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High School Teachers' Perceptions and Use of Personalized Learning

Findings from the American Teacher Panel

Attempting to the individual learning needs of students has long been a priority of educators. Although resourceful teachers find ways to individualize instruction using whatever tools and materials they have at hand, many educators and schools recently have taken a more intentional approach to addressing individual student needs. *Personalized learning* (PL) refers to a collection of instructional practices and school conditions that enable the creation of individual learning experiences and pathways for students. PL can take a wide variety of forms, but it typically involves changes to instructional materials and practices and school and system-level

KEY FINDINGS

How Teachers Reported Using PL Practices

- Teachers used a variety of instructional materials and adapted course content to meet students' needs; giving students choices of instructional topics or materials was less common.
- Teachers used mastery-based assessment more frequently than other mastery-based practices.
- Most teachers addressed students' social and emotional growth in their instruction.
- More teachers used student data for tailoring instructional approaches when teaching a specific topic or content area than for adjusting how quickly students advanced through content.
- Teachers' use of PL practices and supports did not vary substantially by school or teacher characteristics.

How Teachers Reported Their Supports for PL

- Professional development helped teachers learn how to use PL approaches but was less helpful for addressing students' social and emotional needs.
- Structural factors, such as scheduling constraints and pressure to cover specific material, and student-level factors, such as absenteeism, limited teachers' ability to enact PL practices.
- Teachers infrequently received data on the learning progress of individual students and needed better data systems to support PL.
- Teachers with access to high-quality data systems and higher use of student achievement data engaged in higher levels of some PL practices (e.g., mastery-based assessment, variable pacing, and tailoring instruction to students' learning needs and interests).

organizational conditions. These PL approaches are facilitated by, but not exclusively reliant on, information technology.¹

PL approaches have become increasingly common in K–12 schools across the United States (Gross, Tuchman, and Patrick, 2018). In a 2018 *Education Week* poll of 500 principals, only 9 percent reported that PL was not “on their radar screens” (Davis, 2018). PL and similar approaches are particularly common in high schools, as demonstrated by high-school reform efforts, such as the XQ Initiative and investments by the Carnegie Corporation of New York, the Nellie Mae Education Foundation, and the Barr Foundation. Growing interest in PL might be spurred by several factors, such as the increasing availability of learning management systems and other platforms that facilitate sharing and analysis of student data, along with an increase in instructional materials that support individualized instructional pathways.

Understanding teachers’ use of PL practices and the available supports in high schools is especially important because research suggests that many students graduate without the academic, interpersonal, and intrapersonal skills necessary for success in college and career (National Assessment of Educational Progress, undated; Scott-Clayton and Rodriguez, 2015; Casner-Lotto and Barrington, 2006). Research suggests that PL is a promising approach to ensuring that students succeed on their chosen pathway (Hamilton and Mackinnon, 2013; Pane et al., 2017), but high-quality implementation and supports is crucial to realizing these benefits. Large-scale implementation of PL in high schools has been challenging; it is difficult to provide tailored instruction and a variety of instructional practices and materials to every individual student and to reorganize assessments, schedules, and curricula to support mastery-based practices (Mehta and Fine, 2015; Steiner et al., 2017).

Because PL takes a wide variety of forms, schools and districts enact it in different ways. School and

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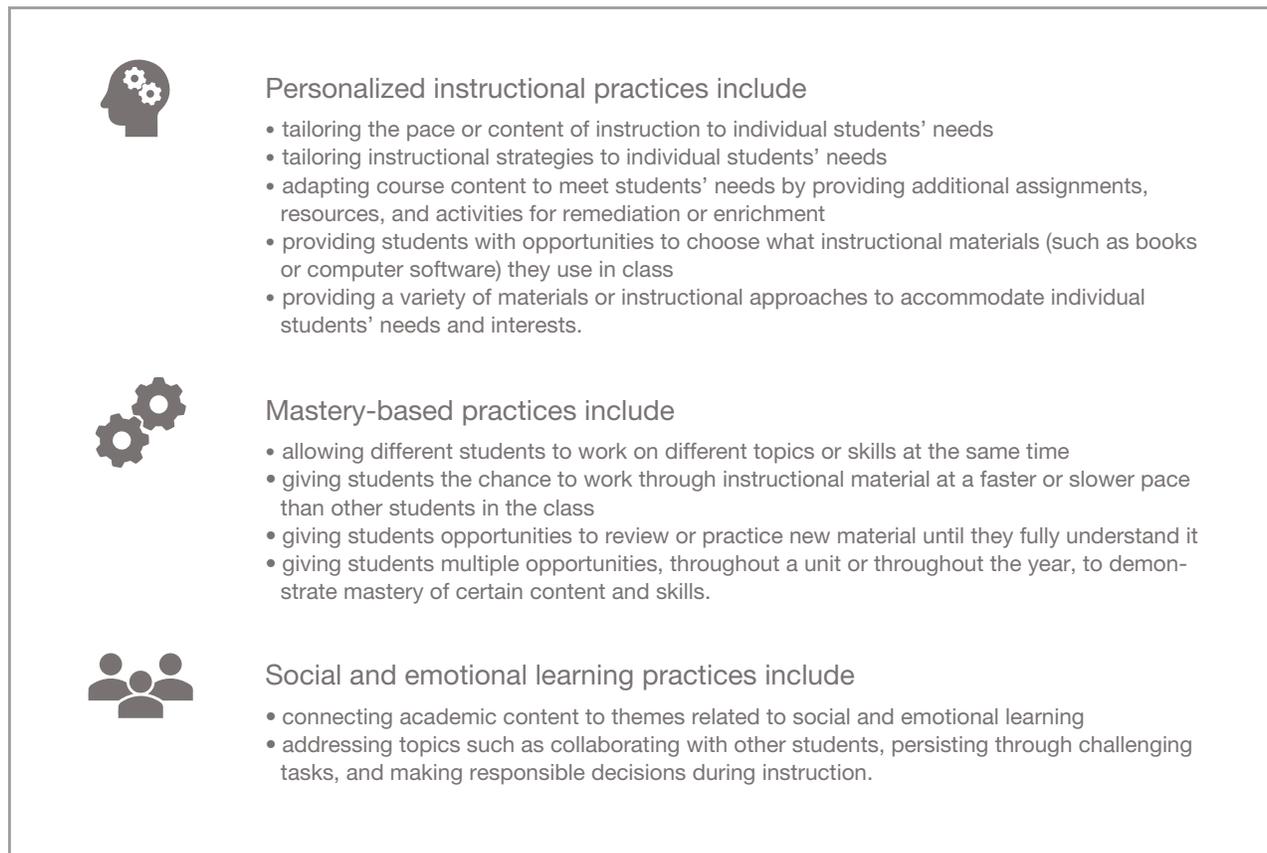
district leaders are likely to adopt the approaches that they believe will work best in their contexts and that are appropriate for their constraints, such as budget or scheduling limits. As a result, there is little consensus about how to define PL (Pane et al., 2017), but the literature suggests that schools that espouse a PL approach generally share a common set of strategies and supports. In many conceptualizations, these strategies and supports can be grouped into three categories: personalized instructional practices, mastery-based practices, and efforts to promote social and emotional learning (SEL). *Personalized instructional practices* generally include providing students with choice in content or topic and are designed to give students more control over their learning; *mastery-based practices* are intended to allow students to move through content at their own pace (Sturgis, 2012; Pane et al., 2017; Gross and DeArmond, 2018).² PL often involves a mix of individual learning, small-group collaboration (e.g., project-based learning), and whole-class instruction. Examples of specific practices in each of these categories are displayed in Figure 1.

PL frequently includes efforts to promote students’ social and emotional development in addition to academic skills (Gross, Tuchman, and Patrick, 2018). This expansive view of the goals of PL reflects a growing body of research that highlights the

Abbreviations

ATP	American Teacher Panel
PL	personalized learning
SEL	social and emotional learning

FIGURE 1
Examples of Personalized Learning Practices



value of social and emotional competencies, such as teamwork, emotion regulation, and resilience, to academic learning and longer-term outcomes, including postsecondary attainment and earnings (Aspen Institute, 2019; Grant et al., 2017; Jackson et al., 2020; National Research Council, 2012). Critics of PL have argued that it could detract from social and emotional development (Wilson, 2019), although most of their concerns pertain to students working alone with a computer or device, rather than the broad variety of individual and group activities that we consider in this report. Well-designed PL has the potential to promote social and emotional development. Opportunities for students to pursue topics that interest them and collaborate with peers can enhance student agency, persistence, teamwork, and other competencies that can help them succeed both in school and in other parts of their lives (Berlinski, 2016; Richardson, 2019). Developing students' skills

in a holistic way is especially important in high schools, as students learn to navigate their lives independently, develop their identities, and prepare for the transition from high school to college or career (Nagaoka et al., 2015; Yeager, 2017).

Recent national surveys have examined the contextual conditions and supports—such as easily accessible data systems, appropriate professional development, and school and district administrator support—that can promote teachers' high-quality implementation of PL approaches (Pane et al., 2017; Gross, Tuchman, and Patrick, 2018). Teachers especially report needing professional development, with only a small minority of teachers rating their PL-related professional development as effective in a nationwide survey (Klein, 2019). In addition, even though PL is about more than merely the use of technology, the quality and features of digital instructional tools are important for effective PL use; about

one-third of teachers in another national survey reported that “actionable data on students’ progress” was among their top criteria when selecting digital instructional materials (Gallup and the NewSchools Venture Fund, 2019).

Despite the popularity of PL and the availability of some national survey data, little data is available on the nationwide prevalence of specific PL instructional practices and supports, particularly in high schools. This report draws on a 2018 survey of a nationally representative sample of high school teachers to measure the extent to which high school teachers have enacted practices consistent with high-quality PL and to gauge teachers’ access to necessary supports. The survey was not designed to examine the implementation of a particular PL model or initiative; rather, we examine the prevalence of practices and conditions that might support a personalized approach to teaching and learning in high schools. Consistent with recent research regarding often-characteristic elements of PL, survey questions focused on personalized instruction, mastery-based instruction, and SEL and school conditions and supports that could enable or hinder the use of these practices. In the survey, we gave the following definitions for the following three broad practices:

1. Throughout this survey, we sometimes refer to *personalized instruction*: adapting the pace and content of instruction to students’ strengths and learning goals and using data strategically to adjust instruction.
2. We also refer to *mastery-based instruction*: instruction that links student advancement to demonstrated mastery of learning goals and providing students with multiple opportunities to demonstrate mastery.
3. Finally, we refer to *SEL*: instruction that builds inter- and intrapersonal competencies such as collaboration, relationship building, and emotion management.

Purpose of This Report

This report presents findings from a survey administered in spring 2018 to RAND’s American Teacher

Panel (ATP). We address the following broad research questions:

1. To what extent do U.S. high school teachers report using PL practices?
2. What supports do U.S. high school teachers receive for implementing PL, and what are their opinions of those supports?

Implementation of education reforms can vary by school and teacher characteristics; little research is focused on variations of PL across school contexts. In addition, resource disparities—such as access to professional development, curriculum materials, and technology tools—across school contexts could influence teachers’ ability to adopt PL and their perceptions of supports for PL (Reich, 2019). Therefore, we explored differences in reported practices and supports between high- and low-poverty schools and between urban and nonurban schools, as well as differences between novice and experienced teachers.³ However, we found few differences that were statistically significant or meaningful in magnitude; therefore, we limit discussion in this report to the full sample of high school teachers.

The findings we summarize in this report should help principals, district staff, and other support providers understand the extent to which teachers are implementing PL practices in their classrooms and the ways that teachers are most and least likely to personalize their instruction. The findings should also help teacher coaches, technical assistance organizations, and other support providers identify areas where teachers need additional resources, reduce inequities in support, and identify and address perceived barriers to high-quality PL implementation.

In this report, we present results from a spring 2018 survey administered to a nationally representative sample of high school teachers via the ATP. We received completed surveys from 1,009 teachers, and the results are weighted to ensure that the results are nationally representative in terms of teacher characteristics (e.g., years of teaching, race/ethnicity) and school characteristics (e.g., geographic location, enrollment, student racial/ethnic composition).

For a description of data and methods, see the “Data Sources and Methods” section at the end of this report. A more complete discussion of methods and

full survey results are available in the separate technical appendix (Steiner, Doss, and Hamilton, 2020), as are the appendix tables referenced in this text.

Results

In this section, we present our findings on high school teachers' use of PL practices and supports for implementing PL.

Use of Personalized Learning Practices

Teachers reported providing a variety of instructional materials and adapting course content to meet students' needs, but offering students choice was uncommon. The ability to tailor instruction to meet the learning needs of individual students is a common tenet of PL approaches and is intended to promote learning by supporting student engagement. Teachers reported doing this in a variety of ways, such as adapting instructional approaches, providing differentiated supports, or offering students the ability to choose the content or topics that are most of interest to them. Teachers reported using some strategies more than others. Majorities of teachers reported providing additional assignments, resources, and activities for remediation or enrichment and providing a variety of materials or instructional approaches to accommodate students' individual needs and interests to a large or moderate extent (63 and 76 percent, respectively; see Appendix Table B.1).

Offering students the ability to choose the instructional materials or topics they focused on in class was reportedly less common. Thirty-six and 28 percent of teachers, respectively, reported emphasizing choice of instructional materials or topics to a moderate or large extent (see Appendix Table B.1). The survey data do not offer any insight into why offering students choice in materials or topics was less common. This finding is consistent with other data that suggest that even at the high school level, providing students with opportunities to choose content or set their own goals is challenging (Klein, 2019).

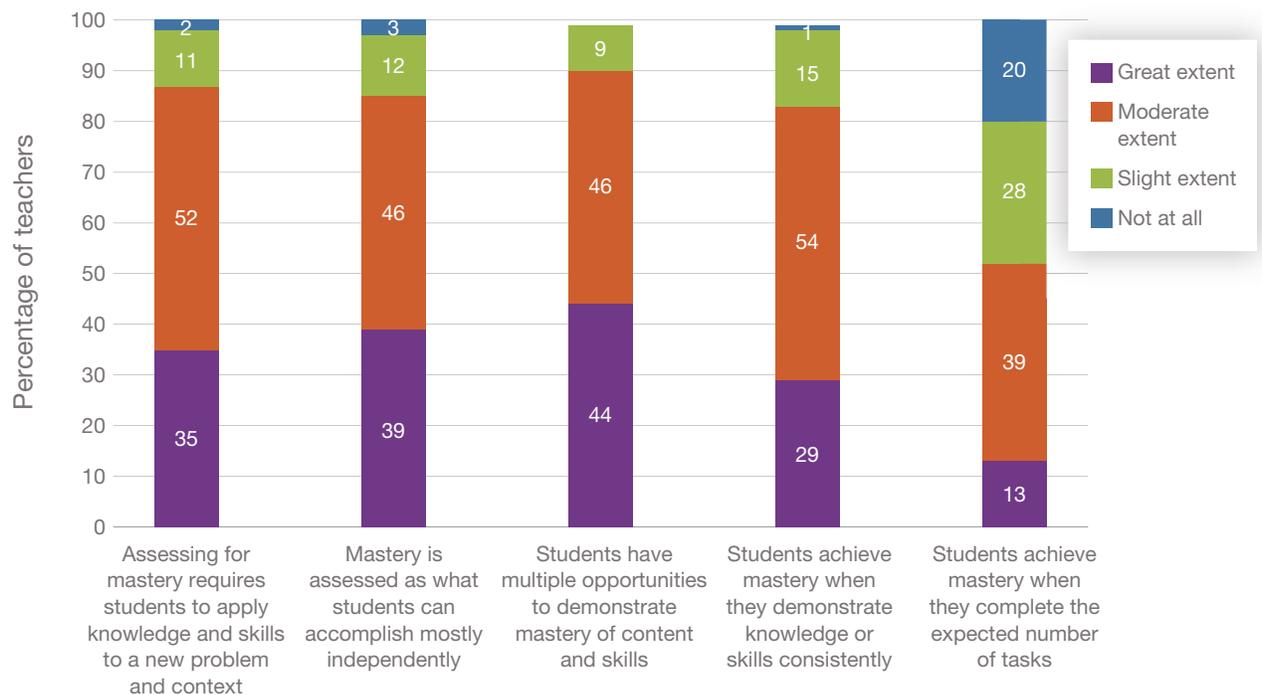
Teachers reported using mastery-based assessment more frequently than they reported using other mastery-based practices. Two important

components of mastery-based instruction are *variable pacing* and *mastery-based assessment*. Variable pacing often involves allowing students to work at a faster or slower pace than others in the class and ensuring that students demonstrate mastery before they move on to a new topic. When questioned about a range of variable pacing techniques, depending on the practice, 42 to 68 percent of teachers reported emphasizing variable pacing in their instruction to a moderate or large extent (see Appendix Table B.2). Mastery-based assessment is generally considered to involve a variety of practices designed to ensure that students can independently demonstrate deep knowledge of the topic or skill and apply that knowledge to a novel problem or context, instead of simply completing a set number of tasks. In addition, students might have multiple opportunities to demonstrate mastery of concepts or skills throughout the year. Seventy-four to 90 percent of teachers reported that key mastery-based assessment practices, such as giving students multiple opportunities to master content and skills and allowing students to make multiple attempts at a task that counts towards mastery, resembled their own practices to a moderate or great extent, as shown in Figure 2 and Appendix Table B.3. However, about 50 percent of teachers reported that students were considered to have achieved mastery when they had completed a set number of tasks, a practice that is not consistent with mastery-based assessment.

The survey data do not reveal why teachers reported using mastery-based assessment practices more than variable pacing practices. Prior research, as well as other data from this survey, indicate that teachers' need to prepare students for mandatory grade-level tests and complete a set amount of content might hamper their use of variable pacing. The challenges of preparing individualized lessons and keeping track of which students are learning which content might also keep teachers from using variable pacing (Pane et al., 2017). Mastery-based assessment practices, such as requiring students to apply knowledge and skills to a new problem or providing students with multiple opportunities to demonstrate mastery, might simply be easier to implement.

Most teachers reported addressing students' social and emotional growth. Sixty to 87 percent of teachers reported emphasizing practices intended to

FIGURE 2
Which Mastery-Based Practices Do Teachers Report Using?



Survey question text: “Please rate the extent to which each of the following descriptions resemble your instructional practices.” Response options were *not at all*, *to a slight extent*, *to a moderate extent*, and *to a great extent*.

NOTES: Sample size in this question is lower because some respondents did not receive this question based on their previous survey answers. Survey weights were used in all tabulations. Not all columns sum to 100 because of rounding; $n = 810\text{--}811$.

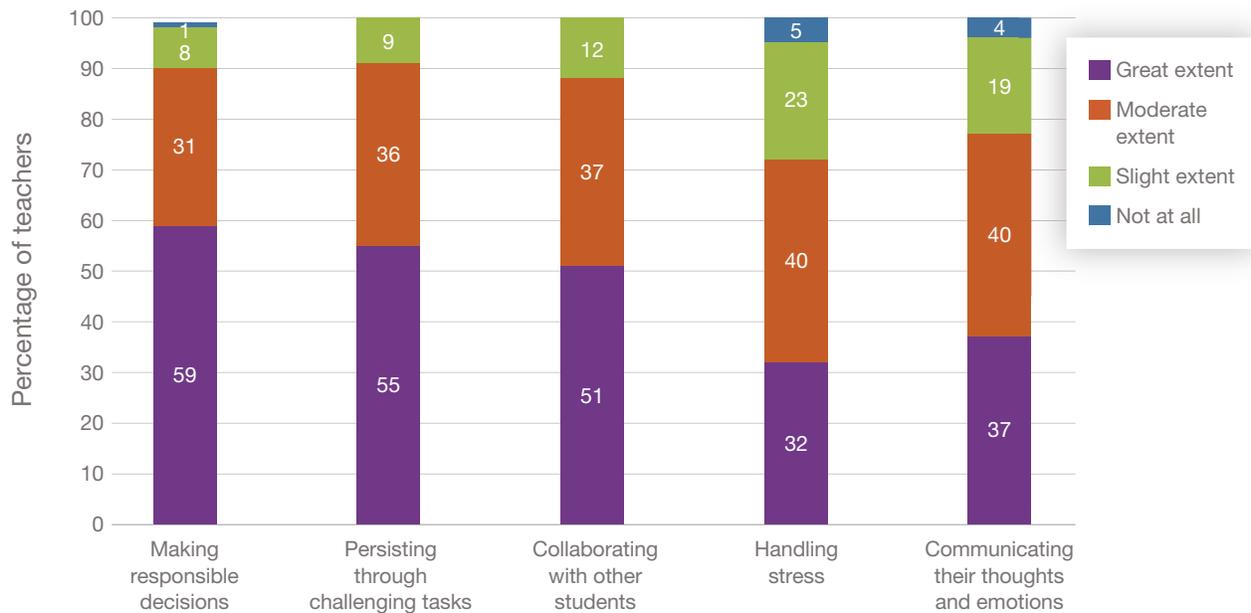
support students’ social and emotional growth. These practices included connecting academic content to SEL themes (e.g., by discussing resilience in the context of a character in a book or by emphasizing perseverance in solving math problems) and giving students opportunities to display their nonacademic talents in class (see Appendix Table B.4). Majorities of teachers also reported emphasizing a variety of social and emotional skills, many of which are crucial for successfully navigating college and career, as shown in Figure 3 and Appendix Table B.5. For example, more than three-quarters of teachers reported emphasizing making responsible decisions, persisting through challenging tasks, and collaborating with other students to a moderate or large extent in their instruction. Somewhat fewer teachers—but still a majority—placed an emphasis on handling stress and communicating thoughts and emotions.

More teachers reported using student data for tailoring instructional approaches to a topic

than for adjusting how quickly students advanced through content. Tailoring the pace and content of instruction to meet the needs of individual students is a key component of personalized instruction (Pane et al., 2017). Adjusting how students advance through content—such as whether a student who demonstrates mastery of a particular skill or concept is able to skip the lessons in which that skill is taught—is considered to be a central feature of mastery-based instruction (Sturgis, 2012).

Ideally, personalized instruction relies on detailed, up-to-date student data, and teachers use such data to inform their decisions about how to tailor instruction and when to advance students. However, fewer than half of teachers reported using student data (specifically student achievement or mastery data) to make these decisions. Forty-three percent of teachers reported using student achievement data to tailor the pace or content of instruction, and 47 percent reported using these data to

FIGURE 3
How Strongly Do Teachers Emphasize SEL Topics?



Survey question text: “Please indicate to what extent you address each of the following topics in your instruction.” Response options were *not addressed*, *to a small extent*, *to a moderate extent*, and *to a large extent*.

NOTES: Survey weights were used in all tabulations. Not all columns sum to 100 because of rounding; $n = 998$.

tailor their instructional strategies (see Appendix Table B.6). Even fewer teachers (18 percent) reported that they used student data to allow students to skip units or lessons if they demonstrated mastery. This is consistent with the earlier finding that relatively few teachers allow students to work through content at their own pace.

These results are consistent with prior research that suggests that teachers might be more likely to use personalized instruction elements that they can easily introduce in their own classrooms than they are to use some elements of mastery-based instruction that require broader school or district-level policy change—such as allowing students to skip a unit or course (Pane et al., 2017).

High school teachers’ reported use of PL practices did not vary substantially by school or teacher characteristics. As noted in the introduction, the resources required to effectively implement PL practices (e.g., teacher training, appropriate curriculum materials) might vary by school characteristics. Therefore, we examined the survey results to discern whether teachers’ reported use of PL practices varied by school poverty level, urbanicity,

or by teacher experience. In general, we did not find systematic, meaningful differences. However, our analyses revealed some isolated differences between novice and experienced teachers (see Appendix Table B.5) and between teachers in urban and rural schools (see Appendix Table B.6) in reported use of mastery-based assessment practices, addressing SEL during instruction, and use of student achievement data. These differences, while statistically significant, were small in magnitude and do not appear to suggest substantive differences in reported use of PL practices across teachers or schools with different characteristics.

Supports for Implementing Personalized Learning

Teachers reported that their professional development supported use of PL approaches, but it was less helpful for addressing social and emotional needs. Professional development is crucial when implementing any new instructional materials or approaches, and it is particularly important in the context of PL, which often requires teachers to adopt

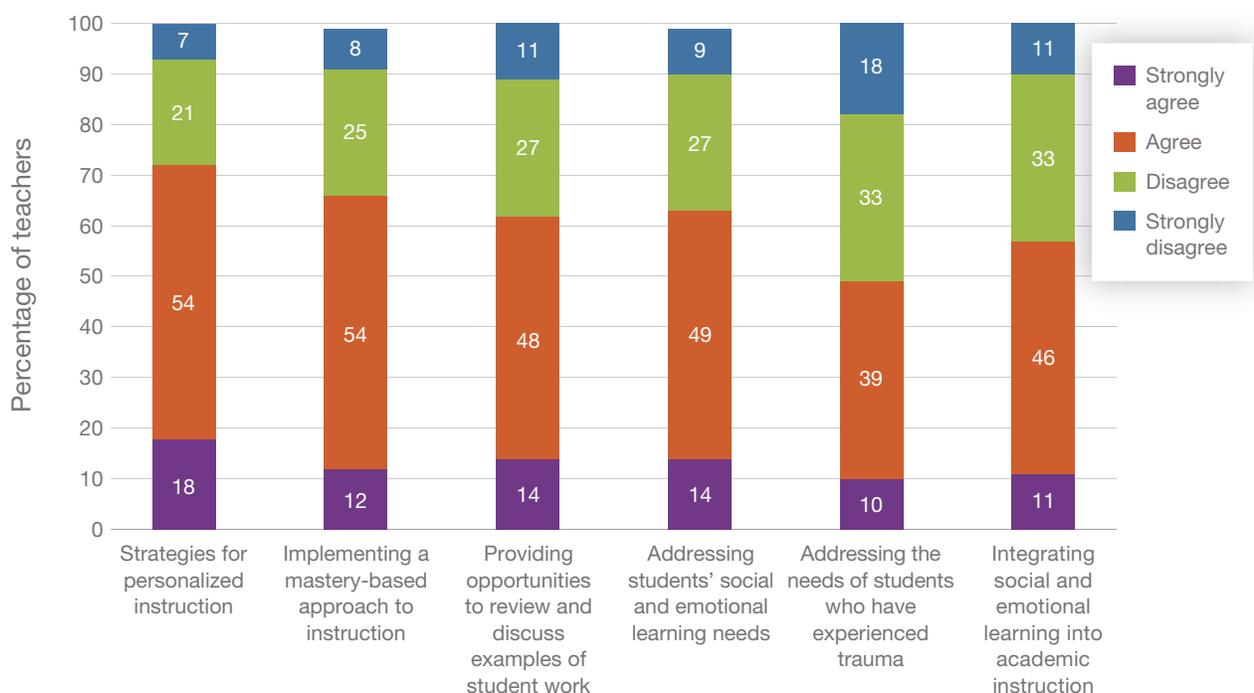
new instructional materials and shift their teaching practices. Figure 4 (and Appendix Table B.7) show that majorities of teachers agreed or strongly agreed that their professional development opportunities addressed strategies for personalizing instruction and for implementing mastery-based instruction (72 percent and 66 percent, respectively). Sixty-two percent agreed or strongly agreed that their professional development provided opportunities to review and discuss examples of student work or grading schemes; some research has suggested that these opportunities are a key element of successful professional development for PL (Steiner et al., 2017).

Although 63 percent of teachers reported that their professional development opportunities provided guidance for addressing students' SEL needs, slightly fewer reported that it helped them understand how to integrate SEL into academic instruction (57 percent; see Figure 4 and Appendix Table B.7). This finding is consistent with other recent national

survey results, which have found that teachers perceive a need for more professional development and support related to supporting SEL, especially for integrating SEL into academic instruction (Hamilton, Doss, and Steiner, 2019). Given that PL aims to holistically address students' academic, social, and emotional needs, there may be opportunities for principals, district staff, and other support providers to provide targeted professional development, particularly in a PL context.

Teachers identified several structural factors that they believed limited their ability to enact PL practices. Although PL is becoming more widespread, many approaches to PL involve instructional tools or strategies that teachers might not have experience using. Moreover, the district policy shifts, school schedule adjustments, and curriculum changes necessary for PL might still be underway at many schools. We asked teachers whether a series of school-level structural conditions and policies were

FIGURE 4
Do Teachers Report Having Appropriate Professional Development Opportunities?



Survey question text: "Please rate your level of agreement with the following statements about the professional learning opportunities in which you participated over the past school year (2017–2018). Consider all forms of formal and informal professional learning such as district- or school-sponsored sessions, common planning time with other teachers, coaching, and professional learning communities. My professional learning opportunities . . ." Response options were *strongly disagree*, *disagree*, *agree*, and *strongly agree*.

NOTES: Survey weights were used in all tabulations. Not all columns sum to 100 because of rounding; $n = 1,006$ – $1,008$.

obstacles to providing PL. Although more than half of teachers perceived each of these conditions to be a major or minor obstacle to PL, teachers were reportedly most concerned about the following school and district conditions: scheduling constraints, pressure to cover specific material as a result of state or district standards or testing requirements, and the need to spend excessive amounts of time developing content that meets individual students' needs (see Figure 5 and Appendix Table B.8). Teachers found other obstacles, such as inadequate data to help them personalize instruction, to be less concerning (see Appendix Table B.8).

Although the survey data do not shed any light on teachers' reasons for perceiving these conditions to be obstacles, these perceptions are consistent with prior surveys of teachers in explicitly PL environments (Pane et al., 2017; Steiner et al., 2017). One possible explanation is that PL is still a relatively

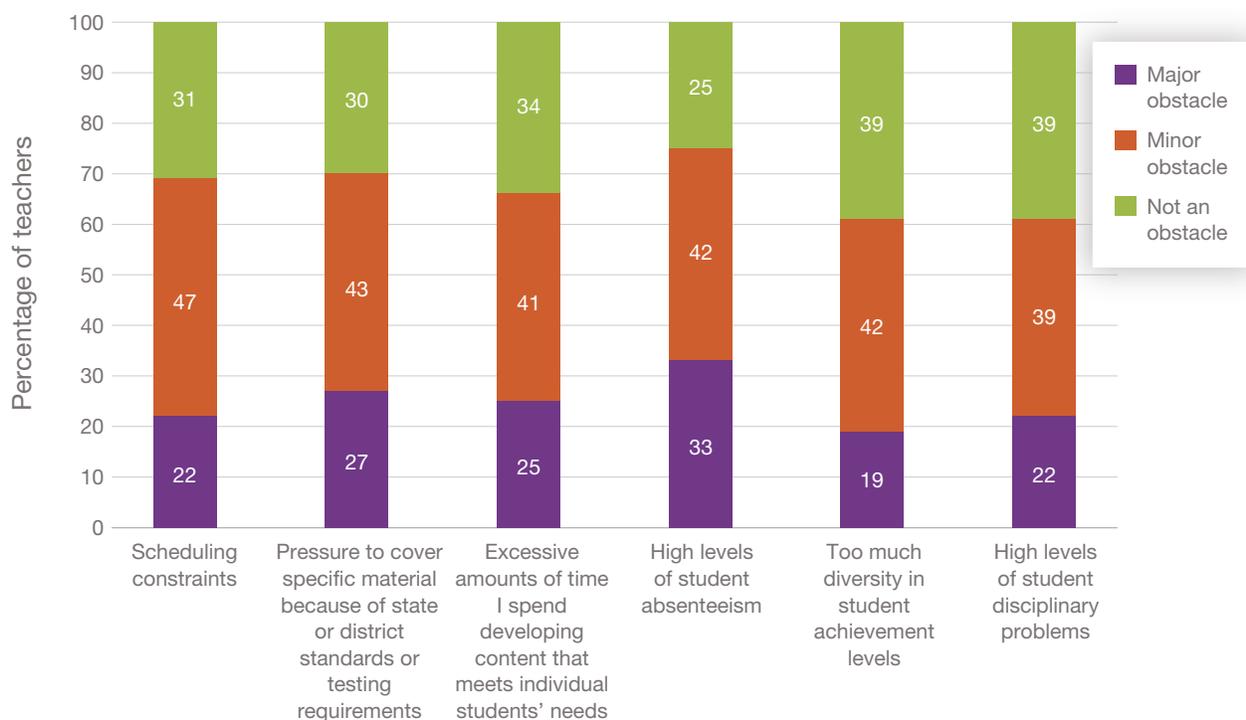
new way of providing instruction in some schools, and school and district structures are still working to adjust the schedules and pacing requirements to support PL practices.

Teachers perceived that some student-level factors hindered their ability to enact PL practices.

We also asked teachers about whether they perceived a series of student-related factors as obstacles to implementing high-quality PL practices. Majorities (61 to 75 percent, depending on the factor) of teachers perceived that some of these student-level conditions—absenteeism, too much diversity in achievement levels, and disciplinary problems—to be major or minor obstacles to implementing PL (see Figure 5).

The results suggest the need to address teachers' perceptions of some student-level factors. This could involve professional development specifically designed to help teachers develop PL-specific classroom management strategies or approaches to supporting

FIGURE 5
Which Conditions Do Teachers Report as Obstacles to Personalized Learning?



Survey question text: "Please indicate the extent to which each of the following conditions is an obstacle to your efforts to personalize students' learning to address their individual learning needs and interests. If the condition does not exist in your school, please mark 'N/A—condition does not exist in my school.'" Response options were *N/A—condition does not exist in my school*, *condition exists but is not an obstacle*, *condition exists and is a minor obstacle*, and *condition exists and is a major obstacle*.

NOTES: Survey weights were used in all tabulations. Teachers who indicated that the obstacle did not exist in their schools were eliminated from the sample for that particular obstacle; *n* = 766–880.

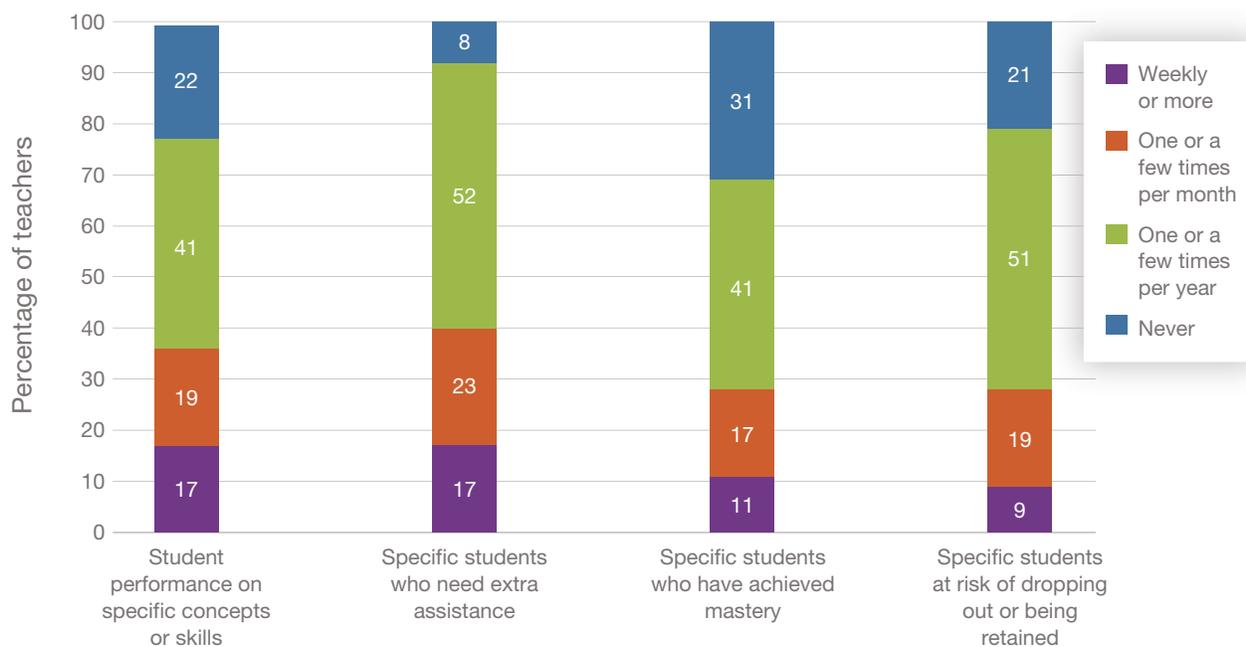
students at different levels of achievement in a PL environment. Another possibility might be professional development designed to help teachers support students to develop the skills and behaviors—such as time management—needed for success in a PL environment. Recent research conducted in high schools that have formally adopted PL approaches has suggested that students need additional support to adjust to PL environments. The practices in a PL classroom, such as the ability to choose one’s own assignments or to have multiple opportunities to revise work, are often different than those of traditional learning environments (Steiner et al., 2017).

Teachers reported that they infrequently received student data and needed better school data systems to support PL. PL often requires teachers to use up-to-date data on individual students’ progress to make instructional decisions. The survey asked about several forms of student data, including information about student performance on specific concepts or skills, specific students who need extra assistance, specific students who have achieved

mastery, and specific students who are at risk of dropping out or not progressing to the next grade. About half (41 to 52 percent, depending on data type) of teachers reported receiving such data once or twice per year. About a third of teachers (28 to 40 percent, depending on data type) reported receiving them more frequently, and relatively few (8 to 31 percent, depending on data type) said that they never received such data at all (see Figure 6 and Appendix Table B.9).

We also asked teachers about the ways in which they believed their schools’ data systems supported PL. Although 82 percent were confident of their skills and experience to use data to guide instruction, only about half of teachers agreed or strongly agreed that their schools’ data systems provided real-time data that were actionable and allowed them to make good decisions about mastery-based progress for individual students. In addition, only a slight majority of teachers agreed or strongly agreed that their school’s data system allowed them to easily produce needed views or reports and that they had access

FIGURE 6
How Often Do Teachers Receive Student Performance Data?



Survey question text: “In general how frequently do you receive the following types of information about the performance of your students?” Response options were *never*, *once a year*, *a few times per year*, *approximately monthly*, *a few times per month*, *approximately weekly*, *a few times per week*, and *at least daily*. “Once a year” and “a few times a year” were combined, “approximately monthly” and “a few times a month” were combined, and “approximately weekly,” “a few times a week,” and “daily” were combined.

NOTES: Survey weights were used in all tabulations. Not all columns sum to 100 because of rounding; $n = 1,002-1,004$.

to high-quality data that help them adapt the pace, content, or strategies of instruction to meet students' needs, as shown in Figure 7 and Appendix Table B.10.

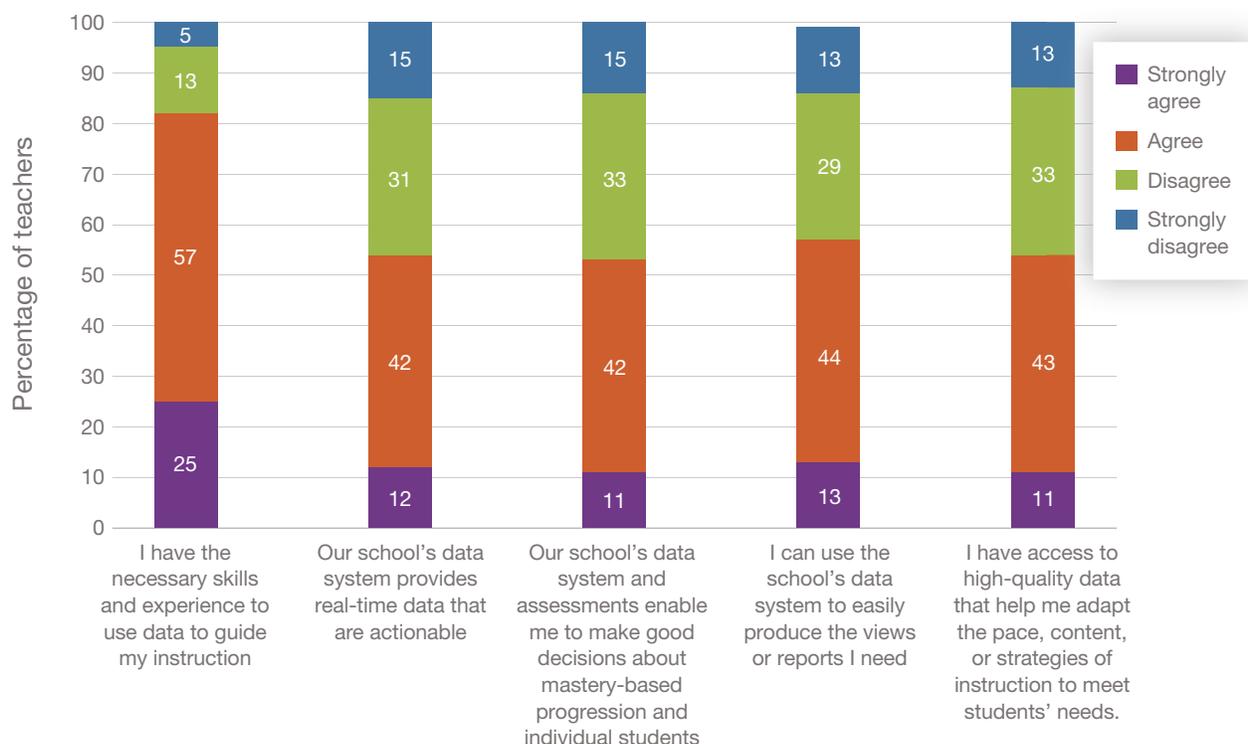
Higher-quality data systems and more extensive use of student data might support use of personalized instructional practices. Given the importance of high-quality assessments that provide real-time data, along with reporting systems that facilitate use of those data, in informing instructional practice (Coburn and Turner, 2012; Hamilton et al., 2009), we probed how teacher reports of personalized instructional practices varied by teachers' reported data use and perceptions of school data systems. We found that teachers who had more positive perceptions of their schools' data systems also reported more extensive use of mastery-based and personalized instructional practices. In addition, teachers who reported more extensive use of student data to inform their instruction also reported greater use of mastery-based assessment and variable pacing, as well as personalized practices,

such as tailoring instruction to students' learning needs and interests (see Figure 8 and Appendix Table B.11).

Although our survey data do not directly illuminate the reasons for these associations, the ability to use current, accurate student-level data that is easily accessible in a usable format can support high-quality instruction, regardless of the extent to which teachers are personalizing their instruction (Coburn and Turner, 2012). Many conceptions of PL include the use of up-to-date data on the learning progress of individual students to make instructional decisions, and so it is perhaps unsurprising that teachers who report greater access to usable data and more-extensive use of student data also report more-extensive use of personalized instructional practices.

High school teachers' reported access to supports for PL did not differ systematically across teacher characteristics. As discussed in the introduction, distribution of resources—particularly

FIGURE 7
Do Teachers Feel They Have High-Quality Data and the Skills to Use This Data?

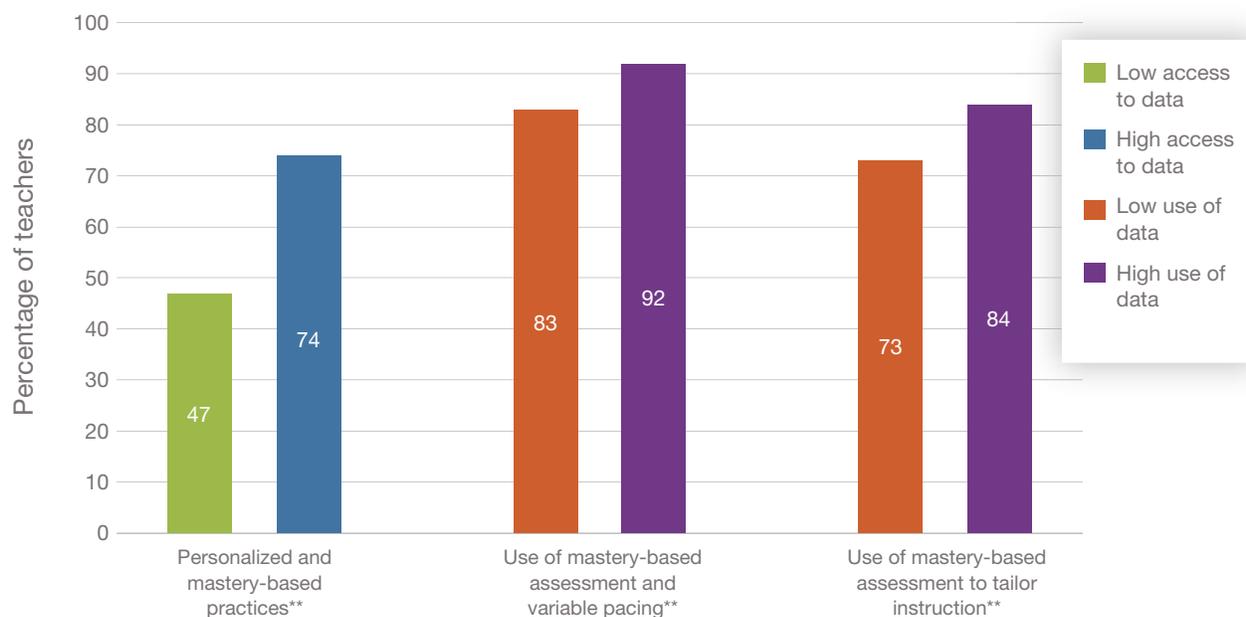


Survey question text: "Please rate your level of agreement with the following statements." Response options were *strongly disagree*, *disagree*, *agree*, and *strongly agree*.

NOTES: Survey weights were used in all tabulations. Not all columns sum to 100 because of rounding; $n = 999-1,000$.

FIGURE 8

How Does Teachers' Perception of Data Access Affect Their Use of Personalized Learning Practices?



NOTES: Results are from linear probability models, in which measures of mastery-based practices, use of mastery-based assessment, and tailoring of instruction are regressed on measures of perceptions of quality of school data or use of data. All measures are averages of individual survey items. Averages are then dichotomized to indicate an average over the midpoint of the underlying Likert scale; see Appendix B for more details. Survey weights were used in all regressions; $n = 1,009$. ** $p < 0.01$.

technology resources—necessary for PL implementation can vary by school characteristics. We examined the survey results to discern if teachers' reported access to supports for PL varied by school poverty level, urbanicity, or by teacher experience. In general, we did not find systematic, meaningful differences. However, our analyses revealed some isolated differences in perceptions of professional learning opportunities, obstacles, and frequency of receipt of student data across teacher subgroups. Teachers in high-poverty schools were more likely to report that their professional development opportunities were aligned to what they do in the classroom than their peers in low-poverty schools (85 percent versus 75 percent), while teachers in nonurban schools were more likely to report that their professional development opportunities provided them with opportunities to try out new ideas (85 percent versus 77 percent; see Appendix Table B.7). More teachers in high-poverty schools reported pressure to cover material to meet standards and tests compared with their counterparts in low-poverty schools (79 percent versus

68 percent), while teachers with less experience were more likely to report high student absenteeism as an obstacle than their more experienced counterparts (93 percent versus 74 percent; see Appendix Table B.8). Novice teachers were more likely to report that they received information that allowed them to identify specific students who needed extra assistance at least once per month (65 percent versus 39 percent; see Appendix Table B.9). Overall, these differences, while statistically significant, do not appear to suggest substantive differences in reported access to supports for PL across teachers or schools with different characteristics.

Implications

In this section, we discuss some implications of our findings for practice and policy.

Most teachers reported that they do not regularly use data to inform decisionmaking, despite emphasizing several PL practices. Although

majorities of teachers reported emphasizing elements of personalized instruction, such as adapting course content to meet students' needs and providing a variety of materials or instructional approaches, fewer than half reported using student achievement or mastery data to make these decisions. Teachers' responses to questions about school data systems and frequency of data receipt suggest some reasons why relatively few teachers reported data use: Only about half of teachers reported that they had access to easily accessible, high-quality, up-to-date data. About half of teachers reported receiving data on the learning progress of individual students only once a year, and between 8 and 31 percent said they never received such data at all. These findings suggest a need to improve high school data systems to improve usability and access and to examine the feasibility of providing specific data on individual students more frequently.

Teachers might need additional supports to promote student-led learning. Teachers' reported use of personalized instructional practices suggests that most differentiation of content is teacher-directed rather than student-directed. Majorities of teachers reported emphasizing PL strategies aligned with differentiation of content, such as adapting course content to meet students' needs by providing additional assignments, resources, and activities and offering a variety of materials or instructional strategies. However, strategies that involved offering students autonomy, such as the ability to make choices in their instructional materials or topics of focus and to work through instructional material at a faster or slower pace than their classmates, were emphasized by about one-third to one-half of teachers. The survey data do not allow us to explore why these differences might exist, but we might expect somewhat higher levels of student autonomy, given that the sample focuses on high schools. Some research suggests teachers face challenges in implementation of student-led tasks, such as offering student choice about study topics and tasks or letting students adjust the pace of their learning (Pane et al., 2017). Some teachers may need targeted professional development to support their use of these practices.

PL advocates and implementers should consider how to incorporate SEL practices into PL models.

Although teachers' reported use of personalized instructional practices and mastery-based approaches was mixed, most teachers indicated engaging in the full set of SEL activities we examined in our survey. The reported ubiquity of SEL emphasis is consistent with other research (Atwell and Bridgeland, 2019; Hamilton, Doss, and Steiner, 2019). Many educators have expressed concerns about potential negative effects of these approaches, particularly those that rely heavily on technology (Kim, 2019). However, large majorities of teachers reported using both SEL and other PL strategies, suggesting that these approaches are not necessarily in conflict and could reinforce one another. Helping educators, and those who support them, understand how to ensure that PL supports a wide range of student academic, social, and emotional needs should be a priority for the PL field.

State and local education agencies should consider how policy supports or hinders personalization. Teachers reported that a variety of school and district conditions were obstacles to implementing PL. These included scheduling constraints, pressure to cover specific material as a result of state or district standards or testing requirements, and the need to spend excessive amounts of time developing content that meets individual students' needs. These perceptions are consistent with other surveys of teachers in PL environments, and prior research suggests that pressure to cover grade-level content or standards in preparation for end-of-year tests is a key barrier to full implementation of mastery-based instruction (Pane et al., 2017; Steiner et al., 2017) and to supporting students' full mastery of instructional content (New Classrooms Innovation Partners for Learning, 2019). If states and districts are interested in supporting PL, they could consider ways to adjust these policies to allow flexibility in how student learning is measured (e.g., reducing the reliance on grade-level proficiency), the types of assessments used (e.g., including adaptive assessments), and the content and standards covered on assessments (e.g., including standards and content from multiple grade levels).

Teachers' attributions of PL-related challenges to students suggests a need for professional development and other supports to help meet student needs in a personalized environment. Two-thirds to three-quarters of teachers perceived that student-level

conditions (i.e., absenteeism, too much diversity in achievement levels, disciplinary problems) were obstacles to their ability to implement PL. In addition, teachers reported a need for professional development to help them understand how to address the needs of students who had experienced trauma and how to integrate SEL into academic instruction, a finding that is consistent with other recent national survey results (Hamilton, Doss, and Steiner, 2019). These findings suggest that there might be opportunities for principals, district staff, and other support providers to offer targeted professional development related to SEL and to address student-level factors that teachers perceive to be challenges in a way that is designed for a PL context.

Educators should monitor equity in PL opportunities and outcomes both within and across schools. We did not find any systematic, meaningful differences in teachers' survey responses by school

type or teacher experience, although we did identify some isolated differences. This finding suggests that teachers' use of PL approaches may be relatively consistent, with students in urban and rural schools and in high- and low-poverty schools experiencing similar PL opportunities. However, these survey data represent teachers' perspectives only; a more complete picture of PL approaches and supports would include information gathered from multiple stakeholders, such as students, administrators, and families, and would examine other possible sources of inequity (e.g., student gender, race/ethnicity). We were not able to examine differences in quality of implementation, which may vary across school type or teacher experience. Further research could examine the prevalence of PL practices and supports and quality of implementation in high schools from multiple perspectives.

Data Sources and Methods

Our main analyses focus on teachers' responses to questions on a survey focused on PL instructional practices and supports that was fielded in spring 2018 to the ATP. ATP members were recruited using probabilistic sampling methods; the samples were designed to be of sufficient size to facilitate nationally representative analyses and analyses of prevalent subgroups at the national level. The survey was administered to 1,818 teachers who taught at least one core academic subject (mathematics, English language arts, science, or social studies) in at least one high school grade (9–12). The analytic sample contains 995 teachers who fully completed the survey and 14 teachers who partially completed the survey, for a total of 1,009 teachers (56-percent response rate).

The results presented in this report are weighted frequencies or averages. Regression models were used to test whether weighted responses differed by the aforementioned school and teacher categories. We also performed supplementary analyses to ensure that significant differences were not driven by a parsimonious set of school or teacher characteristics (additional details about the methodology are provided in Appendix A).

Many of the survey items were developed specifically for this study; several were adapted from other RAND surveys (including those used in Pane et al., 2015) or from surveys developed by the University of Chicago Consortium on School Research (1999). In this report, we examine a subset of questions from a longer survey,

focusing on questions that pertain to PL practices and supports (see Appendix C for the text of the survey questions analyzed in this report).

Limitations of Results

This analysis provides descriptive evidence on the extent to which high school teachers reported using key PL practices, whether they have access to important supports, and what barriers they perceive to high-quality PL implementation. When testing for significant differences in responses among subgroups, we conducted supplementary analyses (described in Appendix A) to ensure that a limited set of school and student characteristics were not driving the subgroup results. However, we do not account for many characteristics (e.g., student race/ethnicity, special education status) that could affect teacher responses.

It is also important to recognize that the survey data rely on the self-reports of teachers who voluntarily participated; we have no independent means of verifying the accuracy of their responses. Thus, the survey data might not always provide an accurate depiction of PL practices, supports, and barriers. Nonetheless, these nationally representative survey responses provide a unique opportunity to share the voices of high school educators across the country and should be helpful for informing decisions about PL-related practices and supports.

Notes

¹ Similar collections of strategies and approaches have been termed *deeper learning* (Huberman et al., 2014; Mehta and Fine, 2015) and *student-centered learning* (Scheopner Torres, Brett, and Cox, 2015), but unlike PL, these definitions typically do not imply the use of technology.

² Mastery-based practices are sometimes described as one aspect of a competency-based approach to instruction (Sturgis, 2015).

³ We followed the National Center for Education Statistics definition of *high-poverty schools* as those where at least 75 percent of students are eligible for free or reduced priced lunch (National Center for Education Statistics, 2017). We defined *urban* as any school in a locale that was categorized as a city in the Common Core of Data. We defined an *experienced teacher* as one that has more than three years of experience and is therefore tenured in most districts.

References

- Aspen Institute National Commission on Social, Emotional, and Academic Development, *From a Nation at Risk, to a Nation at Hope: Recommendations from the National Commission on Social, Emotional, and Academic Development*, Washington, D.C.: The Aspen Institute, 2019. As of May 12, 2020: <http://nationathope.org/report-from-the-nation>
- Atwell, Matthew M., and John L. Bridgeland, *Ready to Lead: A 2019 Update of Principals' Perspectives on How Social and Emotional Learning Can Prepare Children and Transform Schools*, Chicago: Collaborative for Academic, Social, and Emotional Learning, 2019. As of November 26, 2019: https://casel.org/wp-content/uploads/2019/10/Ready-to-Lead_FINAL.pdf
- Barr Foundation, "Education: Engage New England," webpage, 2019. As of October 8, 2019: <https://www.barrfoundation.org/education/engage-new-england>
- Berlinski, Jessica, "5 Ways Tech Can Strengthen Social and Emotional Learning," *Getting Smart*, November 11, 2016. As of March 12, 2020: <https://www.gettingsmart.com/2016/11/5-ways-tech-can-strengthen-social-and-emotional-learning>
- Casner-Lotto, Jill, and Linda Barrington, *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce*, New York: The Conference Board, Partnership for 21st Century Skills, Corporate Voices for Working Families, and Society for Human Resource Management, 2006. As of May 12, 2020: <https://files.eric.ed.gov/fulltext/ED519465.pdf>
- Coburn, Cynthia E., and Erica O. Turner, "The Practice of Data Use: An Introduction," *American Journal of Education*, Vol. 118, No. 2, February 2012, pp. 99–111.
- Consortium on Chicago School Research, "High School Teacher Survey," Chicago, 1999.
- Davis, Michelle R., "Why Principals Are Embracing Personalized Learning," *Education Week*, April 17, 2018. As of September 22, 2019: <https://www.edweek.org/ew/articles/2018/04/18/why-principals-are-embracing-personalized-learning.html>
- Gallup and the NewSchools Venture Fund, *Education Technology Use in Schools: Student and Educator Perspectives*, Washington, D.C.: Gallup, Inc., 2019. As of September 22, 2019: <http://www.newschools.org/wp-content/uploads/2019/09/Gallup-Ed-Tech-Use-in-Schools-2.pdf>
- Grant, Sean, Laura S. Hamilton, Stephani L. Wrabel, Celia J. Gomez, Anamarie A. Whitaker, Jennifer T. Leschitz, Fatih Unlu, Emilio R. Chavez-Herrerias, Garrett Baker, Mark Barrett, Mark Harris, and Alyssa Ramos, *Social and Emotional Learning Interventions Under the Every Student Succeeds Act: Evidence Review*, Santa Monica, Calif.: RAND Corporation, RR-2133-WF, 2017. As of January 23, 2019: <https://www.rand.org/t/RR2133.html>
- Gross, Betheny, and Michael DeArmond, *Personalized Learning at a Crossroads: Early Lessons from the Next Generation Systems Initiative and the Regional Funds for Breakthrough Schools Initiative: Executive Summary*, Seattle: Center on Reinventing Public Education, June 2018. As of September 22, 2019: <https://www.crpe.org/sites/default/files/crpe-personalized-learning-at-crossroads-executive-summary.pdf>
- Gross, Betheny, Sivan Tuchman, and Susan Patrick, *A National Landscape Scan of Personalized Learning in K-12 Education in the United States*, Vienna, Va.: iNACOL, June 2018. As of September 22, 2019: https://www.inacol.org/wp-content/uploads/2018/06/iNACOL_ANationalLandscapeScanOfPersonalizedLearning.pdf
- Hamilton, Laura H., Christopher Joseph Doss, and Elizabeth D. Steiner, *Teacher and Principal Perspectives on Social and Emotional Learning in America's Schools: Findings from the American Educator Panels*, Santa Monica, Calif.: RAND Corporation, RR-2991-BMGF, 2019. As of September 22, 2019: https://www.rand.org/pubs/research_reports/RR2991.html
- Hamilton, Laura, Richard Halverson, Sharnell S. Jackson, Ellen Mandinach, Jonathan A. Supovitz, Jeffrey C. Wayman, Cassandra Pickens, Emma Sama Martin, and Jennifer L. Steele, *Using Student Achievement Data to Support Instructional Decision Making*, Washington, D.C.: U.S. Department of Education, NCEE-2009-4067, 2009.
- Hamilton, Leah, and Anne Mackinnon, *Opportunity by Design: New High School Models for Student Success*, New York: Carnegie Corporation of New York, 2013. As of October 8, 2019: <https://www.carnegie.org/publications/opportunity-by-design-new-high-school-models-for-student-success>
- Huberman, Mette, Catherine Bitter, Jennifer Anthony, and Jennifer O'Day, *The Shape of Deeper Learning: Strategies, Structures, and Cultures in Deeper Learning Network High Schools, Report 1: Findings from the Study of Deeper Learning, Opportunities and Outcomes*, Washington, D.C.: American Institutes for Research, September 2014.
- Jackson, C. Kirabo, Shanette C. Porter, John Q. Easton, Alyssa Blanchard, and Sebastián Kiguel, *School Effects on Socio-Emotional Development, School-Based Arrests, and Educational Attainment*, Washington, D.C.: National Bureau of Economic Research, NBER Working Paper No. 26759, February 2020.
- Kim, E. Tammy, "The Messy Reality of Personalized Learning," *New Yorker*, July 10, 2019. As of November 26, 2019: <https://www.newyorker.com/news/dispatch/the-messy-reality-of-personalized-learning>
- Klein, Alyson, "Exclusive National Survey Shows Teachers View Personalized Learning as Good in Theory, but Hard in Practice," *Education Week*, November 2019.

- Mehta, Jal, and Sarah Fine, *The Why, What, Where, and How of Deeper Learning in American Secondary Schools*, Boston: Jobs for the Future, December 2015.
- Nagaoka, Jenny, Camille Farrington, Stacy B. Ehrlich, Ryan D. Heath, David W. Johnson, Sarah Dickson, Ashley Cureton Turner, Ashley Mayo, and Kathleen Hayes, *Foundations for Young Adult Success: A Development Framework*, Chicago: University of Chicago Consortium on School Research, 2015.
- National Assessment of Educational Progress, “The Nation’s Report Card,” webpage, undated. As of December 13, 2016: <http://www.nationsreportcard.gov>
- National Center for Education Statistics, “Concentration of Public School Students Eligible for Free or Reduced-Price Lunch,” March 2017. As of November 25, 2019: https://nces.ed.gov/programs/coe/pdf/Indicator_CLB/coe_clb_2017_05.pdf
- National Research Council, *Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century*, Washington, D.C.: National Academies Press, 2012.
- Nellie Mae Education Foundation, “Student-Centered Learning,” webpage, 2017. As of October 8, 2019: <https://www.nmefoundation.org/about-us/strategy-and-initiatives>
- New Classrooms Innovation Partners for Learning, *The Iceberg Problem: How Assessment and Accountability Policies Cause Learning Gaps in Math to Persist Below the Surface . . . and What to Do About It*, New York, 2019. As of September 22, 2019: <https://www.icebergproblem.org>
- Pane, John F., Elizabeth D. Steiner, Matthew D. Baird, and Laura S. Hamilton, *Continued Progress: Promising Evidence on Personalized Learning*, Santa Monica, Calif.: RAND Corporation, RR-1365-BMGF, 2015. As of September 22, 2019: <https://www.rand.org/t/RR1365.html>
- Pane, John F., Elizabeth D. Steiner, Matthew D. Baird, Laura S. Hamilton, and Joseph D. Pane, *Informing Progress: Insights on Personalized Learning Implementation and Effects*, Santa Monica, Calif.: RAND Corporation, RR-2042-BMGF, 2017. As of September 22, 2019: <https://www.rand.org/t/RR2042.html>
- Reich, Justin, “Teaching Our Way to Digital Equity,” *Educational Leadership*, Vol. 76, No. 5, 2019, pp. 30–35.
- Richardson, Will, “Sparking Student Agency with Technology,” *Educational Leadership*, Vol. 76, No. 5, 2019, pp. 12–18.
- Scheopner Torres, Aubrey, Jessica Brett, and Joshua Cox, *Competency-Based Learning: Definitions, Policies, and Implementation*, Waltham, Mass.: Education Development Center, April 2015. As of October 21, 2019: <https://files.eric.ed.gov/fulltext/ED558117.pdf>
- Scott-Clayton, Judith, and Olga Rodriguez, “Development, Discouragement, or Diversion? New Evidence of the Effects of College Remediation Policy,” *Education Finance and Policy*, Vol. 10, No. 1, Winter 2015, pp. 4–45.
- Steiner, Elizabeth D., Christopher Joseph Doss, and Laura S. Hamilton, *High School Teachers’ Perceptions and Use of Personalized Learning: Technical Appendixes*, RAND Corporation, RR-A322-2, 2020. As of July 27, 2020: <https://www.rand.org/t/RR-A322-1.html>
- Steiner, Elizabeth D., Laura S. Hamilton, Laura Stelitano, and Mollie Rudnick, *Designing Innovative High Schools: Implementation of the Opportunity by Design Initiative After Two Years*, Santa Monica, Calif.: RAND Corporation, RR-2005-CCNY, 2017. As of September 22, 2019: <https://www.rand.org/t/RR2005.html>
- Sturgis, Chris, “Boston Day and Evening Academy: Where Competency Education Is Good Teaching Practice,” Aurora Institute, blog post, June 21, 2012. As of May 12, 2020: https://aurora-institute.org/cw_post/boston-day-and-evening-academy-where-competency-education-is-good-teaching-practice
- , *Implementing Competency Education in K–12 Systems: Insights from Local Leaders*, Vienna, Va.: International Association for K–12 Online Learning, 2015.
- Wilson, Steven F., “Ed-Tech Utopia Is Over,” *Education Next*, April 24, 2019. As of March 12, 2020: <https://www.educationnext.org/ed-tech-utopia-is-over-personalized-learning>
- XQ Institute, “About,” webpage, undated. As of October 8, 2019: <https://xqsuperschool.org/about>
- Yeager, David S., “Social-Emotional Learning Programs for Adolescents,” *Future of Children*, Vol. 27, No. 1, Spring 2017, pp. 73–94.

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About This Report

Personalized learning (PL) approaches have become increasingly common in K–12 schools across the United States. PL aims to create individual learning experiences and pathways for students. It typically involves changes to instructional materials and practices as well as school and system-level organizational conditions; these changes are often facilitated by technology. Despite PL’s popularity, there is only limited understanding of the conditions needed to support high-quality PL implementation, particularly in high schools. This report presents findings from RAND’s 2018 American Teacher Panel. As part of the survey, a nationally representative sample of high school teachers responded to questions about their use of instructional practices consistent with high-quality PL and access to necessary supports. Our findings should be useful to practitioners, professional development and support providers, researchers, and policymakers who want to understand how high school teachers use PL practices and which supports and resources they need to use them effectively.

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