the whole district. At the three remaining profiled districts, administrators implemented PBL more quickly by selecting only certain teachers to receive PBL training. Administrators at all profiled districts devote most of the implementation process' time and resources to professional development. Contacts at **School E** report that

investment in professional development during implementation facilitates success of PBL initiatives.

Implementation Process at Profiled Districts

Optional: Teacher Selection Phase

Administrators at **School A**, **District D**, and **School E** recruited teacher volunteers to lead PBL courses. At **District B** and **District C**, PBL occurs district-wide, so administrators trained all teachers on PBL techniques.

Professional Development Phase

Administrators at all profiled districts work with external consultants to provide PBL training to teachers. Typically, administrators introduce PBL to teachers over the summer. For more information on professional development, see **pages 11-13**.

Project Creation Phase

At all profiled districts, teachers create their first PBL units in the year following their initial training. Teachers translate learning objectives into projects by identifying authentic audiences for curricular standards. For more information on translating standards into projects, see **page 13**.

Timeline

The PBL implementation process at profiled districts lasts **one to three years**, depending on whether administrators decide to train all teachers or just a select group of teachers. If administrators train more teachers, the implementation process lasts for a longer amount of time. Contacts note that administrators should expect to repeat initial trainings each year for teachers who are new to the PBL program.

Teacher Engagement

To Engage Teachers with PBL, Collect Teacher Feedback and Adjust Implementation Accordingly

Profiled districts use multiple tactics to encourage teachers to use PBL in their classrooms or to volunteer to teach PBL-specific courses. These tactics respond to teachers' key concerns regarding PBL.

To identify teacher concerns, administrators at **District B** form a coalition with volunteer teacher representatives from across the district. Administrators schedule coalition meetings on a flexible basis, altering the timing and location of the meetings to best accommodate teachers.

Administrators also seek feedback from high school teachers through informal channels (i.e., one-on-one conversations). Contacts report that administrators use

these channels because high school teachers often coach sports after school, which prevents them from attending coalition meetings.

Teacher Concerns and Administrators Response Tactics at Profiled District

Teacher Concerns	*Administrator Response Tactics*
Test Scores	**Deploy Administrators and Colleagues to Encourage Teachers to View Instruction and Assessment Holistically**
At **District C**, teachers express concern that PBL will fail to prepare students to succeed on state tests.	**1) One-to-one Peer Mentorship** Administrators pair each reluctant teacher with a PBL leader in their building. Administrators provide stipends and monthly support meetings to teacher leaders. Reluctant teachers witness PBL's effectiveness as an instructional approach that prepares students for standardized testing. **2) Superintendent Messaging** The superintendent uses meetings, bulletins, and everyday interactions to consistently inform educators that student learning takes precedence over test scores. Administrators encourage teachers to value holistic instructional approaches and educational outcomes.
Workload	**Support and Reward Teachers Who Use PBL in Their Classrooms**
At **School A** and **School E**, teachers express concerns that PBL requires more time than traditional instruction.	**1) Technology** Administrators assign PBL teachers to 21st century-equipped classrooms. Contacts report that teachers prefer to teach in these classrooms, so this strategy incentivizes teachers to participate meaningfully in the PBL track despite the additional workload. In addition, the technological capabilities of these classrooms may allow teachers to more easily implement PBL, in less time. **2) Funding** Administrators provide funding for instructional expenses. This funding removes some of the obstacles that teachers face when designing projects for PBL courses. **3) Autonomy** Administrators highlight PBL teachers' choice and freedom to design instructional time. Contacts report that this sovereignty appeals to teachers, who subsequently choose to commit to teach PBL courses despite the added workload.

While some teachers express workload concerns, contacts at profiled districts report that most teachers naturally work to instruct students with effective, innovative pedagogy. Contacts report that this intrinsic motivation may overcome workload concerns.

Assign Enthusiastic Teachers to PBL Courses to Ensure Positive Classroom Environment and Encourage Grassroots Adoption

The administrators responsible for PBL at **School A** and **School E** recruit effective, enthusiastic teachers to lead PBL courses. These administrators rely on professional judgement and personal experiences with different teachers to select strong teachers with a demonstrated interest in innovative pedagogy. This selection process ensures that teachers tasked with PBL courses commit to new instructional tactics and student engagement.

At School E, PBL course teachers spread enthusiasm to their colleagues, who may subsequently express interest in teaching PBL courses. In this way, administrators may be able to expand PBL initiatives from a select group of teachers to a school- or district-wide initiative. At **District C**, district-wide PBL began organically among an interested group of teachers.

Broadcast Success Stories to Encourage Teachers to Consider PBL

At **School A** and **District C**, administrators leverage positive teacher experiences with PBL to advocate for the initiative. This advocacy encourages teachers to remain committed to PBL.

To source success stories, administrators at District C include an agenda item on a regularly occurring district-level meeting of STEM teachers. Teachers and administrators at the district use this meeting to discuss STEM discipline-specific information. At the meeting, administrators ask participants to come prepared with anecdotes about innovative projects occurring at their schools. Administrators publicize these projects in district-wide newsletters. Contacts report that after seeing their colleagues' work recognized, teachers express interest in PBL.

Logistics of STEM Teacher Meetings

These meetings occur four times a year during the school day. Teachers travel to the central office for the meetings. Administrators provide two hours of release time and substitute teachers. Teachers volunteer to participate.

Community Interest

Highlight the Impact of PBL on Opportunities for Applied Learning to Engage Parents, Students, and School Board Members

Administrators at profiled districts engage students, parents, and school board members to sustain PBL initiatives. When administrators at **District D** implemented a PBL track for students in grades seven through ten, administrators communicated the details about the new program through newsletters and email to parents. At **District C**, the district circulates a newsletter to all parents and students that describes all of the projects occurring throughout the district. Parents also receive a quarterly paper version of the newsletter in the mail. In addition, the superintendent invites students to speak at school board meetings about the work they have completed for PBL courses.

Students from a PBL course that combines technology and journalism produce this newsletter.

These communications encourage students to enroll in the program by highlighting the opportunities students would have to work on exciting, real-world projects.

In the newsletters and student presentations to the board at District C, administrators encourage students and staff members to describe how components of PBL such as community partnerships, authentic audiences, and applied learning contribute to increased student engagement.

Similarly, at **School E**, administrators highlight the engaging aspects of PBL when recruiting students to enroll in PBL courses. For example, students in a PBL course used research on adolescent psychology to advocate to the superintendent for a different school schedule. Administrators highlight this story in student recruitment to PBL courses. These efforts ensure that community members maintain positive impressions of PBL, which helps to justify investment in the initiative and encourages students to enroll in PBL courses.

3) Optimizing Instruction

Professional Development

All profiled districts rely on outside consultants to lead professional development sessions. Other consultants include **PBLWorks** and **New Tech Network**

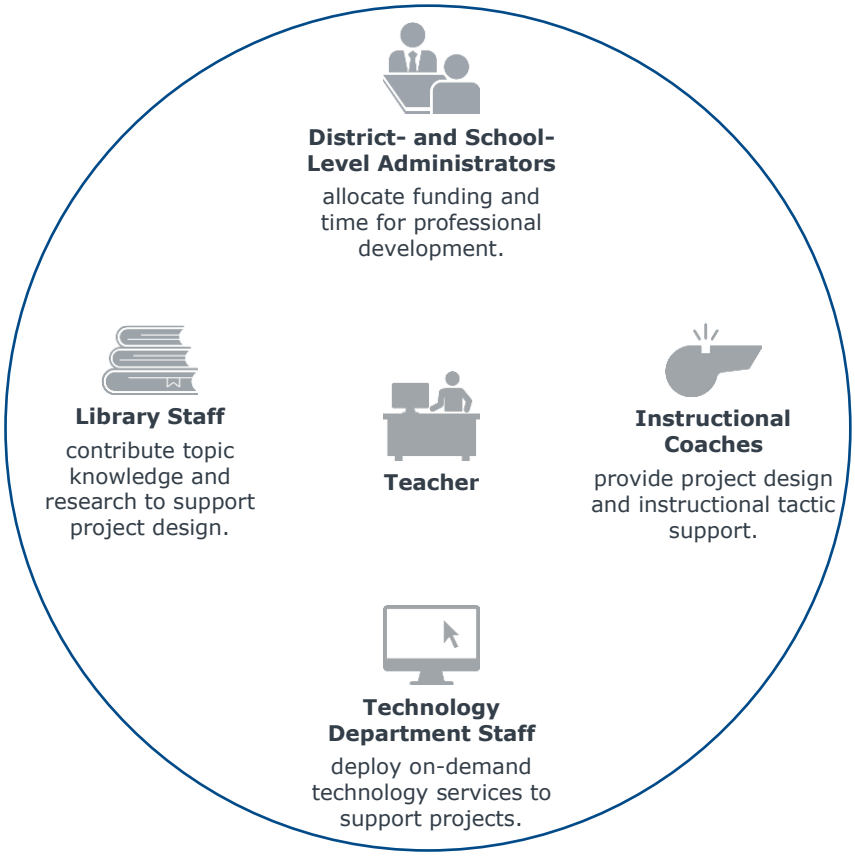
Train Teachers on Project Design and Instructional Tactics to Support PBL Initiatives

Administrators at all profiled districts worked with consultants or other external experts to deliver initial professional development sessions to teachers when the district implemented PBL initiatives. Administrators at **School A** highlight the importance of providing sufficient PBL-specific professional development before teachers implement PBL in their classrooms to facilitate PBL success. For example, at **School E**, teachers planning to lead a PBL course in the coming school year attend a week-long professional development course provided by **Savi Ed Labs**.

At School E, one full-time administrator oversees PBL and senior capstone projects. This administrator provides instructional and project design support upon teachers' request. In addition, this administrator manages the logistics of all community partnerships that teachers build to enhance PBL.

All other profiled districts also offer ongoing PBL support to teachers throughout the year. For example, at **District C**, administrators include a PBL-focused session at district-wide professional development days, which occur three times throughout the year. Administrators required teachers to attend this session in the first year of PBL implementation, and now offer this as an optional session. Further, **District B** offers holistic supports for teachers using PBL.

Wraparound PBL Supports for Teachers at *District B*



Celebrate Pedagogical Progress to Encourage Teachers After Initial Efforts with PBL

At **District B** administrators frame PBL as a target strategy for teachers to use to teach effectively. Contacts report that administrators acknowledge that any pedagogical improvements—even if they are not perfect attempts at PBL—represent progress toward the goal of effective teaching.

Administrators previously reviewed and graded each project design proposal in the district. However, under that model, teachers received too much criticism without constructive guidance. Now, administrators no longer evaluate individual project designs. Instead, administrators offer professional development before teachers design projects, supplemented with ongoing supports to ensure that teachers implement the recommended practices into their project designs.

During professional development sessions, administrators celebrate "failing forward." In other words, administrators acknowledge that teachers will not create perfect projects during their first attempt with PBL but that mistakes can help teachers improve for the future.

Administrators frame PBL as an excellent way, but not the only way, to implement effective teaching practices in the classroom. Therefore, teachers receive praise for a continuum of teaching practices, even if they do not succeed in fully implementing PBL. This prevents teachers from reverting to traditional teaching practices due to discouragement.

Provide Professional Development Funding for PBL to Signal Administrative Support

At **District D**, teachers who lead PBL courses attend monthly, three-hour meetings with outside consultants to workshop project design and instructional tactics. Administrators provide substitutes for teachers during the school year and stipends for teachers during the summer months. Contacts report that facilitating paid professional development opportunities signals the district's commitment to PBL.

Project Design

Encourage Teachers to First Review Standards and Then Design Aligned Projects

Teachers at **District B**, **District C**, and **School E** use a similar process to create projects in accordance with grade- and unit-level standards.

Example Project Design Process at Profiled Districts

Step One: Teachers **review grade-, discipline-, and unit-level standards** to select knowledge and skill areas to target through PBL.

Step Two: Teachers **identify an authentic audience** for selected standards. For example, a social studies teacher may design a project where students write a letter to their congressperson.

Step Three: Teachers **design a project framework** that incorporates all selected standards and the authentic audience.

Step Four: Teachers **measure student mastery of standards**:

- During the project, teachers use exit tickets, written work, and short assessments;
- At the end of the project, teachers use a rubric.

Consider Student Interest at the Beginning of the Project Design Process

Before initiating this process at **School E**, administrators ask students to indicate topics that interest them on a student survey. Administrators aggregate the students' responses and subsequently recruit teachers that they believe harbor similar interest areas. Administrators ask if the teacher would be interested in leading a PBL course on the topic.

Teachers design projects around curricular standards that provide opportunities for students to naturally apply the standards. In their project design, teachers include methods to assess student content mastery. Teachers score student performance on these assessments (e.g., exit tickets, reflections, final deliverables) with rubrics that measure mastery of standards. For an example of a rubric at School E, see **Appendix A**.

To Avoid Underrepresentation of PBL in Specific Courses or Departments, Encourage Interdisciplinary Approaches

At profiled districts, PBL tends to be concentrated in certain disciplines. Contacts at **District C** report that English language arts and social studies teachers most often use PBL units to assess students, whereas contacts at **School E** report that the format of science courses (which include lab periods) facilitates PBL. Contacts at **District B** caution that uneven distribution of PBL across content areas leads to unequal access to PBL. Unequal access may occur if a student only ever experiences PBL in one subject (e.g., social studies) and not in others (e.g., math). Also, students who take more classes in a particular discipline might experience more PBL units than other students.

To prevent unequal PBL access, administrators at **District B** encourage all teachers to consider authentic audiences for their course content and to design PBL units. Administrators communicate this priority during professional development sessions and meetings with teachers.

Further, administrators at **School A**, District B, District C, and **District D** encourage teachers to create interdisciplinary projects. Inter disciplinary projects provide students access to PBL in courses that might not otherwise incorporate PBL. At School A and District D (where students opt-in to a PBL track) administrators ensure interdisciplinary approaches by recruiting teachers from two different subjects to co-teach students.

Students at One Profiled District Gain Access to PBL When They Enroll in At Least One Participating Course

Students do not have to enroll in both courses that are collaborating to create an interdisciplinary, PBL unit. At **District B**, the physical education and anatomy teacher collaborated to design a project about human muscles. During the project, students design workout regimens. Administrators allow students to participate in this PBL unit if they enroll in at least one of the two comprising courses.

Facilitate Community Partnerships to Help Students Apply Learning in Real-World Contexts

Contacts at **District D** and **School E** report that community partnerships account for much of the value that students receive from PBL. Students who work with community partners or other external organizations have the opportunity to learn skills, such as financial management, marketing, and public speaking, that contribute to their post-secondary success.

At District D, administrators established a partnership with a local, advanced manufacturing facility, which underpins the PBL course. Students who participate in the course travel to the facility to gain technical expertise for their projects. Contacts report that this partnership allows students to visualize potential future careers. At School E, contacts report that community partnerships require time to develop. Therefore, the administrator who oversees PBL devotes a significant portion of their time to developing and supporting community partnerships.

Profiled Project Developed in Partnership with External Organizations

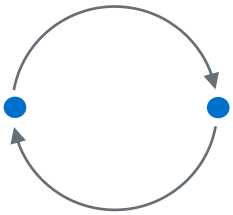
At **District D**, students apply geometry concepts by tracking a weather balloon. Students work with partners at the Federal Aviation Administration (FAA) and a local advanced manufacturing plant to construct the balloon and ensure compliance with aviation regulations.

Consider Implementing a Teacher-Student Shadowing Program to Avoid an Overabundance of Projects at the End of Semesters

If administrators choose to implement district- or school-wide PBL, students may experience multiple project deadlines that occur at the same time. This can cause significant student stress. Administrators at **District B** and **District C** have adopted policies to respond to this challenge.

At District B, administrators no longer mandate that teachers create a certain number of projects each year, because the mandate resulted in all teachers asking students to complete projects at the same time (i.e., at the end of the term). At District C, administrators made teachers aware of this problem by implementing a teacher-student shadowing program. Contacts report that this program educates teachers about the difficulties that their students when face when all teachers assign PBLs at the same time. As a result, teachers decided to assign projects throughout the year, rather than only in December and May once students completed course content for the semester. This new sequencing creates an environment where it is less likely that students will have multiple project deadlines at the same time.

Teacher-Student Shadowing Program at *District C*

Step One	Step Two	Step Three
Teacher Selection Administrators select four teachers at each school, one in each core content area, from a pool of teachers who are involved in other district-level initiatives.	**Student Selection** Administrators ask each principal to select a special education student, a student with advanced coursework, a student on a gifted track, and a student on a regular academic track.	**Iterative Shadow Days** Participating teachers shadow participating students for a full day. Administrators provide substitute teachers.  Each participating teacher selects a colleague to participate in the next iteration of the program.

Impact: Teachers witness how conflicting project deadlines contribute to student stress. Teachers learn to sequence PBL units more evenly throughout the year to avoid a confluence of deadlines at the end of the semester.

4) Assessment

Metrics

Track Student Engagement and Achievement Metrics to Determine the Impact of PBL

Administrators at profiled districts evaluate PBL initiatives in two broad categories: student engagement and student achievement—using quantitative metrics for achievement and qualitative metrics for engagement. Contacts report that administrators expect PBL initiatives to improve student engagement and student achievement due to the pedagogical value of applied, student-centered learning.

Metrics Profiled Districts Use to Evaluate PBL

Quantitative

Grades and Test Scores

At **District D**, administrators monitor course grades, pass rates, and the proportion of students with a GPA of 3.0 or higher. Administrators compare these metrics between students who participate in PBL courses and students in traditional classes.

Student Proficiency and Growth

At **District B**, administrators track proficiency and growth targets for individual students. Administrators use students' course grades and grades on specific standards to quantify these metrics.

Qualitative

Student Feedback

At **District B** and **District D**, administrators collect feedback from students and families. At District B, administrators collect feedback formally through state-mandated accountability surveys. These surveys measure overall student engagement. Administrators monitor survey responses to understand the impact of district-wide PBL initiatives on student engagement. In the future, contacts report that administrators plan to collect student engagement data for each course to determine if PBL courses correlate to higher student engagement.

Students indicate the extent to which they agree with statements such as:

- "I feel challenged at school."
- "I significantly contributed to my class."
- "I follow my passion at school."

Teacher Evaluations

At **District B**, administrators consider feedback from teacher evaluations to assess PBL initiatives. Contacts note that administrators use this feedback to help teachers progress toward more effective teaching.

Implement PBL to Increase Student Engagement and to Teach Soft Skills

Contacts at all profiled districts report multiple benefits for students who participate in PBL courses or units.

Benefits of PBL at Profiled Districts

At **District C**, contacts report that PBL prepares students for 21st century environments by naturally emphasizing the Four C's: Critical thinking, Creativity, Collaboration, and Communication.

Academic Achievement	*Non-Academic Achievement*	*Post-Secondary Preparation*
 **Student Proficiency and Growth** At **District B**, a greater proportion of students have achieved their growth targets each year since PBL implementation.	 **Service Orientation** Students' projects often support non-profits' missions, community initiatives, or other service projects. Contacts at **School A** report that PBL teaches students how to better the world.	 **Growth Mindset** Contacts at **School E** report that PBL requires students to manage a long-term plan and persist through obstacles. This helps students develop a growth mindset, in which they believe in their own ability to improve through effort.[4]
 **Graduation Rates** At **School E**, graduation rates have improved since the introduction of PBL. Contacts note that students can take PBL courses as credit recovery, which contributes to improved graduation rates.	 **Student Engagement** Contacts at **District D** report that PBL course participation has improved student engagement, which previously would decline when students entered high school.	 **Applicable Skills** Contacts at **School E** report that students engaging in PBL learn multiple skills to apply to college and their career. Some skills include public speaking, financial management, grant writing, and cold calling.
 **Senior Capstone** At **School E**, students that participate in PBL courses are more likely to exceed expectations on their senior capstone assignments. These assignments are self-directed projects that all students complete to graduate.		 **Discovery and Reflection** Contacts at **District D** report that PBL allows students to determine where their interests lie. Moreover, the community partnership component of PBL helps students visualize their future paths to college and/or career. In these ways, PBL can help students select college majors and/or career paths.

4) "Decades of Scientific Research that Started a Growth Mindset Revolution," *Mindset Works*. https://www.mindsetworks.com/science/. Accessed June 3, 2019.

Research and Profiled Districts Report Varied Impact of PBL on Content and Standards Mastery

Contacts at profiled districts offer opposing views in regard to whether PBL effectively covers a wide range of standards, and research on PBL identifies both benefits and drawbacks of the instructional approach.

Benefits and Drawbacks of PBL[5]

	Benefits	Drawbacks
Project-Based Learning (PBL)	• Promotes of deep learning for students • Increases information retention • Provides real-world skill application • Facilities improved teamwork and interpersonal skills	• Needs significant time and effort for implementation • Requires coordination across core content areas • **Focuses on building depth of knowledge rather than breadth**

Contacts Disagree on PBL's Ability to Cover Breadth of Standards

At **District C** and **School E**, contacts report that while PBL allows students to dive deeply into selected standards through applied learning, teachers cannot incorporate a wide range of topics into PBL. In contrast, at **School A** teachers who teach PBL classes use differentiated instruction to cover all grade- and unit-level standards over the course of a full project.

5) "The Pros and Cons of Problem-Based Learning," *StuDocuBlog*. https://blog.studocu.com/en/study/pros-cons-problem-based-learning/. Accessed May 30, 2019.

5) Research Methodology

Project Challenge

Leadership at a member district approached the Forum with the following questions:

- What types of project-based learning (PBL) models have contact districts implemented?
- How does PBL measure content mastery for students at contact districts?
- How does PBL differ across various core content areas at contact districts?
- How do teachers at contact districts choose specific projects to match stated learning objectives?
- What is the process for implementing PBL at contact districts?
- How do administrators make decisions about which model to implement at contact districts?
- What was the implementation timeline at contact districts?
- How do administrators at contact districts incentivize teachers to use PBL in the classroom?
- How did contact districts communicate the shift to PBL to students and families?
- How did contact districts communicate the shift to PBL to faculty and administrators?
- What training or professional development, if any, do contact districts provide to core content area teachers on PBL?
- How do contact districts measure the effectiveness of PBL?
- What impact has PBL had on students' overall content mastery at contact districts?
- How does successful PBL provide other benefits or skills for students at contact districts?

Project Sources

The Forum consulted the following sources for this report:

- Boss, Suzie. "Focus on Audience for Better PBL Results," *Edutopia*. February 14, 2014.
- "Decades of Scientific Research that Started a Growth Mindset Revolution." *Mindset Works*. https://www.mindsetworks.com/science/. Accessed June 3, 2019.
- EAB's internal and online research libraries. eab.com.
- Hernandez, Michael. "Evaluation Within Project-Based Learning," *Edutopia*. https://www.edutopia.org/blog/evaluating-pbl-michael-hernandez. Accessed May 30, 2019.
- National Center for Education Statistics. NCES. http://nces.ed.gov/.
- Schuetz, Robert. "Project-Based Learning: Benefits, Examples, and Resources," Schoology Exchange. https://www.schoology.com/blog/project-based-learning-pbl-benefits-examples-and-resources. Accessed May 30, 2019.
- "The Pros and Cons of Problem-Based Learning." *StuDocuBlog*. https://blog.studocu.com/en/study/pros-cons-problem-based-learning/. Accessed May 30, 2019.

• "What is PBL?" *PBLWorks*. https://www.pblworks.org/what-is-pbl. Accessed May 30, 2019.

Research Parameters

The Forum interviewed school- and district-level administrators involved in PBL at the following districts:

A Guide to Districts Profiled in this Brief

District/School	Location	Approximate Enrollment
School A	Midwest	1,300
District B	Midwest	13,000
District C	Midwest	4,000
District D	Midwest	3,000
School E	Northeast	300

Appendix A

Rubric Description and Template for an Individual Standard Based on Resources from *School E*

Teachers at **School E** use rubrics to assess content mastery in PBL courses by scoring student proficiency on academic standards. All students in PBL courses receive scores on six academic standards:

- Synthesis of information to solve community challenges
- Research process
- Evidence gathering
- Collaboration
- Technology use
- Reflection and revision

In addition, students receiving core content area credit for a PBL course receive scores on content-specific academic standards.

Rubric Template

Standard Name (e.g., "Technology") *One to two sentence description of standard*				
Exceeding Proficiency (4)	**Proficient (3)**	**Approaching Proficiency (2)**	**Non-Scorable (1)**	**Teacher Feedback**
• Description of "exceeding proficiency" for selected standard	• Description of "proficient" for selected standard	• Description of "approaching proficiency" for selected standard	• Description of "non-scorable" for selected standard	
Student evidence:	*Student evidence:*	*Student evidence:*	*Student evidence:*	