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CREATING STRONG SCHOOLS & COMMUNITIES

Research Design and Baseline Conditions for Understanding the Scaled Impact of HQPBL for Deeper Learning

2018 Annual Report:
Prepared for PBLWorks
(formerly the Buck Institute for Education)

Updated May 2019

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About Education Northwest

Founded as a nonprofit corporation in 1966, Education Northwest builds capacity in schools, families, and communities through applied research and development.

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Chapter 1. Research Activities and Design

Established in late 2017, *Scaling High-Quality Project Based Learning (HQPBL) for Deeper Learning Impact* is a research-practice partnership (RPP) that includes PBLWorks (formerly the Buck Institute for Education), Manchester School District (MSD), Pearl City-Waipahu Complex Area (PCW), and Education Northwest. This RPP is funded by the William and Flora Hewlett Foundation[1] to investigate the diffusion of innovation and scaled impact of deeper learning.

This report[2] for PBLWorks summarizes the activities Education Northwest conducted in 2018, as well as the results of analysis conducted in early 2019. Chapter 1 describes the RPP development, finalized research design, and data collection plan. Chapter 2 presents the data collection and analysis methods for the baseline teacher survey conducted in fall 2018. Chapter 3 presents baseline results related to project facilitation, while Chapter 4 presents baseline results related to social networks and systems conditions. Chapter 5 outlines the research plan for 2019.

Research-Practice Partnership Development

During the first year of this RPP, Education Northwest focused on establishing relationships with the three core partners (PBLWorks, MSD, and PCW), the Hewlett Foundation, and other members Hewlett's RPP learning community. Through a series of in-person and virtual meetings (summarized below), we developed and refined the research design in collaboration with the partners. We finalized the initial research design in August 2018 and launched data collection in October 2018.

Meetings with core RPP partners: In January 2018, Education Northwest participated in a project kickoff meeting with the core partners at the PBLWorks office. During monthly Zoom meetings, Education Northwest provided updates on the study design and planning. Education Northwest typically met weekly with Sally Kingston, senior director of research and evidence at PBLWorks, to discuss any developments in the study. Some of these meetings included additional PBLWorks staff members and partners as subject matter experts to advise on design and data collection. Starting in July, Education Northwest held weekly "office hours," during which the lead staff members from MSD and PCW checked in about the details of data collection planning.

[1] The RPP receives additional funds from the Bezos Family Foundation, Harold K.L. Castle Foundation, Nellie Mae Education Foundation, Barr Foundation, and New Hampshire Charitable Trust.

[2] This report was originally submitted in December 2018. The report was updated in March 2019 to include the results of the social network analysis and roster matching.

RPP advisory council and leadership team meetings: Education Northwest provided updates on the design and progress of the study in quarterly meetings with leadership team members and in an in-person meeting with the RPP advisory council in June 2018. During the June meeting in Manchester, Education Northwest observed several training sessions led by PBLWorks national faculty members and engaged the advisory council and leadership team in design conversations.

Hewlett learning community meetings: In January, Education Northwest participated in the Billions Institute Skid Row School and launch of Hewlett's RPP learning community in San Diego. In July, Education Northwest presented during a consultancy webinar that included representatives from all RPPs funded by the Hewlett Foundation. The presentation focused on how to scale deeper learning for impact. In October, Education Northwest representatives Julie Petrokubi and Caitlin Scott traveled to Denver to participate in learning community activities focused on design-based implementation research.

Overview of the research-practice partnership

Four main goals guide the RPP:

1. Understand what it takes to scale HQPBL that results in mastery of four deeper learning competencies. Specifically, scale HQPBL to 80 percent of the 29,284 students in MSD and PCW (including at least 80 percent of the students who are furthest from opportunity) by January 2021.
2. Establish a strong foundation for the *Scaling HQPBL for Deeper Learning Impact* RPP that is characterized by trust, productive collaboration, effective communication, mutualism, equity, and a shared commitment to the RPP.
3. Generate and share relevant and actionable research that supports the codification and adoption of new knowledge about how to spread deeper learning practices.
4. Contribute to the knowledge base of scaled impact through productive collaboration with other Hewlett-funded RPPs and active participation in Hewlett's RPP learning community.

Guiding frameworks

Although there is promising evidence regarding the impact of PBL on deeper learning (Holm, 2011; Duke & Halvorsen, 2017; Zeiser, Taylor, Rickles, Garet, & Segeritz, 2014), the PBL field is dynamic, and the deeper learning research base is evolving (Condliffe, 2017; Pellegrino & Hilton, 2012). Historically, there has been a lack of agreement on the core principles of PBL practice in the classroom (Condliffe, 2017). PBLWorks is at the forefront of collaborative efforts to synthesize research and consistently define quality PBL in terms of design, facilitation, leadership, school conditions, student experiences, and student outcomes. This study is grounded in two key theoretical and practical frameworks recently developed by PBLWorks in collaboration with other leaders in the field:

- *High-Quality Project Based Learning (HQPBL)* refers to the quality of student experience on projects (Mergendoller, 2018). There are six criteria present in HQPBL: intellectual challenge and accomplishment, collaboration, authenticity, reflection, project management, and public product. For each of these criteria, *A Framework for High Quality Project Based Learning* (2018) offers guiding questions to assess the quality of student experience on a given project. This study will consider these questions in the design and analysis of data collection with students.

- *Gold Standard Project Based Learning* refers to the quality of unit design and facilitation to promote student learning of key knowledge, understanding, and success skills (Larmer, Mergendoller, & Boss, 2015). Gold Standard Design Elements comprise a challenging problem or question, sustained inquiry, authenticity, student voice and choice, reflection, critique and revision, and public product. PBLWorks offers rubrics that formatively assess the degree to which unit design and facilitation reflect these features of quality. This study will adapt these materials for collecting and analyzing data, such as unit plans and survey questions regarding teacher practice.

In addition, to investigate the processes by which quality PBL design, facilitation, and student experiences expand across these school systems, this study will draw on research regarding diffusion of innovation (Rogers, 2003) and scaling within education (Coburn, 2003).

Overview of PBLWorks' partnership with MSD and PCW

As summarized in the driver diagram (see Appendix A), this partnership aims to increase the number of students engaged in two high-quality projects per year by increasing the number of Gold Standard projects. To accomplish this aim, PBLWorks will offer various services and supports designed to increase motivation and demand for HQPBL, educator capacity for Gold Standard design and facilitation, and district/complex area and school leadership capacity to support and scale Gold Standard design and facilitation. This partnership is especially focused on students who were identified by school systems as being furthest from opportunity, including students experiencing poverty, English learner students, and students eligible for special services.

From spring 2018 to spring 2020, two cohorts of MSD and PCW teachers and leaders will receive training and coaching from PBLWorks. Selected teachers from every school in each school system will participate in PBL 101 training and receive sustained support visits from PBLWorks national faculty members. Leadership team members from each school will participate in a series of workshops over the course of the year. A total of 40 schools will participate in PBLWorks' services, with 560 educators trained in the first cohort (245 teachers and 35 leadership team members from each school system). Participation in PBLWorks' services is voluntary for educators. School system staff members (who are also RPP members) selected the schools using a "scaling map" process facilitated by PBLWorks, based on diffusion of

innovation theory (Rogers, 2003), in terms of identifying opinion leaders and early adopters within each school system. In developing the scaling maps, school system leaders also considered the school's current use of PBL and the percentage of students who were furthest from opportunity. Ideally, school leaders selected teachers to participate using a similar process facilitated by PBLWorks, although this process may not have occurred in every school.

Finalized Research Design

This mixed-methods study (Creswell & Clark, 2017) draws on both quantitative and qualitative data to provide insight into scaling processes, as well as deeper learning practices and outcomes. Quantitative analysis of surveys, class rosters, and student demographics will be useful in understanding the breadth of the scaling process and its impact across school systems. Tools, such as social network analysis (SNA), will allow us to analyze patterns in both diffusion and quality within and across schools. Qualitative methods, such as focus groups and document reviews, will provide in-depth examples of PBL design and insight into diverse educator experiences.

In July, the RPP refined our draft research design to focus more intensively on understanding the patterns of diffusion and the scaling of quality PBL. In contrast to the previous design, which focused on only teachers who participated in PBL 101 and their classrooms, this revised plan allows us to examine quality for both the teachers who participated in PBL 101 (typically, innovators and early adopters) and other teachers whom the PBL 101 participants and the school leadership teams are expected to influence.

To investigate the research issues across school systems and cohorts, we will use the teacher and student surveys to conduct large-sample analyses that are generalizable across the dataset. Education Northwest, MSD, and PCW will invite all teachers to participate in the annual teacher surveys. Teachers will invite all students in grades 4 to 12 to participate in the student surveys at the end of each project during the spring semester. We will also sample project plans to investigate in more depth issues related to PBL quality and intended deeper learning outcomes. We may use stratified random sampling to select project plans to analyze based on the various diffusion pathways that emerge from the teacher survey analysis. If possible, given the sample, we may use these data to generalize to the overall population.

Data collection and analysis

To enhance the rigor of the research, this study will involve triangulation of data (e.g., different types of stakeholders) and methods (e.g., surveys, focus groups, and artifacts) (Patton, 1987). The four methods that will be used for this study are summarized in table 1. Data collection will unfold in multiple phases over the course of the study.

Table 1. Research activities managed by Education Northwest

	Research questions	*Methods**
	**1. How does quality PBL scale and spread within and across schools?** a. What are the patterns of diffusion? b. What system conditions enable or constrain teachers and leaders in scaling quality PBL?	• Teacher survey • Focus groups
	**2. To what extent do students, including students furthest from opportunity, experience two high-quality projects each year?** a. To what extent are teachers designing, adapting, or adopting Gold Standard PBL? b. To what extent do students report deeper learning on projects?	• Teacher survey • Student survey • Review of project plans

*All data collection will occur in spring 2019 and spring 2020, except the baseline teacher survey in fall 2018.

Surveys

Surveys will be the main source of generalizable data from teachers and students. The members of the RPP and their colleagues provided input into the design, piloting, and revision of all the surveys to ensure all newly created items are valid. These individuals have both deep knowledge of the research literature related to PBL and personal expertise in instruction and facilitation of PBL. This method follows best practices for survey design for new instruments (Gehlbach & Brinkworth, 2011).

Teacher survey (see Appendix B)

The teacher survey is a primary source of data regarding patterns of diffusion (RQ1), as well as Gold Standard design and facilitation (RQ2). The teacher survey is a secondary source of data regarding student experiences of two high-quality projects per year (RQ2).

The research team will conduct three surveys with all teachers in each school system: a baseline survey (fall 2018), a year 1 survey (spring 2019), and a year 2 survey (spring 2020). All three teacher surveys will allow the team to assess the extent to which teachers in each district/complex area are aware of PBL, whether they assigned projects in their classes the preceding school year, the specific classes in which they assigned projects, and their strategy for using PBL (i.e., whether they designed, adapted, or adopted a project).

In addition, the survey asks teachers to identify who in the school or district/complex area has supported their use of PBL and what conditions have supported or hindered their ability to use PBL. The survey will also ask teachers to indicate how their PBL units reflect Gold Standard design and facilitation. SNA (including dynamic network analysis, which tracks changes in networks over time) will allow us to visually map the flows of awareness about PBL and Gold Standard PBL practices across each school system and to calculate descriptive and (if desired by the RPP) inferential statistics about their spread.

We will conduct several analyses with teacher survey data:

1. Descriptive statistics illustrating the number and percentage of teachers who assigned projects and who designed, adapted, or adopted and/or facilitated Gold Standard projects at baseline and in each subsequent year.
2. Descriptive statistics of the number and percentage of students who experienced one, two, or three or more projects—overall and disaggregated by student demographic characteristics (including students furthest from opportunity). To compute these statistics, we will match class rosters and student demographic data provided by each school system with educators' survey responses.
3. SNA and dynamic network analysis showing how awareness of PBL and PBL practice diffuses across both school systems over time. If desired, the RPP can also employ significance testing to assess whether changes occurring in the networks are due to chance.

District/complex area staff members and school leadership teams will enable high survey response rates by inviting teachers to complete the survey at back-to-school, in-service, or prep days. The research team will offer an incentive for survey completion, such as the chance to win a gift card. We anticipate the baseline survey will require 15 to 20 minutes of teachers' time and that the year 1 and year 2 surveys will require 20 to 25 minutes of teachers' time.

Student survey (see Appendix C)

The student survey is the primary source of data regarding student deeper learning outcomes and HQPBL (RQ2).[3] The survey will be administered to students in grades 4–12 by all teachers who facilitate PBL during the spring semester.[4] They will administer the survey at the end of each PBL unit they teach. Offering the survey at the end of a project will facilitate students' ability to reflect on a concrete and recent example of a project.

The survey will ask students to reflect on four deeper learning competencies: communication, collaboration, critical thinking/problem-solving skills, and mastery of core academic content through the project. For this section of the survey, we will draw on existing measures in studies of deeper learning (for example, Zeiser et al., 2014), as well as PBLWorks rubrics. Students will also be asked to reflect on the quality of their PBL experience. Students are expected to spend 10 to 15 minutes on the survey.

The survey will primarily consist of close-ended questions that ask students to rate their experience on a scale, as well as up to two open-ended questions. Education Northwest is creating aligned versions of the survey by grade band with developmentally responsive prompts for students in grades 4–8 and students in grades 9–12. Students may take the survey

[3] Analysis of student work was originally part of the research design. However, PBLWorks is instead conducting this as one of the services it provides in partnership with the Center for Assessment.
[4] PCW elected to not administer the survey in spring 2019 due to delays in receiving institutional review board (IRB) approval from the Hawaii State Department of Education.

more than once, and teachers will administer the survey for two years. The survey will be administered online, and teachers will be given a script to guide administration. Students will be identified by their name so that we can connect the survey results with other data, such as class rosters, student characteristics, and teacher.

In addition to the analysis mentioned above, in conjunction with the teacher survey data, we will analyze student survey data as follows:

1. Descriptive statistics gauging the extent to which students report progress in deeper learning and experiences of quality during unit work, including student-reported comparisons to their non-PBL experiences. These results will be triangulated with teachers' reported use of Gold Standard Design Elements.
2. Descriptive statistics to examine student reports of deeper learning and project quality by teacher characteristics (e.g., experience and training with PBL) and student characteristics (e.g., number of projects and English learner status).

To the extent allowable under our data-sharing agreements with school systems, we will disaggregate all descriptive analyses by demographic groups, including students furthest from opportunity.

Focus groups (see Appendix D)

Typically conducted with groups of seven to 10 people who share a common experience, focus groups are especially useful for gathering information about group processes (Marshall & Rossman, 2006). The open-ended nature of focus groups provides richer and more nuanced data than interviews or forced-format surveys. In this project, we will use focus groups to explore educator perspectives of PBL implementation, scaling, and diffusion. All focus group data will be collected via written notes and audio recording, de-identified, and stored securely on our organizational servers. We will use ATLAS.ti to manage and code the data. Analysis will involve both deductive and inductive coding (Marshall & Rossman, 2006), as the study is both testing established frameworks related to PBL quality design, facilitation, and experience and developing theoretical insights related to the diffusion of innovation.

In each school system, we will conduct focus groups with teachers, principals, school-level leadership team members, and district/complex area staff members. In consultation with the RPP, in December 2018, we decided to add the leadership team member focus group to the study so that we could understand the unique experiences of these instructional leaders.

The primary purpose of the focus groups will be to provide more detailed information about the diffusion process and implementation conditions (RQ1) from the perspective of multiple stakeholders (teachers, school administrators, and district/complex area administrators). In designing these protocols, we drew on PBLWorks' leadership rubrics and research on teacher motivations, practices, and school-level conditions related to PBL (for a summary, see Condliffe, 2017). The focus groups will last one hour. In each school system we will conduct the following focus groups annually:

- *District/complex area focus group (or interviews):* We will speak with two to four district/complex area staff members involved in planning and coaching PBL. Topics will include the school-system level strategy and approach to promoting diffusion in and across schools, as well as insight into conditions that promote or constrain diffusion of PBL and quality implementation.
- *Principal focus groups:* We will recruit five to eight principals from each cohort to discuss factors that enable or constrain Gold Standard design and instruction, strategies leadership teams are using to promote diffusion in schools, and the effectiveness of those strategies.
- *Leadership team focus groups:* We will recruit five to eight leadership team members from each cohort to discuss factors that enable or constrain Gold Standard design and instruction, strategies leadership teams are using to promote diffusion in schools, and the effectiveness of those strategies.
- *Teacher focus groups:* We will recruit five to eight teachers from each cohort who participated in PBL 101 but are not on the leadership team at their school. In addition, we will recruit five to eight teachers who did not participate in PBL 101 but facilitated PBL units in the spring semester. The focus groups will discuss factors that enable or constrain Gold Standard design and facilitation, as well as the diffusion process in and across schools.

Table 2. Summary of focus group participant types

Description of participants	*# of participants (spring 2019)*	*# of participants (spring 2020)*	*# of participants (total)*
District/complex area staff members	2–4	2–4 (duplicated)	2–4
Principals	5–8 (Cohort 1)	5–8 (Cohort 2)	10–16
Leadership team members who are not principals	5–8 (Cohort 1)	5–8 (Cohort 2)	10–16
Teachers who completed PBL 101 but are not leadership team members	5–8 (Cohort 1)	5–8 (Cohort 2)	10–16
Teachers who did not complete PBL 101 but facilitated projects	5–8	5–8	10–16

Review of project plans

We will collect project plans from all teachers who complete the teacher survey in spring 2019 and spring 2020, including those who did not participate in PBL 101.[5] Upon completion of the survey, teachers will upload a project plan, using the PBLWorks *Project Overview/Student Learning Guide*,[6] that they consider an exemplar of PBL. We will analyze project plans from a

[5] We are in discussions with the RPP about whether to collect project plans directly from teachers or to reduce the data burden by instead sampling from the project plans already collected by PBLWorks as part of the data collection process for measuring critical thinking. If this change occurs, we would not be able to analyze project plans from teachers who did not participate in PBL 101.

[6] https://my.pblworks.org/resource/document/project_design_overview_and_student_learning_guide

stratified random sample of teachers (up to one per school) to assess whether the plans include Gold Standard Design Elements.

The RPP will develop a checklist derived from the PBLWorks Gold Standard Design Elements (Larmer et al., 2015) to score each unit plan to assess the extent to which projects designed by teachers reflect Gold Standard Design Elements. We will calculate descriptive statistics showing the rate of high-quality projects based on Gold Standard Design Elements in years 1 and 2. By using random samples in each school system and cohort, the data should be unbiased and reflect a broad spectrum of teacher practice present across the school systems. When combined with teacher survey data, we will infer the rate of high-quality projects based on Gold Standard Design Elements across both school systems.

Progress on Data Collection Planning in 2018

This section summarizes progress in designing instruments, planning data collection, securing institutional agreement for the study, and securing parent/guardian consent.

Designing instruments

Baseline teacher survey: In fall 2018, Education Northwest worked with the RPP members to finalize the teacher survey. Education Northwest piloted the survey with two teachers in MSD and three teachers in PCW. These teachers completed the survey online and participated in a brief interview to discuss their experience and provide feedback. Education Northwest used the findings from this pilot process to make several refinements to the survey, such as adding response options to the question about contexts in which respondents went to colleagues for advice or questions (i.e., department meetings) and adding instructional text to clarify questions. See Appendix B for the baseline teacher survey.

Student survey: Education Northwest worked with the core RPP members, as well as current and former PBLWorks staff members, to draft multiple iterations of the student survey. Education Northwest reviewed the literature on PBL and deeper learning outcomes to identify validated measures for this survey. Although we found few measures that were designed for use across content areas and curricula, we were able to adapt several measures (e.g., Bitter, Taylor, Zeiser, & Rickles, 2014) for use in this study. We also adapted the PBLWorks *Gold Standard Design Elements Rubric* and student rubrics, including the *Presentation Rubric for PBL*, the *Collaboration Rubric for PBL*, the *Communication Rubric for PBL*, and the *Critical Thinking Rubric for PBL*.

We piloted the student survey with an elementary and middle school in MSD in January. The pilot process included observations of teachers administering the online survey, debrief interviews with teachers about the survey and administration process, and cognitive interviews with students to determine the extent to which the language and structure are accessible to

diverse students. The pilot sites were intentionally chosen to focus on younger students and students who are furthest from opportunity. See Appendix C for the revised student survey.

Educator focus groups: Education Northwest developed draft focus group protocols, drawing on the diffusion of innovation literature, PBLWorks training materials, and school system school scaling plans. Education Northwest worked with the core RPP members to refine each protocol. See Appendix D for the focus group protocols.

Planning data collection

Given the scale and scope of this study, there were various issues to consider in developing a reasonable data collection and management plan that adheres to school system, state, and research standards. Throughout this process, we worked closely with the district/complex area leads to organize the research in a way that ensures informed consent, protects individual privacy, and reduces the burden on staff members and students as much as possible.

For example, Education Northwest collaborated with school system leads and PBLWorks staff members to produce information sheets for school system and school staff members so that they understand the purpose of the study, as well as the activities and timeline. MSD and PCW partners report that this has been helpful in explaining the differences between PBLWorks' services and research activities. MSD and PCW partners also reviewed the consent form language to make sure it was accessible for their families.

Securing IRB support and data-sharing agreements

Each school system partner has a different process by which researchers apply for institutional approval to conduct research in schools. In MSD, researchers are required to submit their research design to the school board and present their study in person. Education Northwest prepared these materials and presented the design to the school board in June 2018. The board approved the study, and we worked with MSD to develop a data-sharing agreement, which was fully executed in August. As of March, MSD has shared teacher directory information, class rosters, and student demographics for 2017–18 and 2018–19.

The Hawaii State Department of Education IRB reviews all proposals for studies in Hawaii schools, and it manages data sharing with external researchers. In April, we submitted a full application to the Hawaii State Department of Education. We learned in July that we needed to resubmit the application in phases, as we were still working with the RPP to design the student survey. In October, we received approval for the teacher survey and to receive class rosters. In December, we received conditional approval for the student survey and educator focus groups, pending additional materials (e.g., explanation of the evidence base behind PBL). We provided

those materials within a day of receiving this conditional approval.[7] The Hawaii State Department of Education indicated the data were delayed due to internal issues.[8]

This study has also received approval from Education Northwest's internal IRB.

Securing parent/guardian consent

In response to a request by the school system partners, we developed an online process for securing parent/guardian consent for the student survey. To ensure all students have an opportunity to participate in the study, we worked with translators to make the form available in 14 languages.

For the online consent forms, Education Northwest will track completion rates using the 2018–19 class rosters (once they are received from the school system), and we will send lists to the schools that have consent to participate. For a test link to the MSD consent form, visit http://www.surveygizmo.com/collab/4659253/MSD-Consent-Form.

We recently learned the school systems would also like families to have a paper option for parent/guardian consent. We worked with the school systems to develop a parallel process for tracking receipt of the paper parent/guardian consent form and sharing this information with schools.

[7] We received full approval in March 2019.

[8] We requested class rosters in October 2018 and received them in March 2019, but they were incomplete (they did not include teacher names). We are working with the Hawaii State Department of Education to secure these data.

Chapter 2. Methods

This chapter describes the methods used to collect and analyze baseline data around the following issues:

- Teacher experience of PBL and facilitation of projects in 2017-18
- Teacher use of Gold Standard Design Elements in 2017-18 projects
- Teacher social networks in 2017-18
- Student access to projects in 2017-18

Data Collection and Analysis

In fall 2018, Education Northwest conducted the on-line baseline teacher survey in both MSD and PCW. To establish a baseline for comparison over time, the survey asked teachers to reflect on their experiences in 2017–18, prior to the PBLWorks services and diffusion strategies implemented through this project. Teachers were asked to respond to questions about four topics: their experience with PBL, the projects they taught, the system conditions in the schools where they taught, and their professional social networks. We used SNA to describe baseline teacher networks.

Education Northwest also matched these teacher survey results with class rosters to estimate the extent to which students in the school systems participated in projects during 2017–18. Each of these methods is described in greater detail below.

Teacher survey sample

The survey was sent to 1,934 teachers across the two school systems, with an overall response rate of 53 percent for PCW and 51 percent for MSD. Survey respondents represented all 22 schools in MSD and all 17 schools in PCW. Across both school systems, response rates were much higher for elementary schools than secondary schools; within the sample, nearly half of the respondents from MSD and nearly two-thirds of the respondents from PCW taught at an elementary school (table 3). For MSD, a little more than two-thirds of respondents taught at a Cohort 1 school in 2017–18, and half of PCW respondents taught at a Cohort 1 school in 2017–18.

Overall, 30 percent of respondents from MSD were Cohort 1 members who participated in PBL 101, and 9 percent were members of their school's leadership team. For PCW, a third of respondents were Cohort 1 members who participated in PBL 101, and 8 percent were members of their schools' leadership team.

Table 3. Baseline teacher survey response rates by school system and grade band

	MSD (N = 512)	*PCW (N = 495)*
Elementary school	48%	65%
Intermediate/middle school	28%	14%
High school	24%	20%

Note: Percentages by grade band do not total 100 percent due to rounding.

The MSD survey opened October 22 and closed November 26, and the PCW survey opened November 5 and closed December 3. Within these time frames, Education Northwest sent all teachers an initial email inviting them to participate in the survey. Additionally, Education Northwest sent teachers weekly reminder emails. After each reminder, Education Northwest created a report that detailed the response rate for each school in the district and complex area, highlighting schools with the lowest response rates. This report was sent to the district and complex area partners to allow for targeted survey outreach at the school level.

To increase the response rate, Education Northwest offered participant incentives at two points during the survey administration. Respondents who completed a minimum of one survey section were eligible to be entered into a drawing for one $100, $75, $50, or $25 Amazon gift card. The first set of winners was announced in the final reminder email to bolster participation during the last week of the survey, with additional winners announced after the survey closed.

Descriptive analysis

The educator survey was administered using Survey Gizmo. Upon completion of the survey administration period, the data were downloaded and imported into the statistical software Stata for cleaning and analysis. To analyze the data regarding the respondents' experience with PBL, reported use of Gold Standard Design Elements, and school-level conditions, we conducted basic descriptive analyses using tabulations and cross-tabulations of the data. The survey data underwent further cleaning in preparation for the SNA and roster matching analysis, along with specialized analyses, which are described in detail below.

SNA

A foundational assumption of this project is that teacher social networks influence the diffusion of quality PBL in schools and across school systems. According to diffusion of innovation theory (Rogers, 1962), the social networks of opinion leaders play a critical role in diffusing innovation to others in an organization and across a system. Opinion leaders regularly influence the mindset and behavior of others through informal means and relationships rather than positional authority.

MSD and PCW leaders used diffusion of innovation theory to strategically select schools to participate in the first cohort of PBLWorks services. They developed scaling maps that organized schools into five adopter categories based on this theory: innovators, early adopters, early majority, late majority, or laggards. Cohort 1 schools were selected because they were assumed to be in the first two categories in terms of their experience with PBL, openness to new ideas, and networks beyond their school (innovators) or for being opinion leaders whom others

seek out for advice and are well respected and integrated into the school system (early adopters). Most schools used a similar process to select teachers to serve on leadership teams and participate in PBL 101 training. The assumption of this approach is that starting with opinion leaders will facilitate the diffusion of HQPBL within and across schools.

To investigate the patterns of diffusion across these two school systems, the research team needed to establish a baseline for the MSD and PCW networks. The baseline teacher survey provided information on the existing social networks of the respondents in 2017–18 via the survey question, "Who did you go to most often for advice or with general questions related to content knowledge, your instructional practice, or navigating school systems (i.e., figuring out school management or bureaucracy)?" This baseline information is important for capturing how information flows through existing relationships in schools and across each school system. By mapping relationships in and across schools, we can identify potential opportunities and challenges in how information about quality PBL might flow between individuals who have received this information and those who have not.

SNA was used in late 2018 to describe the structure of relationships in MSD and PCW before the start of the study. The teacher survey also provides baseline information for tracking changes in how awareness of PBL and use of quality PBL practice diffuse across each school system over time. We used ORA software[9] to visualize and analyze the networks.

Description of baseline social networks. Table 4 provides a descriptive overview of all individuals who are included in the SNA maps in both MSD and PCW based on the results of the survey. These individuals either participated in the survey or were identified by a survey respondent—together forming the social network of each school system.

In MSD, 419 survey respondents identified 1,677 relationships with 891 individuals working in the district and 11 individuals working outside the district. In PCW, 434 survey respondents identified 1,764 relationships with 783 individuals working in the complex area and 30 individuals working outside the complex area. The number of survey respondents, as well as the number of individuals identified by survey respondents, was comparable across the two school systems.

[9] http://www.casos.cs.cmu.edu/projects/ora/

Table 4. MSD and PCW survey respondents identified a similar number and type of individuals in their social networks

Network Member Characteristics		*MSD (n = 902)*		*PCW (n = 813)*	
Location	School-based staff	880	98%	767	94%
	District/complex area office staff	10	1%	17	2%
	Individuals outside the district/complex area	11	1%	30	4%
Role	Teacher	734	81%	694	85%
	School-level administrator	52	6%	41	5%
Cohort membership	From a Cohort 1 school	305	34%	392	48%
	From a Cohort 2 school	575	64%	373	46%
PBL participation	Cohort 1 PBL 101 participant	201	22%	214	26%
	Leadership team member	65	7%	94	12%

Note: Individuals are represented in more than one category.

The survey focuses on teacher social networks, but administrators and district/complex area office staff members play key roles in connecting individuals across networks. We will note when the analysis includes administrators and district/complex area office staff members who are identified by teachers.

Additionally, not all teachers in MSD or PCW completed the survey, and the networks used for this study do not represent all the relationships in either school system. Therefore, although we can talk generally about the different structures of the two networks represented by MSD and PCW, there may be different relationships through which PBL knowledge might spread that are not captured here. This is a challenge for most studies using SNA and was considered during the analysis.

Roster matching

To determine the extent to which students, including students furthest from opportunity, experience two high-quality projects each year, the research team matched teacher survey reports of project facilitation in specific classes with class rosters and student demographic data from the same school year. Education Northwest received a list of students with their demographic and course enrollment information from MSD for 2017–18. PCW sent Education Northwest a student directory with demographic data and is in the process of preparing a file that allows the demographic data to be matched with survey data. As of the time of this writing, Education Northwest was able to match only student-level data to the teacher survey for MSD.[10]

Individual student records were matched with teachers who participated in the survey by using the course enrollment file that included teacher names. Matching was also done based on teacher email address, which was available for teachers who were also included in the 2018–19 staff roster list.

[10] Education Northwest will update this report once the PCW data are received and analyzed.

The matching process resulted in a match for 423 of the 512 MSD teachers surveyed. Of the 89 teachers who were not matched, only 10 answered the questions about the number of projects they taught in 2017–18. In contrast, 230 of the 512 total survey respondents answered the questions about the number of projects they taught in 2017–18.

To protect student privacy, MSD did not report free or reduced-price lunch eligibility to Education Northwest. Instead, Education Northwest provided the matched data to MSD, and the district created aggregate percentages of project exposure for students eligible for free or reduced-price lunch.

A concern with roster matching is that it cannot correct for selection bias in the sample of teachers who responded to the survey. We expect that teachers familiar with PBL were more likely to respond to the survey than the average teacher. If this expectation is correct, the percentage of students exposed to PBL will be inflated. The number of students who had at least one educator in the survey was 12,946, which represents 93 percent of all students in the 2017–18 roster.

The students matched with teachers from the survey do match the demographics of the overall student population in MSD. Table 5 shows the percentage of students in the entire district and the student population with at least one teacher who filled out the survey.

Table 5. Percentage of students in MSD compared with roster-matching results for race/ethnicity, students receiving special education services, and English learner students

Student characteristics	*Percentage of total students in district (N = 13,881)*	*Percentage of total students matched with teacher survey (N = 12,942)*
Asian	5%	5%
American Indian/Alaska Native	*	*
Black/African American	9%	9%
Hispanic/Latino	24%	24%
White	57%	57%
Pacific Islander	*	*
Two or more races	5%	5%
Received special education services	18%	18%
English learner	15%	15%

Note: * indicates less than 1 percent.

Source: Baseline teacher survey and MSD rosters.

The high percentage of students who matched to at least one teacher means the overall sample of students is close to the MSD population. However, caution is warranted with any conclusions from the roster matching because we will be missing data from any teacher who did not fill out the survey who instructed a student who matched to another teacher. Some students may have been exposed to more projects than reported due to missing survey data.

Other students may have been exposed to fewer projects than reported if projects were not offered to all students in a teacher's class. The project exposure results presented in this report will look at only matched students.

Chapter 3. Project Facilitation at Baseline

In this chapter, we review results related to survey respondents' experience with PBL, their facilitation of projects in 2017–18, and their reported use of Gold Standard Design Elements (a challenging problem or question, sustained inquiry, authenticity, student voice and choice, reflection, critique and revision, and public product)[11] on the last project they facilitated in 2017–18. We then match teacher reports of projects with class rosters and student demographic data to estimate students' exposure to PBL in 2017–18 (data are available for MSD only, as Education Northwest has not yet received roster information from the Hawaii State Department of Education).

Since these results are intended to provide baseline information for this study, we asked teachers to reflect on their experiences and practices prior to participation in PBLWorks activities provided through this RPP. PBLWorks started offering PBL 101 services to PCW teachers in April and to MSD teachers in June. The results reported here are not expected to demonstrate the influence of services provided by PBLWorks as part of this study. A more detailed discussion of preliminary results for each school system follows this summary section.

The following is a summary of high-level themes combined across MSD and PCW:

Teacher experience with PBL and facilitation of projects in 2017–18

- Most respondents were familiar with PBL, but few participated in any formal training before the launch of PBLWorks services in 2018.
- Nearly half of the respondents facilitated a project in 2017–18, with many projects reported to be two or more weeks in length.
- About three-fourths of respondents said they either designed the project from scratch or adapted a project they previously designed for another class.

Teacher use of Gold Standard Design Elements in 2017–18 projects

- Challenging problem or question: About 15 percent of respondents said the primary focus of their project was a driving open-ended question the whole class answered.
- Sustained inquiry: Most projects were reported to have lasted at least two weeks, and almost half were reported to have lasted four weeks or more.
- Authenticity: The most common form of project authenticity was the use of real-world tools and processes, followed by the project reflecting students' personal concerns, interests, or identities.

[11] To ensure the survey was a reasonable length, we collaborated with the research partners to identify specific Gold Standard Design Elements to measure in greater depth. We do not have in-depth measures of sustained inquiry or reflection. Additional components of each element could have been measured but were not due to length issues.

- Student voice and choice: Although teachers commonly reported opportunities for students to make choices during the project, less than half allowed students to choose the topic.
- Critique and revision: Many teachers said students received feedback while working on the project, most frequently from teachers and peers.
- Public product: For more than two-thirds of the projects, teachers said students produced materials that were seen by people outside their classroom.

Student exposure to PBL in 2017–18 (MSD only)

- Overall, 72 percent of students who were matched to surveyed teachers experienced a project during the school year. Of these students, 63 percent were in a class with at least one eight-hour project, and 58 percent were exposed to at least two projects that lasted eight hours or more.
- About three-fifths of students who were identified as English learners, who were eligible for free or reduced-price lunch, or who received special education services were exposed to at least one eight-hour project.
- High school and middle school students had higher rates of exposure to projects than elementary school students.

Rogers (1962) identified five characteristics of innovation that facilitate diffusion: relative advantage, compatibility, complexity, trialability, and observability. Since most respondents had heard of PBL and almost half were facilitating projects at baseline, HQPBL may be viewed as highly compatible with existing values, norms, and goals within the school systems.

Baseline Results Detail: Manchester School District

Baseline results for MSD indicate that about half of respondents were familiar with PBL and facilitated projects in 2017–18. Teachers varied in their reported use of Gold Standard Design Elements on these projects. In matching the survey data with class rosters, a little more than half of all matched students were exposed to at least two projects that lasted eight hours or more, with slightly fewer for students with special needs and English learner students. (See page 52 for a discussion of the limitations of these self-reported data.)

Teacher experience with PBL in 2017–18

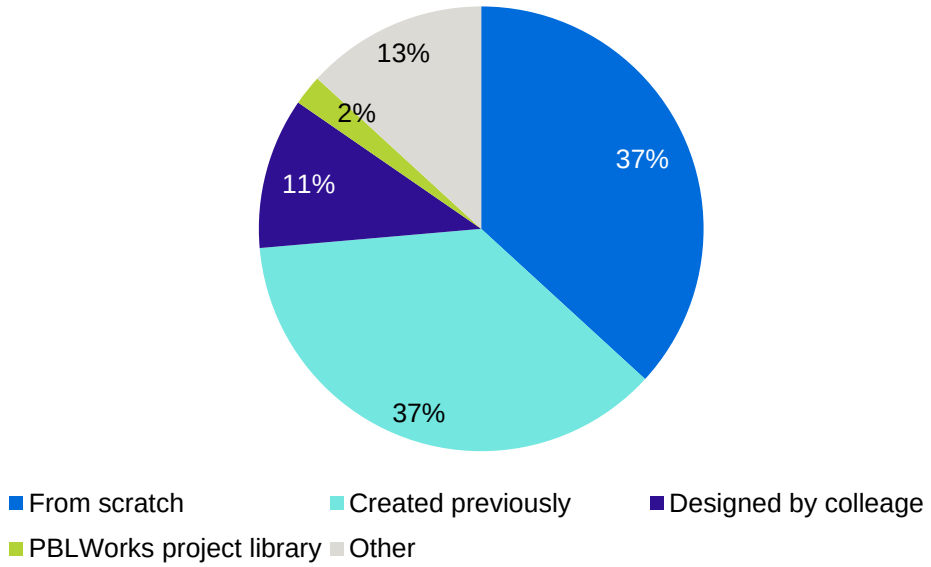
Overall, 35 percent of respondents had heard of PBL but had not received any formal training or attempted to use PBL in their classroom. In addition, 23 percent of respondents reported trying PBL in their classroom, despite not completing a formal training. Further, 27 percent of respondents completed PBL 101 during 2018, and about 15 percent completed a prior formal training in PBL.

Facilitation of projects in 2017–18

Overall, 51 percent of respondents reported teaching a project in 2017–18, and they taught 1,102 projects total. The number of projects facilitated in Cohort 1 and Cohort 2 schools was similar, with 51 percent of projects taught by teachers in Cohort 1 schools and 49 percent of projects taught by teachers in Cohort 2 schools. Most teachers reported teaching only one project. Overall, 55 percent of projects were taught by high school teachers, 27 percent were taught by middle school teachers, and 18 percent were taught by elementary school teachers. Of the 1,102 projects taught in the district last year, 68 percent were reported to have been taught over eight or more hours of class time. Of projects taught over eight or more hours of class time, 52 percent were taught by teachers in Cohort 1 schools and 48 percent were taught by teachers in Cohort 2 schools. In addition, 74 percent of respondents either adapted a project they had previously designed or created a project from scratch (figure 1), and 13 percent reported adapting a project from other sources, such as Teachers Pay Teachers, FIRST LEGO League, and 21st Century Math Projects.

Although Cohort 1 schools were chosen because they were perceived to be innovators or potential early adopters of PBL, they were only slightly more likely to be implementing PBL at baseline than Cohort 2 schools.

Figure 1. MSD teachers' project design strategy (N = 182)



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Use of Gold Standard Design Elements in 2017–18 projects

Teachers who taught at least one project over eight or more hours of class time were asked to report on their use of Gold Standard Design Elements during the last project unit they taught in 2017–18. This included questions about the following elements: challenging problem or

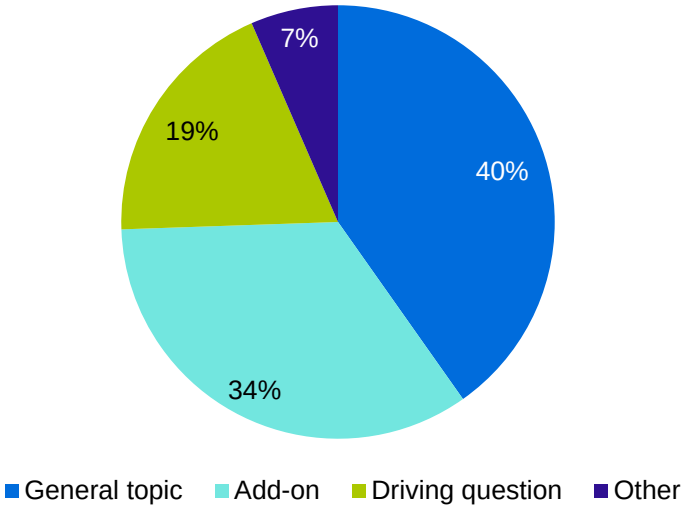
question, sustained inquiry, authenticity, student voice and choice, critique and revision, and public product.[12]

Challenging problem or question

Overall, 19 percent of teachers focused their project on a driving open-ended question the whole class answered. In contrast, nearly 75 percent of projects focused on either a general topic that students could personalize or were add-ons to reinforce learning within a curriculum unit (figure 2). Some examples of teachers' driving questions included:

- *How does water get to our homes/taps?*
- *How would you redesign a city in the world for the year 2030?*
- *When designing a playground for our school, how can we meet the diverse needs of our school population?*

Figure 2. MSD teachers' reported use of a driving question in their project design (N = 184)



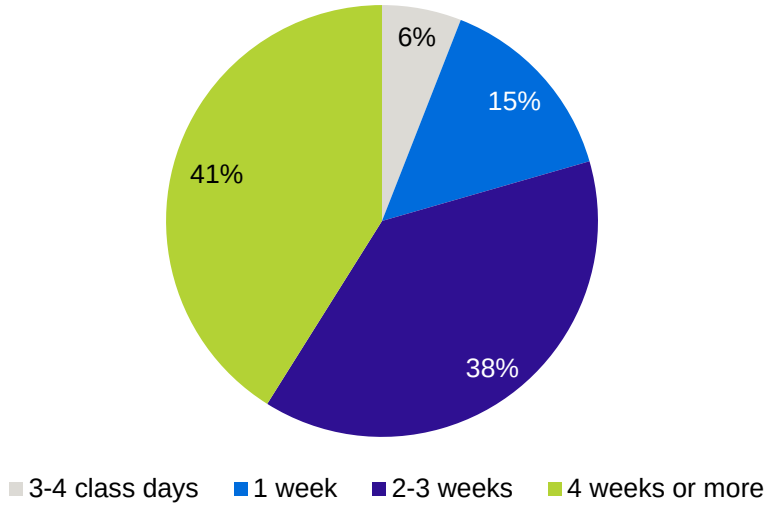
Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Sustained inquiry

Overall, 79 percent of projects lasted over two weeks, and 41 percent lasted for four weeks or more (figure 3). We used project length as a proxy measure of sustained inquiry, as longer projects provide greater opportunity for student inquiry to be sustained over time than shorter projects.

[12] To ensure the survey was a reasonable length, in collaboration with the research partners, we selected specific Gold Standard Design Elements to measure in greater depth. The Gold Standard Design Element of reflection was omitted from these analyses.

Figure 3. MSD teachers' reported project length (N = 185)

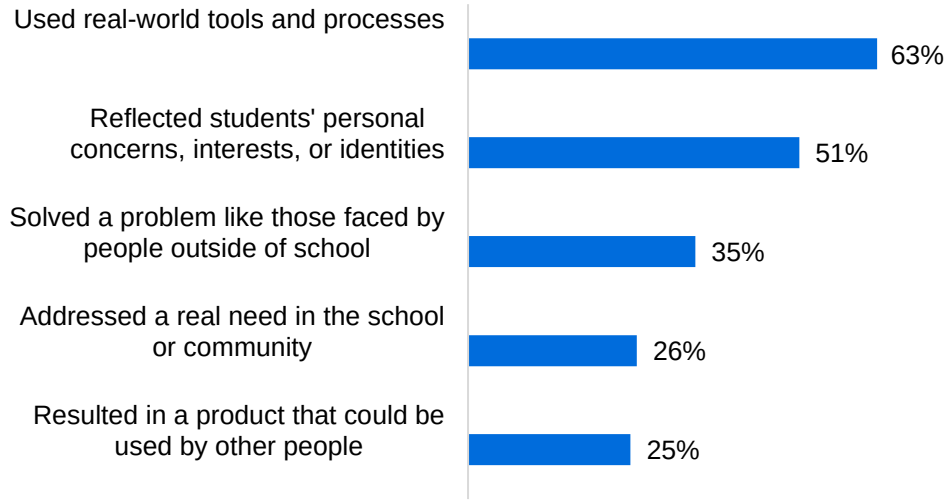


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Authenticity

Teachers most frequently reported project authenticity in terms of the use of real-world tools and processes to complete the project (63 percent) (figure 4). This was followed by a reflection of students' personal concerns, interests, or identities (51 percent). The least frequently reported elements of authenticity were that the project addressed a real need in the school or community (26 percent) and that students created a product that could be used by other people (25 percent).

Figure 4. MSD teachers' reported elements of authenticity (N = 185)

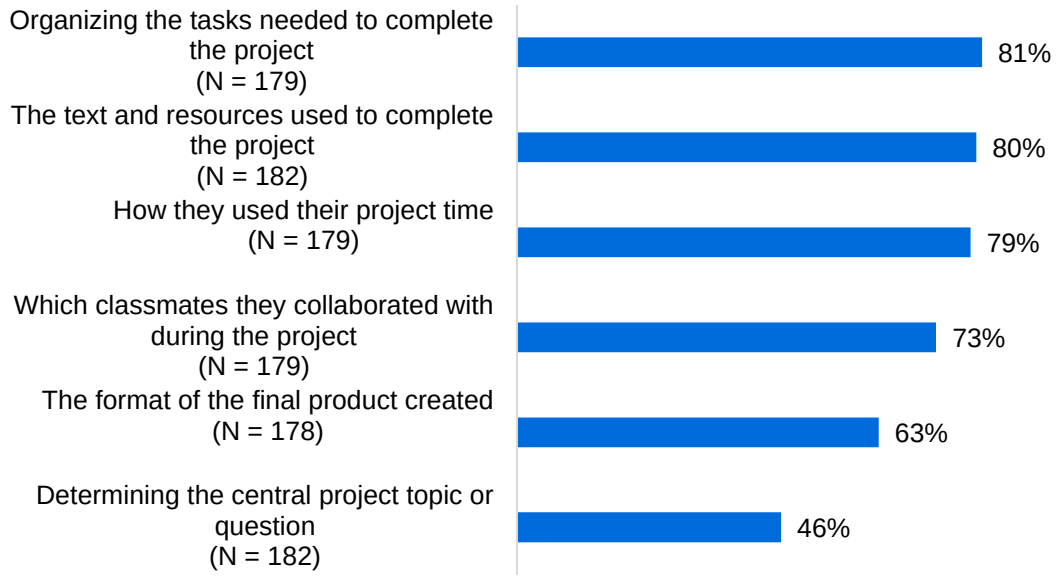


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Student voice and choice

Many teachers said students received multiple opportunities for voice and choice while completing projects. The most common ways were in organizing the tasks and in choosing the text and resources needed to complete projects (figure 5). Students were given the least amount of choice in determining the central project topic or question.

Figure 5. The ways MSD teachers provided opportunities for student voice and choice

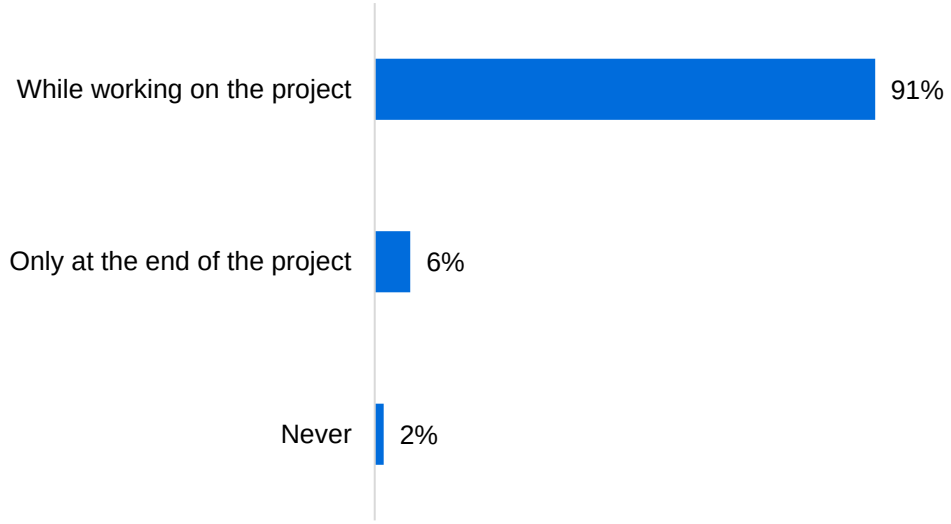


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Critique and revision

Overall, 91 percent of teachers said students received feedback while working on the project (figure 6). In addition, 6 percent of teachers said students received feedback only at the end of the project, and 2 percent said students never received feedback on their project-related work. It is inferred that students who received feedback while working on the project had the opportunity to use it to revise their work, whereas those who received feedback only at the end of the project or never received feedback did not have the opportunity to use it to revise their work.

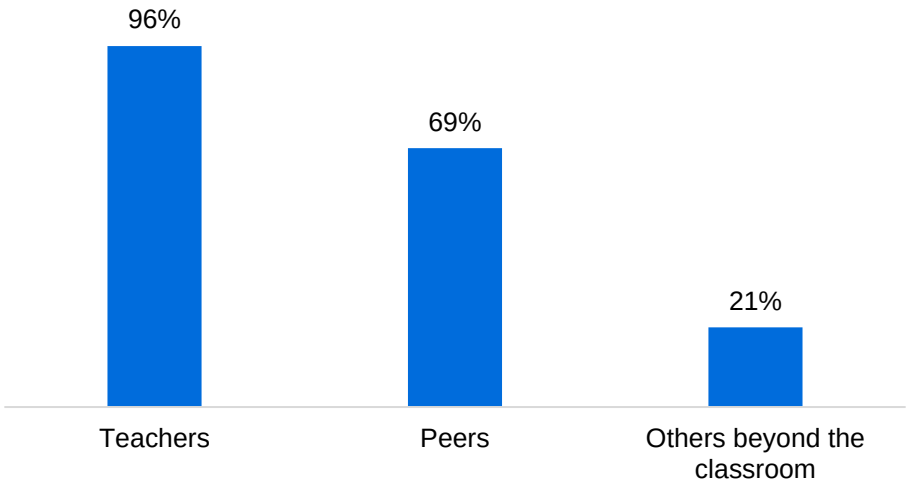
Figure 6. When MSD students received feedback on their project work (N = 185)



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Further, students were given the opportunity to provide feedback on one another's work in 69 percent of projects (figure 7). In 96 percent of projects, teachers provided students with feedback, and 21 percent of projects included feedback from others beyond the classroom.

Figure 7. Who provided MSD students with feedback on their project work (N =185)

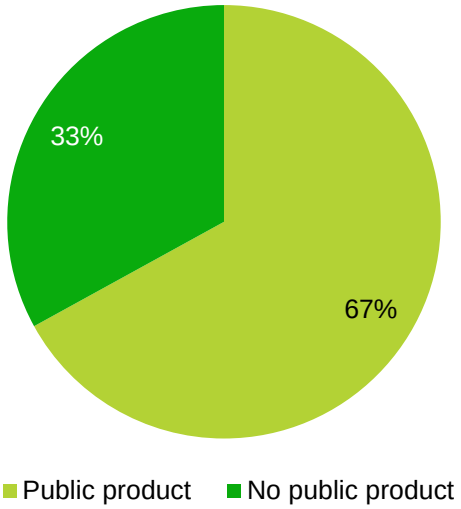


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Public product

In addition, 67 percent of projects included a public product that was presented to people beyond the classroom (figure 8).

Figure 8. MSD teachers' reported inclusion of a public product (N = 182)

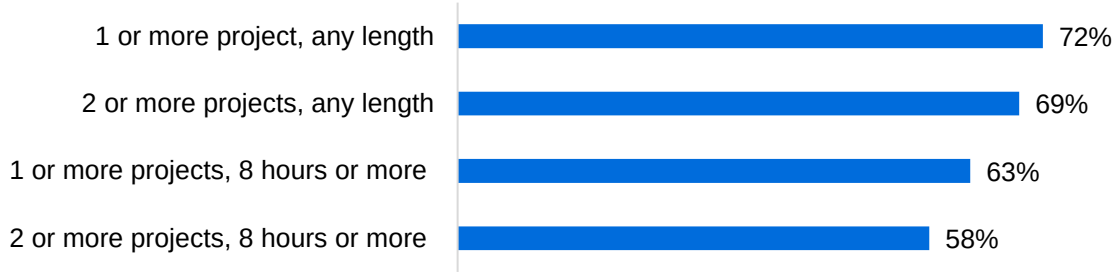


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

MSD student exposure to PBL in 2017–18

Overall, 72 percent of MSD students who were matched to surveyed teachers experienced a project during the school year, with 69 percent experiencing two or more projects (figure 9). Of these matched students, 63 percent were in a class with at least one eight-hour project, and 58 percent were exposed to at least two projects of eight hours or more.

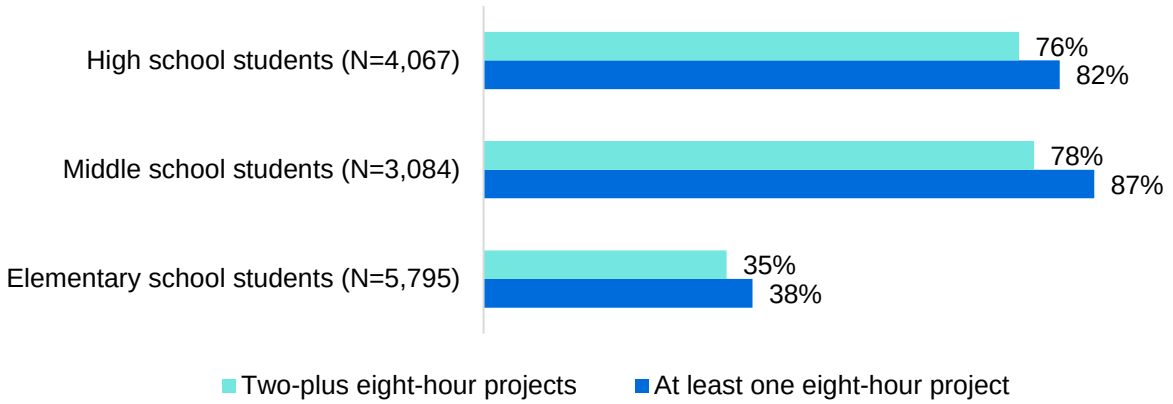
Figure 9. Percentage of all MSD students exposed to projects by project length and number



Source: Fall 2018 baseline teacher survey data matched with MSD rosters.

The percentage of students exposed to projects varied by type of school. Over 75 percent of middle school and high school students were exposed to two or more eight-hour projects in the matched sample. In contrast, 35 percent of elementary school students were exposed to multiple eight-hour projects (figure 10).

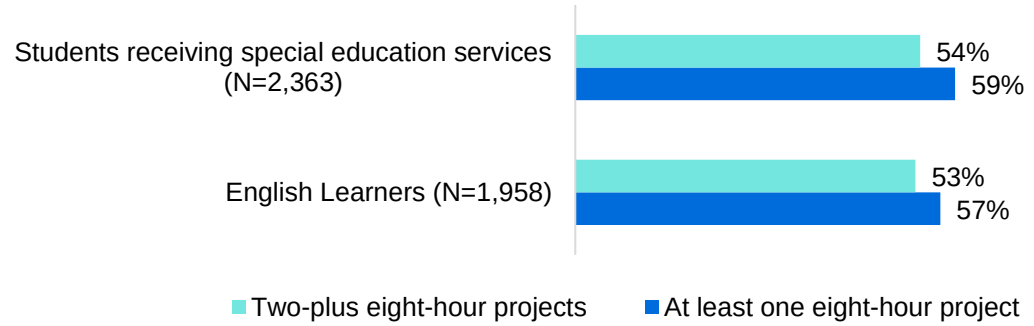
Figure 10. Percentage of MSD students exposed to at least one eight-hour project by school level



Source: Fall 2018 baseline teacher survey data matched with MSD rosters.

The percentage of English learner students and students receiving special education services who were exposed to eight-hour projects was lower than the overall percentage of students who were exposed to eight-hour projects. In 2017–18, while 63 percent of all students were exposed to at least one eight-hour project, 59 percent of students receiving special education services were exposed to eight-hour projects, and 54 percent were exposed to two or more eight-hour projects compared with 58 percent of all students. English learner students also had a lower exposure rate than all students (figure 11).

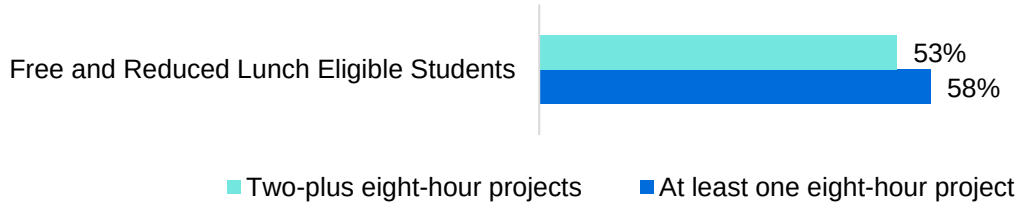
Figure 11. Percentage of MSD students receiving special education services and English learner students exposed to at least one eight-hour project



Source: Fall 2018 baseline teacher survey data matched with MSD rosters.

The percentage of students who are eligible for free or reduced-price lunch who were exposed to at least one eight-hour project was 58 percent and 53 percent were exposed to two or more eight-hour projects (figure 12). The free or reduced-price lunch price eligible students had lower exposure rates than students overall in the 2017-18 school, with the exposure rate being four percentage points lower for exposure to a single eight-hour project and five percentage points lower for exposure to two or more eight-hour projects.

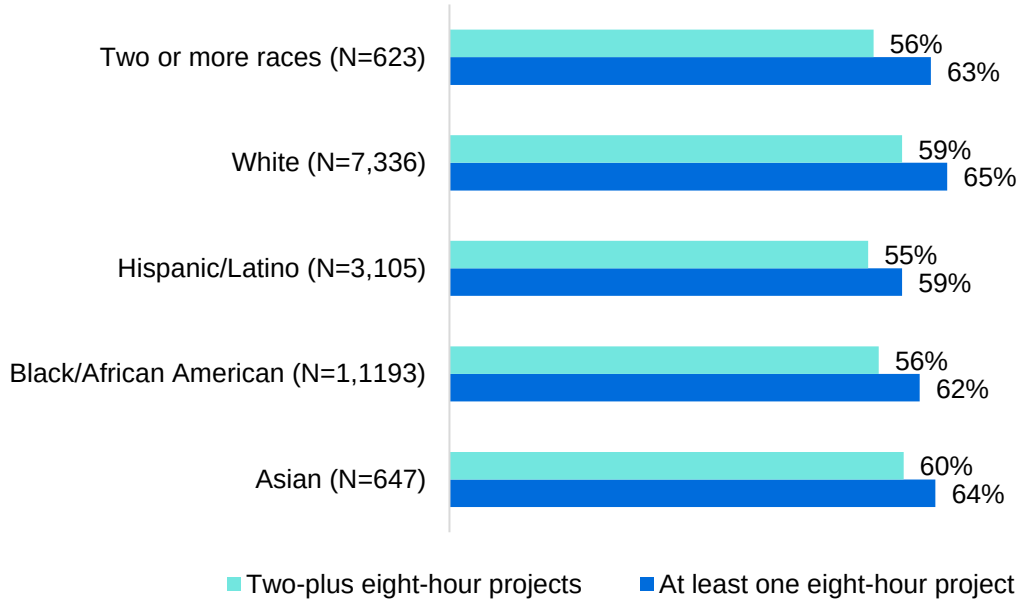
Figure 12. Percentage of MSD students eligible for free or reduced-price lunch exposed to at least one eight-hour project



Source: Fall 2018 baseline teacher survey data matched with MSD rosters.

Exposure to PBL for each race/ethnicity was within 4 percentage points of the average for all students. White students had the highest exposure rate to eight-hour projects (65 percent), and Asian students had the highest exposure rate to two or more eight-hour projects (60 percent). Hispanic or Latino students had the lowest exposure rates for a single eight-hour project and two or more eight-hour projects—59 and 55 percent, respectively (figure 13).

Figure 13. Percentage of MSD students exposed to at least one eight-hour project by race/ethnicity



Source: Fall 2018 baseline teacher survey data matched with MSD rosters.

Baseline Results Detail: Pearl City Waipahu Complex Area

Baseline results for PCW indicate that less than half of respondents were familiar with PBL and facilitated projects during 2017–18. Teachers varied in their reported use of Gold Standard

Design Elements on these projects. See page 52 for a discussion of the limitations of these self-report data.

Teacher experience with PBL in 2017–18

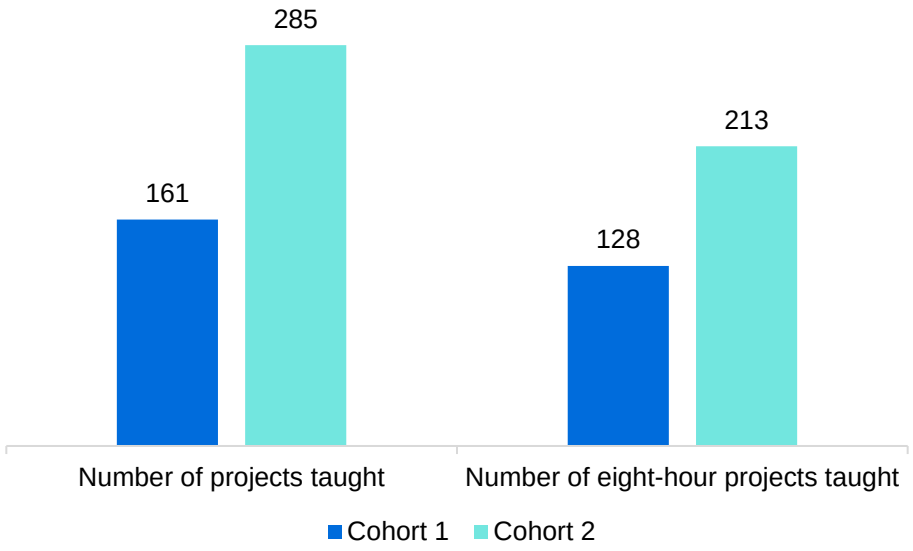
Overall, 37 percent of survey respondents had heard of PBL before completing the baseline teacher survey but had not received any formal training or attempted to use PBL in their classroom. In addition, 20 percent of respondents reported trying PBL in their classroom, despite not completing a formal training. Only 11 percent had completed a prior formal training on PBL, and 30 percent completed PBL 101 in 2018.

Facilitation of projects in 2017–18

Overall, 42 percent of respondents reported teaching a project in 2017–18, and they taught 446 projects total. More projects were reported by teachers in Cohort 2 schools than in Cohort 1 schools. Sixty-four percent of projects were taught by teachers working in Cohort 2 schools and 36 percent of projects were taught by teachers in Cohort 1 schools. The number of projects taught by individual teachers ranged from one to 10, and most teachers reported teaching one project. Many of the projects were taught in elementary schools (48 percent) or high schools (32 percent). Only 20 percent of projects were taught at intermediate schools. Of the 446 projects taught at PCW in 2017-18, 76 percent were reported to have been taught over eight or more hours of class time. Again, more of the projects reported to have been taught over eight hours or more of class time were taught by teachers working in Cohort 2 schools. Sixty-two percent of projects taught over eight hours were reported by teachers in Cohort 2 schools and 38 percent of projects taught over eight hours were reported by teachers in Cohort 1 schools (figure 14).

These results, with more projects facilitated in Cohort 2 schools at baseline than Cohort 2 schools, are surprising given that Cohort 1 schools were selected in part because they were perceived as being either innovators in PBL or potential early adopters.

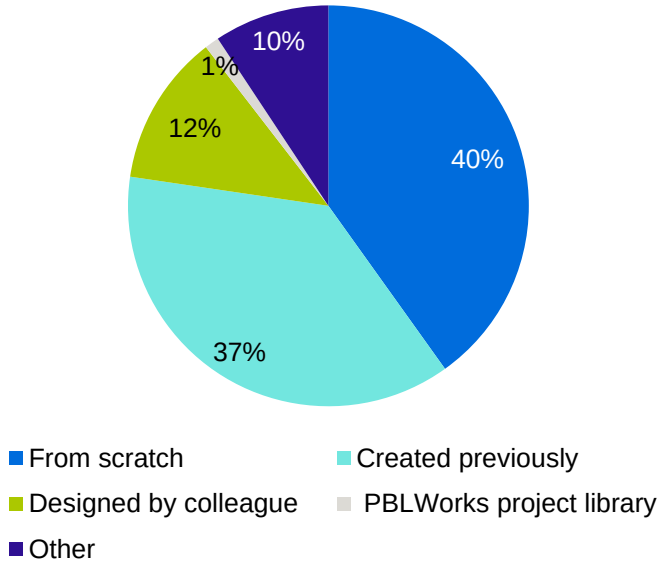
Figure 14. Reported number of projects taught, by school cohort



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Teachers who taught at least one project over eight or more hours of class time were asked to indicate which strategy they used to design the last project unit they taught in 2017–18. Overall, 77 percent either adapted a project they had previously designed or created a project from scratch (figure 15). Some teachers reported adapting a project from other sources, such as Teachers Pay Teachers, SpringBoard, and Passion Project.

Figure 15. PCW teachers' project design strategy (N = 172)



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Use of Gold Standard Design Elements in 2017–18 projects

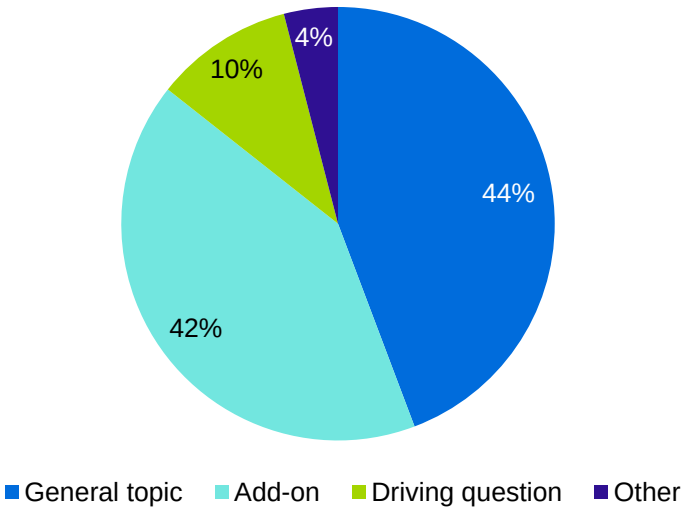
Teachers who taught at least one project over eight or more hours of class time were asked to report on their use of the Gold Standard project design elements during the last project unit they taught in 2017–18. This included questions about the following elements: challenging problem or question, sustained inquiry, authenticity, student voice and choice, critique and revision, and public product[13].

Challenging problem or question

Ten percent of teachers focused their project on a driving open-ended question the whole class answered. In contrast, 86 percent of projects focused on either a general topic that students could personalize or were an add-on to reinforce learning in a curriculum unit (figure 16). Some examples of teachers' driving questions included:

- *What is the best strategy to clean up an oil spill?*
- *Should nuclear weapons ever be used again?*
- *How can we as citizens of the Unites States actively participate in society?*

Figure 16. PCW teacher-reported use of a driving question in their project design (N = 174)



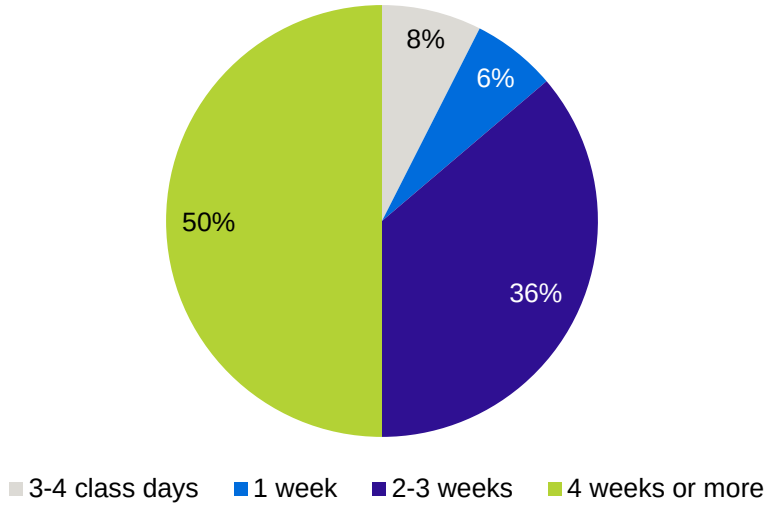
Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Sustained inquiry

Overall, 86 percent of projects lasted over two weeks, and about 50 percent lasted for four weeks or more (figure 17). We used project length as a proxy measure of sustained inquiry as longer projects provide greater opportunity for student inquiry to be sustained over time than shorter projects.

[13] To ensure that the survey was a reasonable length, we selected in partnership with the research partners specific Gold Standard Design Elements to measure in greater depth. The Gold Standard Design Element reflection was omitted from these analyses.

Figure 17. PCW teachers' reported project length (N = 174)

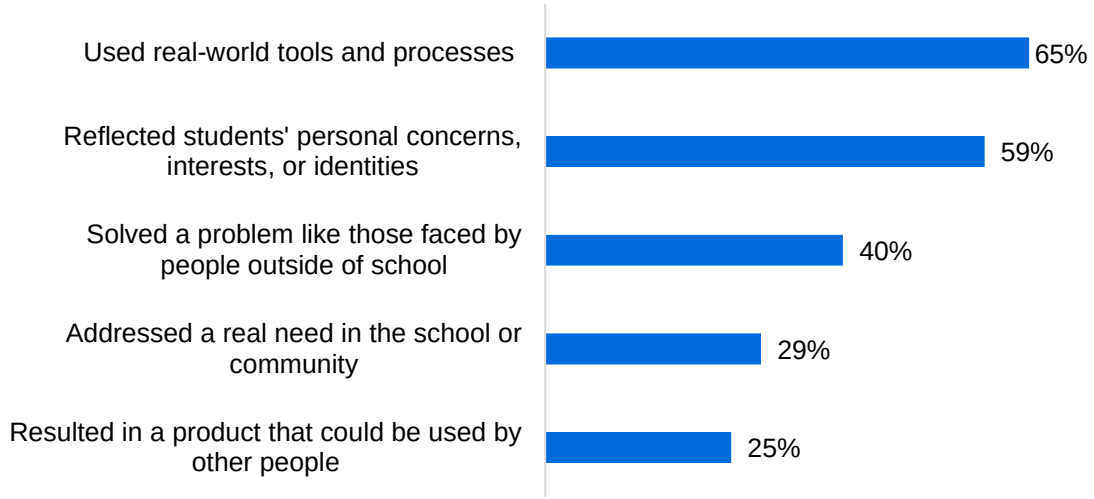


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Authenticity

Teachers most frequently reported project authenticity in terms of the use of real-world tools and processes to complete the project (65 percent) (figure 18). This was followed by a reflection of students' personal concerns, interests, or identities (59 percent). The least frequently reported elements of authenticity were that the project focused on a real need in the school or community (29 percent) and that students created a product that could be used by other people (25 percent).

Figure 18. PCW teachers' reported elements of authenticity (N = 175)



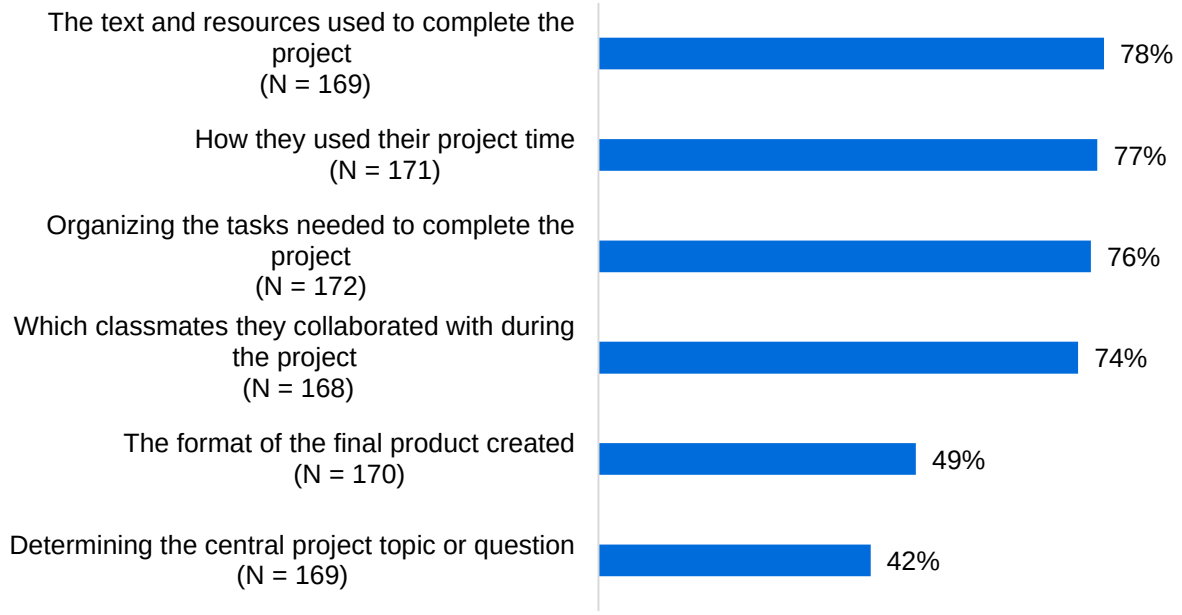
Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Student voice and choice

Many teachers reported that students were provided with multiple opportunities for voice

and choice while completing projects. The most common ways were to give students a say in what text and resources to use (78 percent), how they used their project time (77 percent), and how they organized their tasks (76 percent) (figure 19). The least common way was to give students a say in determining the central project topic or question (42 percent).

Figure 19. The ways PCW teachers provided opportunities for student voice and choice

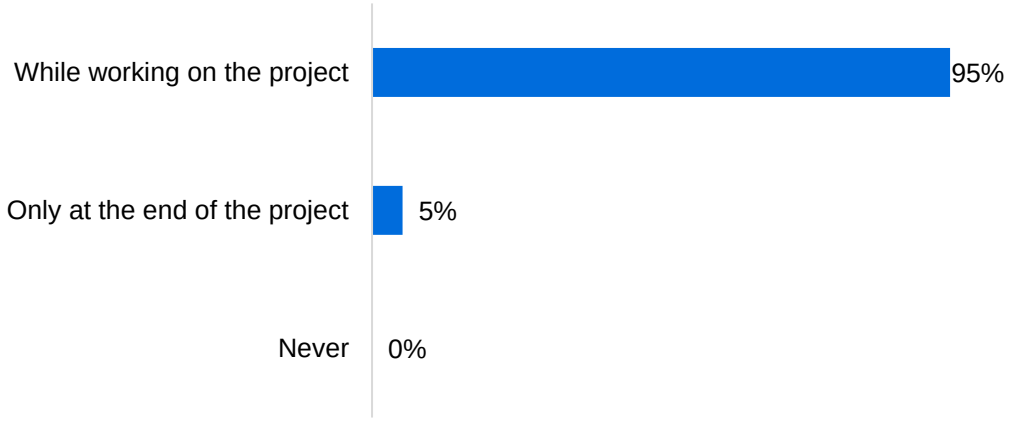


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Critique and revision

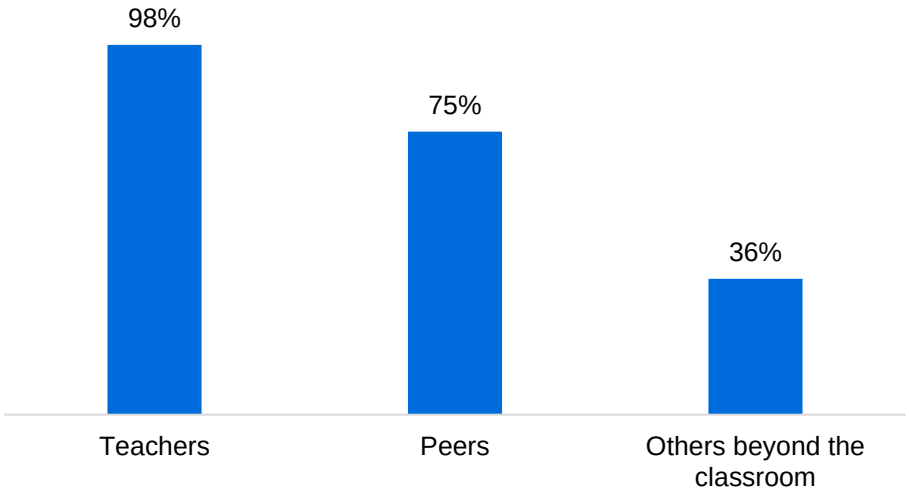
Overall, 95 percent of teachers reported that students received feedback while working on the project (figure 20). In addition, 5 percent of teachers said students received feedback only at the end of the project. No teachers reported that students never received feedback on their project-related work. In 98 percent of projects, teachers provided students with feedback on their work, and students provided peer-to-peer feedback in 75 percent of projects. In addition, students received feedback from others outside of the classroom in 36 percent of projects (figure 21).

Figure 20. When PCW students received feedback on their project work (N = 175)



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Figure 21. Who provided PCW students with feedback on their project work (N = 175)

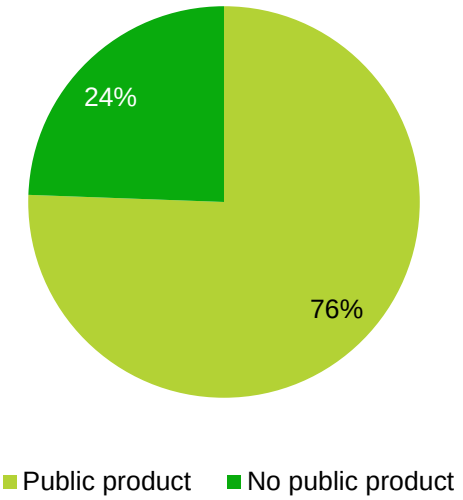


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Public product

Overall, 76 percent of projects included a public product that was presented to people beyond the classroom (figure 22).

Figure 22. PCW teachers' reported inclusion of a public product (N = 182)



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Chapter 4. Systems Conditions and Social Networks at Baseline

PBLWorks trains leadership teams on strategies for fostering the school-level conditions for deeper learning and PBL. This includes professional development on conditions such as culture, capacity building, continuous improvement, and vision. This chapter reports on the degree to which respondents agree that key school-level conditions related to issue of culture and capacity building were present in their school during 2017–18. To maintain a reasonable length and explore concepts that are not unique to PBL, the survey focused on these two conditions. This chapter also describes features of each school system's teacher social network during 2017–18. This includes analysis of the location of opinion leaders in each school system in terms of individuals whom teachers view as experts regarding content knowledge, instructional practices, or navigating school systems.

The following is a summary of key themes across school systems:

School-level system conditions in 2017–18

- In terms of school culture, teachers commonly agreed that there was support for collaboration and innovation in their schools, with over three-quarters reporting that they had colleagues willing to collaborate.
- Overall, teachers said they did not have adequate time to plan lessons or collaborate with colleagues, with over a third reporting enough time for these activities.
- In terms of capacity building, over half of teachers said they received an adequate amount of professional development and that it was of high quality.

Teacher social networks in 2017–18

- Most teachers said they interact with others in their social network through a combination of formal (e.g., designated meeting time) and informal (e.g., drop-in or phone call) settings.
- Teachers were most likely to identify other teachers in their school as the colleagues they go to most often for advice or with questions about content knowledge, instructional practices, or navigating school systems.
- The networks represent a similar number of connections between colleagues, with survey respondents reporting over 1,500 relationships with their colleagues.

These results provided useful information about the baseline for diffusion of innovation. The high level of support for innovation in schools, as reported by teachers, suggests that there may be organizational support for taking risks. This may facilitate the trialability (Rogers, 1962) of PBL through smaller projects as teachers iterate and refine these practices to reach higher levels

of quality. The results of the spring 2019 survey will provide information on whether teachers think these conditions are in place in their school specifically for PBL.

There was greater variability across the two school systems in terms of the degree to which the baseline social networks facilitate the diffusion of innovation, as discussed in more detail below.

Baseline Results Detail: Manchester School District

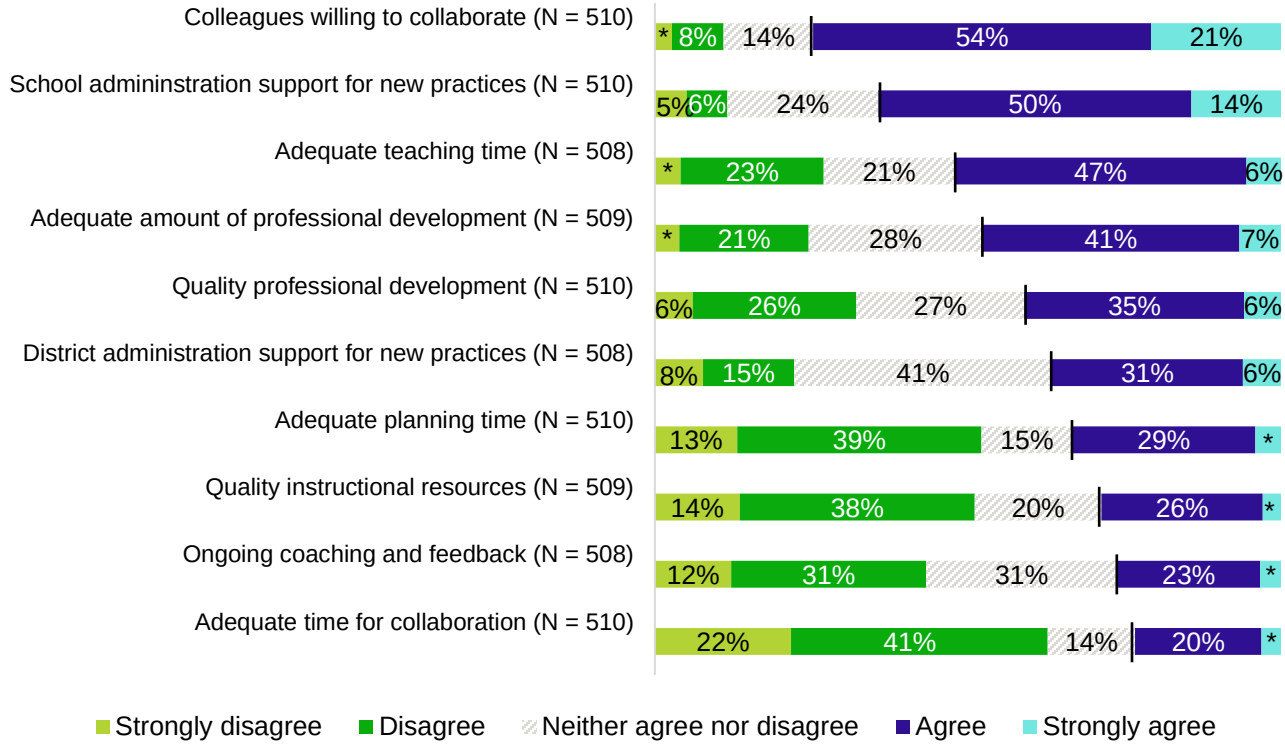
At least two-thirds of teachers said they felt supported to try new practices in their school and that they had colleagues willing to collaborate. There appear to be multiple connections in and across schools, and Cohort 1 PBL 101 participants and leadership team members were commonly identified by teachers as thought leaders in the district.

School-level system conditions in 2017–18

In terms of school culture, 64 percent of teachers agreed or strongly agreed that they felt supported by their school administration in trying new practices (figure 23). Although 75 percent of teachers agreed or strongly agreed that their colleagues are willing to collaborate and share ideas, only 23 percent agreed or strongly agreed that they had an adequate amount of designated time for collaboration with their colleagues. In addition, 52 percent of teachers disagreed or strongly disagreed that they receive an adequate amount of planning time.

The results suggest there are opportunities for growth related to capacity building, with only 26 percent of teachers reporting that they received ongoing coaching and feedback. Additionally, less than half of teachers reported receiving an adequate amount of professional development or quality professional development.

Figure 23. MSD school-level system conditions



Note: * indicates less than 5 percent. Some totals do not equal 100 percent due to rounding.

Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Results from baseline analysis of teacher social networks

Overall, in MSD all but one school is connected via at least one teacher relationship, with a high degree of connectivity across the district. In Cohort 1 schools, teachers who were selected for the leadership team or to participate in PBL 101 training were identified by their colleagues as opinion leaders who regularly influence the practices of other teachers in the district.

School-to-school connections

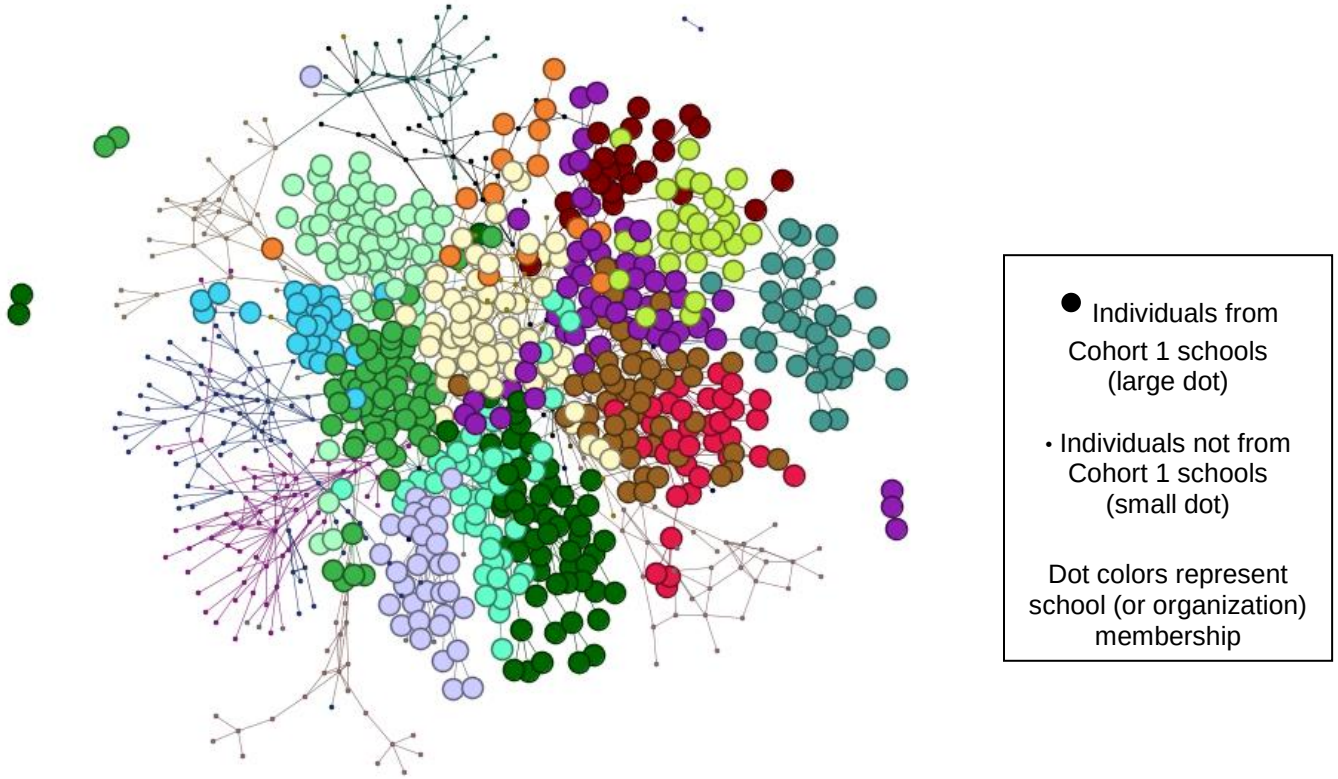
Using SNA, we first looked at the extent to which the different schools across MSD were connected through teachers' relationships with other teachers, administrators, district office staff members, and representatives from outside organizations. We did this because the connections among schools may play a key role in how likely PBL 101 knowledge is to spread from a Cohort 1 school to a Cohort 2 school.

In MSD, all but one school is connected directly to another school through teacher relationships, and many schools are connected through multiple teacher relationships. This can be seen in figure 24, where each dot represents a person, and the line between dots represents a relationship reported between two individuals in the teacher survey, where one individual identified the other as a source of advice. The color of the dot represents the school or

organization an individual is a part of, and the size of the dot represents whether an individual works in a Cohort 1 school, with larger dots representing individuals in Cohort 1 schools.

As shown in figure 24, there is not a distinct clustering of schools in MSD. Rather, there is a central cluster that comprises many schools due to the many connections reported between individuals across schools in the district (see figure 31 to contrast with a network map in which schools are less interconnected). Notably, all schools except for one are directly connected to at least one other school in the district through a reported relationship, and the one school that is not directly connected to another school is indirectly connected to another school through a relationship in the district office. This high level of connectivity in MSD means information about PBL has multiple pathways to reach both teachers in Cohort 2 schools and individuals within Cohort 1 schools who did not directly receive training.

Figure 24. Connections among schools and between cohorts in MSD, 2017–18



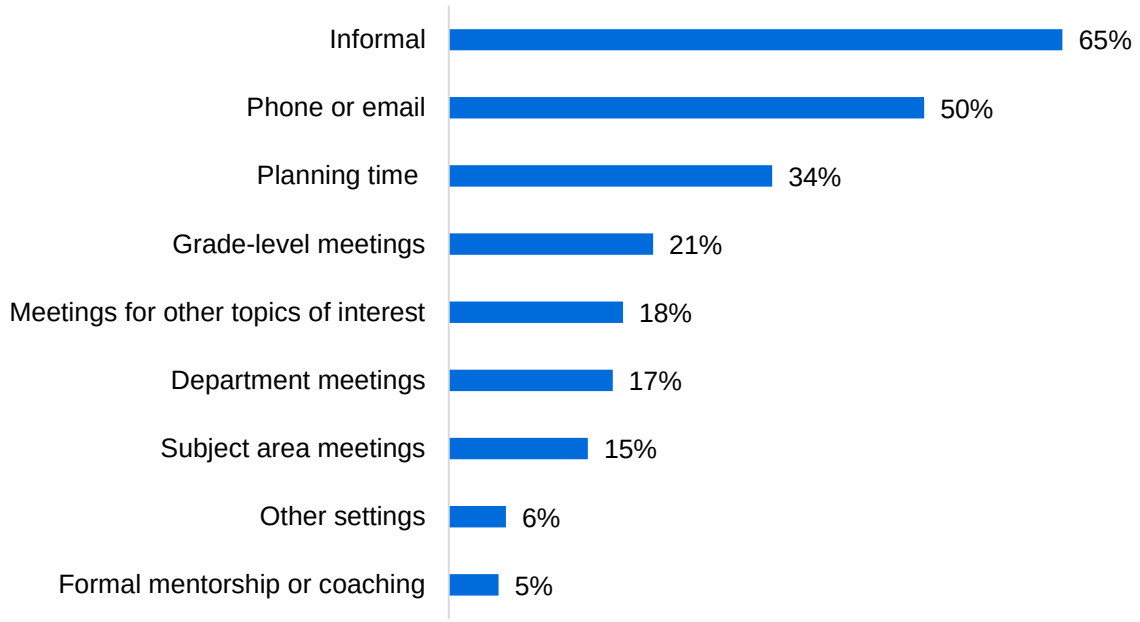
Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Settings in which teachers connect with other educators

Teachers from MSD reported interacting with other teachers, administrators, district staff members, and personnel from other schools and organizations in various settings. These interactions primarily occurred in informal spaces, by phone or email, or in formal meetings (figure 25). Survey respondents were able to select up to three settings in which they interacted with each colleague they selected as part of the SNA. The settings selected were then recoded as

formal (i.e., grade level meetings, subject area meetings, department meetings, meetings around topics of interest, and formal mentorship), informal (i.e., phone or email, informal interactions, planning time), or both informal and formal. Overall, 52 percent of relationships identified in MSD included some form of both formal (e.g., designated meeting time) and informal (e.g., drop-in or phone call) interaction. The range of settings in which individuals interact can support quality diffusion of PBL information, as they provide multiple opportunities for information to be shared.

Figure 25. Teachers in MSD interact with colleagues mainly through informal means



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

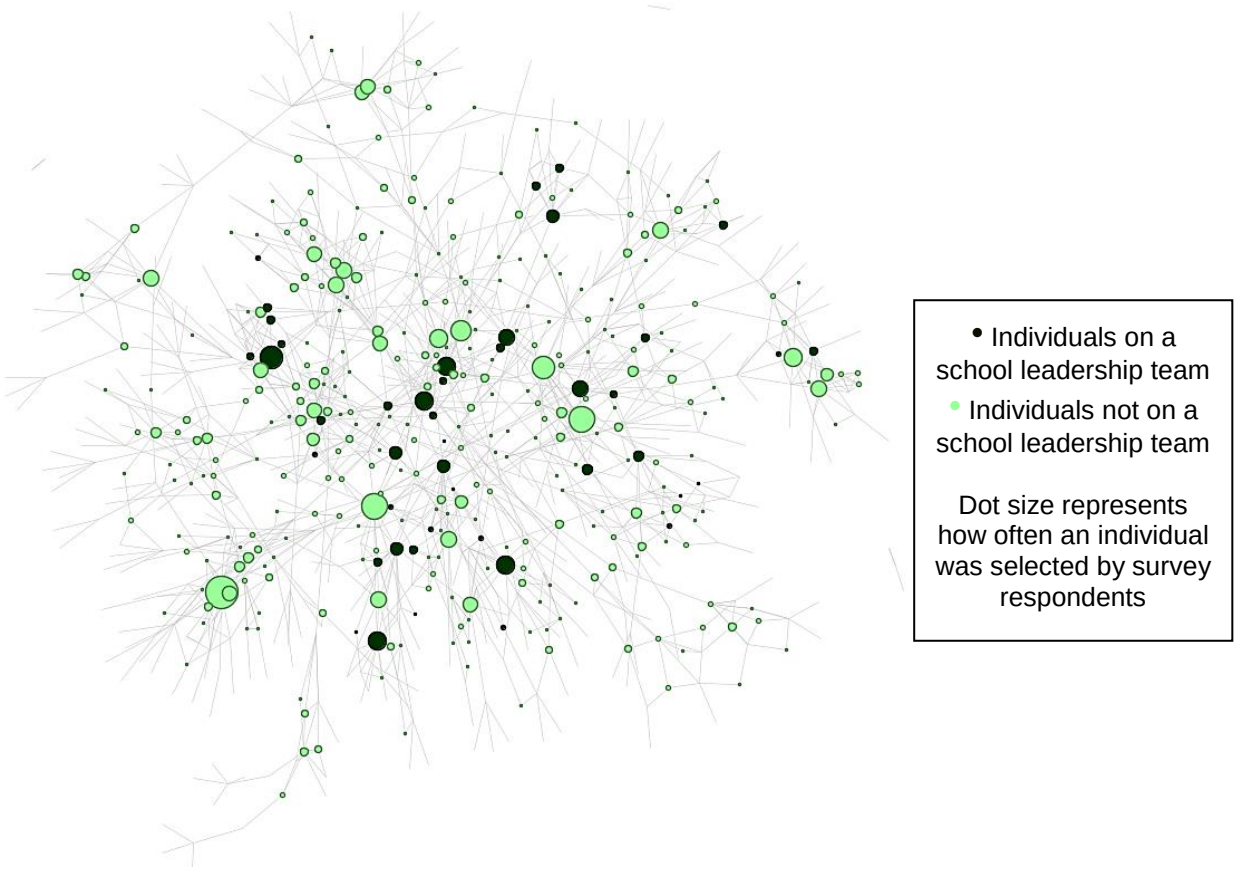
Status of school leadership team members in the network

Using SNA, we next analyzed the extent to which individuals selected as members of their school's leadership team were considered opinion leaders in the district. To do this, the survey asked, "For 2017–18, who did you go to most often for advice or general questions related to content knowledge, your instructional practice, or navigating school systems?"

Figure 26 represents the network for MSD survey respondents, where the size of the dot indicates how often an individual was chosen in the survey. Dark green dots represent individuals who are school leadership team members, and the light green dots represent individuals who are not school leadership team members. As seen in figure 26, many individuals who are not school leadership team members were chosen by survey respondents as people to whom they go for advice or with questions (large green dots). However, leadership team members (dark green dots) appear prominently on the network map, given that leadership team members comprise only 7 percent of the overall network.

Teachers who were school leadership team members were chosen by other survey respondents (average in-degree centrality[14] = 8.3) at over twice the rate of those who were not school leadership team members (average in-degree centrality = 3.8). Teachers on their school's leadership team are sought out more often for advice or answers to general questions related to content knowledge, instructional practice, or navigating school systems than those who are not. This indicates these individuals are considered to be opinion leaders by survey respondents.

Figure 26. MSD survey respondents more often chose school leadership team members as people to whom they go for advice or with questions



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

We then used SNA to measure how central school leadership team members are to the entire network to determine on how these individuals might facilitate the flow of information in MSD as a whole. This can be seen in figure 27, where the size of the dot indicates how central an individual is to the entire network of survey respondents. Dark green dots represent individuals who are school leadership team members, and light green dots represent individuals who are not school leadership team members. Teachers who were selected as members of their school's leadership team are substantially more central to the network

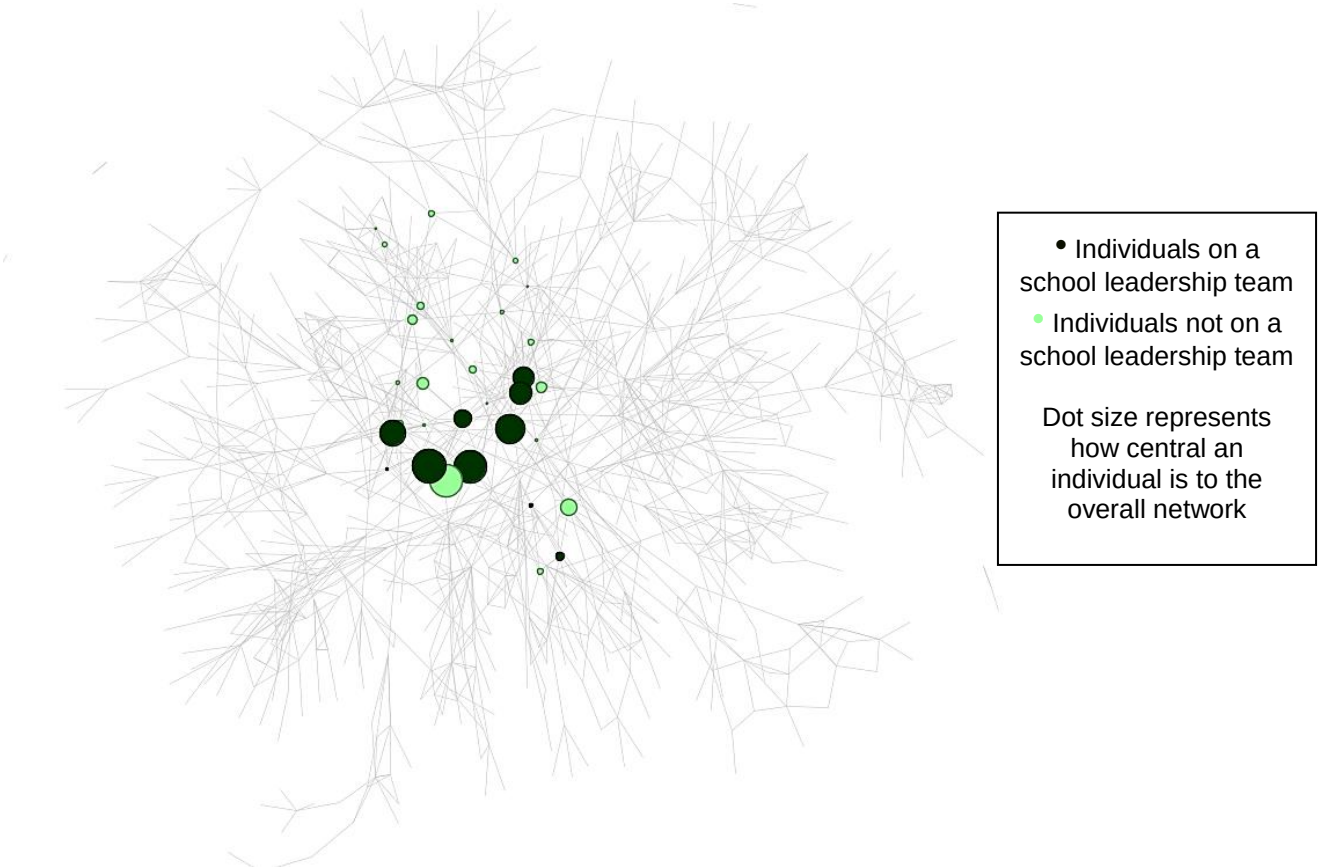
[14] In-degree centrality refers to the number of times an individual was identified by a survey respondent. In other words, if Sam was chosen by Pam, and Pam was chosen by Sam and Bob, Pam would have a higher in-degree centrality than Sam.

(average betweenness centrality[15] = 496.0) than teachers who were not (average betweenness centrality = 43.9). This is represented in figure 27 by the greater number of large dark green dots than light green dots, showing the greater centrality of leadership team members to the overall network.

The high centrality of leadership team members suggests that they are well integrated into the broader school system. If so, they may be well positioned to influence others as early adopters of HQPBL, communicating the experiences of PBL in their own school to a larger network.

[15] Betweenness centrality demonstrates how often an individual is located on the shortest path between two other individuals. This item is directional, so if Pam chooses Sam and Sam chooses Dan (Pam→Sam→Dan), Sam would be considered to be on the shortest path between Pam and Dan—and thus would have a high betweenness centrality.

Figure 27. School leadership team members are more central to the overall network in MSD



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

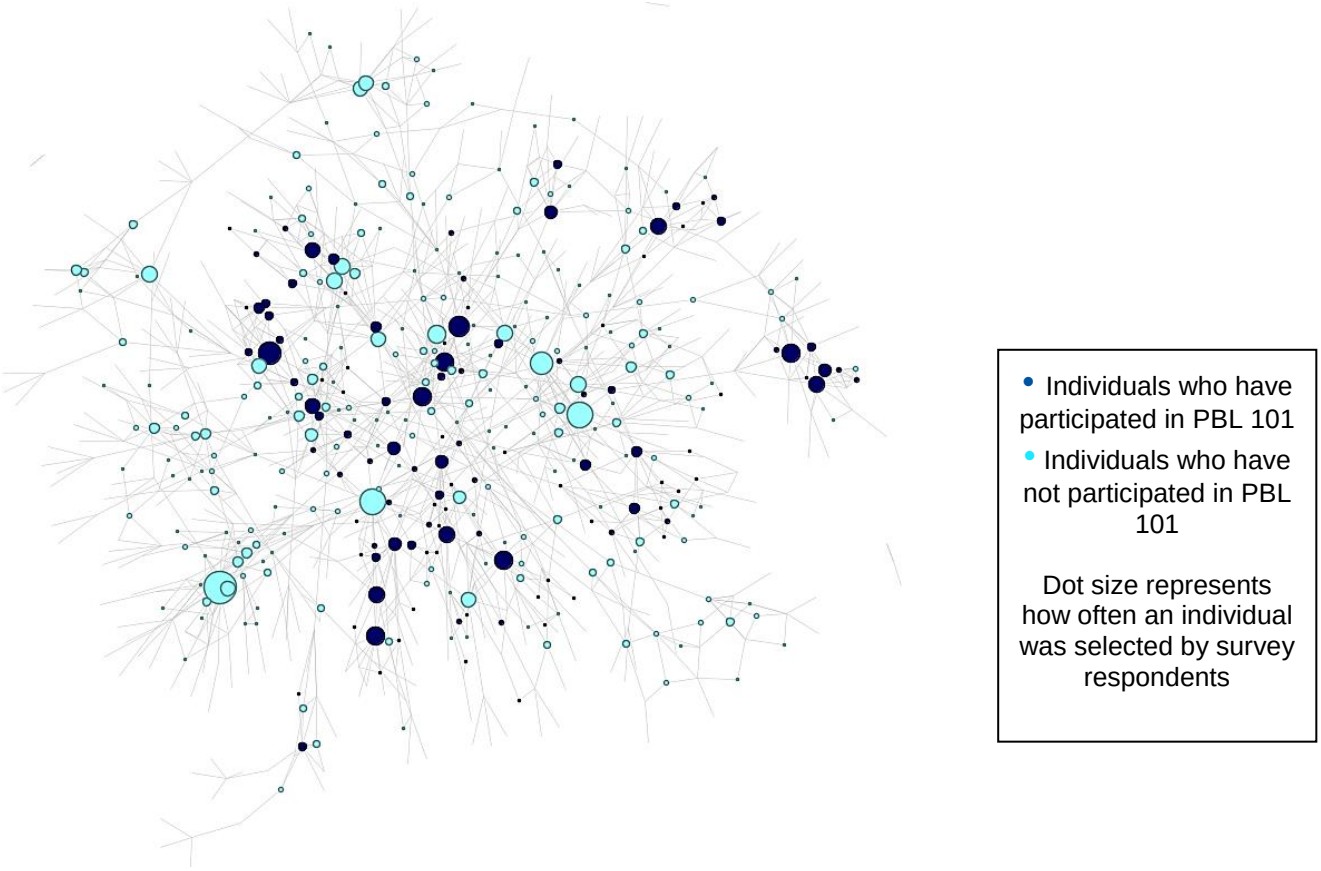
Status of Cohort 1 PBL participants in the network

We also analyzed the extent to which individuals selected for PBL 101 training in Cohort 1 were considered opinion leaders in MSD. We compared how many times an individual was chosen by another survey respondent as someone they often went to for advice or with questions for teachers who did and did not participate in PBL 101 during Cohort 1. This is represented in figure 28, where the size of the dot indicates how often an individual was chosen as a person to whom survey respondents go for advice or with questions. Dark blue dots represent individuals who participated in PBL 101 in Cohort 1, and light blue dots represent individuals who did not. Although many individuals who did not participate in PBL 101 during Cohort 1 were also chosen by survey respondents as people to whom they go for advice or with questions (large light blue dots), PBL 101 Cohort 1 participants (dark blue dots) make up a larger proportion of large dots on the map than the 22 percent of the MSD network they make up.

In MSD, teachers who participated in PBL 101 were chosen by other survey respondents at a greater rate (average in-degree centrality = 5.7) than those who did not (average in-degree centrality = 3.7). Thus, teachers who took PBL 101 are sought out for advice or answers to questions regarding content knowledge, instructional practice, or navigating school systems

more often than those who did not take PBL 101. This indicates these individuals are considered opinion leaders by survey respondents.

Figure 28. Individuals in MSD who participated in PBL 101 in Cohort 1 were more often chosen by survey respondents as people to whom they go for advice or with questions



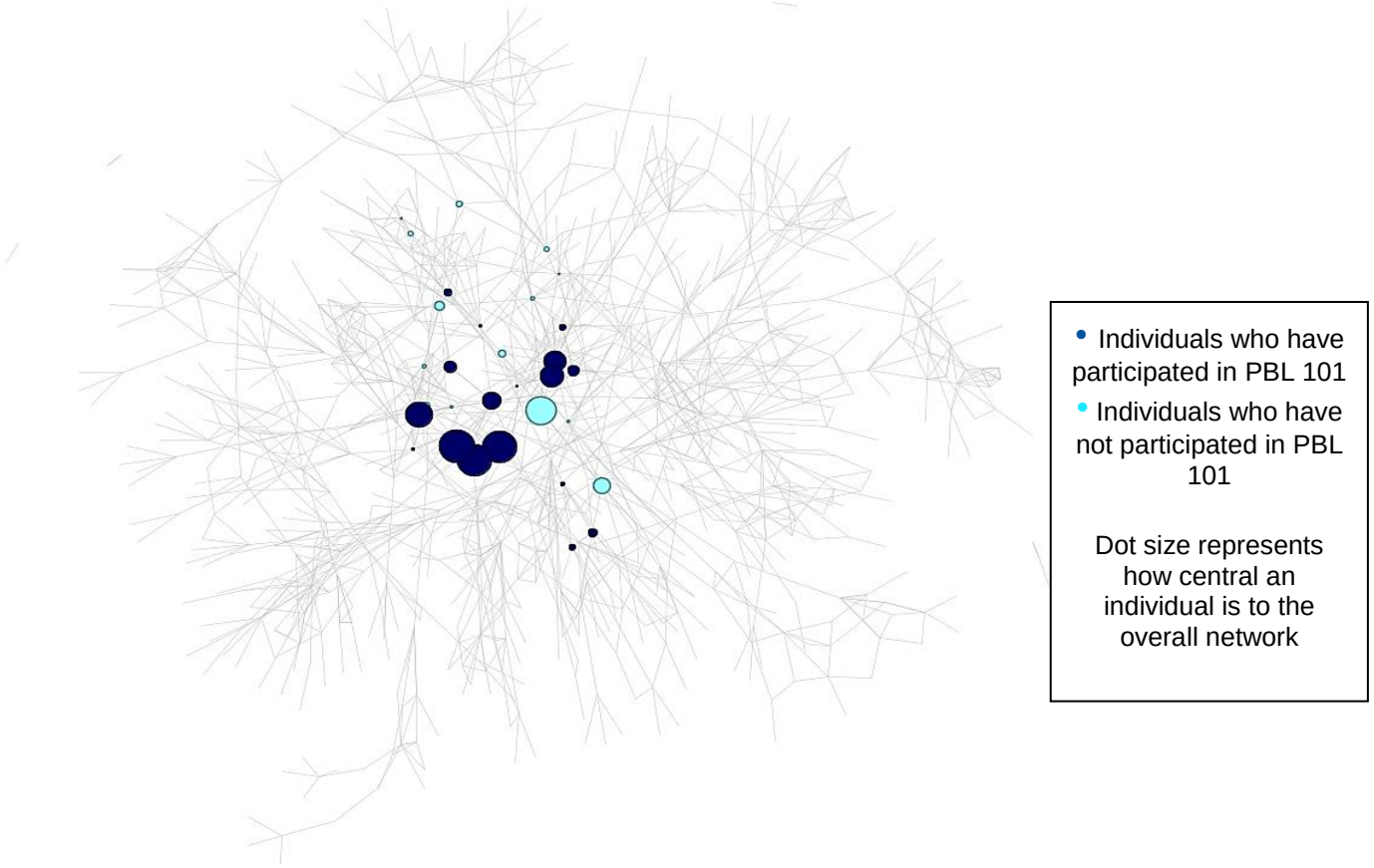
Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

We also used SNA to measure how central an individual is to the *entire network* to determine how information might flow in MSD as a whole. We did this by looking at how often an individual is located on the shortest path between two other individuals. This is important when considering the way that information, such as knowledge of HQPBL, spreads throughout the whole network.

Figure 29 represents the social network of MSD, where the size of the dot indicates how central an individual is to the entire network of survey respondents. Dark blue dots represent individuals who participated in PBL 101 in Cohort 1, and light blue dots represent individuals who did not. As can be seen by the greater number of large dark blue dots than large light blue dots, teachers who participated in PBL 101 in Cohort 1 were substantially more central to the network as a whole (average betweenness centrality = 205.6) than those who did not participate in PBL 101 (average betweenness centrality = 35.3). This means individuals in MSD who have participated in PBL 101 can help foster the *observability* of the activities in the district regarding

PBL by helping demonstrate what PBL looks like in practice and communicating successes and challenges.

Figure 29. Individuals in MSD who participated in PBL 101 in Cohort 1 were more central to the overall network



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

These baseline findings highlight that many individuals who were chosen to serve on their school's leadership team or to participate in PBL 101 in Cohort 1 are seen as opinion leaders by others in the district, and they are in a position to spread knowledge and encourage adoption of PBL throughout the district. Year 1 and Year 2 surveys will examine whether this is the case, that is, whether the individuals who are connected to PBL 101 participants increase their own PBL awareness and their use of quality PBL practices.

Baseline Results Detail: Pearl City Waipahu Complex Area

Over three-quarters of teachers in PCW reported that they had colleagues willing to collaborate, and more than two-thirds said they felt supported to try new practices in their school. In terms of social networks, there appear to be few connections between Cohort 1 and Cohort 2 schools. Cohort 1 school leadership team members were commonly identified by teachers as opinion

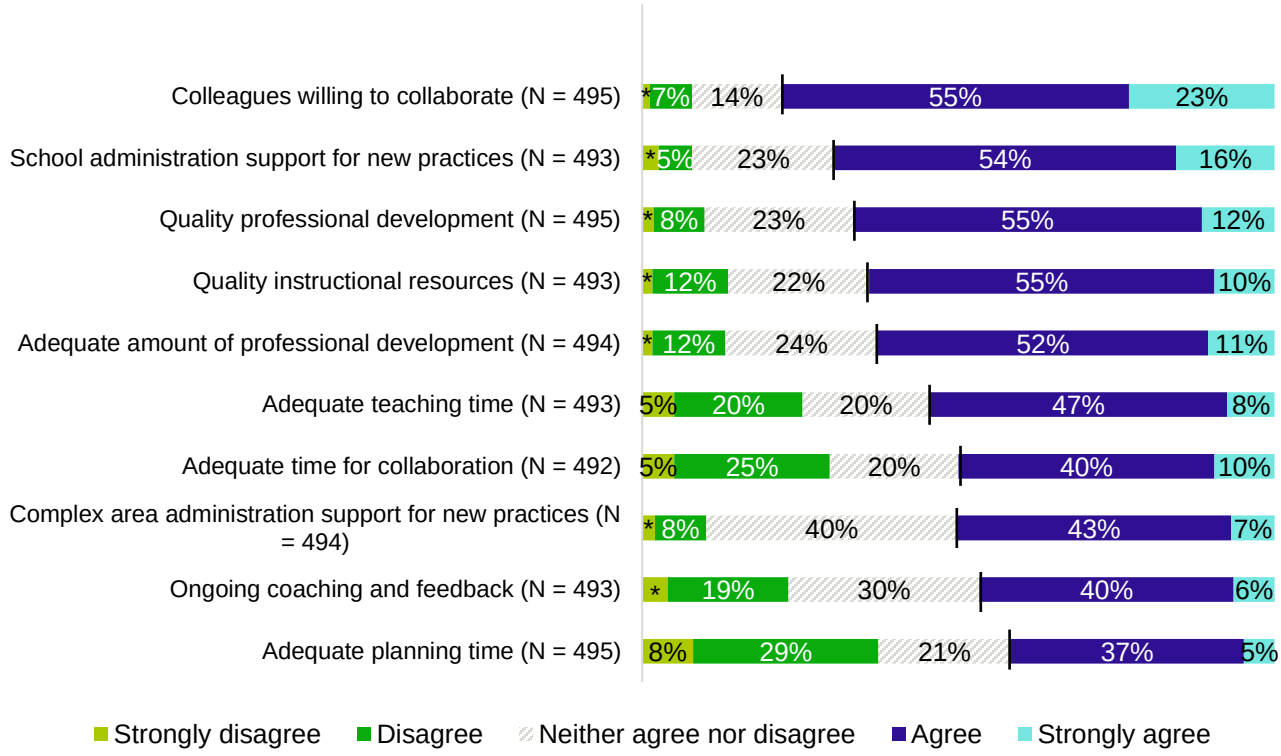
leaders in the complex area. However, PBL 101 participants were not identified as sources of advice as often as other teachers.

School-level systems conditions

In terms of school culture, 78 percent of teachers agreed or strongly agreed that their colleagues are willing to collaborate and share ideas, and 70 percent reported support from their school administration in trying new practices (figure 30). However, only 42 percent agreed or strongly agreed that they receive an adequate amount of time for planning.

The results suggest strengths related to capacity building, with 46 percent of teachers reporting that they received ongoing coaching and feedback. About two-thirds of teachers reported receiving an adequate amount of professional development or quality professional development.

Figure 30. PCW school-level system conditions



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Results from baseline analysis of teacher social networks

Schools whose teachers have received PBL 101 training in Cohort 1 are not regularly connected to Cohort 2 schools. PCW teachers typically identified teachers within their own school as sources of advice, rather than teachers outside of their school. Additionally, in Cohort 1 schools, teachers identified for PBL 101 training are not considered to be a source of advice and

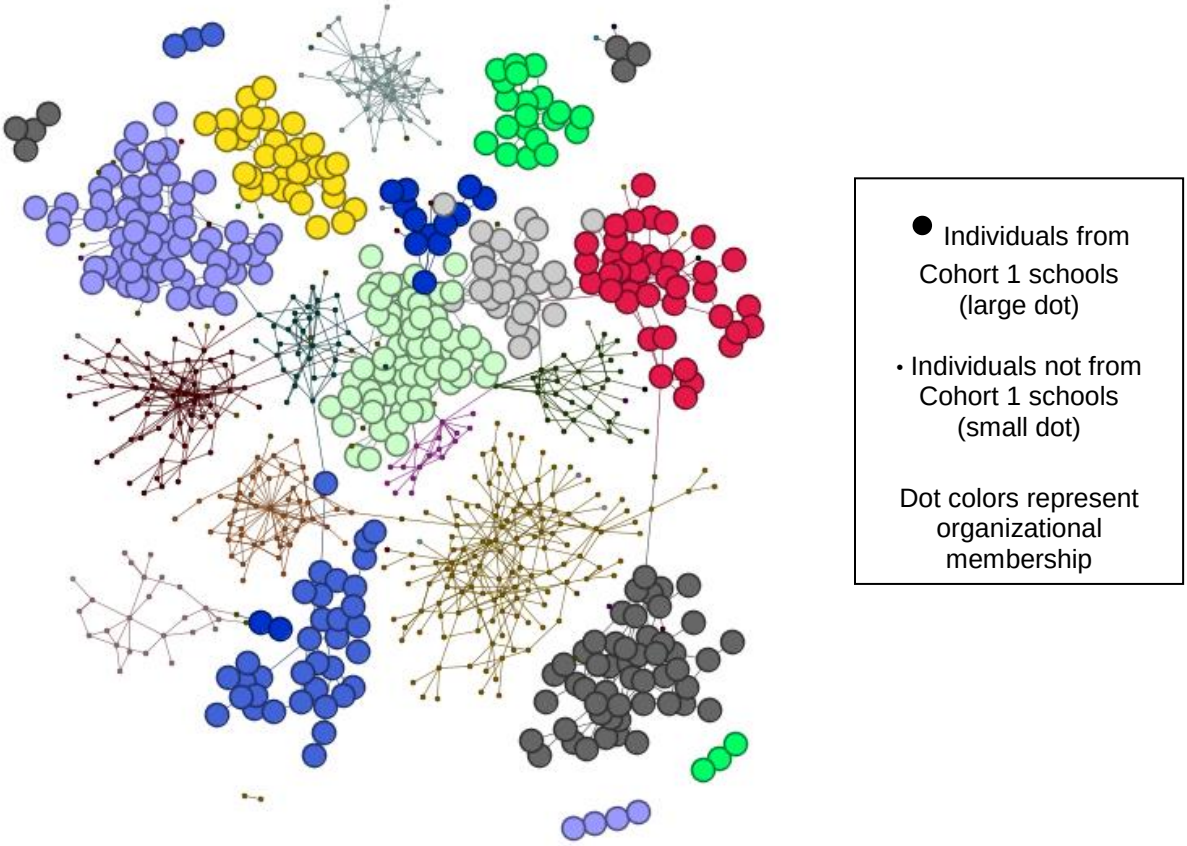
information for others to the same extent that other teachers in the complex area were. However, teachers selected as members of their school's leadership team are considered to be a greater source of advice and information than teachers who are not on the school leadership team., and they are likely to be conduits of information throughout the wider network.

School-to-school connections

Similar to MSD, we first looked at the extent to which the different schools across PCW were connected through teachers' relationships with other teachers, administrators, complex area office staff members, and representatives from outside organizations. This is shown in figure 31, where each dot represents a person, and the line between dots represents when one individual identified another as a source of advice. The color of the dot represents the school or organization an individual is a part of, and the size of the dot represents whether an individual works in a Cohort 1 school, with larger dots representing individuals in Cohort 1 schools.

As shown in figure 31, PCW teachers often identified others in their own school as sources of advice, but they did not identify many individuals outside their school. This can be seen in the way the schools cluster together rather than overlapping with other schools through many mutual connections (as seen in figure 24). Although the connections between schools are somewhat limited, 11 of 17 schools have at least one staff member with a direct relationship to a colleague at another school in the complex area. Of the schools without a direct relationship to another school, three are Cohort 1 schools, and three are Cohort 2 schools. One of these Cohort 1 schools and one of these Cohort 2 schools are indirectly connected to other schools through a complex area office colleague relationship. However, this leaves two Cohort 2 schools with no relationship to a Cohort 1 school identified in this survey.

Figure 31. PCW schools connect through only a few individual relationships

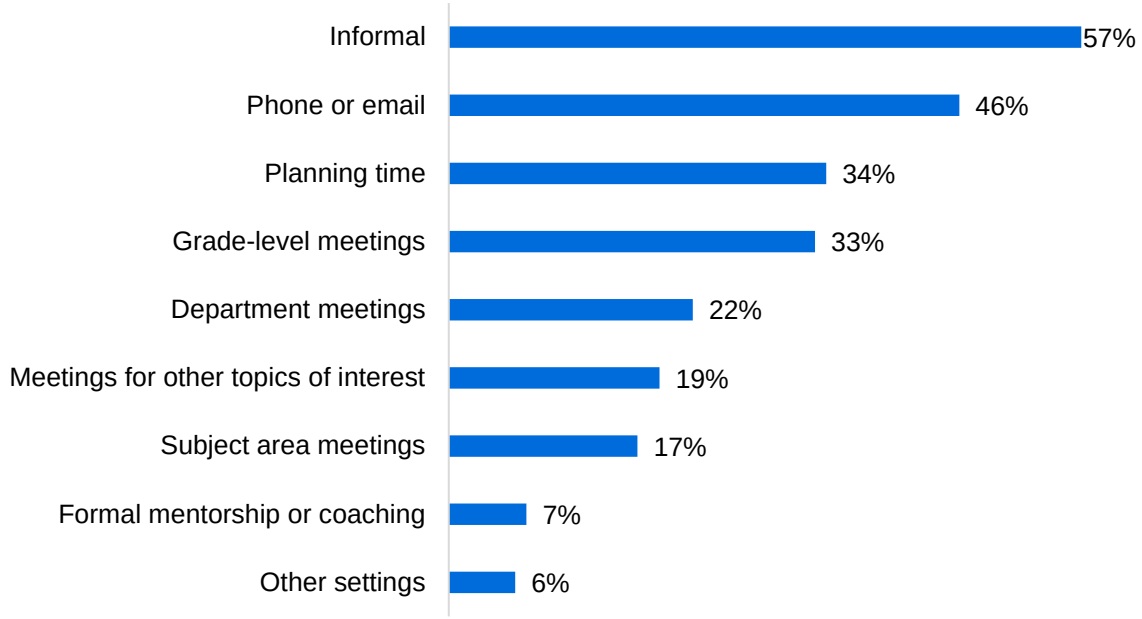


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Settings in which teachers connect with other educators

Teachers from PCW interact with other teachers, administrators, complex area staff members, and personnel from other schools and organizations in various settings. These interactions primarily occur in informal spaces, by phone or email, as part of planning time, or in regularly scheduled meetings (figure 32). As with MSD, the settings respondents indicated for each colleague selected for the SNA were recoded as formal (i.e., grade level meetings, subject area meetings, department meetings, meetings around topics of interest, and formal mentorship), informal (i.e., phone or email, informal interactions, planning time), or both informal and formal. Most relationships identified in PCW include some form of both formal and informal interaction (64 percent).

Figure 32. Teachers in PCW interact with colleagues mainly through informal means



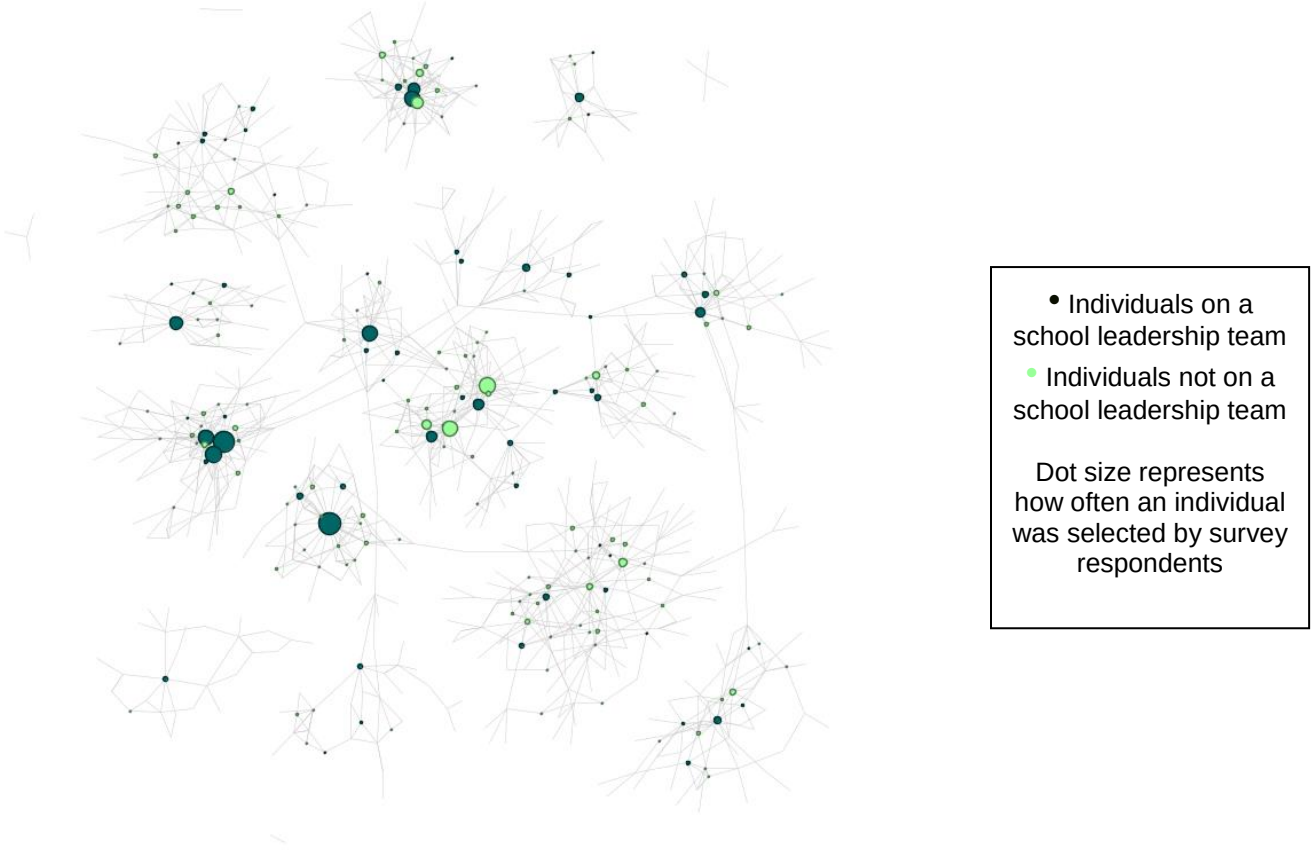
Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Status of school leadership team members in the network

We next analyzed the extent to which individuals selected as members of their school's leadership team were considered opinion leaders in the complex area. Teachers who were school leadership team members were chosen by other survey respondents (average in-degree centrality = 14.45) at a greater rate than those who were not school leadership team members (average in-degree centrality = 4.45). Teachers on their school's leadership team are sought out more often for advice or general questions related to content knowledge, instructional practice, or navigating school systems than those who are not. This indicates these individuals are considered to be opinion leaders by survey respondents.

Figure 33 represents the network for PCW survey respondents, where the size of the dot indicates how often an individual was chosen in the survey. Dark green dots represent individuals who are school leadership team members, and the light green dots represent individuals who are not school leadership team members. Many individuals in the network who are not school leadership team members (large green dots) were chosen by survey respondents as people to whom they go for advice or with questions. However, the 94 leadership team members, who represent 12 percent of the network, were chosen on average at a much higher rate than would be expected, based on their numbers.

Figure 33. PCW survey respondents more often chose school leadership team members as people to whom to go for advice or with questions

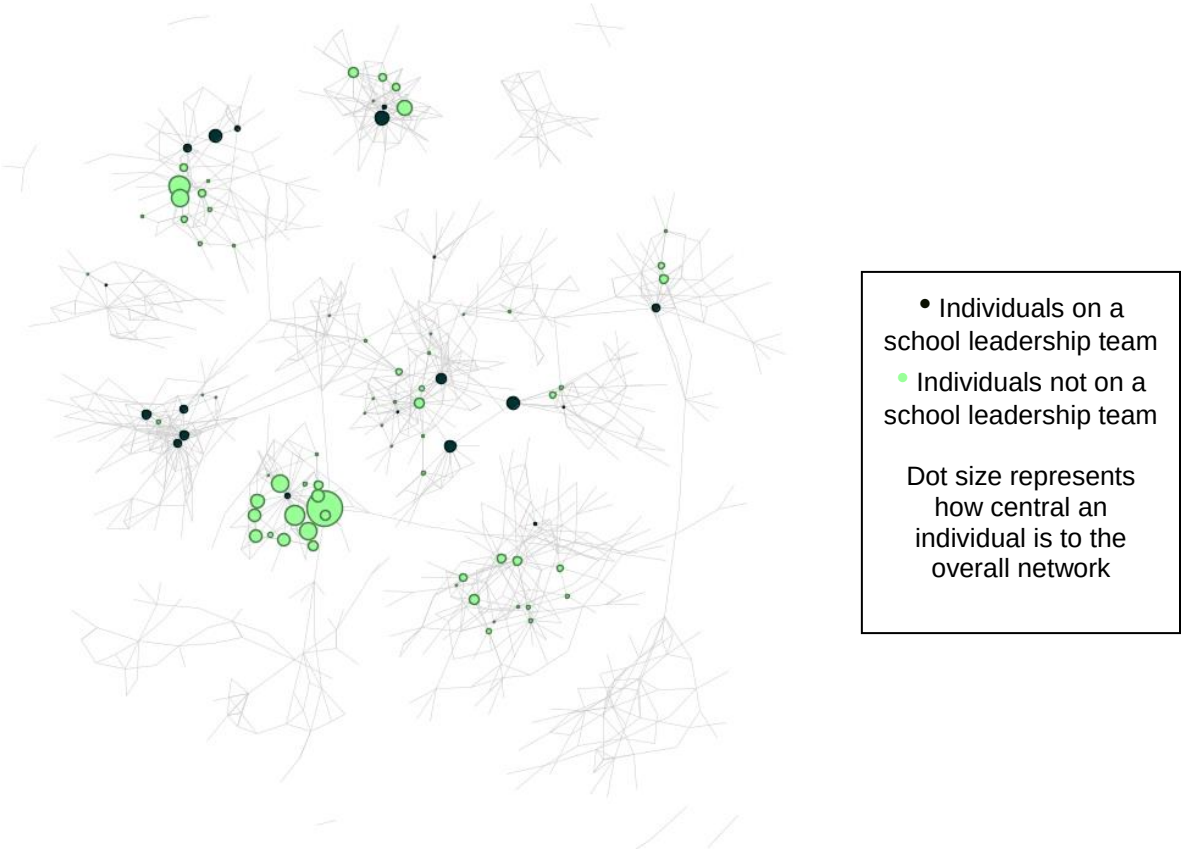


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

We then used SNA to measure how central school leadership team members are to the entire network to gather information on how these individuals might facilitate the flow of information in PCW as a whole.

Figure 34 represents the social network of PCW survey respondents, where the size of the dot indicates how central an individual is to the entire network of survey respondents. Dark green dots represent individuals who are school leadership team members, and light green dots represent individuals who are not school leadership team members. As with MSD, many individuals, who not school leadership team members, were chosen by survey respondents as people to whom they go for advice or with questions. These individuals are represented by large green dots in figure 34. However, on average, leadership team members were selected by others as someone they go to for advice or with questions more often than non-leadership team members. Specifically, teachers who were selected as members of their school's leadership team are more central to the network (average betweenness centrality = 41.08) than teachers who were not (average betweenness centrality = 14.81). This means school leadership team members are positioned to share the experiences of PBL in their own school to the larger network, which can help make the benefits of innovation visible.

Figure 34. School leadership team members are more central to the overall network in PCW

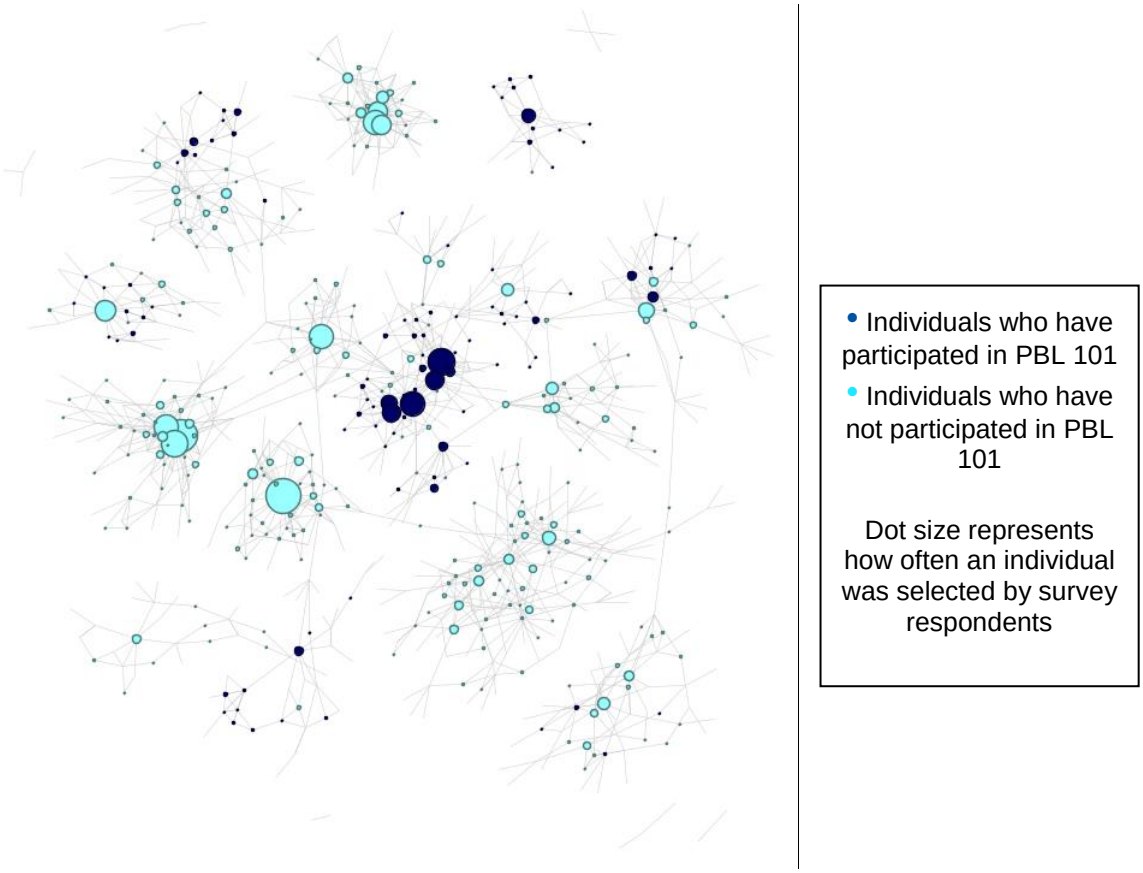


Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

Status of Cohort 1 PBL participants in the network

We again analyzed the extent to which individuals selected for PBL 101 training in Cohort 1 were considered opinion leaders in the complex area. This is represented in figure 35, where the size of the dot indicates how often an individual was chosen as a person to whom survey respondents go for advice or with questions, dark blue dots represent individuals who participated in PBL 101 in Cohort 1, and light blue dots represent individuals who did not. In PCW, teachers who participated in PBL 101 in Cohort 1 were chosen by other survey respondents (average in-degree centrality = 5.30) at similar rates as those who did not (average in-degree centrality = 5.28). This is represented by the greater number of larger light blue dots than dark blue dots in figure 35. Thus, teachers who participated in PBL 101 in Cohort 1 are sought out for advice or answers to questions regarding content knowledge, instructional practice, or navigating school systems about as often as those who did not take PBL 101. This indicates these individuals are not particularly considered opinion leaders by survey respondents.

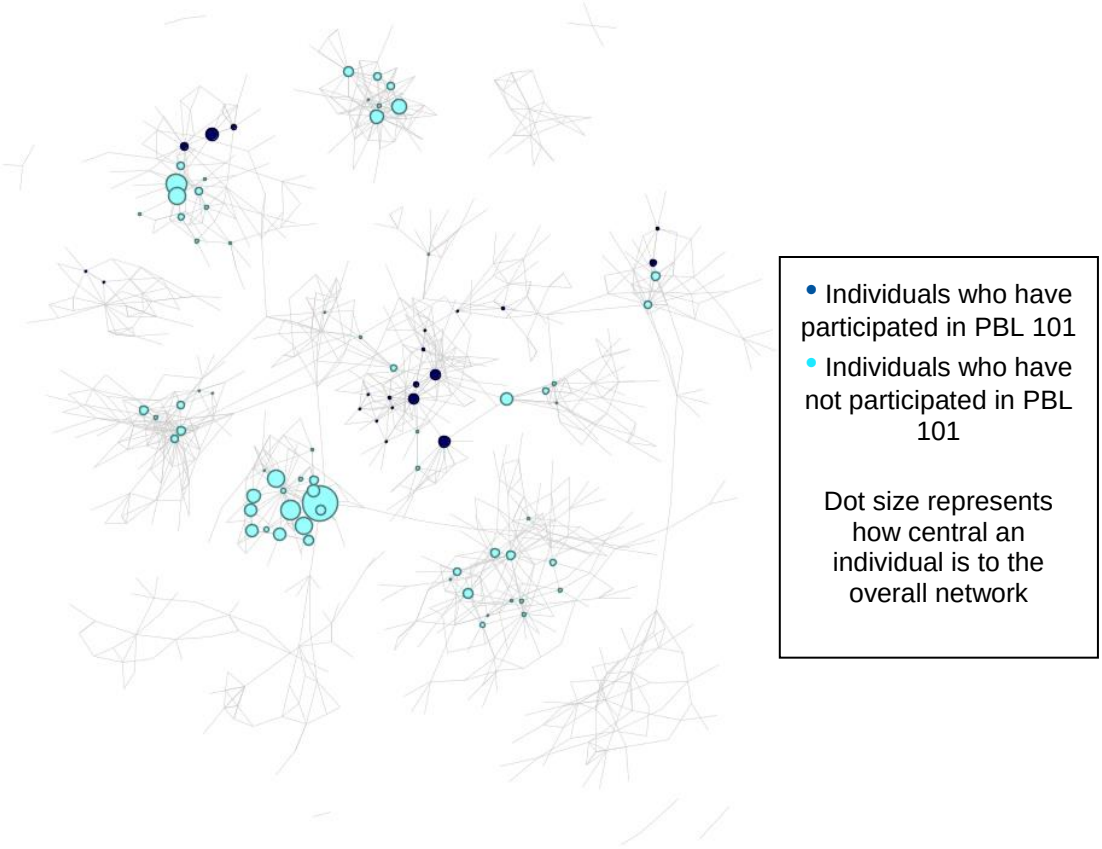
Figure 35. Individuals in PCW who did and did not participate in PBL 101 in Cohort 1 were nearly equally chosen by survey respondents as people to whom they go for advice or with questions



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

We again used SNA to measure how central an individual is to the *entire network* to determine how information might flow in PCW as a whole. This is represented in figure 36, where the size of the dot indicates how central an individual is to the entire network of survey respondents. Dark blue dots represent individuals who participated in PBL 101 in Cohort 1, and light blue dots represent individuals who did not. Overall, PCW teachers who had not participated in PBL 101 in Cohort 1 were more central to the network as a whole (average betweenness centrality = 19.14) than those who did participate (average betweenness centrality = 11.89). This can be seen in the prominence of light blue dots compared with dark blue dots in figure 36. This means individuals in PCW who have participated in PBL 101 in Cohort 1 might be less able to foster the *observability* of PBL in the complex area than if they were more central to the network and thus better positioned to keep the benefits of innovation visible.

Figure 36. Individuals in PCW who took PBL 101 in Cohort 1 were less central to the overall network than those who did not take PBL 101



Source: Education Northwest analysis of fall 2018 baseline teacher survey data.

These baseline findings for the social network of PCW suggest that teachers selected for their school's leadership team are more highly sought out for advice or answers to questions than those who are not. However, individuals who were chosen to participate in PBL 101 in Cohort 1 were chosen by survey respondents at similar rates as other individuals as sources of advice or information. Year 1 and Year 2 surveys will look to see whether the individuals who are connected to Cohort 1 PBL 101 participants or to school leadership team members increase their own PBL awareness and practices.

Limitations

There are several limitations in these data. Although we did receive surveys from teachers who represented multiple school types and experiences with PBL, we received surveys from only a little more than half of the teachers in each school system. For the SNA, this means other important relationships between individuals could exist that would connect schools or groups of staff members that are not captured here (for example, relationships between administrators from different schools who were not surveyed and/or relationships between teachers in each school system who did not complete the survey). Thus, the SNA should be understood as an

analysis of trends of relationships in each school system rather than reflective of all relationships in each school system.

The limitations of a lower survey response rate also have implications for the roster-matching process. For most MSD students, at least one of their teachers participated in the survey, allowing for some measure of exposure—but one that may over-report the exposure rate (if the unmatched students were not exposed to projects) or under-report the exposure rate (if the students reported as unexposed were exposed by a teacher who did not participate in the survey). Teachers who had not completed PBL 101 may have over-reported the number of projects they taught, meaning that as knowledge of quality PBL increases, the number of projects reported may decrease because of more accurate survey responses. This concern meant that the exposure rate analysis was focused on projects that were reported as taking at least eight hours of class time. In future reports, we will examine other aspects of quality.

In the next chapter, we describe changes to the survey that may provide more complete data.

Questions for the RPP to Consider

1. What aspects of these baseline results, if any, surprise you?
2. How do the teachers' social networks compare with what you expected when you developed the scaling plans for your school system?
3. What stands out about how teachers interact in the network?
4. What are the implications of the SNA baseline results for scaling at the school and district or complex area level?
5. How do you expect the 2018–19 results to differ from this baseline? Why?

Chapter 5. 2019 Research Plan

In 2019, Education Northwest will continue to work with the RPP on a mix of analysis, reporting, planning, and data collection activities. In addition to the activities summarized in table 3, we will continue to work with the Hawaii State Department of Education to secure final approval for the study and to secure the class rosters and student demographic data for 2017–18 and 2018–19. We recently received from MSD the class rosters and student demographic data for 2017–18 and 2018–19.

Table 6. Scaling HQPBL for Deeper Learning Impact key milestones and deliverables for 2019

	Y2 (1/19–12/19)			
	Q1	Q2	Q3	Q4
Hewlett RPP meetings and annual grantee meeting. Education Northwest participates to provide research expertise, share emerging findings, and exchange lessons learned with the funder and other RPPs. Education Northwest participates in three in-person meetings and two virtual meetings each year.	Δ	**Δ**	**Δ**	**Δ**
RPP advisory council and leadership team meetings. Education Northwest provides updates on the study design, progress, and emerging findings. Leadership team meets quarterly via phone and once in person annually in conjunction with the advisory council.	Δ	Δ	**Δ**	Δ
Regular phone meetings with core RPP partners. The core RPP meets monthly to discuss overall progress of the study and services. Education Northwest provides updates on the study design, progress, and emerging findings. Education Northwest meets weekly with PBLWorks staff members and biweekly with district partners to coordinate research activities.	Δ	Δ	Δ	Δ
Education Northwest secures and maintains IRB approval and data-sharing agreements with MSD and HI DOE. Education Northwest ensures compliance with all procedures and updates materials as needed. Education Northwest collaborates with partners to produce, translate, disseminate, and track materials related to informed consent (e.g., study information sheet, parent/guardian consent forms).	DA	DA	DA	DA
Teacher survey and roster matching. Education Northwest administers an online survey to all teachers in MSD and PCW each spring. The survey examines both diffusion (RQ1) and scaling quality (RQ2). Education Northwest uses social network analysis, as well as descriptive and inferential statistics, to analyze results and cross-references with student rosters to determine the degree to which students experienced projects aligned to Gold Standard Design Elements.	DA	**DC**	DA	DA
Student survey. Education Northwest collaborates with MSD and PCW to support teachers in administering online surveys to all grade 4–12 students who complete a project in the spring semester. The survey examines scaling quality for DL outcomes (RQ2) Education Northwest uses descriptive statistics to analyze how results vary based on student and teacher characteristics, as well as patterns of diffusion.	**DC**	**DC**	DA	DA
Review of Project Overview/Student Learning Guide. To understand scaling quality (RQ2), Education Northwest collects and analyzes this document for a stratified random sample of PBL 101 participants and non-participants, scoring projects using criteria adapted from PBLWorks' *Gold Standard Design Rubric*.	DA	**DC**	DA	DA
Educator focus groups. To identify factors that influence diffusion (RQ1) and scaling (RQ2), Education Northwest conducts annual focus groups in MSD and PCW with district staff members, principals, and teachers. Up to five in-person focus groups will be conducted in each district each year.	DA	**DC**	DA	DA
Education Northwest reporting				
Quarterly data memos. Before each phone meeting, Education Northwest provides a bulleted list of Education Northwest activities during the previous month. These lists will roll up to a one- to two-page memo describing Education Northwest 's activities during the quarter and how they align with the research plan.	■	■	■	
Annual report. In the last quarter, the annual report will summarize Education Northwest activities for the year and alignment with the research plan, as well as give a preview of the design and planning for the following year's data collection and analysis.				■

Note: Milestone = **Δ** (in person) and Δ (virtual), deliverable = ■, **DC** = data collection, DA =design or analysis

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