EXECUTIVE SUMMARY

Hope Street Group (HSG) launched its first State Teacher Fellows program in Kentucky in 2013; since that time, the program has expanded to Arizona, Hawai‘i, North Carolina, Tennessee, and Utah. With the aim of amplifying teacher voice to inform state and district policies that impact educators, the program provides training, tools, resources, and support to cohorts of State Teacher Fellows (STFs) in each state.

In fall 2018, Hawai‘i STFs distributed surveys on project-based learning (PBL) to Hawai‘i educators and held 85 in-person focus groups with 409 teachers. A total of 1,856 teachers across Hawai‘i completed the survey. This report presents findings from nine survey and four focus group questions.
FINDINGS:

Teachers' familiarity with and use of project-based learning (PBL) practices vary. Sixty-two percent of teachers are unaware of any specific classrooms, complexes, or schools that have successfully integrated PBL throughout the student experience; 33 percent have never received PBL training; and 25 percent never use PBL practices.

In PBL projects, teachers address science, technology, engineering, and mathematics (STEM) topics that incorporate several of the Buck Institute for Education’s Essential Project Design Elements (e.g., authenticity, student voice, challenging problem/question). Within these projects, teachers typically use presentations, rubrics, and performance tasks to assess student growth.

When implementing PBL projects, teachers have encountered several challenges and surprises. Specifically, teachers mentioned the following challenges: time investment, new pedagogical approach, funding/resources, student engagement and accountability, standards/curriculum alignment, and differentiation. Teachers were surprised by high student engagement and learning.

Overall, 79 percent of teachers who use PBL are comfortable in their use of these practices, and 86 percent find PBL valuable for students. In particular, teachers see PBL as valuable for increasing student engagement, increasing students’ critical-thinking and problem-solving skills, and improving students’ understanding.

Teachers mentioned the importance of the following for improving and successfully integrating PBL practices: planning and preparation time; training; funding; PBL observation opportunities; PBL curriculum, projects, and rubrics; sharing of PBL practices; trust in teachers; and community partnerships.
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INTRODUCTION

Hope Street Group (HSG) launched its first State Teacher Fellows (STF) program in Kentucky in 2013. Since that time, the program has expanded to Arizona, Hawai‘i, North Carolina, Tennessee, and Utah. With the aim of amplifying teacher voice to inform state and district policies that impact educators, the STF program provides training, tools, resources, and support to cohorts of STFs in each state.

Policy Studies Associates (PSA) in Washington, D.C., has conducted annual, independent evaluations of the STF program and shared the data with Hawai‘i Department of Education (HIDOE) and other state partners. HSG has used the data to make improvements to the STF program’s impact and reach. PSA is currently conducting an independent evaluation of the 2018 STF program in Hawai‘i. HSG staff will use PSA findings to make evidence-informed decisions and programmatic improvements. In early summer 2019, HSG will share information about these decisions and improvements with HIDOE.

Fall Data Collection

In fall 2018, Hawai‘i STFs (Appendix A) distributed surveys to educators across the state and held 85 in-person focus groups on project-based learning (PBL; Appendix B). STFs hosted the focus groups at schools within their Complex Areas. A total of 1,856 teachers across Hawai‘i completed the survey, and 409 teachers responded to focus group questions. (See Appendix C for demographic information on respondents.)

Analysis and Reporting

HSG secured the services of Magnolia Consulting, located in Charlottesville, Virginia, to independently analyze STF survey and focus group data and to report findings. HSG and Magnolia Consulting present figures in the body of the report that pertain to survey data. These figures highlight overall survey findings, and Appendix D presents survey data disaggregated by respondents’ primary role, grade level, and content area.

In addition to the survey findings, HSG and Magnolia Consulting developed figures, presented in the body of the report, to highlight the most common themes referenced by respondents for each focus group question (Appendix E), with darker shading for themes noted by a higher number of respondents and lighter shading for themes noted by a lower number of respondents.

Report Layout and Design

The layout of this report differs from reports prior to fall 2017. After consultation with STFs, state-based partners, and education agency staff in each state with an STF cohort, HSG changed the layout of the report in 2018 to provide additional graphics and a layout more conducive to sharing via social media; STFs use social media heavily to convey report findings to their professional learning networks (PLNs). Additionally, the new layout reflects many of the subtle yet important changes partners have requested over the years to improve the readability and overall understanding of the data analysis.

HSG is committed to adjusting the layout and organization of this report to help HIDOE better understand and act on the data, and feedback from HIDOE is welcome. The HSG Hawai‘i State Director, along with the national office staff who support her, will promptly attend to any feedback.
Relevant Survey Findings

Overall, 75 percent of teachers reported using project-based learning (PBL) practices at least once a year. However, 25 percent of teachers reported that they never use PBL practices in their classroom (Survey Question 1).

Twenty-five percent of teachers never use PBL practices.

Further, 62 percent of teachers indicated that they do not know of any specific classrooms, complexes, or schools that have successfully integrated PBL throughout the student experience (Survey Question 6).
Sixty-two percent of teachers do not know of specific classrooms, schools, or complexes that have successfully integrated PBL.

With respect to professional development offerings, 49 percent of teachers reported that they have been offered or have received professional development on PBL. By contrast, 33 percent of teachers reported that they have not received any training on PBL (Survey Question 9).

Thirty-three percent of teachers have not received any PBL training.

Teachers who use PBL practices in the classroom completed additional survey questions. Eighty-six percent of these teachers indicated that they find it valuable to use PBL approaches with students. Teachers who view PBL approaches as valuable then selected the three most valuable results of using PBL with their students. The largest percentage of teachers selected increased engagement (91 percent), followed by increased critical thinking and problem solving (70 percent) and improved understanding (68 percent; Survey Questions 2 and 3).
Of teachers who use PBL, 86 percent find it valuable to use with students.

Of teachers who view PBL as valuable, 91 percent view increased engagement as the most valuable result.

When asked how they assess student growth, teachers who use PBL reported that they use a variety of approaches. Specifically, they use presentations (67 percent), rubrics (67 percent), performance tasks (62 percent), pre-post reflections (56 percent), and other methods to assess student growth (Survey Question 4).
Teachers who use PBL assess student growth through presentations (67 percent), rubrics (67 percent), performance tasks (62 percent), pre-post reflections (56 percent), and other means. Seventy-nine percent of teachers who use PBL reported that they are comfortable or very comfortable in implementing PBL in their classrooms. By contrast, 12 percent of teachers reported being uncomfortable or very uncomfortable, and 10 percent are unsure of their comfort level (Survey Question 5). Seventy-nine percent of teachers who use PBL are comfortable or very comfortable during its implementation.
All surveyed teachers indicated the most important factors to successfully integrating PBL. Seventy-eight percent of teachers reported that planning and preparation time for teachers is most important. Teachers also mentioned teacher training (55 percent) and funding for resources (49 percent; Survey Question 8).

**Seventy-eight percent** of teachers view **planning/prep time for teachers** as the most **important factor** in **integrating** PBL.

Additionally, teachers suggested the following resources, trainings, or professional development experiences for expanding and improving PBL practices: professional development (74 percent), observing at a school using PBL (66 percent), and receiving a PBL curriculum (63 percent; Survey Question 10).

**Seventy-four percent** of teachers indicated that **professional development** should **be provided to expand and improve** PBL.
Relevant Focus Group Findings

In focus groups, facilitators asked teachers to consider the following definition of PBL in their responses: “a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, program, or challenge.”

For the first focus group question, facilitators asked teachers to share examples of PBL, given their classroom and school experiences. Teachers’ examples reflected the Essential Project Design Elements: key knowledge, understanding, and success skills; challenging problem or question; sustained inquiry; authenticity; student voice and choice; reflection; critique and revision; and public product (BIE, 2018). Teachers shared school- and classroom-based examples of PBL that spanned various curricular content areas, with projects largely in science, technology, engineering, and mathematics (STEM) areas (Focus Group Question 1).

Teachers’ PBL examples spanned various content areas, with some teachers emphasizing the cross-curricular nature of PBL. PBL examples were largely in STEM fields, particularly environmental science.

PBL EXAMPLES SPANNED VARIOUS CURRICULAR CONTENT AREAS

Teachers’ PBL examples spanned various content areas, with projects largely in science, technology, engineering, and mathematics (STEM) areas.
“In Hawaiian studies, had to research plants and how to do it; research the places that plants can grow; interviewing water board and talking about the politics and what they have to do; teacher would give them a plant and they had to research it, present it, and then later go to where they were and remove, plant, or whatever based on the plant and need.”

“Earth Day Project: focus on recycling and landfills and how to recycle in order to make by-products such as electricity.”

AUTHENTICITY
Teachers’ PBL examples reflected the Essential Project Design Element of authenticity. Specifically, teachers’ examples involved creating meaningful, real-world connections for students.

“My class is looking at studying the wa’a plants that came here with the voyagers and why they were chosen and how they survived the travel. We do our general academics, we tie it into our research. We bring in community experts. They make it very real and concrete for the kids so they really get the importance.”

“Students selected problems that are close to their life. Students are forming groups and building innovation and engineering something to solve their day to day life. One boy whose chore is take out the trash. But he’s scared because he has to do it at night. He built a cart that has a secret compartment that has his teddy bear and flashlight.”

STUDENT VOICE AND CHOICE
Teachers’ PBL examples also reflected the Essential Project Design Element of student voice and choice. These examples referenced teachers acting as facilitators of student-directed learning and autonomy.

“Project based learning is student-based with the teacher in a more facilitator type role.”

“Lots of student voice and choice, what they want to do and how they do it. Create a video, a rap, a poster, how they present information, a working due date, questions we wanted to answer.”

CHALLENGING PROBLEM OR QUESTION
Additionally, teachers’ PBL examples reflected the Essential Project Design Element of a challenging problem or question. In these examples, teachers referenced a problem or question for students to solve or answer in their PBL projects.

“Fifth grade end of elementary project around a driving question. For example, why should we take care of our water sources? This led to class study but also site visits and study of various areas of water shed from mountain to the sea. Ended in a public presentation.”

“They were trying to create a project that will protect [their] snacks from the rain outside. So they had to ... figure out what they wanted to do to keep their snacks covered. Some suggested container, some suggested a bucket, teachers suggested to let’s make something you don’t have. Some kids came up with some really cool ideas that I hadn’t even thought of and they were kindergartners.”
SUSTAINED INQUIRY
Teachers’ PBL examples reflected the Essential Project Design Element of sustained inquiry. In these PBL examples, teachers mentioned different aspects of the inquiry process (e.g., finding resources to answer questions).

“Design a dream house: research on web, on Zillow for sizes and prices and then create an ad for the house with researched price. Used geometry and other math concepts in project.”

“Interviewing others to collect data. Ending study skills portion and kids are creating a brochure of specific skills learned. Kids are thinking of it as a brochure of being in a doctor’s office and making it readable and simple.”

PUBLIC PRODUCT
Teachers’ PBL examples also reflected the Essential Project Design Element of a public product. Specifically, teachers mentioned that students publicly shared their PBL products through papers, presentations, brochures, videos, science fair projects, marketable goods, and musical or theatrical performances.

“Projects were based upon life experiences for 3rd grade they did a wetland project where they made a public service announcement—they transferred what they knew to others.”

“Students are separated into different groups and rewrite the book so it could relate to situations here in Hawaii. They write a script, edit it, make props, and perform the skit. Each class varies in the amount of time it takes to complete. Project makes the lesson more fun and hands on.”

KEY KNOWLEDGE, UNDERSTANDING, AND SUCCESS SKILLS
Additionally, teachers’ PBL examples reflected the Essential Project Design Element of key knowledge, understanding, and success skills. These examples referenced standards alignment and evidence of critical thinking, problem solving, or working collaboratively.

“Lots of integration with content areas and problem solving skills. Think about what is doable. Do research. Work collaboratively. Problem Solve in the moment. Flexible.”

“PBL gives more depth to problems solving as well as social and emotional learning. Like respecting one another, listening to one another. Tie in interpersonal skills in group learning.”

REFLECTION
Teachers’ PBL examples reflected the Essential Project Design Element of reflection. These examples mentioned teacher and student reflection on the project, including student learning and product quality.

“Reflection at the end. Daily reflections for accountability. Tweak it as they went.”

“Kids had to research a problem in the community, and then had to get real quotes and evidence how it makes an impact. Poverty, drug abuse, and homelessness were the main focii. After, they did a reflective piece about what they could really do as students at WHS realistically. They talked about creating a hashtag to promote drug free being; talked about preventing littering by making more interesting and noticeable trash cans.”
Finally, teachers’ PBL examples reflected the Essential Project Design Element of critique and revision. These examples mentioned that part of the PBL process involves students giving and receiving feedback, as well as revising products.

“I also made students create tests for each other with different methods of assessments. They had to use the materials from the lectures so everyone would be basing it off the information that was discussed in the class.”

“Allowing students to go through trial and error process.”

In response to the second focus group question, teachers shared several challenges and surprises that arose during their implementation of PBL. Overall, teachers mentioned the following challenges: finding time to plan and implement PBL projects, using a new pedagogical approach, securing funding and resources, increasing student engagement in some student groups, holding students accountable for learning, aligning standards/curriculum with PBL projects, and differentiating PBL for varied student needs. Teachers also mentioned the following surprises: higher student engagement and learning (Focus Group Question 2).
Teachers mentioned the following themes as challenges of PBL implementation.

**CHALLENGE: REQUIRES A LARGE TIME INVESTMENT**

Teachers shared that one challenge of implementing PBL is the large time investment required. Specifically, teachers mentioned that PBL requires significant planning and implementation time, and they referenced a lack of time due to scheduling constraints.

"The challenge of finding time to plan, organize, and gather materials and then finding time to actually do PBL with all that we have to do with Wonders, Stepping Stones, testing, etc."

"The time it takes to create the lessons and make sure they meet the PBL criteria is quite extensive. There are many ideas out there, but the teacher must take the time to create new lessons."

**CHALLENGE: USING A NEW PEDAGOGICAL APPROACH**

Teachers noted that another challenge of implementing PBL is that it requires a new pedagogical approach using novel student learning and teaching methods. For example, some teachers mentioned that in PBL settings, it is challenging for students to work independently, as students often must use new skills and require scaffolding. Some teachers added that they have a hard time allowing students greater independence, as typical instruction is more teacher directed. Other teachers noted that PBL requires flexibility in their teaching style and greater teacher content knowledge and expertise across curricular content areas.

"The constant challenge with PBL is that you have to be flexible and adapt to where the students are. There’s no cookie cutter pieces. It’s teacher-facilitated but student-driven. So you cannot plan it start to finish."

"Having to release control and let the kids run with it and take on the role of how can I support you students? Feeling of negligence, but had to let them go and be adventurous."

**CHALLENGE: SECURING FUNDING AND RESOURCES**

Teachers mentioned that it can be challenging to secure funding and find resources for PBL projects.

"Limited resources/asking for donations. How to get unlimited resources for the students so they weren’t limited in what they could/couldn’t do."

"PBL requires materials. If you ask them to provide materials, it’s an equity issue. If you provide materials, you’re putting them into a box. Cost of materials is a factor."

**CHALLENGE: ENGAGING ALL STUDENTS**

Teachers noted that it can be difficult to engage and interest all students in PBL projects. Some teachers added that because PBL is implemented in groups, engagement levels may vary within and across groups.

"It is always that one student seems to do more than other students. Putting each student in charge of certain things is important so one isn’t doing it all."
“Students aren’t all that focused. Still trying to get some ideas on how to get students more engaged.”

CHALLENGE: HOLDING STUDENTS ACCOUNTABLE FOR LEARNING

Teachers commented on the challenge of holding students accountable for their learning while implementing PBL. Some teachers specifically commented on the challenges of assessing students’ learning and setting performance expectations when implementing PBL.

“Some students won’t accept a group grade due to other students not doing their share or being absent for excused reasons. There has to be systems in place for this.”

“Systems need to be in place to how things are going to be monitored. Having that discussion with students about how things are being taught. Doing a good job versus how many points to get an A.”

CHALLENGE: ALIGNING PBL WITH STANDARDS AND CURRICULUM

Teachers mentioned that it can be challenging to align PBL with curriculum standards and core content areas. Some teachers stated that they view the standards and core content areas as misaligned with what they teach in PBL projects.

“Finding how you can fit the project into the content you still need to cover. Do the standards fit the project?”

“Challenge to get away from curriculum or feeling like we are avoiding the standards to do a project. Hard to find a balance between the project and standards.”

CHALLENGE: DIFFERENTIATING PBL

Teachers commented on the challenge of providing differentiated instruction to accommodate various student grade and ability levels when implementing PBL. For example, some teachers mentioned the challenge of differentiating PBL for students in special education.

“There are different skill levels and the teacher has to be able to handle that.”

“Students with special needs struggle and need a lot [of] 1-to-1 assistance in PBL.”

Teachers mentioned the following themes as surprises of PBL implementation.

SURPRISE: STUDENTS ARE VERY ENGAGED

Teachers mentioned that the high levels of student engagement and participation were surprising when they implemented PBL. Some teachers mentioned that PBL experiences have resulted in higher engagement levels than they typically see in their classrooms.

“Constantly surprised how far students are participating in projects and going above and beyond expectations. Students going in-depth and logging lots of research.”

“I thought the kids would be engaged but they became passionate about it and truly invested in the project.”
**SURPRISE: STUDENTS ARE SEEING LARGE KNOWLEDGE GAINS**

Teachers shared that they were surprised to see large gains in student knowledge and learning during PBL implementation. Some teachers added that PBL projects resulted in greater student learning and retention of concepts compared to more traditional instruction in core subject areas.

- “I can’t get over how much my kids learn from this. The actual true implementation of PBL leads to strong student achievement.”
- “Students get a chance to do something they don’t normally do, and they are really creative. They learn more than just what you want them to learn.”

In response to the third focus group question, teachers suggested resources, trainings, or professional learning experiences that their schools could provide to expand and improve PBL practices. Teachers suggested that schools could provide time to plan and implement PBL, opportunities to observe PBL instruction, examples of PBL, financial support, and experts or mentor teachers for PBL trainings and implementation (Focus Group Question 3).

**OFFER TIME TO PLAN AND IMPLEMENT PBL**

Teachers requested that schools provide teachers with time to collaborate and plan with colleagues, as well as time to implement PBL with their students, to support PBL practice expansion and improvement. For example, teachers noted that authentic PBL requires adequate time for multiple team members (e.g., teachers across
disciplines, coaches, mentors) to discuss and develop project ideas. Some teachers requested ongoing opportunities for teacher collaboration throughout PBL projects. Other teachers requested that schools allow more time for PBL implementation, as the current curriculum is focused on core content areas, standards, and testing.

“The school would have to provide lots of time for planning and collaborating. It’s not something you meet once and then it’s over. You have to meet with all the disciplines on your team throughout the entire project. (i.e., researching information about the community in Social Studies, collecting data in science, analyzing data and graphing in math. creating presentations in ELA).”

“Not enough time to implement an authentic problem and allow students to solve [the] problem. Teachers have too much to do during the day with standards, that there’s not enough time to allow students to explore and investigate.”

OFFER OPPORTUNITIES TO OBSERVE PBL INSTRUCTION

Teachers requested that schools allow for classroom observations of master PBL teachers to support the expansion and improvement of PBL practices. Some teachers expressed an interest in visiting other PBL schools within their complex, elsewhere in the state, or on the mainland, such as High Tech High in California.

“Seeing it in real life. Not seeing it at a training, but actually seeing a teacher and class. Class participation with the teacher and students of what is happening in the project. Interacting with the process.”

“I’ve also heard about visits to High Tech High from colleagues. It would be helpful to see something legit in action.”

PROVIDE EXAMPLES OF PBL PROJECTS, RUBRICS, AND CURRICULA

Teachers suggested that schools could provide premade and sample PBL lessons, rubrics, and curricula to support the expansion and improvement of PBL practices.

“I’m unsure of what really is project-based learning. So, I would like some curriculum, ideas, examples that were already tried. PBL is a new concept to me. I am on board with the idea. I need support and resources to recognize PBL and implementing PBL.”

“Content-specific examples would help. Also providing structure for teachers on how to best implement the practices. Would like to see rubric templates so that I know what I’m doing is along the right lines.”

PROVIDE FINANCIAL SUPPORT FOR PBL

Teachers suggested that schools provide financial support for PBL and flexibility in how PBL funds are used (e.g., training, planning time, materials) to support the expansion and improvement of PBL practices.

“Money to support the project and the flexibility on how to spend it without all the red tape.”
“We need monetary resources that we can use as projects come up. We need to make sure that we have the budget for PBL that we can draw from as needed. We shouldn’t have to order things in the summer before we know what the students really need.”

OFFER TRAININGS AND IMPLEMENTATION SUPPORT FROM PBL EXPERTS OR MENTORS

Teachers shared that schools could offer trainings led by PBL experts or mentor teachers to support the expansion and improvement of PBL practices. Some teachers requested that schools offer follow-up trainings or meetings throughout PBL implementation.

“Amazing mentor whose done one, who has ideas, who’s willing to come in and listen to our ideas and help mold it into something manageable.”

“Need ongoing support or follow-up from a PBL expert, coach, or trainer to check in on the progress of projects.”

In response to the final focus group question, teachers offered suggestions for specific statewide practices or policies that would support implementation of PBL. Respondents suggested that teachers receive quality PBL training, PBL-related funding and resources, access to example or model PBL projects, and time for learning and implementing PBL. Teachers also suggested that the state, complexes, and schools share PBL practices statewide, support the development of community partnerships, and trust in teachers’ abilities (Focus Group Question 4).
PROVIDE HIGH-QUALITY PBL TRAINING
Teachers requested that the state offer high-quality professional development and training on PBL.

- “Intensive training on PBL with follow up.”
- “State sponsored summits where PBL experts run break-out sessions. Showing how to do PBL through the Ha lens.”

OFFER PBL-RELATED FUNDING AND RESOURCES
Teachers requested that the state offer funding and resources for PBL projects, including funding for professional development, materials, and supplies.

- “They have to fund the supplies and experiences.”
- “Increasing funding for implementation.”

OFFER EXAMPLE PBL PROJECTS TO TEACHERS
Teachers asked that the state provide example PBL projects for teachers to review or implement in their classrooms.

- “Have a model school for future schools to visit and learn from.”
- “Maybe the state can create model PBL projects that new teachers can just use to try it out. Like 10 PBLs completely written for middle school, ready to go. If there isn’t the stress of prep, teachers would feel better and try to use them.”

PROVIDE TIME TO LEARN AND IMPLEMENT PBL
Teachers requested that the state provide teachers with additional time to develop PBL projects and implement these in their classrooms.

- “Take things off our plate. Too many things. Too little time.”
- “More time set aside to focus on PBL—planning, collaboration, gathering materials, purchasing materials.”

PUBLICLY SHARE PBL PRACTICES STATEWIDE
Teachers requested that the state publicly share PBL practices statewide—particularly across complexes and with parents and the larger community—to promote consistent use across schools and to share PBL successes.

- “Can the state make sure that the whole district shares the vision!”
- “We need to publicize more what we do instead of focus on SAT scores. Bigger picture we see more of it coming but we seem really ahead of the game and want more credit for it. It works. Publicize.”
PROVIDE COLLABORATION OPPORTUNITIES
Teachers requested that schools and complexes provide opportunities for teachers to collaborate with other teachers—at their school, across schools, or within grade levels—in order to develop and implement PBL projects.

“Having time to collaborate. Collaboration days for school, school sharing of PBL.”

“School-to-school collaboration. Networking and seeing what other people are doing so that other students can experience the fruitful experiences from a network of students doing similar projects.”

TRUST IN TEACHERS’ ABILITIES
Teachers requested that administrators trust in their abilities and provide them with greater independence to teach creatively. For example, some teachers requested that administrators trust their judgment in selecting the best teaching method for reaching each student.

“Freedom for teachers to be creative. Good teachers are the first best resource.”

“We need admins to trust that we know what’s best for our kids and that’s what we’re going to provide.”

SUPPORT AND GROW COMMUNITY PARTNERSHIPS
Teachers requested that the state, complexes, and schools assist with supporting and developing community partnerships for PBL projects.

“Develop community partnerships.”

“They could have an office where they organize all of the community partnerships to be ready for us.”
Summary

In summary, teachers' familiarity with and use of PBL practices vary. For example, 62 percent of teachers are not aware of any specific classrooms, complexes, or schools that have successfully integrated PBL throughout the student experience; 33 percent of teachers have never received PBL training; and 25 percent of teachers never use PBL practices.

Teachers who use PBL practices shared a variety of example projects and mentioned accountability practices embedded within each project. PBL examples largely consisted of STEM projects that incorporated several of the Buck Institute for Education's Essential Project Design Elements (e.g., authenticity, student voice, challenging problem/question). Within these projects, teachers used presentations, rubrics, and performance tasks to assess student growth.

When implementing PBL projects, teachers have encountered several challenges and surprises. Specifically, teachers mentioned the following challenges: time, new pedagogical approach, funding/resources, student engagement and accountability, standards/curriculum alignment, and differentiation. Additionally, teachers were surprised by high student engagement in some groups and high levels of student learning from PBL projects.

Overall, teachers who use PBL are comfortable in their use of these practices (79 percent of teachers) and find it valuable for students (86 percent of teachers). In particular, teachers see PBL as valuable for increasing student engagement, increasing students' critical-thinking and problem-solving skills, and improving students' understanding.

Teachers mentioned the importance of the following to support them in improving and successfully integrating PBL practices into their classrooms: planning and preparation time; training; funding; PBL observation opportunities; PBL curricula, projects, and rubrics; sharing of PBL practices; trust in teachers; and community partnerships.
Appendix Description

The following pages provide additional information on Hawai‘i State Teacher Fellows, survey and focus group questions, survey respondent demographics, disaggregated survey findings, focus group analysis and number of respondents referencing each theme, sample representativeness, and technical issues related to survey distribution.
Appendix A

This appendix lists the Hawai‘i State Teacher Fellows and their schools.

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<tr>
<td>Kristilyn Oda</td>
<td>Holomua Elementary School</td>
</tr>
<tr>
<td>Daphne Okunaga</td>
<td>Pearl City High School</td>
</tr>
<tr>
<td>Melissa Peck</td>
<td>Ele Ele Elementary School</td>
</tr>
<tr>
<td>Dawn Taba</td>
<td>Kauai High School</td>
</tr>
<tr>
<td>Dana Tanigawa</td>
<td>Waipahu Elementary School</td>
</tr>
<tr>
<td>Robert Widhalm</td>
<td>Hawaii DOE - Office of Human Resources - Professional Development and Educational Research Institute</td>
</tr>
</tbody>
</table>
Appendix B

This appendix provides the Hawai‘i survey, focus group, and demographic questions.
HI Fall 2018 Survey

*Hope Street Group, as an independent nonprofit, is facilitating the collection of data from teachers in Hawaii to inform a number of decisions the Hawaii Department of Education will make over the next six to 12 months. All responses are collected anonymously. Your willingness to respond to these questions is appreciated.*

Project-based learning is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge.

1) In your current role, how often do you use project-based learning practices in your classroom?
   ( ) Once a year  
   ( ) Once a semester  
   ( ) Once a quarter  
   ( ) Several times a quarter  
   ( ) Weekly  
   ( ) Daily  
   ( ) Never

2) In your current role, have you found it valuable to use project-based learning approaches with students?
   ( ) Yes  
   ( ) No  
   ( ) I’m not sure

3) What have you found to be the most valuable result of using project-based learning approaches with students? You may select up to three of the following.
   [ ] Increased engagement  
   [ ] Improved understanding  
   [ ] Improved test scores  
   [ ] Improvement with General Learner Outcomes (GLOs)  
   [ ] Increased critical thinking/problem solving  
   [ ] Fewer absences  
   [ ] Other (please explain): ___________________________________________________________

4) In your use of project-based learning, what are the ways that you currently assess student growth? Check all that apply.
   [ ] Essays  
   [ ] Pre/post-reflections  
   [ ] Presentations  
   [ ] Rubrics  
   [ ] Community panels  
   [ ] Performance tasks  
   [ ] Other: __________________________________________________________

5) How comfortable are you implementing project-based learning in your classroom?
   ( ) Very Comfortable  
   ( ) Comfortable  
   ( ) Uncomfortable
6) Do you know of specific classrooms, schools or complexes that have successfully integrated project-based learning throughout the student experience?
( ) Yes
( ) No

7) If yes, please share where you’ve observed these successes:

8) What do you feel are the most important factors in successfully integrating project-based learning? You may select up to three of the following.
   [ ] School schedule
   [ ] Planning/Prep time for teachers
   [ ] Training for teachers
   [ ] Funding for resources
   [ ] Principal support
   [ ] Access and engagement of community partners
   [ ] A community of collaborative practice with colleagues
   [ ] Other: _________________________________________________

9) What kinds of project-based learning resources have you been offered and/or what types of project-based learning experiences have you participated in? You may select more than one option.
   [ ] Professional development
   [ ] Observation at a school using project-based learning
   [ ] Conferences or trainings
   [ ] Professional Learning Communities
   [ ] Project-based learning curriculum
   [ ] Other: _________________________________________________
   [ ] I have not received any training on project-based learning.

10) What kinds of resources, trainings, or professional learning experiences should be provided to expand and improve project-based learning practices? You may select more than one option.
   [ ] Professional development
   [ ] Observe at a school using project-based learning
   [ ] Conferences
   [ ] Professional Learning Communities
   [ ] Project-based learning curriculum
   [ ] Other: _________________________________________________

11) How would you describe your primary role?
( ) Classroom Teacher
( ) Non-Classroom Teacher

12) Which Complex or Charter do you work in?
( ) Charter School
( ) Kaimuki
( ) McKinley
( ) Aiea
( ) Kapaa
( ) Mililani
( ) Baldwin
( ) Kapolei
( ) Moanalua
( ) Campbell
( ) Kau
( ) Molokai
( ) Castle
( ) Kauai
( ) Nanakuli
( ) Farrington
( ) Keaau
( ) Pahoa
( ) Hana
( ) Kealakehe
( ) Pearl City
( ) Hilo
( ) Kekaulike
( ) Radford
( ) Honokaa
( ) Kohala
( ) Roosevelt
( ) Kailua
( ) Konawaena
( ) Waiakea
( ) Kaiser
( ) Lahainaluna
( ) Waialua
( ) Kalaheo
( ) Lanai
( ) Waianae
( ) Kalani
( ) Leilehua
( ) Waipahu
( ) Kahuku
( ) Maui
( ) Waimea

13) How many years have you been teaching?
( ) Less than 4 years
( ) 4-9 years
( ) 10-14 years
( ) 15 years or more

14) What is the highest degree you earned?
( ) Bachelor’s Degree
( ) Master’s Degree
( ) Higher than a Master’s Degree

15) What is your age range?
( ) Less than 30
( ) 30-49
( ) 50-54
( ) 55 or older

16) What is the primary grade level you work with?
( ) PreK-5
( ) 6-8
( ) 9-12
( ) Complex Area
( ) State office

17) What is the primary content area you teach or support teachers?
( ) Career and Technical Education
( ) Physical Education
( ) Elementary
( ) Science
( ) English Language Arts
( ) Social Studies
( ) Fine Arts
( ) World Languages
( ) Health
( ) Other: ____________________
( ) Mathematics

Thank you for completing this survey. Your input is valued. If you have questions or would like additional information about the State Teacher Fellowship, please contact: kristen@hopestreetgroup.org.
HI Fall 2018 Focus Group Questions

Project-Based Learning is defined as a “teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge.” (Buck Institute)

1. Given your classroom and school experience, what are some examples of project-based learning?
2. Please explain any surprises or challenges that came up during implementation of PBL.
3. What kinds of resources, trainings, or professional learning experiences should your school provide, if any, to expand and improve project-based learning practices?
4. What state-wide practices or policies do you think would support implementation of PBL?
Appendix C

This appendix provides demographic data on the Hawai‘i survey respondents, including primary role, years teaching, highest degree earned, age range, primary grade level, primary content area, and complex or charter location.
How would you describe your primary role? \((n = 1,856)\)

<table>
<thead>
<tr>
<th>Classroom Teacher</th>
<th>83%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Classroom Teacher</td>
<td>17%</td>
</tr>
</tbody>
</table>

How many years have you been teaching? \((n = 1,856)\)

<table>
<thead>
<tr>
<th>Less than 4 years</th>
<th>18%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4–9 years</td>
<td>23%</td>
</tr>
<tr>
<td>10–14 years</td>
<td>19%</td>
</tr>
<tr>
<td>15 years or more</td>
<td>41%</td>
</tr>
</tbody>
</table>

What is the highest degree you earned? \((n = 1,856)\)

<table>
<thead>
<tr>
<th>Bachelor's Degree</th>
<th>44%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher than a Master's Degree</td>
<td>6%</td>
</tr>
</tbody>
</table>

What is your age range? \((n = 1,856)\)

<table>
<thead>
<tr>
<th>Less than 30 years</th>
<th>15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>30–49 years</td>
<td>54%</td>
</tr>
<tr>
<td>50–54 years</td>
<td>13%</td>
</tr>
<tr>
<td>55 or older</td>
<td>17%</td>
</tr>
</tbody>
</table>

What is the primary grade level you work with? \((n = 1,856)\)

<table>
<thead>
<tr>
<th>PreK–5</th>
<th>35%</th>
</tr>
</thead>
<tbody>
<tr>
<td>6–8</td>
<td>24%</td>
</tr>
<tr>
<td>9–12</td>
<td>40%</td>
</tr>
<tr>
<td>Complex Area</td>
<td>1%</td>
</tr>
<tr>
<td>State Office</td>
<td>1%</td>
</tr>
</tbody>
</table>
What is the primary content area you teach or support teachers? (n = 1,856)

- **30%** ELEMENTARY
- **17%** OTHER:
- **14%** ENGLISH LANGUAGE ARTS
- **10%** MATHEMATICS
- **8%** SCIENCE
- **8%** SOCIAL STUDIES
- **7%** CAREER AND TECHNICAL EDUCATION
- **3%** FINE ARTS
- **2%** PHYSICAL EDUCATION
- **2%** WORLD LANGUAGES
- **1%** HEALTH

Which Complex or Charter do you work in? (n = 1,856)

<table>
<thead>
<tr>
<th>Complex or Charter</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aiea</td>
<td>1%</td>
</tr>
<tr>
<td>Baldwin</td>
<td>1%</td>
</tr>
<tr>
<td>Campbell</td>
<td>1%</td>
</tr>
<tr>
<td>Castle</td>
<td>3%</td>
</tr>
<tr>
<td>Farrington</td>
<td>3%</td>
</tr>
<tr>
<td>Hana</td>
<td>1%</td>
</tr>
<tr>
<td>Kailua</td>
<td>2%</td>
</tr>
<tr>
<td>Kaiser</td>
<td>0.4%</td>
</tr>
<tr>
<td>Kalahi</td>
<td>0.7%</td>
</tr>
<tr>
<td>Kalalau</td>
<td>0.8%</td>
</tr>
<tr>
<td>Kahiku</td>
<td>0.2%</td>
</tr>
<tr>
<td>Kailani</td>
<td>2%</td>
</tr>
<tr>
<td>Kahuku</td>
<td>2%</td>
</tr>
<tr>
<td>Kaimuki</td>
<td>2%</td>
</tr>
<tr>
<td>Kapaa</td>
<td>0.4%</td>
</tr>
<tr>
<td>Kapolei</td>
<td>9%</td>
</tr>
<tr>
<td>Kau</td>
<td>0.3%</td>
</tr>
<tr>
<td>Kauai</td>
<td>7%</td>
</tr>
<tr>
<td>Keaau</td>
<td>1%</td>
</tr>
<tr>
<td>Kealakehe</td>
<td>0.5%</td>
</tr>
<tr>
<td>Kealani</td>
<td>0.7%</td>
</tr>
<tr>
<td>Kohala</td>
<td>0.1%</td>
</tr>
<tr>
<td>Kohala</td>
<td>0.8%</td>
</tr>
<tr>
<td>Lahainaluna</td>
<td>0.8%</td>
</tr>
<tr>
<td>Lanai</td>
<td>0.3%</td>
</tr>
<tr>
<td>Leilehua</td>
<td>2%</td>
</tr>
<tr>
<td>Leilehua</td>
<td>3%</td>
</tr>
<tr>
<td>Maui</td>
<td>6%</td>
</tr>
<tr>
<td>McKinley</td>
<td>1%</td>
</tr>
<tr>
<td>Miliwani</td>
<td>4%</td>
</tr>
<tr>
<td>Moanalua</td>
<td>2%</td>
</tr>
<tr>
<td>Moanalua</td>
<td>2%</td>
</tr>
<tr>
<td>Molokai</td>
<td>0.6%</td>
</tr>
<tr>
<td>Nanakuli</td>
<td>3%</td>
</tr>
<tr>
<td>Naiku</td>
<td>0.3%</td>
</tr>
<tr>
<td>Pahoa</td>
<td>0.2%</td>
</tr>
<tr>
<td>Pearl City</td>
<td>3%</td>
</tr>
<tr>
<td>Radford</td>
<td>5%</td>
</tr>
<tr>
<td>Roosevelt</td>
<td>8%</td>
</tr>
<tr>
<td>Waiakea</td>
<td>0.2%</td>
</tr>
<tr>
<td>Waialua</td>
<td>3%</td>
</tr>
<tr>
<td>Waianae</td>
<td>7%</td>
</tr>
<tr>
<td>Waimea</td>
<td>2%</td>
</tr>
<tr>
<td>Waipahu</td>
<td>3%</td>
</tr>
</tbody>
</table>
Appendix D

This appendix provides the survey findings—disaggregated by respondents’ primary role, grade level, and content area—and includes aggregated survey findings in Tables D1–D8.
In your current role, how often do you use project-based learning practices in your classroom?

- Once a year: 11%
- Once a semester: 15%
- Once a quarter: 20%
- Several times a quarter: 16%
- Weekly: 7%
- Daily: 5%
- Never: 25%

**Aggregated (n = 1,856)**

- Classroom Teacher (n = 1,540):
  - Once a year: 18%
  - Once a semester: 12%
  - Once a quarter: 16%
  - Several times a quarter: 8%
  - Weekly: 19%
  - Daily: 22%
  - Never: 57%

- Non-Classroom Teacher (n = 316):
  - Once a year: 7%
  - Once a semester: 7%
  - Once a quarter: 11%
  - Several times a quarter: 6%
  - Weekly: 6%
  - Daily: 5%
  - Never: 7%
In your current role, how often do you use project-based learning practices in your classroom?

### Aggregated (n = 1,856)
- Once a year: 11%
- Once a semester: 25%
- Once a quarter: 15%
- Several times a quarter: 7%
- Weekly: 16%
- Daily: 20%
- Never: 14%

### PreK–5 (n = 645)
- Once a year: 14%
- Once a semester: 30%
- Once a quarter: 16%
- Several times a quarter: 6%
- Weekly: 20%
- Daily: 12%
- Never: 12%

### 6–8 (n = 436)
- Once a year: 10%
- Once a semester: 19%
- Once a quarter: 16%
- Several times a quarter: 8%
- Weekly: 20%
- Daily: 19%
- Never: 8%

### 9–12 (n = 747)
- Once a year: 5%
- Once a semester: 44%
- Once a quarter: 22%
- Several times a quarter: 11%
- Weekly: 22%
- Daily: 5%
- Never: 5%

### Complex Area (n = 19)
- Once a year: 63%
- Once a semester: 16%
- Once a quarter: 5%
- Several times a quarter: 5%
- Weekly: 5%
- Daily: 5%
- Never: 5%

### State Office (n = 9)
- Once a year: 44%
- Once a semester: 22%
- Once a quarter: 11%
- Several times a quarter: 11%
- Weekly: 22%
- Daily: 5%
- Never: 5%
In your current role, how often do you use project-based learning practices in your classroom?

**Aggregated (n = 1,856):**
- Once a year: 15%
- Once a semester: 20%
- Once a quarter: 16%
- Several times a quarter: 5%
- Weekly: 11%
- Daily: 7%
- Never: 15%

**Career and Technical Education (n = 124):**
- Once a year: 28%
- Once a semester: 11%
- Once a quarter: 24%
- Several times a quarter: 5%
- Weekly: 17%
- Daily: 14%
- Never: 8%

**Elementary (n = 556):**
- Once a year: 28%
- Once a semester: 11%
- Once a quarter: 24%
- Several times a quarter: 5%
- Weekly: 17%
- Daily: 14%
- Never: 8%

**English Language Arts (n = 260):**
- Once a year: 23%
- Once a semester: 13%
- Once a quarter: 18%
- Several times a quarter: 2%
- Weekly: 17%
- Daily: 17%
- Never: 15%

**Fine Arts (n = 53):**
- Once a year: 26%
- Once a semester: 17%
- Once a quarter: 9%
- Several times a quarter: 8%
- Weekly: 21%
- Daily: 15%
- Never: 15%

**Health (n = 13):**
- Once a year: 31%
- Once a semester: 8%
- Once a quarter: 23%
- Several times a quarter: 23%
- Weekly: 15%
- Daily: 15%
- Never: 15%
In your current role, have you found it valuable to use project-based learning approaches with students?

**Aggregated (n = 1,394)**

- Yes: 86%
- No: 12%
- I’m not sure: 2%

**Classroom Teacher (n = 1,258)**

- Yes: 86%
- No: 12%
- I’m not sure: 2%

**Non-Classroom Teacher (n = 136)**

- Yes: 91%
- No: 8%
- I’m not sure: 1%
In your current role, have you found it valuable to use project-based learning approaches with students?

- **Yes**
- **No**
- **I’m not sure**

**Aggregated (n = 1,394)**
- Yes: 86%
- No: 2%
- I’m not sure: 12%

**PreK–5 (n = 453)**
- Yes: 83%
- No: 2%
- I’m not sure: 15%

**6–8 (n = 324)**
- Yes: 88%
- No: 1%
- I’m not sure: 11%

**9–12 (n = 605)**
- Yes: 88%
- No: 2%
- I’m not sure: 10%

**Complex Area (n = 7)**
- Yes: 86%
- No: 14%
- I’m not sure: 0%

**State Office (n = 5)**
- Yes: 100%
- No: 0%
- I’m not sure: 0%
In your current role, how often do you use project-based learning practices in your classroom?

- Aggregated (n = 1,394): 86% Yes, 12% No, 2% I'm not sure
- Career and Technical Education (n = 113): 92% Yes, 5% No, 3% I'm not sure
- Elementary (n = 400): 83% Yes, I'm not sure 15%, No 2%
- English Language Arts (n = 199): 89% Yes, 10% No, 1% I'm not sure
- Fine Arts (n = 44): 86% Yes, 14% No, 2% I'm not sure
- Health (n = 9): 78% Yes, 22% No, I'm not sure
Mathematics ($n = 113$)
- 78%
- 17%
- 5%

Physical Education ($n = 27$)
- 81%
- 15%
- 4%

Science ($n = 132$)
- 92%
- 8%
- 1%

Social Studies ($n = 135$)
- 83%
- 14%
- 3%

World Languages ($n = 24$)
- 88%
- 12%
- 8%

Other ($n = 198$)
- 92%
What have you found to be the most valuable result of using project-based learning approaches with students? You may select up to three of the following.

- Increased engagement (91%)
- Improved understanding (68%)
- Improved test scores (25%)
- Improvement with General Learner Outcomes (GLOs) (70%)
- Increased critical thinking/problem solving (4%)
- Fewer absences (4%)
- Other (4%)

**Aggregated (n = 1,203)**

**Classroom Teacher (n = 1,079)**

- Increased engagement (91%)
- Improved understanding (67%)
- Improved test scores (25%)
- Improvement with General Learner Outcomes (GLOs) (69%)
- Increased critical thinking/problem solving (4%)
- Fewer absences (5%)

**Non-Classroom Teacher (n = 124)**

- Increased engagement (95%)
- Improved understanding (71%)
- Improved test scores (23%)
- Improvement with General Learner Outcomes (GLOs) (75%)
- Increased critical thinking/problem solving (2%)
- Fewer absences (2%)
What have you found to be the most valuable result of using project-based learning approaches with students? You may select up to three of the following.

- Increased engagement
- Improved understanding
- Improved test scores
- Improvement with General Learner Outcomes (GLOs)
- Increased critical thinking/problem solving
- Fewer absences
- Other

Aggregated (n = 1,203)

- 91% Increased engagement
- 68% Improved understanding
- 25% Improved test scores
- 70% Improvement with GLOs
- 4% Increased critical thinking/problem solving
- 4% Fewer absences
- 4% Other

PreK–5 (n = 375)

- 96% Increased engagement
- 66% Improved understanding
- 20% Improved test scores
- 72% Improvement with GLOs
- 3% Increased critical thinking/problem solving
- 5% Fewer absences
- 3% Other

6–8 (n = 285)

- 87% Increased engagement
- 65% Improved understanding
- 25% Improved test scores
- 69% Improvement with GLOs
- 4% Increased critical thinking/problem solving
- 6% Fewer absences
- 4% Other

9–12 (n = 532)

- 100% Increased engagement
- 83% Improved understanding
- 20% Improved test scores
- 100% Improvement with GLOs
- 0% Increased critical thinking/problem solving
- 0% Fewer absences
- 0% Other

Complex Area (n = 6)

- 100% Increased engagement
- 83% Improved understanding
- 20% Improved test scores
- 100% Improvement with GLOs
- 0% Increased critical thinking/problem solving
- 0% Fewer absences
- 0% Other

State Office (n = 5)

- 100% Increased engagement
- 80% Improved understanding
- 0% Improved test scores
- 20% Improvement with GLOs
- 0% Increased critical thinking/problem solving
- 0% Fewer absences
- 0% Other
What have you found to be the most valuable result of using project-based learning approaches with students? You may select up to three of the following.

- Increased engagement
- Improved understanding
- Improved test scores
- Improvement with General Learner Outcomes (GLOs)
- Increased critical thinking/problem solving
- Fewer absences
- Other

Aggregated (n = 1,203)

- Increased engagement: 91%
- Improved understanding: 68%
- Critical thinking/problem solving: 70%
- Fewer absences: 4%
- Other: 4%

Career and Technical Education (n = 104)

- Increased engagement: 88%
- Improved understanding: 57%
- Critical thinking/problem solving: 78%
- Fewer absences: 1%
- Other: 4%

Elementary (n = 331)

- Increased engagement: 97%
- Improved understanding: 66%
- Critical thinking/problem solving: 72%
- Fewer absences: 3%
- Other: 4%

English Language Arts (n = 177)

- Increased engagement: 90%
- Improved understanding: 75%
- Critical thinking/problem solving: 66%
- Fewer absences: 7%
- Other: 5%

Fine Arts (n = 38)

- Increased engagement: 87%
- Improved understanding: 68%
- Critical thinking/problem solving: 68%
- Fewer absences: 0%
- Other: 8%

Health (n = 7)

- Increased engagement: 71%
- Improved understanding: 86%
- Critical thinking/problem solving: 43%
- Fewer absences: 0%
- Other: 14%
Mathematics ($n = 88$)
- 86%
- 66%
- 6%
- 33%
- 1%

Physical Education ($n = 22$)
- 86%
- 50%
- 5%
- 36%
- 0%

Science ($n = 121$)
- 90%
- 67%
- 10%
- 67%
- 10%

Social Studies ($n = 112$)
- 89%
- 65%
- 3%
- 28%
- 4%

World Languages ($n = 21$)
- 90%
- 62%
- 5%
- 62%
- 10%

Other ($n = 182$)
- 90%
- 72%
- 4%
- 21%
- 3%

- 90%
- 71%
- 4%
- 23%
- 3%

- 90%
- 72%
- 4%
- 6%
- 6%
In your use of project-based learning, what are the ways that you currently assess student growth? Check all that apply.

- Essays: 28%
- Pre/post-reflections: 55%
- Presentations: 66%
- Rubrics: 66%
- Community panels: 7%
- Performance tasks: 61%
- Other: 7%

Aggregated (n = 1,394)

Classroom Teacher (n = 1,258)
- Essays: 28%
- Pre/post-reflections: 55%
- Presentations: 66%
- Rubrics: 68%
- Community panels: 7%
- Performance tasks: 61%
- Other: 6%

Non-Classroom Teacher (n = 136)
- Essays: 21%
- Pre/post-reflections: 60%
- Presentations: 65%
- Rubrics: 52%
- Community panels: 12%
- Performance tasks: 67%
- Other: 10%
In your use of project-based learning, what are the ways that you currently assess student growth? Check all that apply.

**Aggregated (n = 1,394)**
- Essays: 28%
- Pre/post-reflections: 55%
- Presentations: 66%
- Rubrics: 66%
- Community panels: 7%
- Performance tasks: 61%
- Other: 7%

**PreK–5 (n = 453)**
- Essays: 14%
- Pre/post-reflections: 45%
- Presentations: 57%
- Rubrics: 53%
- Community panels: 3%
- Performance tasks: 61%
- Other: 9%

**6–8 (n = 324)**
- Essays: 35%
- Pre/post-reflections: 60%
- Presentations: 68%
- Rubrics: 75%
- Community panels: 7%
- Performance tasks: 61%
- Other: 5%

**9–12 (n = 605)**
- Essays: 43%
- Pre/post-reflections: 86%
- Presentations: 86%
- Rubrics: 71%
- Community panels: 29%
- Performance tasks: 71%
- Other: 29%

**Complex Area (n = 7)**
- Essays: 40%
- Pre/post-reflections: 40%
- Presentations: 40%
- Rubrics: 1%
- Community panels: 40%
- Performance tasks: 1%
- Other: 0%

**State Office (n = 5)**
- Essays: 40%
- Pre/post-reflections: 40%
- Presentations: 40%
- Rubrics: 0%
- Community panels: 0%
- Performance tasks: 0%
- Other: 0%
In your use of project-based learning, what are the ways that you currently assess student growth? Check all that apply.
Mathematics \( (n = 113) \)
- Mathematics: 12%
- Physical Education: 59%
- Science: 56%
- Social Studies: 72%
- World Languages: 7%
- Other: 2%

Physical Education \( (n = 27) \)
- Mathematics: 7%
- Physical Education: 41%
- Science: 37%
- Social Studies: 63%
- World Languages: 4%
- Other: 4%

Science \( (n = 132) \)
- Mathematics: 27%
- Physical Education: 58%
- Science: 67%
- Social Studies: 77%
- World Languages: 11%
- Other: 8%

Social Studies \( (n = 135) \)
- Mathematics: 48%
- Physical Education: 61%
- Science: 78%
- Social Studies: 79%
- World Languages: 10%
- Other: 2%

World Languages \( (n = 24) \)
- Mathematics: 42%
- Physical Education: 25%
- Science: 83%
- Social Studies: 63%
- World Languages: 13%
- Other: 4%

Other \( (n = 198) \)
- Mathematics: 59%
- Physical Education: 22%
- Science: 62%
- Social Studies: 51%
- World Languages: 9%
- Other: 12%
How comfortable are you implementing project-based learning in your classroom?

**Aggregated (n = 1,394)**

- Very Comfortable: 21%
- Comfortable: 58%
- Uncomfortable: 10%
- Very uncomfortable: 2%
- I'm not sure: 9%

**Classroom Teacher (n = 1,258)**

- Very Comfortable: 25%
- Comfortable: 62%
- Uncomfortable: 6%
- Very uncomfortable: 7%
- I'm not sure: 1%

**Non-Classroom Teacher (n = 136)**

- Very Comfortable: 10%
- Comfortable: 57%
- Uncomfortable: 10%
- Very uncomfortable: 2%
- I'm not sure: 10%
How comfortable are you implementing project-based learning in your classroom?

Aggregated ($n = 1,394$)

- Very Comfortable: 58%
- Comfortable: 21%
- Uncomfortable: 9%
- Very uncomfortable: 2%
- I’m not sure: 2%

PreK–5 ($n = 453$)

- Very Comfortable: 59%
- Comfortable: 13%
- Uncomfortable: 10%
- Very uncomfortable: 3%
- I’m not sure: 15%

6–8 ($n = 324$)

- Very Comfortable: 57%
- Comfortable: 24%
- Uncomfortable: 11%
- Very uncomfortable: 7%
- I’m not sure: 1%

9–12 ($n = 605$)

- Very Comfortable: 57%
- Comfortable: 28%
- Uncomfortable: 6%
- Very uncomfortable: 8%
- I’m not sure: 1%

Complex Area ($n = 7$)

- Very Comfortable: 57%
- Comfortable: 29%
- Uncomfortable: 14%

State Office ($n = 5$)

- Very Comfortable: 80%
- Comfortable: 20%
How comfortable are you implementing project-based learning in your classroom?

- **Aggregated (n = 1,394)**
  - Very Comfortable: 58%
  - Comfortable: 21%
  - Uncomfortable: 9%
  - Very uncomfortable: 2%
  - I’m not sure: 10%

- **Career and Technical Education (n = 113)**
  - Very Comfortable: 45%
  - Comfortable: 43%
  - Uncomfortable: 7%
  - Very uncomfortable: 1%
  - I’m not sure: 9%

- **Elementary (n = 400)**
  - Very Comfortable: 60%
  - Comfortable: 14%
  - Uncomfortable: 14%
  - Very uncomfortable: 4%
  - I’m not sure: 9%

- **English Language Arts (n = 199)**
  - Very Comfortable: 60%
  - Comfortable: 23%
  - Uncomfortable: 8%
  - Very uncomfortable: 9%
  - I’m not sure: 1%

- **Fine Arts (n = 44)**
  - Very Comfortable: 36%
  - Comfortable: 7%
  - Uncomfortable: 5%
  - Very uncomfortable: 10%
  - I’m not sure: 1%

- **Health (n = 9)**
  - Very Comfortable: 33%
  - Comfortable: 11%
  - Uncomfortable: 22%
  - Very uncomfortable: 7%
  - I’m not sure: 5%
Mathematics ($n = 113$)

- Science ($n = 132$)

- Social Studies ($n = 135$)

- World Languages ($n = 24$)

- Other ($n = 198$)
Do you know of specific classrooms, schools or complexes that have successfully integrated project-based learning throughout the student experience?

- **Aggregated (n = 1,856)**
  - Yes: 62%
  - No: 38%

- **Classroom Teacher (n = 1,540)**
  - Yes: 64%
  - No: 36%

- **Non-Classroom Teacher (n = 316)**
  - Yes: 51%
  - No: 49%
Do you know of specific classrooms, schools or complexes that have successfully integrated project-based learning throughout the student experience?

- **Yes**
- **No**

<table>
<thead>
<tr>
<th>Category</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregated (n = 1,856)</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>PreK–5 (n = 645)</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>6–8 (n = 436)</td>
<td>36%</td>
<td>64%</td>
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<td>9–12 (n = 747)</td>
<td>44%</td>
<td>56%</td>
</tr>
<tr>
<td>Complex Area (n = 19)</td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>State Office (n = 9)</td>
<td>33%</td>
<td>67%</td>
</tr>
</tbody>
</table>
Do you know of specific classrooms, schools or complexes that have successfully integrated project-based learning throughout the student experience?

Yes
No

Aggregated ($n = 1,856$)

Career and Technical Education ($n = 124$)

Elementary ($n = 556$)

English Language Arts ($n = 260$)

Fine Arts ($n = 53$)

Health ($n = 13$)
Mathematics ($n = 180$) 66% 34%

Physical Education ($n = 35$) 77% 23%

Science ($n = 146$) 54% 46%

Social Studies ($n = 145$) 64% 36%

World Languages ($n = 33$) 67% 33%

Other ($n = 311$) 52% 48%
What do you feel are the most important factors in successfully integrating project-based learning? You may select up to three of the following.¹

- School schedule
- Planning/Prep time for teachers
- Training for teachers
- Funding for resources
- Principal support
- Access and engagement of community partners
- A community of collaborative practice with colleagues
- Other

1 Question 7 was an open-ended question and is not included in this appendix.
What do you feel are the most important factors in successfully integrating project-based learning? You may select up to three of the following.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Aggregated (n = 1,856)</th>
<th>PreK–5 (n = 645)</th>
<th>6–8 (n = 436)</th>
<th>9–12 (n = 747)</th>
<th>Complex Area (n = 19)</th>
<th>State Office (n = 9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School schedule</td>
<td>26%</td>
<td>30%</td>
<td>22%</td>
<td>21%</td>
<td>31%</td>
<td>31%</td>
</tr>
<tr>
<td>Planning/Prep time for teachers</td>
<td>25%</td>
<td>55%</td>
<td>5%</td>
<td>49%</td>
<td>18%</td>
<td>18%</td>
</tr>
<tr>
<td>Training for teachers</td>
<td>4%</td>
<td>17%</td>
<td>44%</td>
<td>22%</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>Funding for resources</td>
<td>49%</td>
<td>49%</td>
<td>22%</td>
<td>22%</td>
<td>28%</td>
<td>20%</td>
</tr>
<tr>
<td>Principal support</td>
<td>21%</td>
<td>21%</td>
<td>22%</td>
<td>15%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Access and engagement of community partners</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>A community of collaborative practice with colleagues</td>
<td>26%</td>
<td>25%</td>
<td>22%</td>
<td>18%</td>
<td>28%</td>
<td>20%</td>
</tr>
<tr>
<td>Other</td>
<td>68%</td>
<td>60%</td>
<td>67%</td>
<td>59%</td>
<td>6%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Q8
What do you feel are the most important factors in successfully integrating project-based learning? You may select up to three of the following.

- School schedule
- Planning/Prep time for teachers
- Training for teachers
- Funding for resources
- Principal support
- Access and engagement of community partners
- A community of collaborative practice with colleagues
- Other

**Aggregated (n = 1,856)**

- School schedule: 26%
- Planning/Prep time for teachers: 55%
- Training for teachers: 49%
- Funding for resources: 17%
- Principal support: 21%
- Access and engagement of community partners: 26%
- A community of collaborative practice with colleagues: 4%
- Other: 5%

**Career and Technical Education (n = 124)**

- School schedule: 31%
- Planning/Prep time for teachers: 42%
- Training for teachers: 57%
- Funding for resources: 19%
- Principal support: 23%
- Access and engagement of community partners: 25%
- A community of collaborative practice with colleagues: 5%
- Other: 3%

**Elementary (n = 556)**

- School schedule: 31%
- Planning/Prep time for teachers: 69%
- Training for teachers: 62%
- Funding for resources: 55%
- Principal support: 45%
- Access and engagement of community partners: 45%
- A community of collaborative practice with colleagues: 69%
- Other: 31%

**English Language Arts (n = 260)**

- School schedule: 25%
- Planning/Prep time for teachers: 52%
- Training for teachers: 48%
- Funding for resources: 18%
- Principal support: 26%
- Access and engagement of community partners: 30%
- A community of collaborative practice with colleagues: 5%
- Other: 4%

**Fine Arts (n = 53)**

- School schedule: 23%
- Planning/Prep time for teachers: 42%
- Training for teachers: 64%
- Funding for resources: 23%
- Principal support: 17%
- Access and engagement of community partners: 25%
- A community of collaborative practice with colleagues: 4%
- Other: 23%

**Health (n = 13)**

- School schedule: 38%
- Planning/Prep time for teachers: 46%
- Training for teachers: 54%
- Funding for resources: 23%
- Principal support: 15%
- Access and engagement of community partners: 23%
- A community of collaborative practice with colleagues: 15%
- Other: 23%
What kinds of project-based learning resources have you been offered and/or what types of project-based learning experiences have you participated in? You may select more than one option.

- Professional development: Aggregated (n = 1,856) 49%
- Observation at a school using project-based learning: Aggregated (n = 1,856) 18%
- Conferences or trainings: Aggregated (n = 1,856) 26%
- Professional Learning Communities: Aggregated (n = 1,856) 20%
- Project-based learning curriculum: Aggregated (n = 1,856) 17%
- Other: I have not received any training on project-based learning: Aggregated (n = 1,856) 6%

Classroom Teacher (n = 1,540)
- Professional development: 49%
- Observation at a school using project-based learning: 18%
- Conferences or trainings: 25%
- Professional Learning Communities: 19%
- Project-based learning curriculum: 18%
- Other: I have not received any training on project-based learning: 6%

Non-Classroom Teacher (n = 316)
- Professional development: 50%
- Observation at a school using project-based learning: 21%
- Conferences or trainings: 31%
- Professional Learning Communities: 21%
- Project-based learning curriculum: 13%
- Other: I have not received any training on project-based learning: 3%
What kinds of project-based learning resources have you been offered and/or what types of project-based learning experiences have you participated in? You may select more than one option.

- Professional development
- Observation at a school using project-based learning
- Conferences or trainings
- Professional Learning Communities
- Project-based learning curriculum
- Other
- I have not received any training on project-based learning

**Aggregated (n = 1,856)**

- Professional development: 49%
- Observation at a school using project-based learning: 26%
- Conferences or trainings: 20%
- Professional Learning Communities: 17%
- Project-based learning curriculum: 32%
- Other: 40%
- I have not received any training on project-based learning: 6%

**PreK–5 (n = 645)**

- Professional development: 42%
- Observation at a school using project-based learning: 22%
- Conferences or trainings: 16%
- Professional Learning Communities: 12%
- Project-based learning curriculum: 40%
- Other: 40%
- I have not received any training on project-based learning: 6%

**6–8 (n = 436)**

- Professional development: 47%
- Observation at a school using project-based learning: 27%
- Conferences or trainings: 19%
- Professional Learning Communities: 18%
- Project-based learning curriculum: 36%
- Other: 25%
- I have not received any training on project-based learning: 4%

**9–12 (n = 747)**

- Professional development: 33%
- Observation at a school using project-based learning: 44%
- Conferences or trainings: 33%
- Professional Learning Communities: 33%
- Project-based learning curriculum: 44%
- Other: 44%
- I have not received any training on project-based learning: 0%
What kinds of project-based learning resources have you been offered and/or what types of project-based learning experiences have you participated in? You may select more than one option.

<table>
<thead>
<tr>
<th>Professional development</th>
<th>Observation at a school using project-based learning</th>
<th>Conferences or trainings</th>
<th>Professional Learning Communities</th>
<th>Project-based learning curriculum</th>
<th>Other</th>
<th>I have not received any training on project-based learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>54%</td>
<td>58%</td>
<td>26%</td>
<td>32%</td>
<td>32%</td>
<td>18%</td>
<td>24%</td>
</tr>
<tr>
<td>21%</td>
<td>24%</td>
<td>18%</td>
<td>17%</td>
<td>1%</td>
<td>6%</td>
<td>1%</td>
</tr>
<tr>
<td>31%</td>
<td>41%</td>
<td>20%</td>
<td>32%</td>
<td>32%</td>
<td>19%</td>
<td>26%</td>
</tr>
<tr>
<td>18%</td>
<td>29%</td>
<td>17%</td>
<td>31%</td>
<td>19%</td>
<td>12%</td>
<td>18%</td>
</tr>
<tr>
<td>16%</td>
<td>32%</td>
<td>18%</td>
<td>16%</td>
<td>19%</td>
<td>11%</td>
<td>20%</td>
</tr>
<tr>
<td>5%</td>
<td>6%</td>
<td>5%</td>
<td>4%</td>
<td>6%</td>
<td>7%</td>
<td>29%</td>
</tr>
<tr>
<td>28%</td>
<td>40%</td>
<td>26%</td>
<td>21%</td>
<td>21%</td>
<td>39%</td>
<td>49%</td>
</tr>
</tbody>
</table>

Aggregated (n = 1,856)

Career and Technical Education (n = 124)

Elementary (n = 556)

English Language Arts (n = 260)

Fine Arts (n = 53)

Health (n = 13)
Mathematics (n = 180)  47%

Physical Education (n = 35)  51%

Science (n = 146)  57%

Social Studies (n = 145)  54%

World Languages (n = 33)  42%

Other (n = 311)  49%
What kinds of resources, trainings, or professional learning experiences should be provided to expand and improve project-based learning practices? You may select more than one option.

**Aggregated (n = 1,856)**

- Professional development: 74%
- Observe at a school using project-based learning: 66%
- Conferences: 26%
- Professional Learning Communities: 41%
- Project-based learning curriculum: 63%
- Other: 7%}

**Classroom Teacher (n = 1,540)**

- Professional development: 74%
- Observe at a school using project-based learning: 64%
- Conferences: 25%
- Professional Learning Communities: 40%
- Project-based learning curriculum: 63%
- Other: 7%

**Non-Classroom Teacher (n = 316)**

- Professional development: 75%
- Observe at a school using project-based learning: 74%
- Conferences: 28%
- Professional Learning Communities: 46%
- Project-based learning curriculum: 62%
- Other: 6%
What kinds of resources, trainings, or professional learning experiences should be provided to expand and improve project-based learning practices? You may select more than one option.

- Professional development
- Observe at a school using project-based learning
- Conferences
- Professional Learning Communities
- Project-based learning curriculum
- Other

### Aggregated (n = 1,856)

- Professional development: 74%
- Observe at a school using project-based learning: 66%
- Conferences: 26%
- Professional Learning Communities: 41%
- Project-based learning curriculum: 63%
- Other: 7%

### PreK–5 (n = 645)

- Professional development: 73%
- Observe at a school using project-based learning: 63%
- Conferences: 29%
- Professional Learning Communities: 40%
- Project-based learning curriculum: 62%
- Other: 7%

### 6–8 (n = 436)

- Professional development: 79%
- Observe at a school using project-based learning: 68%
- Conferences: 32%
- Professional Learning Communities: 68%
- Project-based learning curriculum: 63%
- Other: 16%

### 9–12 (n = 747)

- Professional development: 78%
- Observe at a school using project-based learning: 78%
- Conferences: 22%
- Professional Learning Communities: 67%
- Project-based learning curriculum: 56%
- Other: 11%

### Complex Area (n = 19)

- Professional development: 79%
- Observe at a school using project-based learning: 68%
- Conferences: 32%
- Professional Learning Communities: 68%
- Project-based learning curriculum: 63%
- Other: 16%

### State Office (n = 9)

- Professional development: 78%
- Observe at a school using project-based learning: 78%
- Conferences: 22%
- Professional Learning Communities: 67%
- Project-based learning curriculum: 56%
- Other: 11%
What kinds of resources, trainings, or professional learning experiences should be provided to expand and improve project-based learning practices? You may select more than one option.

- Professional development
- Observe at a school using project-based learning
- Conferences
- Professional Learning Communities
- Project-based learning curriculum
- Other

Aggregated $(n = 1,856)$

- Professional development: 74%
- Observe at a school using project-based learning: 66%
- Conferences: 26%
- Professional Learning Communities: 41%
- Project-based learning curriculum: 63%
- Other: 7%

Career and Technical Education $(n = 124)$

- Professional development: 65%
- Observe at a school using project-based learning: 57%
- Conferences: 26%
- Professional Learning Communities: 35%
- Project-based learning curriculum: 56%
- Other: 10%

Elementary $(n = 556)$

- Professional development: 75%
- Observe at a school using project-based learning: 69%
- Conferences: 21%
- Professional Learning Communities: 39%
- Project-based learning curriculum: 62%
- Other: 6%

English Language Arts $(n = 260)$

- Professional development: 73%
- Observe at a school using project-based learning: 69%
- Conferences: 27%
- Professional Learning Communities: 45%
- Project-based learning curriculum: 60%
- Other: 8%

Fine Arts $(n = 53)$

- Professional development: 70%
- Observe at a school using project-based learning: 70%
- Conferences: 32%
- Professional Learning Communities: 34%
- Project-based learning curriculum: 51%
- Other: 4%

Health $(n = 13)$

- Professional development: 69%
- Observe at a school using project-based learning: 62%
- Conferences: 8%
- Professional Learning Communities: 38%
- Project-based learning curriculum: 62%
- Other: 0%
Mathematics ($n = 180$)

- 76% (Dark Blue)
- 70% (Light Blue)
- 23% (Brown)
- 41% (Red)
- 3% (Black)

Physical Education ($n = 35$)

- 77% (Dark Blue)
- 57% (Light Blue)
- 37% (Brown)
- 49% (Red)
- 6% (Black)

Science ($n = 146$)

- 73% (Dark Blue)
- 64% (Light Blue)
- 29% (Brown)
- 42% (Red)
- 7% (Black)

Social Studies ($n = 145$)

- 74% (Dark Blue)
- 53% (Light Blue)
- 27% (Brown)
- 39% (Red)
- 2% (Black)

World Languages ($n = 33$)

- 82% (Dark Blue)
- 58% (Light Blue)
- 30% (Brown)
- 30% (Red)
- 12% (Black)

Other ($n = 311$)

- 75% (Dark Blue)
- 68% (Light Blue)
- 31% (Brown)
- 46% (Red)
- 10% (Black)
1) In your current role, how often do you use project-based learning practices in your classroom?

Table D1

<table>
<thead>
<tr>
<th>Frequency</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>Never</td>
<td>462</td>
<td>25</td>
</tr>
<tr>
<td>Daily</td>
<td>102</td>
<td>5</td>
</tr>
<tr>
<td>Weekly</td>
<td>137</td>
<td>7</td>
</tr>
<tr>
<td>Several times a quarter</td>
<td>306</td>
<td>16</td>
</tr>
<tr>
<td>Once a quarter</td>
<td>376</td>
<td>20</td>
</tr>
<tr>
<td>Once a semester</td>
<td>271</td>
<td>15</td>
</tr>
<tr>
<td>Once a year</td>
<td>202</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,856</td>
<td>100%</td>
</tr>
</tbody>
</table>

2) In your current role, have you found it valuable to use project-based learning approaches with students?

Table D2

<table>
<thead>
<tr>
<th>Valuation</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
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<td>Yes</td>
<td>1,203</td>
<td>86%</td>
</tr>
<tr>
<td>No</td>
<td>27</td>
<td>2%</td>
</tr>
<tr>
<td>I'm not sure</td>
<td>164</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,394</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note. Only teachers who reported that they use project-based learning practices more often than “never” (Survey Question 1) answered this question.

3) What have you found to be the most valuable result of using project-based learning approaches with students? You may select up to three of the following.

Table D3

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<thead>
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<th>Result</th>
<th>Unchecked</th>
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<th>Checked</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Increased engagement</td>
<td>107</td>
<td>9%</td>
<td>1,096</td>
<td>91%</td>
</tr>
<tr>
<td>Improved understanding</td>
<td>387</td>
<td>32%</td>
<td>816</td>
<td>68%</td>
</tr>
<tr>
<td>Improved test scores</td>
<td>1,158</td>
<td>96%</td>
<td>45</td>
<td>4%</td>
</tr>
<tr>
<td>Improvement with General Learner Outcomes (GLOs)</td>
<td>908</td>
<td>75%</td>
<td>295</td>
<td>25%</td>
</tr>
<tr>
<td>Increased critical thinking/problem solving</td>
<td>364</td>
<td>30%</td>
<td>839</td>
<td>70%</td>
</tr>
<tr>
<td>Fewer absences</td>
<td>1,159</td>
<td>96%</td>
<td>44</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>1,149</td>
<td>96%</td>
<td>54</td>
<td>5%</td>
</tr>
</tbody>
</table>

Note. Only teachers who reported that they found it valuable to use project-based learning approaches with students (Survey Question 2) answered this question.
4) In your use of project-based learning, what are the ways that you currently assess student growth? Check all that apply.

Table D4

<table>
<thead>
<tr>
<th>Unchecked</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essays</td>
<td>888</td>
</tr>
<tr>
<td>Pre/post-reflections</td>
<td>545</td>
</tr>
<tr>
<td>Presentations</td>
<td>409</td>
</tr>
<tr>
<td>Rubrics</td>
<td>404</td>
</tr>
<tr>
<td>Community panels</td>
<td>1,132</td>
</tr>
<tr>
<td>Performance tasks</td>
<td>467</td>
</tr>
<tr>
<td>Other</td>
<td>1,156</td>
</tr>
</tbody>
</table>

Note. Only teachers who reported that they use project-based learning practices more often than “never” (Survey Question 1) answered this question.

5) How comfortable are you implementing project-based learning in your classroom?

Table D5

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Comfortable</td>
<td>294</td>
<td>21%</td>
</tr>
<tr>
<td>Comfortable</td>
<td>802</td>
<td>56%</td>
</tr>
<tr>
<td>Uncomfortable</td>
<td>140</td>
<td>10%</td>
</tr>
<tr>
<td>Very uncomfortable</td>
<td>26</td>
<td>2%</td>
</tr>
<tr>
<td>I’m not sure</td>
<td>132</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,394</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Note. Only teachers who reported that they use project-based learning practices more often than “never” (Survey Question 1) answered this question.

6) Do you know of specific classrooms, schools or complexes that have successfully integrated project-based learning throughout the student experience?

Table D6

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1,148</td>
<td>62%</td>
</tr>
<tr>
<td>Yes</td>
<td>708</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,856</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

7) If yes, please share where you’ve observed these successes.

Question 7 was an open-ended question and is not included in this appendix.

8) What do you feel are the most important factors in successfully integrating project-based learning? You may select up to three of the following.

Table D8

<table>
<thead>
<tr>
<th>Unchecked</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td>School schedule</td>
<td>1,367</td>
</tr>
</tbody>
</table>

A48
<table>
<thead>
<tr>
<th>Planning/Prep time for teachers</th>
<th>Unchecked n</th>
<th>%</th>
<th>Checked n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>400</td>
<td>22%</td>
<td>1,456</td>
<td>78%</td>
</tr>
<tr>
<td>Training for teachers</td>
<td>827</td>
<td>45%</td>
<td>1,029</td>
<td>55%</td>
</tr>
<tr>
<td>Funding for resources</td>
<td>952</td>
<td>51%</td>
<td>904</td>
<td>49%</td>
</tr>
<tr>
<td>Principal support</td>
<td>1,543</td>
<td>83%</td>
<td>313</td>
<td>17%</td>
</tr>
<tr>
<td>Access and engagement of community partners</td>
<td>1,457</td>
<td>79%</td>
<td>399</td>
<td>22%</td>
</tr>
<tr>
<td>A community of collaborative practice with colleagues</td>
<td>1,367</td>
<td>74%</td>
<td>489</td>
<td>26%</td>
</tr>
<tr>
<td>Other</td>
<td>1,774</td>
<td>96%</td>
<td>82</td>
<td>4%</td>
</tr>
</tbody>
</table>

9) What kinds of project-based learning resources have you been offered and/or what types of project-based learning experiences have you participated in? You may select more than one option.

**Table D9**

<table>
<thead>
<tr>
<th>Professional development</th>
<th>Unchecked n</th>
<th>%</th>
<th>Checked n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>950</td>
<td>51%</td>
<td>906</td>
<td>49%</td>
</tr>
<tr>
<td>Observation at a school using project-based learning</td>
<td>1,519</td>
<td>82%</td>
<td>337</td>
<td>18%</td>
</tr>
<tr>
<td>Conferences or trainings</td>
<td>1,366</td>
<td>74%</td>
<td>490</td>
<td>26%</td>
</tr>
<tr>
<td>Professional Learning Communities</td>
<td>1,492</td>
<td>80%</td>
<td>364</td>
<td>20%</td>
</tr>
<tr>
<td>Project-based learning curriculum</td>
<td>1,545</td>
<td>83%</td>
<td>311</td>
<td>17%</td>
</tr>
<tr>
<td>Other</td>
<td>1,748</td>
<td>94%</td>
<td>108</td>
<td>6%</td>
</tr>
<tr>
<td>I have not received any training on project-based learning</td>
<td>1,253</td>
<td>67%</td>
<td>603</td>
<td>33%</td>
</tr>
</tbody>
</table>

10) What kinds of resources, trainings, or professional learning experiences should be provided to expand and improve project-based learning practices? You may select more than one option.

**Table D10**

<table>
<thead>
<tr>
<th>Professional development</th>
<th>Unchecked n</th>
<th>%</th>
<th>Checked n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>483</td>
<td>26%</td>
<td>1,373</td>
<td>74%</td>
</tr>
<tr>
<td>Observe at a school using project-based learning</td>
<td>631</td>
<td>34%</td>
<td>1,225</td>
<td>66%</td>
</tr>
<tr>
<td>Conferences</td>
<td>1,378</td>
<td>74%</td>
<td>478</td>
<td>26%</td>
</tr>
<tr>
<td>Professional Learning Communities</td>
<td>1,095</td>
<td>59%</td>
<td>761</td>
<td>41%</td>
</tr>
<tr>
<td>Project-based learning curriculum</td>
<td>688</td>
<td>37%</td>
<td>1,168</td>
<td>63%</td>
</tr>
<tr>
<td>Other</td>
<td>1,731</td>
<td>93%</td>
<td>125</td>
<td>7%</td>
</tr>
</tbody>
</table>
Appendix E

Hope Street Group and Hawai‘i Department of Education collected qualitative responses from in-person focus groups. HSG then sent the responses to Magnolia Consulting for analysis. After receiving the focus group data, Magnolia Consulting cleaned and prepared the data for coding in ATLAS.ti, a qualitative data analysis software. ATLAS.ti allows users to divide data into segments, attach codes to the segments, and find and display all instances of similarly coded segments for analysis. This enables efficient data organization and analysis. Next, Magnolia Consulting conducted a content analysis of the data, which involved identifying, organizing, and categorizing recurring themes in the focus group responses. Magnolia Consulting staff regularly met to review codes and establish rater agreement on recurring themes. The total number of respondents who referenced each theme is shown in Tables E1–E4.

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FG1. Project-Based Learning is defined as a “teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem or challenge (Buck Institute). Given your classroom and school experience, what are some examples of project-based learning?

Table E1

<table>
<thead>
<tr>
<th>Theme</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBL examples span various curricular content areas</td>
<td>235</td>
</tr>
<tr>
<td>Authenticity</td>
<td>167</td>
</tr>
<tr>
<td>Student voice and choice</td>
<td>113</td>
</tr>
<tr>
<td>Challenging problem or question</td>
<td>112</td>
</tr>
<tr>
<td>Sustained inquiry</td>
<td>99</td>
</tr>
<tr>
<td>Public product</td>
<td>94</td>
</tr>
<tr>
<td>Key knowledge, understanding, and success skills</td>
<td>66</td>
</tr>
<tr>
<td>Reflection</td>
<td>21</td>
</tr>
<tr>
<td>Critique and revision</td>
<td>6</td>
</tr>
</tbody>
</table>

FG2. Please explain any surprises or challenges that came up during implementation of PBL.

Table E2

<table>
<thead>
<tr>
<th>Theme</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenge: Requires a large time investment</td>
<td>130</td>
</tr>
<tr>
<td>Challenge: Using a new pedagogical approach</td>
<td>110</td>
</tr>
<tr>
<td>Challenge: Securing funding and resources</td>
<td>68</td>
</tr>
<tr>
<td>Challenge: Engaging all students</td>
<td>53</td>
</tr>
<tr>
<td>Surprise: Students are very engaged</td>
<td>44</td>
</tr>
<tr>
<td>Challenge: Holding students accountable for learning</td>
<td>40</td>
</tr>
<tr>
<td>Challenge: Aligning PBL with standards and curriculum</td>
<td>37</td>
</tr>
<tr>
<td>Challenge: Differentiating PBL</td>
<td>32</td>
</tr>
<tr>
<td>Surprise: Students are learning</td>
<td>31</td>
</tr>
</tbody>
</table>
FG3. What kinds of resources, trainings, or professional learning experiences should your school provide, if any, to expand and improve project-based learning practices?

<table>
<thead>
<tr>
<th>Theme</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer time to plan and implement PBL</td>
<td>92</td>
</tr>
<tr>
<td>Offer opportunities to observe PBL instruction</td>
<td>57</td>
</tr>
<tr>
<td>Provide examples of PBL projects, rubrics, and curriculum</td>
<td>55</td>
</tr>
<tr>
<td>Provide financial support for PBL</td>
<td>42</td>
</tr>
<tr>
<td>Offer trainings and implementation support from PBL experts or mentors</td>
<td>33</td>
</tr>
</tbody>
</table>

FG4. What state-wide practices or policies do you think would support implementation of PBL?

<table>
<thead>
<tr>
<th>Theme</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide high-quality PBL training</td>
<td>100</td>
</tr>
<tr>
<td>Offer PBL-related funding and resources</td>
<td>92</td>
</tr>
<tr>
<td>Offer example PBL projects to teachers</td>
<td>79</td>
</tr>
<tr>
<td>Provide time to learn and implement PBL</td>
<td>73</td>
</tr>
<tr>
<td>Publicly share PBL practices statewide</td>
<td>64</td>
</tr>
<tr>
<td>Provide collaboration opportunities</td>
<td>60</td>
</tr>
<tr>
<td>Trust in teachers’ abilities</td>
<td>37</td>
</tr>
<tr>
<td>Support and grow community partnerships</td>
<td>34</td>
</tr>
</tbody>
</table>
Appendix F

This appendix provides information on the representativeness of survey respondents, based on National Center for Education Statistics data.
In an effort to determine how representative the respondents to this survey are, demographic information was collected (Questions 11–17 on the Fall 2018 Survey). This demographic information was intended to be compared to demographic data collected by the National Center for Education Statistics (NCES); however, Hawai’i’s data are not available due to reporting standards not being met for years of teaching experience (see http://nces.ed.gov/surveys/sass/tables/sass1112_2013314_t1s_003.asp), highest degree completed (see http://nces.ed.gov/surveys/sass/tables/sass1112_2013314_t1s_004.asp), and age range (see http://nces.ed.gov/surveys/sass/tables/sass1112_2013314_t1s_002.asp). Therefore, no comparisons were made on these demographics.

Given the limited data available, HSG is unable to determine if the respondents are representative of the teaching population in Hawai’i.
Appendix G

This appendix provides guidance around interpreting survey data in the current report.
INTERPRETING DATA

Minimizing Survey Error

Survey research is a commonly used research method to determine what people are thinking, feeling, or doing. However, survey research can be complicated and, if done poorly, yield inaccurate or imprecise results. A successful survey is based on sound research questions, accurate measures of the topics of interest, and a design that enables the generalization of research findings to the population of interest. Four types of survey error, however, can undermine the results of any given survey: measurement, exclusion, sampling, and nonresponse.

Measurement Error

Measurement error, also referred to as an error of observation, occurs when respondents give inaccurate or imprecise answers to survey questions. This may happen as a result of poorly worded questions (e.g., lengthy or double-barreled questions) or poorly designed surveys (e.g., unclear instructions or inadequate response options). By taking care in the design of survey items and the broader survey questionnaire, by having key stakeholders review draft items and the draft questionnaire, and by testing out items with potential respondents, HSG sought to minimize measurement error.

Exclusion Error

Exclusion error occurs when (a) there are members of the population of interest who have no chance of being surveyed and (b) these excluded members of the population differ from included members of the population. For example, in an email survey of teachers, exclusion errors could occur if there were teachers whose email addresses were not active, teachers who did not check their listed email account, or teachers who were not on the email list at all (e.g., teachers who were newly hired). To the extent that these teachers differed from others regarding the survey topic of interest, exclusion error exists. Because all of the teachers in the State Teacher Fellows’ professional learning networks (PLNs) have provided an email address, exclusion error in this survey is minimal.

Sampling Error

Sampling error involves random differences occurring between sample estimates and true population values. Sampling error is unavoidable in sample surveys because only some population members are surveyed. Sampling error is often quantified by standard errors or margins of error (also referred to as confidence intervals), which provide information on the probability that any finding from a sample is due to chance (i.e., sampling error). Holding all else equal, increasing sample sizes generally reduces sampling error. Because HSG attempted to survey all of the teachers in the state by emailing the survey link to all teachers in PLNs, inviting teachers in PLNs to send the link to colleagues who may or may not be in a PLN, having state partners also send the link to teachers for whom they have access via an active email address, and publicizing the availability of the survey via social media, sampling error does not apply. In other words, there is no statistical basis for calculating confidence intervals regarding the survey results.

Nonresponse Error

Nonresponse error occurs when individuals do not respond to a survey or to particular questions on a survey, and when these individuals would have responded differently, on average, than those people who did respond. More specifically, nonresponse error is the product of:
• **The nonresponse rate**, which is the percentage of the sample or population who do not respond to a survey (unit nonresponse rate) or to an item on the survey (item nonresponse rate); and

• **Nonresponse bias**, which is the difference between the average respondent’s response and the average nonrespondent’s response for a given item.

Thus, a survey can have a low response rate with little or no nonresponse error. This can occur if there are few or no differences between respondents and nonrespondents that are relevant to the survey’s topics of study. In contrast, when there are large differences between respondents and nonrespondents, it is possible for surveys to have high nonresponse bias even with high response rates.¹

There are many reasons why responses of respondents might differ from those of nonrespondents. Survey format matters. For example, given their greater technological literacy, younger teachers may be more likely to respond to an online survey than teachers nearing retirement age. If younger teachers differed from older teachers in their thoughts regarding a survey topic (for example, teacher pension reforms), then this difference could bias results if analyses did not take into account teacher age. Survey topics also matter. For example, in a survey of teacher compensation, teachers who feel strongly that they are underpaid might be more inclined to respond than teachers who are comfortable with their current level of compensation. As a result, such a survey could overstate teacher dissatisfaction regarding pay. When seeking to minimize nonresponse bias, it is important to consider what affects respondents’ likelihood of participating in a survey and how respondents might respond to specific survey questions.²

Because surveys can have low response rates and still have little to no nonresponse bias, response rates are not a good measure to judge the quality of a survey in and of themselves.³ Recent empirical evidence has shown that the relationship between response rates and nonresponse bias is weak, at best:

• A comprehensive study using exit poll data found no statistically significant relationship between response rates and survey error.⁴

• In a study of household surveys, response rates accounted for only about 11 percent of the variation in nonresponse bias estimates.⁵

• Results from two identical national telephone surveys were similar, despite dramatically different response rates (61 percent versus 36 percent).⁶

• A national health survey that saw declining response rates over time also found declining nonresponse bias.⁷

Because response rates are not a good indicator of nonresponse bias, investigations into the extent of possible nonresponse bias are important. There are a number of practical approaches that survey researchers can take to make such investigations. For example, researchers can compare demographics or other administrative data on survey respondents to those of nonrespondents, contrast survey results for early responders with those for late responders, and judge survey results against findings from an external data source.⁸ In each case, the more similar the results, the less substantial any nonresponse bias is likely to be.

**Conclusion**

When assessing the quality of a survey, it is important to consider the total survey error, composed of measurement, exclusion, sampling, and nonresponse errors. HSG has taken
steps to reduce total survey error via a rigorous, multifaceted approach to survey design and implementation.

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