

**Advancing A Shared Understanding of Personalized Learning:  
Insights from Eight Middle School Classrooms in Rhode Island**

November 2, 2018

Report prepared by

Julie Coiro<sup>1</sup>, Wendy Espinoza Cotta<sup>2</sup>, Terry Deeney<sup>1</sup>, Jay Fogleman<sup>1</sup>, and Annice Correia Gabel<sup>2</sup>

<sup>1</sup>URI School of Education

<sup>2</sup>New England Basecamp

Funding provided by

Rhode Island Education Innovation Research Network (RI-EIRN)

## Table of Contents

Introduction .....	2
Theoretical Frameworks .....	4
Research Design and Methods .....	5
Data Sources and Analysis .....	9
Findings .....	11
Overall Summaries of Numerical Data Related to DDD and PL frameworks .....	12
Teacher Enactments of Personalized Learning Practices .....	17
Comparing Teacher Perceptions to the Rhode Island PL Initiative.....	25
Characterizing Personalized Learning Practices Across Eight Rhode Island Classrooms .....	28
Authentic Learning .....	28
Student Agency.....	31
Flexible Instructional Approaches .....	34
Role of Technology.....	37
Collaboration.....	39
Use of Data .....	43
Classroom Culture .....	45
Discussion .....	50
Conclusion .....	55
Recommendations for Stakeholders .....	56
Future Questions to Explore .....	57
References .....	58
Appendix A: Teacher Interview Questions .....	60
Appendix B: Coding Scheme for Digital Didactical Design (DDD) Elements.....	64
Appendix C: Coding Scheme for Personalized Learning (PL) Elements.....	66
Appendix D: Teacher Surveys .....	69
Appendix E: Student Survey.....	83

## Introduction

In the fall of 2016, the Governor of Rhode Island committed to a statewide personalized learning initiative in an effort to assist educators in moving toward personalized learning for all Rhode Island school-age children (EduvateRI, 2017). One year later, the Rhode Island Department of Education and the Rhode Island Office of Innovation provided leadership in initiating a campaign to capture a statewide shared definition of personalized learning in its Personalized Learning Whitepaper (EduvateRI, 2017). The white paper was first drafted in September of 2016 and was revised to include contributions and feedback from over 40 stakeholders across the state, including educators, administrators, families, and non-profit and industry leaders. The Rhode Island White Paper was released in February, 2017 and notably, is described as “an iterative, open-source document” that is open to ongoing public review and comment.

In this white paper, *personalized learning (PL)* is defined as instruction that offers pedagogy, curriculum, and learning environments to meet individual student needs (EduvateRI, 2017). The State of Rhode Island’s Office of Innovation defines personalized learning as made up of three main components that are adjusted for each student’s needs (EduvateRI, 2017). These components are 1) Pace of learning, or the time students need to engage with a learning objective; 2) Learning objectives, or the specific learning goals a student is working toward; 3) Instructional approach, or the activities, experiences, instructional groupings and resources used to support students’ learning. Further, the RI Personalized Learning Initiative described different elements representative of PL, including differentiated learning activities, data-informed learner profiles, mastery-based progression of skills, ongoing formative assessment, a flexible learning environment, student choice and agency, and authentic/applied learning opportunities that are technology-enabled and teacher-facilitated.

Prompted by the RI initiative’s calls to learn more about how teachers implement personalized learning practices in different classroom settings, the present study is situated within a broad frame of empirical and research-based work in an effort to connect theory, practice, and research around personalized learning practices. Notably, because personalized learning is generally characterized by teachers tailoring their classroom experiences to address diverse learning preferences and needs as well as the specific interests of individual learners (Bray & McClaskey, 2015), PL often plays out differently across different contexts. This can lead to public uncertainty around what personalized learning is, how it looks, or how it should be implemented in the classroom (see Gross & DeArmond, 2018; Luyre, 2019). There are few empirical studies on personalized learning within K-12 contexts (Watson et al., 2011) and even fewer that examine the implementation and evolution of personalized learning implementations over time or across grade levels. Further, there is a gap in studies that examine how personalized learning changes schools at the organizational level over time (Bingham, 2017), how teacher’s beliefs and practices may change (Bingham, 2017; Olofson, Downes, Petrick, Smith, Legeros & Bishop, 2018), and how personalized learning practices affect student agency. In addition, there is little empirical data to support any particular PL method over another (Paine, Steiner, Baird, Hamilton, & Pane, 2017). This lack of public understanding and support, especially by aspiring teachers, school leaders and policymakers, is a roadblock to further educational reform. These key gaps in the literature need to be addressed to build widespread public understanding of personalized learning, as there continues to be great interest at the national and state levels of government in supporting personalized learning initiatives.

Thus, the purpose of the present study was to provide empirical data that helps to characterize current teaching and learning practices in eight RI middle school classrooms. Each teacher self-identified as implementing personalized learning practices through either the Summit Learning (SL) platform (four teachers) or other versions of Blended Learning (BL) practices (four teachers) for at least two years. More specifically, we sought to understand and describe each teacher’s current practices and perceptions (as well as their students’ perceptions of teacher practices) in order to advance our understanding of the definitions and unique attributes of personalized learning practices in Rhode Island.

### Theoretical Frameworks

Two frameworks informed the design of our study; one grounded in theory and research around effective teaching with technology and the other grounded in more recent practice-based interpretations of personalized learning. Using both of these frameworks allows us to first, consider PL practices in a broad general context of teaching and curriculum focused on learning with technology, and then to zoom in more specifically on practices informed by seven elements of personalized learning.

#### Digital Didactic Designs (DDD) Framework

First, we used the Digital Didactic Designs (DDD) framework that views teaching, learners, and technology integration as a system of three components; the teacher, the student, and the knowledge enacted (Sensevy, 2012). Based on the European tradition, the term “didaktik” encompasses methods, curriculum and content, and how learning can be achieved, while also focusing on how social relationships are cultivated between teachers and learners (see Lund & Hauge, 2011; Wildt, 2007).

The DDD framework (see Jahnke, Bergström, Marell-Olsson, Häll, and Kumar, 2017) includes five design elements (slightly adapted for our purposes) that work together to characterize deep, meaningful learning:

Dimension	Definition
<i>Teaching goals and intended learning outcomes (TG/ILO)</i>	Teaching goals and intended learning outcomes are clear and visible for students. The teacher communicates relevant learning criteria so that students know how to make progress in their learning.
<i>Learning activities (LA)</i>	Learning involves a variety of meaningful learning activities or assignments that help students achieve their intended learning outcomes.
<i>Assessment (AS)</i>	Assessment is a process of feedback and evaluation that allows students to receive guided reflections within the learning process about their performance and skills development.
<i>Multiple social roles and relationships (RR)</i>	Multiple roles and relationships for teachers and students are supported. Teachers are experts as well as process mentors and learning companions. Students are not only consumers of information, but also producers, meaning makers, creators, reflectors, and co-designers of learning.
<i>Multiple technologies (MT)</i>	Multiple technologies are integrated in a multimodal manner that allows students to access various information and communication spaces to support their learning. Technologies are used by students to enhance learning as a work in process; to create, collect, and produce products; and to share, reflect on, and present their learning progress.

Jahnke et al. (2017) argue, “DDD is useful for studying designs in practice that involve web-enabled technologies to gain a comprehensive picture of what goes on in individual and multiple classrooms where teachers design and implement activities using media tablets” (p. 2). For the present study, we have similarly applied these ideas to our classroom teacher observations to more precisely describe the activities, practices, materials, and resources teachers use to personalize learning (with and without technology) in middle school classrooms.

### **Personalized Learning (PL) Framework**

A second framework that informs our study outlines effective teaching practices depicted by the Better Lesson Continuum (2017). The Better Lesson Continuum moves beyond a focus on inquiry-based practices related to platforms and systems to more explicitly characterize teacher practices at the classroom level. Designers of this continuum define blended learning as the “strategic integration of educational technology instructional strategies with high quality human-to-human strategies to maximize the personalization of each student’s experience in school” (p. 5).

Of the four definitions of blended learning outlined by the [Christensen Institute](https://www.christenseninstitute.org/blended-learning-definitions-and-models/) (2018) (see <https://www.christenseninstitute.org/blended-learning-definitions-and-models/>), this interpretation appears to align best with the flex model of blended learning. Importantly, from the Better Lesson perspective, teacher beliefs, dispositions and intentionality are highlighted as the tools teachers use for supporting students to be more self-directed and have more success. As a result, teachers make significant effort to learn the tools and systems with the goal of serving and working with their students.

The Better Lesson continuum was derived from the close documentation of classroom practices in 2014-15 of “11 vanguard teachers across the United States who were implementing different models of blended learning in their classrooms” (p. 5). In 2016-17, it was further refined after several rounds of observations, interviews, and informal ratings of nearly 200 teachers. The resulting Personalized Learning Continuum framework (see Figure 2) includes seven domains “deemed as essential elements of any powerful personalized learning environment, regardless of the specific form or model the personalized learning takes and irrespective of the grade level or subject areas being considered” (p. 15). These include: 1) authentic learning; 2) student agency; 3) use of data; 4) role of technology; 5) collaboration; 6) flexible instructional modalities; and 7) classroom culture (see Table 1 below).

The broad framing of research-based elements made the Better Lesson framework particularly suitable for informing our efforts to characterize the range of personalized learning practices observed among eight teachers of different grade levels, content areas, and school contexts. In addition, the seven elements were in line with underlying theory and research-based principles of the Personal Digital Inquiry (PDI) framework (Coiro, Castek, & Quinn, 2016). The PDI framework characterizes inquiry-based learning as practices that embed effective teaching and technology use with collaborative discussion, analysis, and reflection in ways that lead to knowledge building, knowledge expression, and personal action.

### **Research Design and Methods**

For this mixed-methods study, we sought to understand how personalized learning is enacted in different classrooms in Rhode Island by describing and presenting data around three research questions:

- What are the actions and interactions of teachers and students within the context of using digital texts, tools, learning platforms, and inquiry-based practices in urban middle school classrooms?
- How do teachers in two urban middle schools perceive the process of designing and implementing lessons as well as using technology in personalized learning?
- How do students in two urban middle schools perceive teaching and the use of technology to tailor learning in their classroom this year?

Due to time constraints, this report focuses on findings related to the PL framework. To develop a frame with which to begin to answer our questions, we wove elements of the PDI framework into the details from the Better Lesson Continuum (2017) to define seven dimensions that work together to characterize *personalized learning* (PL) in this study, which can be found in Table 1.

Table 1.  
Seven Dimensions of Personalized Learning from the Better Lesson Continuum

<b>Dimension</b>	<b>Definition</b>
<i>Authentic learning</i>	How the teacher organizes the context and processes of learning to account for student goals and backgrounds.
<i>Student agency</i>	How the teacher designs learning experiences that promote and support ownership of content and learning processes.
<i>Flexible instructional formats</i>	How the teacher designs instructional formats or modalities to engage students with content in various ways.
<i>Role of technology</i>	How the teacher selects and deploys educational technology in support of content and learning processes.
<i>Collaboration</i>	How the teacher designs experiences that foster skills, habits, and dispositions of effective collaborators.
<i>Use of data</i>	How the teacher uses data from diverse sources, including technology platforms, to inform teaching and learning.
<i>Classroom culture</i>	How the teacher designs and communicates to students about classroom systems, expectations, routines, and strategies.

## Participants

**Schools.** We sought urban middle schools in Rhode Island identified as using personalized learning approaches. We targeted middle schools since many of the RI PL initiatives are taking place in middle school settings. We also sought to include teachers from across the four core content areas (ELA, math, science, and social studies) and from different grade levels at the same school. Recommended to us were schools in two urban districts that reported aligning their practices with one of two popular personalized learning models being implemented in Rhode Island: the Summit Learning (SL/PLT) program or Blended Learning (BL).

**Summit Learning (SL/PLT).** Generally, the Summit Learning program offers customizable project-based curricula, professional development, and ongoing technical support to help teachers transition from more traditional classroom instruction to a personalized learning approach. One facet of the program is the use of the Summit Learning Platform (see <https://www.summitlearning.org/>), a free digital platform that helps students access their own progress data, track progress towards short and long-term goals, learn content at their own pace, and reflect on their learning with mentors. The platform is pre-loaded with a base curriculum

that allows teachers to customize instruction and digital resources to meet their students' individual needs and interests.

As described on the website, there are three pillars to the Summit Learning program: 1) Project Time, where teachers facilitate deeper learning project-based activities designed to develop cognitive skills; 2) Personalized Learning Time (PLT), where the focus is to provide students dedicated time to work online through content-based multimedia focus areas; and 3) Mentoring, where teachers have 1:1 conversations to get to know students, and check in on student goal setting and reflection on their growth as self-directed learners. The behaviors of self-directed learning are composed of five skills in particular: challenge-seeking, persistence, strategy shifting, appropriate help-seeking, and response to setbacks. Guided mentoring support seeks to instill these behaviors in students.

We will refer to the Summit Learning program classrooms in this study by the acronym SL/PLT as a reminder that teaching and learning practices embedded into the participating Summit Learning classrooms were designed to combine work in the digital platform with activities in daily PLT experiences.

**Blending Learning (BL).** Blended learning combines traditional pedagogical methods, such as face-to-face lecture, with web-based content and instruction, often within a supervised, brick-and-mortar classroom (Horn & Staker, 2015). Optimally, students are given a certain level of control over the time, place, pace, or path of instruction. Blended learning has developed over time into seven nuanced models: station rotation, lab rotation, flipped classroom, individual rotation, flex, a la carte, and enriched virtual. Horn & Staker (2015) posit that personalized learning could be classified as the flex model of blended learning, though there is a gap in the literature and little evidence to suggest any consensus in practice or theory. In the present study, we were interested in classrooms with teachers employing their interpretation of a flex model of blended learning practices as a second context in which to study how personalized learning is being taken up by middle school teachers in Rhode Island.

**School contexts.** To protect the anonymity the two Rhode Island districts, schools, and their participating teachers, we label and describe each district/school only by its efforts to integrate personalized learning into its curriculum. In addition, we deliberately provide only general district/school information. In Table 2, we describe the demographics of participating teachers and students only as a range across the two districts.

Four teachers in our study (one grade 6 and three grade 8) teach in an urban middle school that has been working to personalize learning in line with the Summit Learning (SL/PLT) program and its three pillars. The principal of this school summed up their school's initiative with the following description:

A volunteer team of teachers from the four core content areas who expressed interest in integrating personalized learning practices received a week of formal training and professional development in the summer, along with embedded coaching support during their first year of implementation. Along with the commitment to attend formal professional development, the team of teachers also needed to manage the shift to one-to-one Chromebook rollout, greatly increasing student use of technology in the classroom. Parents opted-in to the Summit Learning program and the student composition of program participants included students with special education and English language learner needs.

Four other teachers in our study (one grade 6 and three grade 8) teach in an urban-ring middle school that has been working to personalize learning through Blended Learning (BL) practices. Administrators in this school described their efforts in this way:

“These practices are developed through collaborative, teacher-driven curriculum development that is centered around a lab classroom structure. Teachers volunteer to partner with a district coach and, at times, a school administrator to create and deliver units of study that provide all students with equitable access to lessons that expect students to communicate, collaborate and create content through authentic, constructivist and concrete real-life learning experiences. The district is focused on providing collaborative learning tools and high quality, locally developed curriculum ensuring equitable access to a socio-economically diverse population. Having been a 1:1, K-12 district for 4 years, teachers and students have worked together to learn how to use Chromebooks as a tool for learning through unconferences, "just in time" support, and student-led professional development.”

Table 2.  
School Demographics

School-level characteristics	BL site	SL/PLT site
Percent of students eligible for FRPL	<60%	>90%
Percent Hispanic	<15%	>75%
Percent Black	<10%	<10%
Percent White	>70%	<10%
6th Grade ELA PARCC Proficiency	<40%	<15%
6th Grade Math PARCC Proficiency	<25%	<10%
8th Grade ELA PARCC Proficiency	<40%	<20%
8th Grade Math PARCC Proficiency	<15%	<10%
Percent Chronically Absent	<20%	>25%
Number of Out of School Suspensions	<100	>250

**Teachers.** Once we identified our two schools, we sent an email to teachers describing the study and requesting interest in participation. Our criteria for choosing four teachers from each school was three-fold: (1) teachers who represent the four core content areas of English, math, science and social studies, (2) teachers who self-identified as implementing the personalized learning practices for at least one full school year, (3) teachers who had received some kind of formal professional development in the areas of personalized learning and/or

blended learning. We then chose four teachers in each school, based on these criteria, and on teachers' availability/ability to complete all research activities.

The eight teachers in our sample included five females and three males, with two 6th-grade teachers (one at each school) and six 8th-grade teachers (three at each school). Each of the core academic subject areas were represented in our sample, with one teacher in the BL context responsible for each subject (English language arts, history, math, and science) while the four teachers in the SL/PLT context included one English language arts teacher, one math teacher and two history teachers.

Across our sample, the eight teachers ranged in teaching experience from 4 years to 28 years as follows: 5 years or less (1); between 6-10 years (2); 11-15 years (2); 16-20 years (1); 25-30 years (2). The teachers reported having used technology in their teaching for 2-12 years as follows: two years (4); four years (3); twelve years (1).

**Students.** Within the participating teachers' observed classrooms were 338 students represented as follows: male (49%), female (51%); grade 6 (23%), grade 8 (78%); Math (23%), Science (17%), ELA (22%), or History (37%).

When asked in a survey the overall status of their grades in that particular class during the past year, the majority answered "average" (54%), followed by "excellent" (23%), "don't know" (14%), and, "poor" (9%). The majority of students at both sites reported that they have a computer at home that can be used for homework (75%), though there is a significant difference across the sites (BL = 61%; SL/PLT = 85%).

### **Data Sources and Analysis**

Data was collected from classroom observations, teacher interviews, and teacher and student online surveys, following protocols approved by the University of Rhode Island's human-subjects review board.

**Classroom observations.** As part of their study participation, teachers were told simply that researchers would be observing the ways in which they used blended or personalized learning practices in their teaching. A team of two or more researchers visited each teacher's classroom for one class period (approximately 45 minutes) three times between February and March 2018. The three observations were scheduled with the hope of observing one lesson each from early, mid-way, and the end of an instructional unit. In this way, we hoped to capture the range of personalized learning practices teachers were implementing across a typical 6-8 week unit, understanding that these were a small snapshot of the each unit. For each observation, each researcher kept field notes about what teachers were saying, how teachers used class time, what practices were observed, how the classroom was arranged, and how students were engaging in the assignments and with each other, the teacher, and technology. Two of the 12 observations in the SL/PLT context were of Personalized Learning Time (PLT) sessions. During these, the teacher met individually with students to discuss their plans for their workload across subject areas. Therefore, at these times, the teacher was not engaged in content-specific lessons.

**Teacher and Student Surveys.** To characterize teachers' perceived frequency of their own behaviors over the past school year related to personal learning practices, we designed an online teacher survey with five demographic items (e.g., grade level, subject area taught) and 56 Likert-scale items based on the seven dimensions we identified in our the PL framework we adopted from both the PDI and PL frameworks (see Table 1). Teachers were asked to indicate how often each statement was true for them and their classroom instruction on a scale from 1 (almost never true) to 5 (almost always true).

Similarly, to understand how students perceived their teacher’s efforts to personalize learning in their classroom this year, students from each context who spent at least one class a day with one of the four participating teachers were asked to complete a parallel survey of 21 items. In total, 356 students completed the survey, 212 students from the BL context (32 Grade 6, 180 Grade 8) and 144 students from the SL/PLT context (42 Grade 6, 102 Grade 8). Table 3 below outlines the number of survey items used to capture teacher’s and student’s perceived frequency of behaviors associated with each PL element.

Table 3.  
Survey items.

PL Element	# of Items on Teacher Survey	# of Items on Student Survey
Authentic Learning	6	3
Student Agency	7	2
Flexible Instructional Formats	6	2
Role of Technology	7	2
Collaboration	8	2
Use of Data	4	2
Classroom Culture	9	8
Total	47*	21

\*Nine negatively worded items were removed from the original set of 56 items for this analysis

**Teacher Interviews.** We conducted one face-to-face interview (45-70 minutes) with each teacher in late April or early May 2018, after we completed all observations, and teachers completed the online survey. A researcher interviewed each teacher individually using a semi-structured interview protocol consisting of 48 questions grouped into four categories: 1) basic background information (e.g., teaching experiences, roles, and philosophy), 2) classroom and school context (e.g., current efforts to change teaching and learning practices, expectations from school administrators); 3) perspectives around blended and personalized learning practices (e.g., definitions, descriptions of typical lessons, personal impressions of how teachers and students benefit from PL practices); and d) descriptions about ongoing support of PL practices (e.g., types of professional development, challenges of implementation, support from colleagues and administration). (See Appendix A.) All interviews were audio recorded and later transcribed for analysis.

**Data analysis.** We coded data in five steps. In Steps 1-3, we used both the Digital Didactic Designs (DDD) framework, and the Personalized Learning (PL) framework, incorporating the Better Lesson Continuum and Personal Digital Inquiry) we discussed earlier in

this paper. In Steps 4-5, we focused solely on the seven dimensions of personalized learning we identified as the focus of this paper.

**Step 1.** We integrated researchers' classroom observation notes of each lesson into a single spreadsheet document, and sequenced notes from the beginning to ending of each lesson across the three observations. We used the DDD coding scheme (see Appendix B) to assign a numerical value (1-5) for each of the five DDD elements (teaching goals, learning activities, assessment, social roles and relationships, and multiple technologies). To ensure the validity and reliability of the assigned values, three researchers scored the same teacher observation independently and then met to discuss and resolve any disagreements. Once we agreed on a final value for each DDD element, and clarified the coding scheme, three researchers independently coded the remaining observations, such that each researcher scored all teachers for each observation (e.g. Researcher 1 scored Observation 1, Researcher 2 scored Observation 2, etc.).

**Step 2.** We followed a similar procedure to assign each teacher a value for the seven PL elements (authentic learning, student agency, flexible instructional formats, role of technology, collaboration, use of data, and classroom culture) for each of their three classroom observations using the PL coding scheme (see Appendix C).

**Step 3.** Because teachers typically showed varied instruction across observed lessons, we averaged the values assigned to each teacher for each of the DDD and PL elements to more simply characterize each teacher's practices across our three classroom observations. We then averaged summary data across teachers at each school to arrive at a school-based average of each DDD and PL element.

**Step 4.** We then focused our analysis on characterizing patterns within the coded lesson scores for each of the seven PL dimensions across the eight teachers and two school sites. For this analysis, we examined individual teacher coded scores (ranging from 1-5) on a particular PL dimension for each of the three lessons, and then looked for similarities and differences relative to that PL element across the teachers and school sites.

**Step 5.** Finally, recognizing the limitations of observing three isolated moments in time to understand the complexities of personalized learning practices across an entire school year, we used information from follow-up teacher interviews, teacher surveys, and student surveys to enhance our ability to characterize and compare the nature of teaching, learning, and human interactions in the context of using digital texts, tools, learning platforms, and inquiry-based practices across the school year.

## Findings

We present our findings in three sections. First, we provide an overall summary of numerical data related to classroom observation scores aligned to the DDD and PL frameworks, and averaged scores across survey items for teachers and students. In the second section, we integrate teachers' responses to interview questions that asked them to explain what the terms *blended learning* and *personalized learning* mean to them, what they envision as part of a typical personalized or blended lesson in their classroom, and how they believed teachers and students benefited from these practices. In the third section of our findings, we provide descriptive interpretations of the data sequenced to align with the seven elements of the Better Lesson Personalized Learning Continuum as they appear in our rubric (see Appendix C). This process enables us to highlight similarities and differences within and across teachers, students, and school contexts to better understand the complex nature of teaching, learning, and human interactions as teachers enact their visions of personalized learning in their classrooms.

### Overall Summaries of Numerical Data Related to DDD and PL Frameworks

Overall, the summary values for the 24 classroom observations (3 in each of 8 teachers' classrooms) ranged, on average, from 2.8 - 3.4 (1-5 scale) on each the five elements in the DDD Framework (see Appendix B), which is grounded in theory and research around effective teaching with technology. In addition, summary values of the 24 classroom observations ranged, on average, from 2.3 - 3.2 (1-5 scale) on each of the seven elements in the PL Framework (see Appendix C), which is focused specifically on field-based personalized learning practices.

When these data are considered relative to school context, average scores across all four middle school teachers who identified with using Blended Learning (BL) practices in their classrooms ranged from 2.5-3.2 on the five DDD elements and from 2.1-2.6 on the PL elements. In comparison, average scores across all four middle school teachers who identified with using Summit Learning/Personalized Learning Time (SL/PLT) practices in their classrooms ranged from 2.9-4.2 on the five DDD elements and from 2.4-3.6 on the PL elements.

These data (as summarized in Table 4) suggest that while the eight teachers we observed demonstrate considerable effort toward enacting personalized learning practices in line with theory, research, and practice, there is room for growth. Information about all eight teachers and variations among individual teachers and within each of their three lessons will be described in much more detail in the next section of this report.

Table 4. Coded Summary Values of DDD and PL Elements By Teacher Averaged Across Three Classroom Observations

Teacher # (Class Context)	Summary Values for Five Digital Didactic Design (DDD) Elements*					Summary Values for Seven Personalized Learning (PL) Elements*						
	TG/LO	LA	AS	RR	MT	AL	SA	FI	RT	CB	UD	CC
<b>AVG Site 1 (BL)</b>	<b>2.5</b>	<b>2.9</b>	<b>2.8</b>	<b>3.2</b>	<b>2.8</b>	<b>2.6</b>	<b>2.3</b>	<b>2.3</b>	<b>3.2</b>	<b>2.1</b>	<b>2.1</b>	<b>2.6</b>
Teacher 1 (BL)	1.0	1.7	1.3	1.7	2.0	2.3	1.3	1.0	2.3	1.0	1.0	1.0
Teacher 2 (BL)	2.7	3.3	3.7	4.0	3.0	2.0	2.3	3.3	3.3	2.0	3.0	2.7
Teacher 3 (BL)	3.3	3.0	3.0	3.3	2.7	2.7	2.3	2.3	3.3	2.3	1.7	3.0
Teacher 4 (BL)	3.0	3.7	3.0	3.7	3.3	3.3	3.3	2.7	4.0	3.0	2.7	3.7
<b>AVG Site 2 (SL/PLT)</b>	<b>4.2</b>	<b>3.4</b>	<b>3.6</b>	<b>3.7</b>	<b>2.9</b>	<b>2.6</b>	<b>2.6</b>	<b>3.1</b>	<b>3.1</b>	<b>2.4</b>	<b>2.9</b>	<b>3.6</b>
Teacher 5 (SL/PLT)	4.0	3.7	4.0	4.3	2.7	3.0	4.0	4.3	3.7	3.0	3.0	4.0
Teacher 6 (SL/PLT)	3.0	2.7	3.3	2.7	2.0	1.3	1.3	2.0	2.7	1.7	2.3	2.3
Teacher 7 (SL/PLT)	4.7	4.0	4.0	4.3	4.0	3.0	3.3	3.3	2.3	2.7	3.7	4.0
Teacher 8 (SL/PLT)	5.0	3.3	3.0	3.3	3.0	3.0	1.7	2.7	3.7	2.3	2.7	4.0
<b>AVG across two sites</b>	<b>3.3</b>	<b>3.2</b>	<b>3.2</b>	<b>3.4</b>	<b>2.8</b>	<b>2.6</b>	<b>2.4</b>	<b>2.7</b>	<b>3.2</b>	<b>2.3</b>	<b>2.5</b>	<b>3.1</b>

TG/LO=Teaching Goals/Learning Outcomes; LA=Learning Activities; AS=Assessment; RR=Roles and Relationships; MT=Multiple Technologies; AL=Authentic Learning; SA=Student Agency; FI=Flexible Instruction Formats; RT=Role of Technology; CB=Collaboration; UD=Use of Data; CC=Classroom Culture

\*NOTE: Possible values for each DDD and PL element ranged from 1-5; summary values in this table (rounded to the nearest tenth) were calculated for each teacher by summing values for each element across three observations and then dividing by three.

In addition to overall numerical data for classroom observations, we collected survey data from the eight participating teachers and from a sample of middle school students from teachers' classrooms. Teacher survey responses are designed to characterize their self-perceived classroom behaviors this past school year relative to each of the seven elements in the PL Framework (Table 1). Possible values for survey items ranged from 1-5: 1=Almost Never True; 2 = Rarely True; 3 = Occasionally True; 4 = Often True; 5 = Almost Always True. Table 5 provides an overall summary of the eight teacher's self-reported scores, on average, across seven sets of items (refer to Table 3 for a breakdown of the 49 items).

On average, individual teacher ratings (ranging from 3.29-5.00) and averaged ratings across each school site (ranging from 3.56-4.54) suggest that most teachers believe that they "often" engage in teaching and learning practices aligned with the six of the PL elements (Authentic Learning, Student Agency, Flexible Instruction Formats, Role of Technology, Collaboration, and Classroom Culture) while several teachers report they "occasionally" engage in practices aligned with a seventh PL element (Use of Data).

Table 5.  
Teacher Survey Results Derived By Averaging Scores Across the Set of Survey Items Linked to Each PL Element

Teacher # (Class Context)	Survey Results for Self-Perceived Frequency of Teacher Behaviors Relative to Personalized Learning (PL) Elements*							
	AL	SA	FI	RT	CB	UD	CC	Overall Average
<b>AVG Site 1 (BL)</b>	4.46	4.18	4.25	4.25	4.34	3.56	4.17	4.21
Teacher 1 (BL)	4.83	4.57	4.67	4.86	4.88	3.50	4.78	4.66
Teacher 2 (BL)	4.50	4.14	4.17	4.00	4.25	3.25	4.22	4.13
Teacher 3 (BL)	4.83	4.71	4.50	4.71	4.75	4.25	4.00	4.53
Teacher 4 (BL)	3.67	3.29	3.67	3.43	3.50	3.25	3.67	3.51
<b>AVG Site 2 (SL/PLT)</b>	4.54	4.29	4.38	4.32	4.28	4.50	4.31	4.36
Teacher 5 (SL/PLT)	4.83	5.00	4.67	4.71	4.50	4.75	4.44	4.68
Teacher 6 (SL/PLT)	4.00	3.57	3.67	4.14	3.88	4.50	4.22	3.98
Teacher 7 (SL/PLT)	4.33	4.00	4.33	4.14	3.88	3.75	4.22	4.11
Teacher 8 (SL/PLT)	5.00	4.57	4.83	4.29	4.88	5.00	4.33	4.66
<b>AVG across two sites</b>	4.50	4.23	4.31	4.29	4.31	4.03	4.24	4.25

AL=Authentic Learning (6 items); SA=Student Agency (7 items); FI=Flexible Instruction Formats (6 items); RT=Role of Technology (7 items); CB=Collaboration (8 items); UD=Use of Data (4 items); CC=Classroom Culture (9 items)

\*NOTE: Possible values for each survey item ranged from 1-5; 1=Almost Never True; 2 = Rarely True; 3 = Occasionally True; 4 = Often True; 5 = Almost Always True. Scores in this table (rounded to the nearest one hundredth) were calculated for each teacher by averaging responses across all positively worded items for each PL element

Table 6 provides an overall summary of student survey scores, on average, across the two school contexts (BL and SL/PLT) (refer to Table 3 for a breakdown of the 21 items). Student survey responses are designed to characterize students’ perceived frequency of their teacher’s classroom behaviors this past school year relative to each of the seven elements in the PL Framework. As with the teacher survey, possible values for survey items ranged from 1-5.

In general, averaged ratings across each set of items for each school site (ranging from 2.94-3.81) and averaged across sites (3.07-3.50) suggest that most students in this sample believe their teacher “occasionally” engaged in teaching and learning practices aligned with the seven PL elements (Authentic Learning, Student Agency, Flexible Instruction Formats, Role of Technology, Collaboration, Use of Data, and Classroom Culture). Yet, compared to the other five PL elements, the average scores were slightly lower across both contexts for how often students believed their teachers engaged in practices aligned with Student Agency and Use of Data.

Table 6.  
Student Survey Results Derived By Averaging Scores Across the Set of Survey Items For Students in Each Classroom Context Linked to Each PL Element

	Student Survey Scores for Seven Personalized Learning (PL) Elements*						
	AL	SA	FI	RT	CB	UD	CC
Average for Site 1 (BL)	3.61	3.39	3.41	3.81	3.57	3.20	3.73
Average for Site 2 (SL/PLT)	3.40	2.95	3.15	3.05	3.04	2.94	3.20
Average across two sites	3.50	3.23	3.28	3.43	3.30	3.07	3.47

AL=Authentic Learning (3 items); SA=Student Agency (2 items); FI=Flexible Instruction Formats (2 items); RT=Role of Technology (2 items); CB=Collaboration (2 items); UD=Use of Data (2 items); CC=Classroom Culture (8 items)

\*NOTE: Possible values for each survey item ranged from 1-5; 1=Almost Never True; 2 = Rarely True; 3 = Occasionally True; 4 = Often True; 5 = Almost Always True. Student survey scores for each PL element averaged across all student responses at each school site and rounded to the nearest one hundredth.

Overall, teacher survey data suggests that teachers at both schools are confident in their ability to implement PL elements. Figure 1 compares the average teacher responses to survey items related to seven PL dimensions. Teachers at both sites indicated using teaching strategies at the highest levels [4 (often) to 5 (almost always)] in all of the seven PL dimensions. The high frequencies at both sites suggest that teachers see these elements as significant components of their overall planning and instruction. Although we did not test for statistical differences, the radar plots suggest that teachers using the Blended Learning approach reported relying on student data somewhat less often than did the teachers using the Summit Learning Platform (BL = 3.6; SLP/PLT = 4.5).

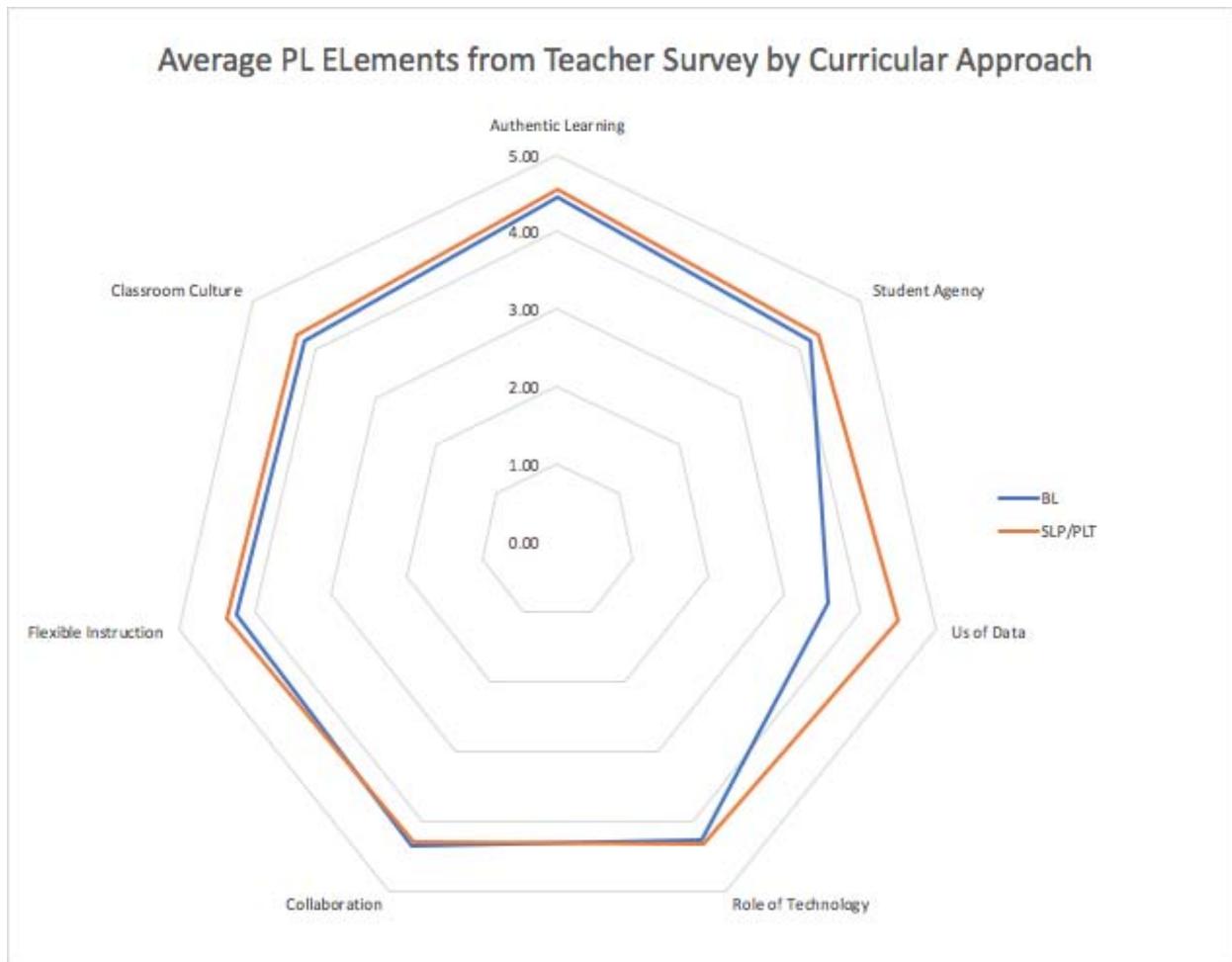


Figure 1.  
Average PL Elements from Teacher Surveys

Again, we did not test for statistical differences, but our radar plots in Figure 2 show some differences in how students at the two sites reported experiences with the various PL dimensions. Students at the Blended Learning site report higher frequencies of PL practices for all dimensions, although it is unknown whether these are significant. (See Table 6 for averages for each PL dimension.) These results may suggest that the students at the BL site perceive a stronger PL impact on the instruction they experience.

Figure 3 uses two radar plots to display teacher and student survey responses within each site. These plots make noticeable the differences in perceptions between students and teachers with respect to the PL elements. As stated before, students at both sites perceive less PL practices than do their teachers. At the blended learning site, however, these differences are less pronounced, with teachers and students agreeing most closely about a heavy reliance on technology and a strong classroom culture. Areas of greatest difference seem to be the degree to which that instruction was flexible, authentic, and promoted student agency. For the site using the Summit Learning Platform, the degree that students perceived PL practices is markedly less than what was reported by their teachers. This difference corresponds to students reporting practices occurring ‘occasionally’ instead of teachers’ perception of them occurring ‘almost

always.’ These results suggest that while teachers are confident in their purposeful intentions to design instruction that personalizes learning practices along these seven dimensions, students may not yet recognize how these practices shape the learning opportunities they have access to in their classrooms.

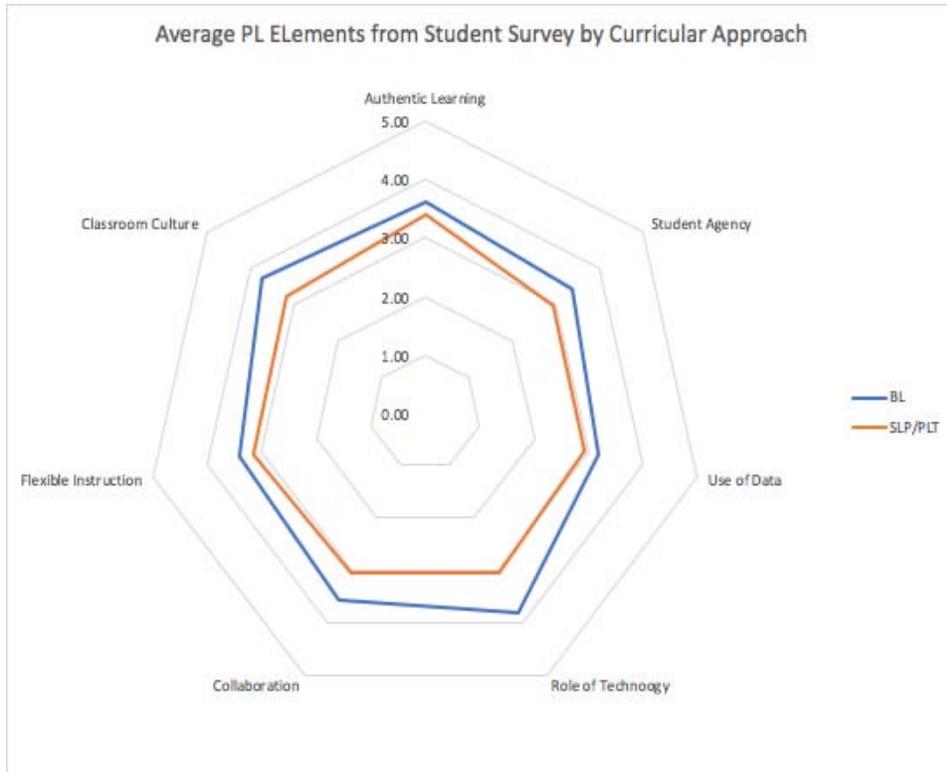


Figure 2.  
Average Student Survey Results of PL Dimensions by School

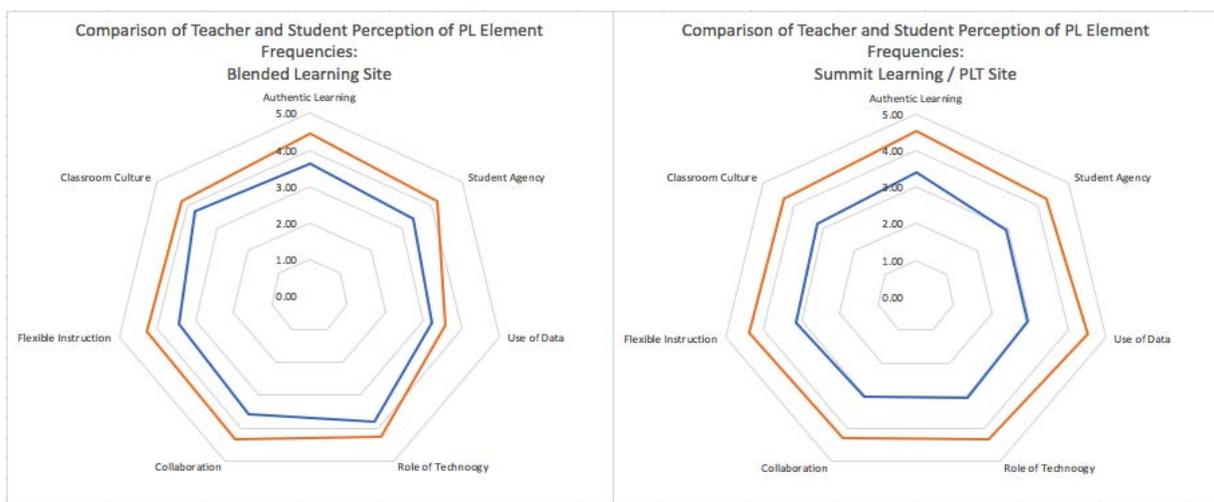


Figure 3.  
Comparing Teacher and Student Perceptions of PL Element Frequency

## Teacher Enactments of Personalized Learning Practices

After we observed each teacher for three classroom sessions and they responded to the online survey, each teacher met with a researcher to share more information about their experiences with blended or personalized learning practices. Figure 4 (pages 17-21) provides a glimpse into what participating teachers think of when they hear the phrases *blended learning* and *personalized learning* and how they enact these ideas as part of a typical lesson. Most of these direct quotations were excerpted from much longer explanations, in an attempt to represent the essence of each teacher’s thinking in their own words.

Perhaps what is most apparent across these responses is that teachers’ thinking about blended and personalized learning practices are wide and varied, with respect to how the practices are taken up as part of typical classroom instruction. Although the four teachers in each context have participated in similar kinds professional development (either traveling to California for training in the Summit Learning platform paired with continued support from New England Basecamp or attending the RI Blended Learning Conference paired with in-school grade level team support in partnership with the district technology coordinator), teachers in both contexts appear to adapt their lessons to the varied contexts in which they teach. These intentional teaching decisions are likely informed by each teacher’s perceptions of student interests, their philosophies of teaching, their impressions of blended and personalized learning practices, and what they believe will prepare their students for thinking and learning in their discipline.

Figure 4.

Teacher Perspectives of Personalized Learning Practices (Note: To maintain anonymity, the order of teachers in this figure and their respective interview responses has been changed from the order of teachers presented in the tables that are connected to scores on the DDD and PL rubrics.)

Teacher (BL)	
<p><b>Blended learning:</b> “I think about 25 kids and...all kids think and learn at different levels, so creating a curriculum that can blend or they can all become a chameleon and blend together. Some kids have strengths in reading. Some have strengths in writing, and some have strengths in drawing. Combine those groups and have that blended type of learning. That's kind of where I think. But, I know that's not the correct definition.”</p>	<p><b>Personalized learning:</b> “[That] is something that's really cool, but that requires a ton of effort on a teacher, because personalized learning is where you are really looking at that student... You have to find tools or create graphic organizers or things that can help that student do that versus the kid over here who gets it and who's done in three minutes. I want to be able to have another assignment for him. Not that there's any extra credit with standards, but give him a challenge so that he's going to think and have a better aha moment. ...But, to me, in my head, it's like I'm giving that student that resource that's going to be able to have that student produce the end result, which is what I want.”</p>

**A typical BL lesson:** “What I do is..I look at what do I want them to come out with? What is the outcome and what do I want to assess at the end so I know that they understand the differences? I pick those objectives. I look at those definitions. Then, I look at resources that can help them with that. Then, I put that stuff into, kind of line it up and say okay, are we going to just do [Topic A] today? Then, [Topic B] tomorrow and then kind of do that. I start with usually a brainstorm of what we're going to do. Then, I have resources... [and] I create graphic organizers that are kind of like question - answer, and then I give another. If they want to do an image or a video or something else that they can relate it to or understand it, then they can go back to that. In doing that type of blended learning, they can [also] read at different levels, because some of the articles...that I use have different levels...You can kind of do revisions to kind of help them, but with that blended learning, they need to show how they changed it [the assignment/product] and why they changed it and went in that direction. That's where it's more one on one.”

Teacher (BL)

**Blended learning:** “I think [this is] the combination of technology and face-to-face instruction and small group instruction to give kids control over their learning space, pace and product.”

**Personalized learning:** “To me, I don't know what the official definition is, but making it personal and relevant to what the kids' needs are and having their voices heard and being active participants. Of course, I've thought like, ‘what's the difference?’ in terms of individualized and personalized. I think blended learning makes that possible. In a room of 26 kids with such variety and levels, that's how we can make those things possible.”

**A typical BL lesson:** “Think of your class as where is the most varying of need or interest? Writing is perfect for that. Writers are so different, even if you have all the same level, each writer feels so unique in terms of what they're gonna write about and their style. Some writers need that time to develop their writing piece first. Some just want to jump in. My first day I'm like, "Wow, these kids are so excited. I want to just let them fly." That's when I made my first playlist. We would start there. They all have a series of activities that they're kind of working through. I try to instill a number of checkpoints in there. On any given day, the kids come in we would do our reading first, but then we start writing or working on the playlist. Some of them will be doing formative assessments and kind of mini lessons at first. Some of them will be drafting. There will be a number of different things going on at the same time. I do have those checkpoints built in, just so I can touch base to approve a topic or a graphic organizer or something like that to discuss it...again this is kind of staggered depending on the students. I assign them -- I try to do two individualized revision goals, one craft focused and one editing focused. Some kids will be working independently and others will be working on a revision group. I try to pair them up as much as possible if I can have it. So there will be a small group and I'll be working with other kids together...At the end, I tend to do a check-in form so I can touch base with everyone who needs it.”

**Teacher (BL)**

**Blending Learning:**

“Technology. I'm going to say individualize as well, but not so much as an IEP. Just more personalized I should say, not individualized, personalized; less teacher centered, more student centered.”

**Personalized Learning:**

“That's when I think the kids kind of control a little bit of the direction that things are going. For me if something that comes up and it's in class, if all of a sudden and I'm just talking about... say the Olympics and the kids say, "Olympics? What's that?" and that drives me in that direction, kind of thing. That to me makes it a little more personalized, when it's the demand of my audience.”

**A typical BL lesson:** “I try to take it [planning wise] a week out. That way if I need something else [e.g., another resource], I can look for it in due time without scrambling. I like to have the kids read ahead. Sometimes I'll give them a short little article to just kind of prepare them. Kind of just to cleanse their palate a little bit sometimes, as well as, in between things. Just to steer them in a different direction.”

**Teacher (BL)**

**Blending Learning:** “I think of students being able to work at their own ability level, being instructed at their ability level, receiving materials that are appropriate for them, giving them feedback, letting them assess how they're feeling about this work, check-ins with them, being able to set your room up in a different way that doesn't look [the same] every single day. Especially with [my subject area], some of my teachings are direct when they're learning something new and sometimes it's hard to do that blending piece because when I give something out for the first time, everybody's pretty much on the same page. It's after that launch that things may start to look different and then I can incorporate that blended learning piece.”

**Personalized Learning:** “Just really tailoring to that student's needs, each individual student's needs and trying to, like I said, try to identify what their best learning style is and how you might engage that as much as you can to really bring out the best in them. Whether it's a visual piece, whether it's on paper, whether it's communication, oral, or visual. We try to do the best that we can do with what we have.”

**A typical BL lesson:** It's like parallel teaching with only one person, where I knew that there were some partnerships that could take place where I had identified eight student leaders that could manage kids ... We level them yellow, blue, green with yellow being our top kids; blue being our kids that are right there and are maybe just below that right there that with a little mentoring can get it; and green, which is our kids that need re-teaching and a little bit more remedial or some sort of modification or an accommodated piece. Those three levels existed in that class that day (of the lesson) and as I spent my time with all of those, the green situations; the yellows and blues were able to manage and I was able to get those greens to a point where they were independent and then I went over to facilitate [the other groups].”

Teacher (SL/PLT)

**Blended learning:** “I’m not big on blended learning...I’ve never really jumped into blended learning. I jumped into personalized learning.”

**Personalized learning:** “I think of a kid asking questions and figuring out how to answer their questions on their own. I think of personalized learning as what I go through when I walk into Home Depot and I have to figure out how many tiles I need to do my bathroom. How much glue I’m going to need for those tiles. Realizing that the mathematics I’m teaching these kids is the mathematics that I would use every day. I’m trying to make learners who can walk into the store and figure that out. Kids who can walk up and look at the wall in this room and make a prediction on how much paint they’d need to buy. That’s what I’m looking for, because it’s going to apply, these are the things that apply to their real life. Whether it’s balancing a checkbook, being able to budget, or buying enough wood to build a doghouse. I want them to be able to take the skills I’m giving them here and translate them into things where, if they run into stuff they don’t understand, that they know how would you go find that information.”

**A typical SL lesson:** “The platform gives us a lot of projects and checkpoints...that foster higher-level thinking...by asking kids to explain how they got their answer...For example, the project that they gave us about slope [in the platform] I decided to modify it more into creating your own business. I made it really more about them. Creating something that they can relate to, and then just turn, using my math that I’m showing them and telling me a story about it. Rather than sitting there doing problems, now they understand what they’re talking about...They’ve figured it out now that y-intercept, if it’s in a business model, is about where did I start in my business. Did I start with money, did I start without money, did I have to get money to come out of negative numbers. That’s an example of how I kind of cater it to them, and I try and make it more of them not solving problems as much as figuring out what this means to me.”

Teacher (SL/PLT)

**Blended learning:** “When I hear blended learning...I think of different means for kids to use, to learn. I know some models [that] could be the centers kind of thing. I wouldn’t say I’ve done blended learning. It seems like it is...I guess...just providing different ways, different supports for them.”

**Personalized learning:** “I would say personalized learning is more that the kids can direct their learning. Say the assignment is this story, "Okay, here are some resources I can look at." I don't have to use every single one, like sometimes the teacher gives you a packet. I can choose what will work best for me. During their PLT time, they're literally choosing what subject to work on, what focus area, and how they're going to study. They're definitely personalizing their learning in that way for homework and after school, balancing and setting goals and getting stuff done.”

**A typical SL/PLT lesson:** Our two focus areas now that go with this [project, they're figurative language and story telling. ... That could be something at the beginning, we have them access knowledge from that focus area, like "Okay, quick review, similes and metaphors." Then maybe that would lead into them looking in their stories. Did they activate any in their stories, or maybe with somebody else's? Then we try to [apply these skills] with them, with these stories, a lot of peer editing, looking at each other's [work] and then giving feedback. Then [they] start on the cog[nitive] skills... [In the platform], they had to analyze, or their partner had to analyze for them, what they have to work on. That way it's not the same kids having to sit through the same lesson of strong verbs when they're using verbs that are off the chart or the same thing with dialogue. [The kids say] 'Oh, [now] I know I have to write my dialogue.' That's when they want to tune you out, so yeah, it looks different for every project, every task, that would look different. Could be groups, it could be peer editing. Sometimes it does have to be whole group for a bit, when we go over something."

Teacher (SL/PLT)

**Blended learning:** "When I think of blended learning I think of station rotation and some sort of app, or something from a vendor that is supposed to be an intervention or a supplement to curriculum that kids can use so that the teacher can pull a small group. I think of IXL for math, or Achieve 3000 for reading, and it's a tool to help students work on their own so that a teacher can pull meaningful groups."

**Personalized learning:** "I think of the mindset shift, the instructional shift where students are self-directed. Because everything I know about personalized learning, I learned through the Summit model, I think of the three pillars, so I think of mentoring, project based learning, and then personalized time, which is that content mastery piece. I think in a program that is personalized, students need to have an adult that cares about them that they meet with regularly, so there's that mentoring piece that is helping them with the goal setting both academically and socially ... Then there has to be a time when they're on their own working through content, and they have to master that 80% or higher; and then there's authentic projects where they're applying what they've learned through teacher support."

**A typical SL lesson:** "In the middle of a project, which is pretty typical because projects are units of instruction, it would be working towards developing a skill towards a checkpoint. I would think about what is that checkpoint asking them to do. For example, if it's writing a paragraph with a claim about if daily life in Athens was better than Sparta, I would then do some sort of mini lesson where I'm modeling the skill that I would be expecting them to do. Maybe it's going through one part of the documents of the evidence together with them and modeling how to fill out that graphic organizer, and then releasing them to do it on their own. Having some sort of exit ticket that they have to turn into me so I can see their progress."

Teacher (SL/PLT)	
<p><b>Blended learning:</b> “As we were taught, blended learning was three groups: one group with a teacher, one group with a textbook and one group online... Then I'm also looking at the challenges of the city classrooms where we might have a little more management problems. I always found blended learning to be a quick technology fix so we could say we're doing it.”</p>	<p><b>Personalized learning:</b> “It's kids finding out information on their own, guided of course. Not so much you have all year for this topic. We've got to have some kind of order of how we do things and some kind of framework. But to me, the reason why I like this is that they can come up and find their own information... [in a unit on Native Americans], the fact that my kids in my class picked up a phone and called the Smithsonian [to speak to an anthropologist with new ideas], that's what this kind of personalized learning is. They chose their topic. This is what he wanted to do; he was driven. So in that unit, rather than everybody studying Columbus or everybody studying Salem, they were choosing out of hundreds and hundreds of mysteries, what they wanted to.”</p>
<p><b>A typical SL lesson:</b>  “So the last unit we're doing is the industrialist versus the worker, mainly centered on Irish immigration. So we kicked that unit off with a documentary on agriculture today with child labor migrants. So that's how we started off and right now they're processing. "Well, how come we can only work so many hours a week in [their city] because they're all getting their work forms. But yeah, these kids [in the documentary] can be nine years old! So I asked the kids to research it and there's a law of agriculture that they can do those things. So what I like about Summit personalized is I can take modern history backwards rather than the other way around. One of the things we [history teachers at different grade levels] like to do, we like to look at old problems, whether they're still happening today, show them that they're happening today and then kind of associate [with other events] How do we make change [for] the greater [good] - how do we change? ... Technology makes it easier...tomorrow [for example] I know I'm going home and I'm planning what I want to produce. So I can upload anything I want onto the platform that I think would be helpful to the kids. So I do a lot of research on what other teachers do, how I can blend it into what I do.”</p>	

One way of characterizing the different ways that these eight teachers enact personalized learning practices is along a continuum (see Figure 5) from more teacher-centered efforts to differentiate instruction (with and without technology) to those that cultivate more student-centered pathways for learning (with and without technology). Comments from four teachers in our sample align with more teacher-centered decisions about what students need and what materials students will have access to, albeit often with their students’ interests in mind (e.g., student-centered rather than student-guided). Larry Cuban (2018) describes these teachers as “committed to using online and offline lessons anchored in discrete skills and knowledge and tailored to the abilities and performance of individual students.”

In the BL context, for example, Teacher 1 explains that when kids ask a question, “I’m driving my instruction toward what interests students” and Teacher 2 reports, “I try to identify what their best learning style is and how you might engage that as much as you can to really bring out the best in them.” Two teachers in the SL/PLT context responded similarly: “I want them to be able to take the skills I'm giving them here and translate them into things [that are meaningful to them]” (Teacher 6) and Teacher 8 reports how she typically models the skill,

models how to fill out the graphic organizer, and then “releases them to do it on their own...having some sort of exit ticket that they have to turn into me so I can see their progress.” The two teachers in the SL/PLT context also alluded to what might be described as a combination of teacher-directed and platform-directed instruction: “Projects [in the platform] are units of instruction, [so my teaching] would be working towards developing a skill towards a checkpoint,” explains Teacher 8, while Teacher 6 considers how to make the platform-provided skill set more relatable for students: “The platform gives us a lot of projects and checkpoints... but...I decided to modify it more into creating your own business. I made it really more about them [my students].” For these four teachers, their instruction often centers on the needs and interests of students, but the teacher selects the learning goals and materials for most of the day-to-day classroom routines.

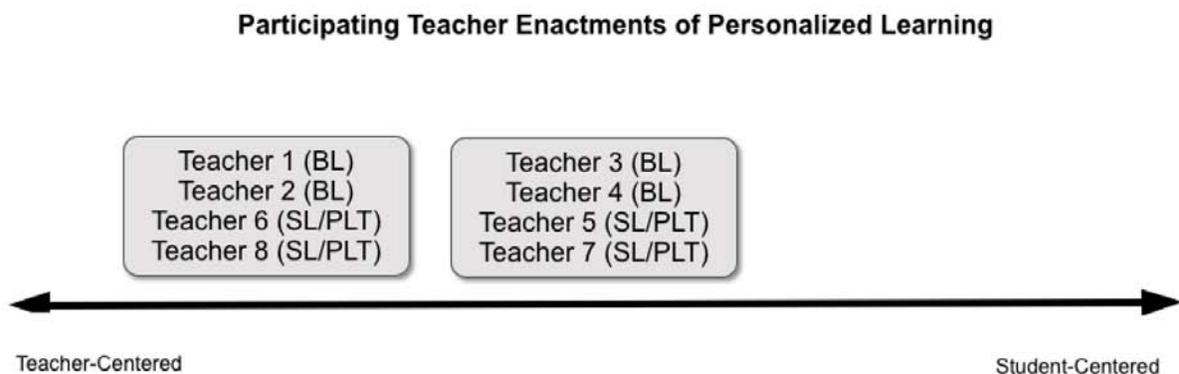


Figure 5.  
Continuum of Personalized Learning Practices: Teacher Interviews

The personalized learning practices described by the other four teachers in our sample appear to align with more of a mixture of teacher-centered and student-centered lessons that integrate a range of project-based units, digital readings, and self-assessments into whole group, small group, and independent work activities - what Cuban (2018) describes as efforts “in the middle” of his personalized learning continuum. These teachers’ descriptions of personalized practices emphasize their own role in choosing goals and materials as well as their expectations that students have an active role in choosing learning materials and revising the format of suggested learning products. As Teacher 3 (in the BL context) explains, “You have to find tools or create graphic organizers or things that can help that student...it's like I'm giving that student that resource that's going to be able to have that student produce the end result, which is what I want... I pick those objectives. I look at those definitions. Then, I look at resources that can help them with that. You can kind of do revisions to kind of help them, but with blended learning, they need to show how they changed it [the assignment/product] and why they changed it and went in that direction. That's where it's more one on one.” Similarly, Teacher 4 (in the BL context) explains that in a typical lesson, “There will be a number of different things going on at the same time. I do have those checkpoints built in, just so I can touch base to approve a topic or a graphic organizers” [but my goal is to] “give kids control over their learning space, pace and product.”

Teachers 5 and 6 (in the SL/PLT context) expressed similar visions of teaching and learning practices that combine elements of student-choice and teacher-centered instruction,

supported by a platform that provides curriculum and houses data that can inform instruction and students' goal-setting. As Teacher 5 explains, "kids can direct their learning...like sometimes the teacher gives you a packet. I can choose what will work best for me...Then they start on the cognitive skills [provided in the platform]...and it [the pace and sequence] looks different for every project, every task; that would look different." Teacher 7 hopes personalized learning practices will foster inquiry and student choice of topic and then sees his role as helping to gather outside resources that offer a wider perspective on relevant issues: "It's kids finding out information on their own, guided of course. ...They choose their topic. ...out of hundreds and hundreds of mysteries, what they want to do." After school ends each day, this teacher explains, with technology, "I can upload anything I want onto the [Summit] platform that I think would be helpful to the kids."

What was missing from our data were teachers who described their current practices in ways that depicted mostly student-centered learning (on the far right of the personalized learning continuum pictured in Figure 5). This is when students use data and their own questions to set and monitor their own learning goals, actively document and reflect on the quality of their work process and products, and have an active role in how they will share their learning with others inside and outside the classroom.

A second interesting pattern in the interviews revealed different perspectives of blended and personalized learning practices that varied across the two school contexts. In the SL/PLT context, for example, teacher responses suggest a slight aversion to their understanding of blended learning practices (e.g., *I tried it; it's difficult to manage; I'm not big on it; it's time consuming to come up with resources for each lesson*), and they each gave examples of how the Summit Learning platform helped them manage classroom learning and instruction (e.g., student behaviors, gathering initial sets of materials, identifying cognitive and socio-emotional targets, tracking student performance and lesson progression), which, in turn, allowed them more time to step back and think about student performance, look for additional media resources, and reflect on different ways of teaching beyond what was provided in the platform. In the BL context, teacher responses suggested they used blended learning practices (e.g., digital playlists, flexible groupings) to differentiate instruction by varying the levels of reading materials or learning tasks to match student needs; and they also used personalized learning practices to offer students more voice and choice as part of these flexible learning groups. These different interpretations of BL and PL practices suggest all teachers (in any PL context) could benefit from more discussion about the extent to which these practices may overlap and whether or not BL and PL practices can co-exist in curriculum designed to best meet the needs of all learners.

### **Comparing Teacher Perceptions to the RI PL Initiative**

As outlined earlier in our paper, the RI PL Initiative outlines nine elements in its definition of PL; these include differentiated learning activities, data informed learner profiles, mastery based progression of skills, ongoing formative assessment, a flexible learning environment, student choice and agency, and authentic/applied learning opportunities that are technology enabled and teacher-facilitated. When we examine the interpretations of PL and BL as expressed by the eight teachers in our study relative to the RI definition of PL, there are many overlaps (see Table 7).

Table 7.  
Personalized Learning: RI Definition and Teacher Perceptions

<b>PL Element (as defined in the RI PL Initiative)</b>	<b>SL/PLT Context</b>	<b>BL Context</b>
Differentiated learning activities	Yes	Yes
Ongoing formative assessment	Yes	Yes
Flexible learning environment	Yes	Yes
Authentic/applied learning	Yes	Yes
Technology enabled	Yes	Yes
Teacher facilitated	Yes	Yes
Student choice and agency	Yes	Yes
Mastery based progression	Yes	Yes
Learner profiles	No	No

Almost all of the teachers talked about the importance of *differentiating learning activities* by adapting and/or giving students choice about the format (paper vs. digital), reading level, language, topical content and/or medium for learning (e.g., video, audio, print) to meet the diverse and varied needs and interests of their students. Similarly, many teachers included descriptions of a *flexible learning environment* in their definitions of BL or PL practices, ranging from whole group work to flexible small group work, partner work, one-to-one conferencing, and expectations that students complete some of their work individually at school and at home. To illustrate, the sentiments of one BL teacher succinctly touches on both differentiation and flexible grouping:

“I think of students being able to work at their own ability level, being instructed at their ability level, receiving materials that are appropriate for them, giving them varied feedback, letting them assess how they're feeling about their work, [doing regular] check-ins with them, [and] being able to set your room up in a different way that doesn't look [the same] every single day.” In the SL/PLT context, the ELA teacher alludes to differentiation and flexible grouping as well: “[A lesson] looks different for every project, every task, that would look different. Could be groups, it could be peer editing. Sometimes it does have to be whole group for a bit, when we go over something.”

Also common among teacher’s interview responses were efforts to collect *ongoing formative assessments* that inform their efforts to personalize instruction. When describing a typical lesson around a specific focus area or skill set, one of the SL/PLT teachers explained:

“That could be something at the beginning, we have them access knowledge from that focus area, like “Okay, quick review, similes and metaphors.” Then maybe that would lead into them looking in their stories. Did they activate any in their stories, or maybe with somebody else’s? Then we try to [apply these skills] with them, with these stories, a lot of peer editing, looking at each other’s work and then giving feedback. Then [they] start on the cog[nitive] skills... They had to analyze, or their partner had to analyze for them, what do they have to work on. That way it’s not the same kids having to sit through the same lesson of strong verbs when they’re using verbs that are off the chart or same thing with dialogue.”

In the BL context, formative assessment is fairly common as well:

“We would start [with our playlist]. They all have a series of activities that they’re kind of working through. I try to instill a number of checkpoints in there. On any given day, the kids come in, we would do our reading first, but then we start writing or working on the playlist. Some of them will be doing formative assessments and kind of mini lessons at first. Some of them will be drafting. There will be a number of different things going on at the same time. I do have those checkpoints built in, just so I can touch base to approve a topic or a graphic organizer or something like that to discuss it.”

Most of the teachers in both contexts also mentioned their efforts to personalize lessons by expecting students to *apply their learning in authentic ways*. A sixth grade SL/PLT teacher describes one pillar of their instruction grounded in “authentic projects where they’re applying what they’ve learned through teacher support” and an eighth grade SL/PLT teacher seeks to push students to independently apply these real-world skills outside of class:

“I’m trying to make learners who can walk into the store and figure the math [they use every day]. Kids who can walk up and look at the wall in this room and make a prediction on how much paint they’d need to buy. That’s what I’m looking for, because...these are the things that apply to their real life. Whether it’s balancing a checkbook, being able to budget, or buying enough wood to build a doghouse. I want them to be able to take the skills I’m giving them here and translate them into things where, if they run into stuff they don’t understand, that they know how would you go find that information.”

Similarly, the Social Studies BL teacher often finds short readings or video clips to encourage students to draw connections between what they are learning and the world outside their classroom and the Science BL teacher describes how her instruction emphasizes real-world connections like this:

“...If I see something on the news and I kind of bring that up, I can relate that...during our conversations.” Later in the interview this teacher also describes what she expects from her students: “You have to apply those [vocabulary] words in your short answers. You’re going to have more short answers, and you’re going to be able to tell me and use that terminology in that context. That’s how I can assess it.”

Teachers in both contexts often spoke about how technology enabled them to create more engaging, differentiated lessons they could share across disciplines, but they also pointed out the

critical role they play as the teacher who facilitates the learning that places in his/her classroom. When asked where technology fits into PL experiences, one SL/PLT teacher's response captures the essence of many participating teachers' ideas:

“Technology to me is a tool. It's something that makes things easier and faster, but it doesn't replace the learning. For example, a Chromebook can be used to translate faster than saying, "Hey so and so, can you translate what I just said to this student?" It's something that happens faster and students can do it themselves. It can provide an accommodation to a student in a way that wouldn't be easy to do when you're alone in the classroom and you don't have help. They can speak into the Chromebook and it will write their paragraph for them. There's access to more resources. You can differentiate more, and give students exactly what they need and give them feedback digitally, which is much faster than reading a bunch of paragraphs written on paper and having to hand-write your comments and give it back. It makes things more efficient, and it helps, but it doesn't replace any of the core practices that we know work.”

Yet, when this same teacher was asked if she was worried if technology would ever replace her, much like her colleagues, she responded by explaining:

“No...because this program doesn't work without a strong teacher. This program doesn't work without relationships. I could do this - I would venture to say it would be more difficult - but I could do this program without a Chromebook...But if you just had the kids and the Chromebook, nothing would be done.”

With respect to student choice and agency, many of the teachers in the BL and SL/PLT context talked about letting students choose from the set of resources or activities provided by the curriculum and they also described the importance of students taking ownership and being held accountable for their learning. However, many of the teacher's comments focused on students taking ownership by completing their homework before the deadline and in submitting work they are proud of (or revising it if they are not). Fewer of the teacher's comments described agency in terms of students taking the driver's seat in their learning, by reflecting on their own progress, defining their own goals (outside of curricular choices), and creating personally defined projects that enable them to act on their knowledge by influencing ideas outside of their classroom.

Across the interviews, two of the SL/PLT teachers mentioned *mastery* as an element of typical PL practices. One teacher described mastery as “one of the three pillars” of the Summit Learning model, and the 2<sup>nd</sup> teacher in this context emphasized that some of her students are motivated to “take more ownership” to be able to accomplish the goal of getting to 80% mastery in their focus areas. Finally, while several teachers discussed how they used data (digital and otherwise) to group and teach students, no teachers in either context mentioned the use of learning profiles in their interviews.

### **Characterizing Personalized Learning Practices Across Eight Rhode Island Classrooms**

In this section, descriptive interpretations of the data are sequenced to align with the seven elements of the Better Lesson Personalized Learning Continuum as they appear Table 1. For each element, we (1) describe the results of our three classroom observations within the two contexts (Blended Learning and Summit Learning/PLT), relative to teacher practices around that

particular PL element; (2) compare these observations to teacher responses to post-observation interview questions about that element; and (3) compare teacher and student responses to survey items about that element. This process enabled us to highlight similarities and differences within and across teachers, students, and school contexts to better understand the complex nature of teaching, learning, and human interactions as teachers enact their visions of personalized learning in their classrooms.

## Authentic Learning

### Authentic Learning: Classroom Observations

There are three aspects of Authentic Learning as described in the PL Framework: (a) connecting academic topics and tasks with the world outside of school, (b) providing students with opportunities to creatively demonstrate mastery of academic topics, (c) providing opportunities for students to demonstrate their mastery to an audience beyond their classroom. For this study, we generally defined authentic learning as how teachers accounted for student goals and backgrounds in their instructional approaches. Each teacher was observed three times. Each observer scored each lesson from 1-5 based on the PL scoring rubric outlined in Appendix B. the following criteria. When we averaged coded scores for authentic learning in each classroom across the three classroom observations for each teacher (see Table 8), the average score across the visits ranged from 1.33 to 3.33 (on a scale from 1-5) with the SL/PLT site scoring slightly higher overall. Four teachers (one SL/PLT teacher and three BL teachers) averaged scores between 1.3 and 2.7 (on a five point scale), and four teachers (three SL/PLT and one BL) averaged scores between 3.0 and 3.3.

Observed elements of authentic learning were fairly consistent across the three observations for most of the teachers. Teachers 1, 2, 5, 6, and 8 scored within 1 point of their respective averages across the three lessons, while one lesson of teachers 3, 4, and 7 scored at least 2 points lower than the other two lessons. This suggests that while most teachers were consistent with how they connected their instruction with students’ goals and backgrounds, some observed lessons demonstrated less of this element. Next, we offer examples of the range of how the teachers supported authentic learning at each site.

Table 8.  
Coded Score (from 1-5) for Authentic Learning (AL) experiences for each observation and averaged across observations

Teacher	AL Visit 1	AL Visit 2	AL Visit 3	AL Average Across 3 Visits
Teacher 1 (BL)	2	3	2	2.33
Teacher 2 (BL)	2	1	3	2.00
Teacher 3 (BL)	4	3	1	2.67
Teacher 4 (BL)	2	4	4	3.33
Teacher 5 SL/PLT	3	3	3	3.00
Teacher 6 SL/PLT	1	1	2	1.33

Teacher 7 SL/PLT	4	4	1	3.00
Teacher 8 SL/PLT	3	2	4	3.00

In lessons coded as 1 for authentic learning (21% of the 24 lessons), teachers either were not observed not engaging students explicitly, or used grades or academic progress to engage students in activities. For example, a teacher used the performance assessment rubrics to engender students to revise their responses to better coincide with the rubrics.

In lessons coded as 2 for authentic learning (25%), teachers brought real world examples into instruction, but were not observed relating knowledge and skills learned to the world outside of school, or relating the lesson to students’ learning goals or interests. For example, in the SL/PLT site, teachers were observed connecting class projects to real-world topics (e.g. student views about the ongoing presidential debates were discussed in the context of a planned classroom debate). At the BL site, students collaborated with partners on peer editing, but explanation of why this is an important skill outside the classroom was not noted.

In lessons coded as 3 for authentic learning (29%), teachers were observed connecting academic topics to student interests and goals in a variety of ways. Topics and skills addressed were still justified mostly in terms of being a course topic. At the SL/PLT site, students were urged to use their own initiative (“if you don’t know a word, then look it up”) in the context of academic tasks. However, in the PLT classes, teachers conferred with students to hear their weekly goals and support their progress. At the BL site, teachers stressed academic progress and supported instruction with everyday examples.

In the six lessons coded as 4 for authentic learning (25%), we observed teachers establishing real world connections and motivations for classroom tasks. Students were encouraged to show mastery creatively as well. At the SL/PLT site, we observed teachers connecting class topics to historical events and myths that students had an interest in, students collaborating to represent their knowledge creatively in a Powerpoint presentation, and teachers asking students to put themselves in hypothetical historical situations. At the BL site, we observed a teacher encouraging students to make their own real-world connections to a classroom topic. In each of these situations, the activities students we still engaged in the same task, with little room for them to make topic relevant personally (required for a score of 5).

### **Authentic Learning: Teacher Interviews**

During our interviews with teachers, we asked teachers how they connected their instruction to students’ interests and what types of products they have students produce. Teachers at both sites agreed that personalized or blended learning allows teachers to relate academic topics to their students’ interests and real world events, which has the effect of increasing student engagement. As examples, a teacher at the SL/PLT encouraged students to conduct outside research, and to contact an expert at a national organization to gain further information about a topic. A teacher at the BL site targeted a “year of Yes,” where she encouraged students to research topics that they were interested in.

At the SL/PLT site, where the curriculum for each subject is explicitly organized into distinct projects, teachers described students having opportunities to apply specific cognitive skills by creating a variety of products. Student products included nonfiction research and writing, podcasts, role-playing activities, debates, annotated maps, invention creation and marketing, visual presentation of a community problem, and fantasy fiction writing.

At the BL site, teachers engaged students in using a variety of media to demonstrate their knowledge in their courses. Students engaged in creative projects such as designing posters, writing blogs, eBooks, creating art projects, conducting “Appy-hours” to share technology-based projects “retelling a story through their eyes, through their perspective” using PowerPoint presentations, stories, and digital postcards, writing lab reports as well as “constructed responses” that link class topics to real world situations.

There appeared to be conditions at both sites that might limit the opportunities for students to perceive their various work as authentic—as having a meaning outside of being an academic assignment. Generally, teachers discussed providing students the opportunity to answer a subject-related question of their own choosing or represent their knowledge in a particular medium, but in the three lessons we observed, students did not have opportunities to produce artifacts to share outside of the class or school – efforts which would reflect the higher end of the PL rubric on the authentic learning dimension. For some projects at both sites, all students were expected to produce similar artifacts (e.g. annotated maps, digital postcards). Teachers described the projects within the Summit Learning curriculum as not requiring an external audience, perhaps because the platform is designed to be usable across a variety of sites. At the BL site, some teachers felt pressure to be preparing students for the academic realities of high school and college, which might limit their reliance on project-based instruction.

### **Authentic Learning: Teacher and Student Surveys**

Survey results suggest that teachers from both sites place high importance on authentic learning (AL). Teachers were asked about several elements of AL, including (a) communicating real life connections of course topics, (b) focusing on connections, (c) having students create personally meaningful products, (d) helping students learn in creative ways, (e) giving students chances to collaborate, and (f) having students showcase their work.

Across the two sites, average teachers’ responses about AL ranged from 3.67 to 5.00, with an overall mean of 4.50, indicating that teachers felt their instruction was often or almost always authentic. Teachers at the blended learning site reported an average response of 4.46 while teachers from the Summit learning site averaged 4.54. Teachers at both sites agreed on the importance of helping students learn in creative ways (both sites averaged 4.5) and almost always having students create personally meaningful products (both sites averaged 4.75). At the blended learning site, teachers reported a slightly higher concern for focusing on connections (BL 4.75; SL/PLT 4.50), and giving students opportunities for working collaboratively (BL 4.75; SL/PLT 4.50). Teachers at Summit Learning site indicated always sharing the purpose of a topic and making real world connections (BL 4.50; SL/PLT 5.00) and often showcasing student work (BL 3.50; SL/PLT 4.00).

Students were asked three questions to gauge their perception of the degree to which their classroom experiences were authentic or relevant: how often their teacher (a) shared a purpose for the day’s activities, (b) explained how skills learned will be helpful in real life, and (c) provided opportunities to share and celebrate work with others outside of school. Students at the BL site reported their teachers shared their lessons’ purpose more often (BL 3.86; SL/PLT 3.41). The BL students also reported more opportunities to celebrate their work with external audiences (BL 3.65; SL/PLT 3.2). SL/PLT students reported that their teachers explained the relevance of what they were learning more often as compared to the BL teachers (B: 3.32; SL/PLT 3.58).

Students perceived their instruction to be authentic considerably less often than their teachers. Overall, on average, students in both the BL and SL/PLT contexts felt that their

teachers “occasionally” provided authentic learning elements (BL: 3.6; SL/PLT: 3.4), while their their teachers reported enacting authentic lessons “almost always” (BL: 4.46; SL/PLT: 4.56).

## Student Agency

### Student Agency: Classroom Observations

Our coding scheme broadly defined student agency in a personalized learning environment as how the teacher designs learning experiences to promote and support students’ ownership of content and learning processes. As shown in Table 9, observations led to similar average scores across the two schools for teachers’ design of experiences for student ownership. Individually, three teachers (two SL/PLT teachers and one BL teacher) averaged scores of 1-2 (out of 5), two teachers (BL) averaged scores of 2-3, and three teachers (two SL/PLT and one BL) averaged scores of 3-4.

Table 9.  
Coded Score (from 1-5) for Student Agency (SA) experiences for each classroom observation and averaged across observations

Teacher	SA Visit 1	SA Visit 2	SA Visit 3	SA Average Across 3 Visits
Teacher 1 (BL)	1	2	1	1.3
Teacher 2 (BL)	4	2	1	2.3
Teacher 3 (BL)	5	1	1	2.3
Teacher 4 (BL)	3	4	3	3.3
Teacher 5 SL/PLT	3	5	4	4.0
Teacher 6 SL/PLT	2	1	1	1.3
Teacher 7 SL/PLT	4	3	3	3.3
Teacher 8 SL/PLT	2	2	1	1.7

Lessons that scored in the 1-2 range for student agency (54% of 24 lessons) involved the teacher directing most of the learning activity and decisions about tasks and timing. Students were engaged in doing the required tasks as led by the teacher. In some instances, students were able to make some limited choices within the bounds of the curriculum, and may have worked at their own pace, as long as deadlines were met. When students worked in teams or groups, the decision to do this rested with the teacher.

Two teachers, both from the BL school, showed average scores in the 2-3 range. Yet, there was wide variation across their observations, which suggests that these teachers’ promotion of agency may relate to the demands of the curriculum. For example, one teacher engaged in high teacher-direction in two observations, but promotion of agency in another. Although the teacher directed the general topic, students chose within the bounds of that topic, worked in groups, set their own plan for their workload, etc. In this observation, the teacher circulated around, facilitating (or directing) groups as needed. The teacher was mindful of time, but did not

dictate when students began/ended a portion of the task. Rather, the teacher voiced the time concern to the students both in whole and small groups (e.g. ‘I’m worried about time here.’). Another teacher, who was also very directed in two observations, promoted more agency in one observation. The teacher encouraged students to reflect on their own performance, to be creative when solving problems, and set their own pace within their dyads. However, again, the topic, product, goals, and overall timeline were set by the teacher/curriculum.

For lessons scoring in the 3-4 range for student agency (38%), the teachers still created the activities or directed the curriculum. However, within these designated parameters, teachers offered students choices (e.g. choose topic/stance, create learning goals, set work pace). These teachers also reminded students of how the activities tie to “real life” experiences and encouraged students to be self-directed (e.g. choosing groups that would promote staying on task, weighing time spent versus deadlines).

Two lessons in our observations scored a 5 for student agency (8%). One lesson was observed in the SL/PLT school, where one class period per day is not subject-specific. During this Personalized Learning Time [PLT] period (observed twice), the teacher met individually with students to discuss their plans for their workload across subject areas. Students came prepared for this meeting with a completed graphic organizer designed to scaffold their meeting. Students then chose how to spend the period both with respect to content (what they would do) and process (how they would do it). However, students’ decisions were related to the curriculum. In other words, students had required activities across subject areas. They were free to choose what to do, but not whether to do any particular activity.

For the second lesson that scored a 5, the teacher (in the BL context) appeared to have designed a range of opportunities for students to apply their knowledge and personal skills set to the unit research topic in ways that met their needs. Some students worked in small groups with 3-4 peers on a group-defined task, others worked with a single partner, and two students worked together on a creative interpretation of how they would study and share the topic with their peers, which the teacher characterized at the beginning of class as a “doing your own plan of attack.” During the class we observed, the teacher moved from group to group, asking students to outline their project plans and problem-solve the best way to collect and report on their data.

In terms of fostering student agency, across classrooms and teachers, overall, the teachers dictated the “what” of the learning, and in some classrooms, the students had some control over “when” and “how.” Missing from most of the observations was teachers actively structuring the learning environment to encourage students to more totally control their own learning with respect to deciding what to learn, skills they needed to improve/build, and the mechanism to do that.

### **Student Agency: Teacher Interviews**

Teacher interview prompts regarding agency focused on students’ ability to make choices, relationships between in- and out-of-school learning, and student voice. Teacher interviews confirmed observation data that students have choices within the bounds of the curriculum, deadlines, or desired behavior/functioning of the groups. One teacher summed up teachers’ perceptions in the statement, “it kind of varies depending on what we’re doing, which is the answer for a lot of things.” A Grade 8 teacher stated, students “don’t have a choice on the ... skills, but they have a choice on their research. So to me, that’s very important.” A Grade 6 teacher described, “I think that choice comes in ‘Do I want to work alone, or do I want to collaborate on this?’ ‘Do I want to write it by hand, or do I want to type it?’” However, this teacher also stated, “There’s not a whole lot of choice in the task.”

Utmost in teachers' minds are how student choices will affect their overall progress on meeting curricular goals. An 8th grade teacher stated, "Some of the times when it's a concept or a standard that's not going to be emphasized as much, I let them choose their group. But, most of the time I pick a kid who has high critical thinking and pair them with someone who has low so that they can kind of build off that." This teacher discussed the pull-and-tug of autonomy versus curriculum, "if they work at their own pace, it's hard ... because if we have the end result as [task], then they all have to finish something by a particular time to get to that [task]."

Teachers also discussed a desire to bridge to students' outside lives, particularly with respect to igniting interest and building relationships. A Grade 8 teacher explained, "I try to incorporate things that they do outside or things that they might want to do in the future as much as possible...I can incorporate things even with their self selected reading they can choose what they read. I don't tell them what to read. So that incorporates some of their interests." A grade 6 teacher stated, "I try to connect to what I think is cool and try to expose them to that, and I try to bring up any new video games that I know are popular."

However, teachers also discuss the match between student interest and curriculum demands. The Grade 6 teacher above also responded, "I don't know that I've done it [bridged to outside school] in a way where it connects to my curriculum." Other teachers feel their particular subject area lends itself better to dovetailing with outside interests. The 8th grade teacher above felt that, "I have a little bit more leeway [to have students bring in their interests] than other subjects." Another 8th grade teacher discussed that students' backgrounds (SES, ethnicity) were a subject of much controversy in our times. The teacher then uses these controversies as starting points for discussion and to relate to curricular goals.

Overall, teachers reported that they work to foster student agency by promoting voice, choice, and student interests when they can, in relation to the curriculum and the goals that teachers have for their students.

### **Student Agency: Teacher and Student Survey Data**

Across the two schools, when asked about their perceptions about how they support student agency in their classrooms, on average, teachers in both SL/PLT and BL classrooms reported similarly (scores of 3 or "occasionally" to 5 or "almost always") that, over the past school year, they created opportunities for students to:

- a) design their own action steps for completing tasks (BL = 4.0; SL/PLT = 4.25);
- b) know the skills they need to develop to be successful learners (BL = 4.5; SL/PLT = 5.0);
- c) track their own progress in meeting goals (BL = 4.25; SL/PLT = 4.75);
- d) adjust the pace and sequence of learning to meet their needs (BL = 4.0; SL/PLT = 4.5);
- e) share learning in a variety of formats (BL = 4.25; SL/PLT = 4.25);
- f) act on their creative learning products to raise awareness in classroom or community (BL = 3.75; SL/PLT = 4.0); and
- g) seek challenges in classes, related to their learning interests outside of school (BL = 4.5; SL/PLT = 3.25).

There was some variation across the schools in one item addressing encouraging students to seek challenges in class that relate to their interests outside of class, with the BL teachers showing a higher agreement that they promote this practice. However, one teacher in the PL school designated "almost never true" (a score of "1") for this item, which generated this difference. Overall, compared to classroom observation data that suggested teachers "occasionally" design opportunities for student agency, teacher survey data indicates a slightly higher perception (often true) of the frequency of opportunities for students to take more ownership of their learning in their classrooms.

Students were also asked to rate their agreement (1-5 scale: rarely, occasionally, often, almost always, always) with the following statements relative to student agency: 1) I actively seek challenges in this class related to my personal interests (BL = 2.89; SL/PLT = 2.86); and 2) I have opportunities to adjust the pace of my learning to meet my needs (BL = 3.64; SL/PLT = 3.27). On average, students rated these items as “often” (BL school = 3.39, SL/PLT school = 2.95). Data from teacher and student surveys suggest that student perceptions about the frequency of opportunities for personal agency appeared to be lower than teacher perceptions of their efforts to promote and support student ownership of their learning across the school year. Some of this discrepancy may come from the differences in the wording of items; the teacher survey asks about how often teachers design opportunities for students to have more agency, while the student survey asks about how often students take advantage of these opportunities and relate them to their own personal interests.

### **Flexible Instructional Approaches**

#### **Flexible Instructional Approaches: Classroom Observations**

Our coding scheme broadly defined flexible instructional methods in a personalized learning environment as how a teacher designs instructional formats or modalities to engage students with content and learning processes. Averaged scores for flexible instruction in each classroom across the three classroom observations for each teacher ranged from 1.33 to 3.33 (on a scale from 1-5), with the average score in the SL/PLT site being slightly higher overall (see Table 10). Four teachers (one SL/PLT teacher and three BL teachers) averaged scores between 1.3 and 2.7, and four teachers (three SL/PLT and one BL) averaged scores between 3.0 and 3.3.

Observed elements of flexible instructional methods were fairly consistent across the three observations for most of the teachers. Scores for Teachers 1, 2, 4, 6, 7, and 8 remained within 1 point of their respective averages across the three lessons, while teacher 3 had one lesson that was scored at least 2 points lower than the other two, and teacher 5’s lessons varied from 1 to 5. This suggests that most teachers were consistent in how they used different grouping strategies at each site.

Table 10.

Coded Score (from 1-5) for Flexible Instructional Methods (FIM) for each classroom observation and averaged across the observations

Teacher	FIM Visit 1	FIM Visit 2	FIM Visit 3	FIM Average Across 3 Visits
Teacher 1 (BL)	1	1	1	1.00
Teacher 2 (BL)	4	2	3	3.00
Teacher 3 (BL)	3	1	1	1.67
Teacher 4 (BL)	1	1	1	1.00
Teacher 5 SL/PLT	1	5	3	3.00
Teacher 6 SL/PLT	2	2	3	2.33
Teacher 7 SL/PLT	4	3	4	3.67
Teacher 8 SL/PLT	2	3	3	2.67

In lessons coded as 1 for flexible instructional methods (38% of the 24 lessons), teachers mainly used whole group instruction along with some evidence of interacting with students to build a positive rapport during class time. This was the case at both the BL and SL/PLT sites.

In lessons coded as 2 for flexible instructional methods (27% of the lessons), teachers relied chiefly on whole group instruction, but may have also provided limited time for students to work in groups or pulled a group of students together for additional instruction. In the SL/PLT site, teachers were observed transitioning from whole group opening activities to students working in pairs on specific tasks, and then back to the whole group for sharing. At the BL site, students might be separated into groups to answer specific questions about a common reading in a shared Google Docs document.

In lessons coded as 3 (29% of the lessons), teachers were observed grouping students in a variety of ways. While it was generally unclear whether students were grouped with intentionality, and how student collaboration was explicitly supported, teachers did seek to establish positive working rapport with students. At the SL/PLT site, students were introduced to a task together as a class and then worked in small groups to gather evidence from an online collection of sources, or spent time helping classmates with an assignment. At the BL site, teachers had some students work in small groups without explicit teacher support while the teacher provided more targeted instruction to other students.

In the four lessons coded as 4 or 5 for flexible instructional methods (17% of the 24 lessons), we observed teachers fluidly using various instructional modalities within a lesson. At the SL/PLT site, we observed teachers intentionally transitioning between whole class, small group, working in pairs, etc. multiple times in a lesson. Students were sometimes encouraged to collaborate and share their work out to the whole class. At the BL site, we observed students and teachers working together collaboratively in a variety of groupings, ranging from whole class, to small groups, to independent work. Some situations had student groups working in parallel on related, but different, tasks.

### **Flexible Instructional Approaches: Teacher Interviews**

We used three aspects of Flexible Instructional Methods (FIM) from the PL framework to analyze the relevant comments that teachers shared during our interviews: (a) using a variety of instructional modalities, (b) fostering student collaboration, and (c) building effective teacher-student relationships that communicate that students are cared for and are safe to take risks while learning. During our interviews with teachers, we explicitly asked each teacher how they used student grouping to enhance their instruction. We used their answers to this, and other questions for relevance to the FIM aspects described above.

When asked how they used grouping strategies to enhance their classes, teachers at the BL site described relying on flexible grouping to engage their students and address their needs. Mixed groups were used to encourage peer assistance, collaboration, engagement, as well as to provide every student with a chance to contribute. Students were often grouped to serve as resources for each other. Teachers described using formative assessments to inform grouping based on students' current level of understanding. In addition to ability levels, teachers took into account students' personality traits when assigning groups. In the case of collaborative classes, groupings were sometimes determined beforehand with the assistance of the special educator. Overall, BL teachers saw technology as a support for the use of groups because it provided more ways to differentiate instruction.

At the SL/PLT site, teachers also relied on a variety of grouping strategies, but talked more about using data to intentionally group their students. Teachers described using data from various diagnostic tests to group students for teaching and targeted instruction. The near real-

time student-level progress data afforded by the Summit Learning platform allowed teachers to intentionally create ad-hoc peer tutoring groups as well as other heterogeneous work groups. Several teachers pointed out the need to vary their grouping strategies on a daily basis.

Teachers at both sites emphasized the importance of building relationships with each of their students. It was important for teachers to “get to know each kid.” At the BL site, one teacher pointed out that technology assists in this by providing more support for independent and small group work, allowing the teacher to target his or her attention to coaching, tutoring or conferring. At the SL/PLT site, teachers agreed that the platform helped them build relationships by providing a more complete picture of each student’s progress. They felt that the Summit Learning approach was built on mentoring and students having contact with a caring adult.

### **Flexible Instructional Approaches: Teacher and Student Surveys**

Teachers also expressed high value (scale of 1-5) on utilizing flexible instructional approaches (FI). Teachers were asked several aspects of FI, including (a) using a variety of grouping strategies, (b) arranging space to encourage talking and collaboration, (c) encouraging students working independently and in groups, (d) allowing students to discuss mutual interests and challenges.

Teachers at both sites had similar responses to questions about FI, with average responses ranging from 4.83 (almost always) to 3.67 (occasionally to often true), with an overall mean of 4.3, indicating teachers often provided flexible instruction. Teachers at the blended learning site reported an average response of 4.25 while teachers using Summit Learning/PLT averaged 4.38. Teachers at both sites felt similarly about almost always choosing to vary groupings (both sites averaged 4.75), supporting students working independently (both sites averaged 4.5), and often encouraging students work with peers (both sites averaged 4.25). At the blended learning site, teachers reported a higher reliance on having students discuss shared challenges (BL 4.75; SL/PLT 4.25). Teachers at Summit Learning/PLT site reported almost always encouraging creative collaboration while teachers from the blended learning site did this often (BL 4.00; SL/PLT 4.75). The Summit Learning/PLT teachers often allow students to collaborate on projects based on shared interests, while teachers at the blended learning site reported doing this occasionally (BL 3.25; SL/PLT 3.75).

Students were asked two questions about the flexibility of the learning environments they were experiencing: whether their teachers (a) allowed them to work in variety of groupings, and (b) provided a variety of locations within the classroom for them to do their work. Students at the BL site reported their teachers varied their groupings more often as compared to the SLP/PLT site (BL 3.7; SLP/PLT 3.33). The BL students also reported more opportunities work in different locations in support of collaboration (BL 3.13; SLP/PLT 2.97).

Overall, students experiencing the Blended Learning approach reported more flexible classrooms than their counterparts in the SLP/PLT program (BL 3.41; SLT/PLT 3.15). Students at both sites, however, perceived their instruction less flexible than was reported by their teachers (BL 4.25; SLP/TLT 4.38).

### **Role of Technology**

#### **Role of Technology: Classroom Observations**

Our coding scheme broadly defined the role of technology in a personalized learning environment as how the teacher selects and deploys educational technology in support of content and learning processes. When we averaged coded scores for designing experiences involving technology across the three classroom observations for each teacher (see Table 11), overall patterns played out similarly across the two school sites. Two teachers (one SL/PLT teacher and

one BL teacher) averaged scores of 2 (on a five point scale), four teachers (two SL/PLT and two BL) averaged scores of 3, and two teachers (one SL/PLT and one BL) averaged scores of 4. However, coded scores for each of the three lessons ranged between 2 and 5 (out of 5), suggesting that all of the eight teachers incorporated technology that supported learning to some degree in each of the three lessons we observed.

Table 11.

Coded Score (from 1-5) for Role of Technology (RT) experiences for each classroom observation and averaged across observations

Teacher	RT Visit 1	RT Visit 2	RT Visit 3	RT Average Across 3 Visits
Teacher 1 (BL)	2	3	2	2.33
Teacher 2 (BL)	4	2	4	3.33
Teacher 3 (BL)	5	2	3	3.33
Teacher 4 (BL)	4	4	4	4.0
Teacher 5 SL/PLT	3	4	4	3.67
Teacher 6 SL/PLT	2	3	3	2.67
Teacher 7 SL/PLT	5	3	4	4.0
Teacher 8 SL/PLT	4	3	4	3.67

There were no lessons coded as 1 in use of technology. This is evidence that both school sites used technology to support blended and personalized learning practices.

In lessons coded as 2 in use of technology (21% of the 24 lessons), the teachers showed some evidence that they did not fully understand the fundamental concepts of technology operations or teachers did not demonstrate the ability to choose, use and troubleshoot current technologies. Teachers may have showed some evidence that they were not able to transfer their knowledge to flexibly use relevant technologies or learning platforms to meet the needs of diverse learners, enhance instruction and/or support creative application of content knowledge. For example, in one SL/PLT lesson coded as a 2, the teacher primarily used technology to give students access to the learning task and to project the directions and rubric to the whole group. In a BL lesson coded as a 2, the teacher primarily used technology to present videos to students and the teacher expressed having difficulty with adding digital resources to the platform.

In lessons coded as 3 in use of technology (29% of the 24 lessons), the teacher showed some evidence of using technology to fulfill many of these criteria. For example, one teacher at the SL/PLT site used the platform to present a digital graphic organizer on the platform and students were encouraged to search and use their own resources to answer questions and find evidence. A teacher at the BL site whose lesson scored a 3 added various digital resources to the platform, including visual digital resources to support visual depictions of the lesson's content.

In lessons coded as 4 in use of technology (42% of the 24 lessons), teachers showed evidence that they understood fundamental and sophisticated concepts of technology operations, demonstrated an ability to choose, use and troubleshoot current technologies and were able to transfer their knowledge to flexibly use relevant emerging technologies or learning platforms to meet the needs of diverse learners, enhance instruction and possibly support creative application

of content knowledge. For example, in a lesson coded as a 4, one teacher at the BL site appeared very confident organizing instruction through the digital platform, locating relevant video tutorials and giving access to digital tools (Google docs, online interactive websites) as well as non-digital tools (markers, worksheets, whiteboards) to engage with content and meet diverse learner needs. In a follow-up lesson scored as a 4, the teacher at the BL site provided leveled digital playlists, in addition to utilizing a combination of leveled paper worksheets and whiteboards. Another teacher at the BL site whose lesson scored at a 4 provided digital playlists with leveled resources, a Google doc to capture student writing, and a Google form for an exit ticket to reflect on the day's lesson. A teacher at the SL/PLT site scored a 4 when the teacher provided students with targeted digital writing feedback through Google docs, as well as writing scaffolds such as sentence starters, exemplars and writing prompts on the digital platform. In addition, the teacher used the platform's red-yellow-green visual indicators on the digital platform to engage students with reflecting on and monitoring their daily progress through project checkpoints.

In lessons coded as 5 (two of 24 lessons), teachers showed strong evidence that they met all the criteria in the PL rubric for the use of technology. To illustrate, one teacher at the SL/PLT site scored a 5 in a lesson where the teacher moved between the Summit platform and the research-based learning task, as well as fluidly teaching students how to use the audio recording feature in powerpoint, as well as modify text and insert images. The teacher also highlighted the benefit of the text-to-speech reader in the platform to help students decode challenging text in the online resources they independently encountered as they completed the research-based learning task. At the BL site, researchers observed one lesson coded as a 5, where the teacher showed evidence of confidence in using technology to support students in publishing online blogs. In this lesson, the teacher also encouraged students to use other websites and images to add visual interest to their blogs and was able to troubleshoot issues when students encountered technical problems. Notably, coded lesson scores suggest that, across the classroom observations, the most challenging criteria in this dimension was to use technology to support students' creative application of content knowledge.

### **Role of Technology: Interview Data**

Teacher interview prompts regarding the role of technology focused on the role of technology in instruction and in student learning and included items such as, "Where do you see technology fitting in to the type of teaching and learning you would like to see in the classroom?" and "What role does technology play in student learning?"

The role of technology in instruction was considered somewhat important to very important across the two school sites. One teacher at the BL site stated, "Technology is kind of the magic wand that makes things happen. Things that were not possible when we first started teaching, we can do now." The teacher further explained, "It [technology] allows me to do different lessons at the same time with the kids...It allows me to then have the kids actively looking at a lesson, some of it they can refer back to, if needed or if they're absent or if they're just excited and want to get ahead...It allows me to meet one-on-one with the kids. That's where the gold is. When I can sit down one-on-one with a kid, that's the gold. The others allow that to happen, basically."

Two teachers at the SL/PLT site emphasized how technology supported differentiation and providing students with varied resources and varied products of learning, "I think I feel that I can provide kids with more ways of doing things...It could be, I mean, even kids showing, they know more about all this stuff than we do. Them showing each other...[There are] different

multimedia options for them to use.” A third SL/PLT site teacher further added how technology supports delivery of feedback, “So what I like about this [Summit Learning] program, I can do immediate feedback...and...it makes it easier [to find resources]. I've always felt that I did a good job bringing resources in but it was hard...[now]...all right, tomorrow, I know I'm going home and I'm planning what I want to produce. So I can upload anything I want onto the platform that I think would be helpful to the kids.”

The perception of the role of technology in student learning was diverse. Some teachers at the BL site expressed some ambivalence about the purpose of technology. One BL site teacher stated, “I find that technology is helpful. However, I also find it takes away from skills that they don't have.” A second BL site teacher explained, “Do I think it [technology] plays a big role? Yes, I do but at the same time, I think there's a little bit of a happy medium. I don't think that everything can be done through the Chromebook...” However, some teachers viewed technology as an effective way to connect with tools that students find engaging. A BL site teacher elaborated, “ By giving them something that is what they like to do, like today if I was doing the postcard...What Instagram picture would you post put up of this place you've visited?” A second BL site teacher expressed concerns about technology being perceived by students as just a replacement for more traditional learning, “But then, I feel like I don't want to just have a playlist. I don't want to be that teacher who has the binder, takes it out, and gives the lesson, cause then I'm afraid that playlist is going to be that binder but just an electronic thing.” Teacher interview data suggests that there is some variation across the two sites in how teachers perceive the role of technology to support instruction and student learning.

### **Role of Technology: Teacher and Study Survey Data**

To characterize the role of technology as part of their personalized learning practices, the four BL teachers reported higher frequencies of efforts to a) give students some responsibility for selecting technologies aligned with their learning or sharing purpose (BL = 4.75; SL/PLT = 4.25) and b) use technology to foster collaboration and creativity (BL = 4.75; SL/PLT = 4.25), while the four SL/PLT teachers reported higher frequencies of efforts to a) design learning activities that use technology to give and receive feedback from their peers (BL = 3.25; SL/PLT = 3.75) and b) use technologies that provide immediate feedback to students and their families (BL = 3.25; SL/PLT = 4.75). Teachers in both BL and SL/PLT classrooms reported similar frequencies in using a) designing digital activities intended to help students solve difficult learning challenges (BL = 4.5; SL/PLT = 4.75).

Students were also asked to rate their agreement with statements relative to the role of technology. Asked, “In this class, my teacher uses digital activities to help me solve problems and learn new things,” students at the BL site rated slightly higher with a score of 3.9 than at the SL/PLT site with a score of 3.13. Asked, “In this class, I have opportunities to use technology to express myself in creative ways that aren't possible without technology,” students at the BL site rated higher with a score of 3.72 than at the SL/PLT site with a score of 2.97. Data from teacher and student surveys suggests that student perceptions about the role of educational technology to provide them with enhanced opportunities to support their learning is lower than teacher perceptions of their efforts to integrate educational technology to support student learning.

## **Collaboration**

### **Collaboration: Classroom Observations**

Our coding scheme broadly defined collaboration in a personalized learning environment as how a teacher designs experiences to foster skills, habits, and dispositions of effective

collaborators. When we averaged coded scores for designing collaborative experiences across the three classroom observations for each teacher (see Table 12), overall patterns played out similarly across the two school sites. Two teachers (one SL/PLT teacher and one BL teacher) averaged scores of 1 (on a five point scale), four teachers (two SL/PLT and two BL) averaged scores of 2, and two teachers (one SL/PLT and one BL) averaged scores of 3. However, coded scores for each of the three lessons ranged between 1 and 4 (out of 5), suggesting that all of the eight teachers utilized some type of collaborative learning experience in each of the three lessons we observed. Next, we offer examples of the range of collaborative experiences we observed across the eight classrooms.

Table 12.

Coded Score (from 1-5) for Collaboration (CB) experiences for each classroom observation and averaged across observations

Teacher	CB Visit 1	CB Visit 2	CB Visit 3	CB Average Across 3 Visits
Teacher 1 (BL)	1	1	1	1
Teacher 2 (BL)	2	3	1	2
Teacher 3 (BL)	4	2	1	2.3
Teacher 4 (BL)	3	4	2	3
Teacher 5 SL/PLT	4	4	1	3
Teacher 6 SL/PLT	1	2	2	1.6
Teacher 7 SL/PLT	4	2	2	2.7
Teacher 8 SL/PLT	1	2	4	2.3

CB - Collaboration Experiences

In lessons coded as 1 for collaborative experiences (33% of the 24 lessons), we observed teachers using, or at least allowing, some form of partner work as part of that day's lesson. Students might, for example, help a neighbor understand the directions, work together to solve a set of math problems, or turn and talk with a partner about an idea shared in the whole group. However, we did not observe intentional structures in these lessons that were designed to provide students with supported practice in productively talking with or making joint decisions with a partner. In a few instances, students were moved away from others and asked to work independently, because they appeared to be too distracted by working with others.

In lessons coded as 2 for collaborative experiences (33%), teachers provided time for students to work together on class assignments or reflect on their individual performance. For example, during observations of teachers in both contexts, students were encouraged to help one another work through specific problems. In one lesson, the teacher in the BL setting specifically set aside time for students to mentor another student who was having trouble. The teacher explained, "Mentors, you need to bring your partners on board. Be like a math doctor and identify where your partner has glitches. My goal is [that by] tomorrow, we will all be able to do the same thing." However, in these lessons, students spent less time collaboratively planning or reflecting on the quality of their group work.

Lessons coded as 3 (8%) involved specific collaboration activities designed to foster productive learning conversations about important content. For instance, as part of a lesson on how to integrate quality argumentation skills into their writing, a teacher in the BL context told students, “We are going to pair you up and [ask you to] give each other feedback.” as part of a peer review process. Specific thinking prompts were embedded into a small group Google Docs file, and students were encouraged to work with partners while analyzing characters’ thoughts and actions in order to “be like a detective, and go deeper....to provide evidence” of their thinking. Occasionally, teachers structured designated times for small groups of students to collaboratively plan part of a multi-day project or jointly reflect on an aspect of their work together. In the SL/PLT context, for example, a teacher set up time for students to work collaboratively to prepare for a whole class debate. Importantly, because not all students in this classroom were native English speakers, the teacher intentionally encouraged students to discuss ideas in their native language so that all students were welcomed into these collaborative planning conversations.

Six lessons (25%) were coded as 4 for collaboration experiences that moved beyond accidental or planned partner work to intentionally engage students in productive conversations (e.g., listening, contributing new ideas) and jointly planning and reflecting on group processes over time. In one lesson, an teacher in the SL/PLT context designed a whole-class Four Corners Activity to engage regular and special education students in active conversations about their positions on anticipated themes in an upcoming novel. As part of the activity, the teacher publicly recognized students who were able to express their own opinions, while listening to and respecting the varied opinions of others who moved to different corners of the room. In another lesson, an eighth grade teacher in the SL/PLT context set aside class time for small groups to plan out next steps in revising their digital slideshows to meet specific criteria about length and content. In the BL context, we observed a teacher intentionally designing (and sometimes facilitating) small group conversations for students to work through disagreements about how best to proceed on their project, and then moving from group to group to facilitate and support students when needed.

We did not observe lessons that reached high levels of intentionally engaging students in effective collaborative experiences (e.g., jointly setting their own learning goals and timelines, negotiating multiple perspectives, and documenting and reflecting on both individual and group progress). However, we recognize that some lessons are simply designed to be more teacher-directed (and thus, less collaborative), depending on the lesson’s purpose and student needs.

### **Collaboration: Teacher Interview Data**

Teacher responses to open-ended interview questions about opportunities for collaborative experiences in their classroom mirror findings from our coded scores across the three observations. When asked whether and how students engage in small groups as part of a typical personalized lesson, all teachers in both contexts suggested that the amount of collaboration depends on the purpose of a particular lesson. One teacher in a SL/PLT classroom explained, “In my class, when I feel we need whole group, we do whole group. When we introduce topics, usually we do a whole group activity, then from there, we kind of break it up into pieces to work in small groups and then some things they have to do individually.” Another SL/PLT teacher explained, “I encourage collaboration, especially with the EL’s, so that they’re building language and hearing language modeled by their peers. It might be that they’re working with me in a small group as well, so it’s different, depending on the day.” And a third SL/PLT teacher answered, “Depending on what it is, sometimes every day, sometimes every day for a minute or two, sometimes for the whole period.” The teacher who scored all 1’s on designing

collaborative experiences acknowledged, “I do a little more teaching than most teachers do, I do a little more modeling just to get [students] moving in the right direction.”

The four teachers in the BL context similarly expressed the importance of purpose. One BL teacher explained that students often work in partnerships, but in some lessons, they work more independently, while a second BL teacher reported that much of the collaboration that occurred among students was due to planned efforts to support regular and special education students working together in the same classroom. A third BL teacher elaborated, “It depends on the lesson itself.. and where they're at in the lesson. If they're doing a lab, then they're working together...But, prior to that, they were individual. To get the research and to understand the concepts before they go into that final assessment, I would say that it's individual. Then, they go into groups.” The fourth BL teacher also explained that the amount of collaboration in each lesson “kind of varies depending on what we’re doing.”

### **Collaboration: Teacher and Student Survey Data**

Across the two sites, averaged ratings for amount of time teachers reported to spend designing opportunities to support effective collaboration (CB) skills in their classrooms over the school year ranged from 3.50 to 4.88 with an overall mean of 4.31. Teachers at both sites reported, on average, similar frequencies of collaborative efforts across the eight items (SL/PLT site = 4.34; BL site = 4.28), suggesting teacher ratings across the school year were higher than researcher ratings of each teacher’s three classroom observations.

Teachers at both sites reported, on average, high frequencies of time in their school year for students to work with others to create realistic project timelines (both sites averaged 4.5 out of 5). There was some variation across the two schools in terms of teachers’ perceived efforts to foster productive collaboration. On average, the four teachers at the BL site reported more time spent a) encouraging students to use technology to share ideas in creative ways (BL = 4.5; SL/PLT = 3.5); b) teaching students to advocate for themselves while respectfully working to settle differences (BL= 4.5; SL/PLT = 4.0); and c) encouraging students to find other students who have common interests and set learning goals for a group project (BL = 4.0; SL/PLT = 3.75).

In contrast, the four SL/PLT teachers reported, on average, more time spent encouraging students to a) learn how to collaborate, actively listen, and engage in conversation with peers (SL/PLT = 4.75; BL = 4.50); b) engage in experiences to collaborate and learn from each other (SL/PLT = 4.75; BL = 4.50); c) reflect on ways their group is working well together and ways to improve team process (SL/PLT = 4.75; BL = 4.25); and d) formally document and track team process over the course of a group project (SL/PLT = 4.25; BL = 4.00). Like other data sources, the survey data suggests that the ways and frequencies with which students engage in collaborative activities depends on the purpose of each particular lesson.

Students at both sites were also asked to rate their agreement with two statements related to collaborative experiences. For the first item, “In this class, I have opportunities to work with and learn from other students in both digital and face-to-face experiences,” students at both sites, on average, rated this item as “often” (BL school = 3.72, SL/PLT school = 3.02). For the second item, “My teacher creates activities that allow me to practice sharing my feelings with others and working to respectfully settle our differences,” students, on average, rated this item as “often” in the BL school (3.28) and the higher end of “occasionally” in the SL/PLT school (2.98). Data from teacher and student surveys suggest that student perceptions about the frequency of opportunities to collaborate with others appeared to be lower than teacher perceptions of their efforts to engage students in collaborative activities over the course of the year.

## Use of Data

### Use of Data: Classroom Observations

Our coding scheme defines use of data in a personalized learning environment as how the teacher uses data from diverse sources, including technology platforms, to inform teaching and learning. When we averaged coded scores for use of data across the classroom observations for each teacher (see Table 13 below) and then averaged scores across study sites, we see higher overall observation scores for lessons observed at the SL/PLT site (mean=3.08) than at the BL site (mean=1.67). Below are examples of the range of use of data observed across the eight classrooms.

Table 12.

Coded Score (from 1-5) for Use of Data (UD) experiences for each classroom observation and averaged across observations

Teacher	UD Visit 1	UD Visit 2	UD Visit 3	UD Average Across 3 Visits
Teacher 1 (BL)	1	1	1	1
Teacher 2 (BL)	4	2	3	3
Teacher 3 (BL)	3	1	1	1.67
Teacher 4 (BL)	1	1	1	1
Teacher 5 SL/PLT	2	5	3	3.33
Teacher 6 SL/PLT	3	2	3	2.67
Teacher 7 SL/PLT	4	3	4	3.67
Teacher 8 SL/PLT	2	3	3	2.67

In lessons coded as 1 in use of data (33% of the lessons), we did not observe teachers using data to design and implement various instructional modalities, nor fostering a data culture to support self-directed learning. In lessons coded as a 1 where students are paired or grouped for example, we did not observe groupings based on the use of available student data. The high frequency of lessons coded as 1 at the BL site can be in part attributed to access to meaningful student-level data that are necessary to score high in this element.

In lessons coded as 2 in use of data (16%), the teachers showed some evidence of using data, but researchers did not observe evidence that students actively engaged with this data to inform their respective learning goals. For example, in one SL/PLT lesson coded as a 2, the teacher began class by pointing students to feedback provided in the system; and also used the data to inform teaching of how students could do better on this assessment. There were systems in place to track data but students did not appear interested or actively involved in accessing the data, or reflecting on feedback to improve their performance.

In lessons coded as 3 in use of data (33%), the teacher showed some evidence of using data to implement various instructional modalities (whole group, partial group, or one-on-one). The teacher used some assessment data to guide progress and communicate with students to build student self-direction. There was evidence that the teacher fostered a data culture where

students took ownership of their data to create learning goals and outcomes in both independent and group settings. In such a context, the teacher generated a way for students to document, track, and reflect on individual and group progress and outcomes. In one observation, the teacher fostered a culture where students took ownership of their learning; however, it was not clear how either the teacher or students documented progress over time.

At the BL site, researchers observed one lesson coded as 4, where the teacher showed evidence of using data sources to design and implement support on a range of levels based on the teacher's perceived needs. In this lesson, the teacher also encouraged students to self-reflect. One teacher at the SL/PLT site scored 4 on two observed lessons. In these, the teacher used data in the Summit Learning platform to inform instruction and determine which students required greater support, and to monitor overall student progress. In these cases, students were aware of their progress, but responded to it in diverse ways.

In lessons coded as 5 in use of data (4%), the teacher used various data sources (print, digital, behavioral) to intentionally design and implement a variety of flexible instructional modalities (whole group, partial group, one-on-one) based on a gradual release methodology. The teacher used assessment/performance data to guide progress and communicate with students to build student self-direction. The teacher fosters a data culture where students took ownership of their data to create learning goals and outcomes in both independent and group settings, and generated ways for students to document, track, and reflect on individual and group progress and outcomes over time. In the one observed lesson coded a 5 at the SL/PLT site, the teacher used Summit Learning platform data and own notes about student progress to determine what work to prioritize. Students actively kept track of their own data, indicating a strong data culture.

### **Use of Data: Teacher Interview Data**

Teacher responses to open-ended interview questions about the use of data in their classroom align with findings from our coded scores across the three classroom observations. All teachers were asked what role data plays in student learning and if students see their performance data. Across the SL/PLT teachers were references to high student engagement in their Summit Learning platform data. One SL/PLT teacher remarked, “[The students] live in their data...They see that platform data every day. Any one of these [students] could explain where they are and where they need to get, and how they're going to get there.” Another SL/PLT teacher shared an anecdote from the day of their interview: “He told another student how he jumped two grade levels this year on his STAR reading [assessment]. So [students] use that amongst themselves... So to me, that's real data.” A third SL/PLT teacher reported, “[In PLT classes, students] determine what are they going to work on that day because they pick the thing that they're furthest behind in, or want to get ahead in. Data: they're looking at it all the time.”

In comparison, teachers at the BL site reported intermittent use of data in student learning. One BL teacher mentioned occasional use of classroom-level data that helps motivate greater proportions of students to turn in assignments on time, for example. One SL/PLT teacher also mentioned that student engagement with data can be quite competitive. At the SL/PLT site, however, the data are student-level data (not classroom-level) and are generated daily and systematically. Another BL teacher mentioned data use, but “not in every class.” They reported, “In my class I do use Aspen (our grading system). Not every teacher does that. [Students] are able to track their standards and see everything. Sometimes I don't like that for certain assignments.”

Comparably, when all teachers were asked what role assessment data plays in their instruction, we noted differences between the school sites. One SL/PLT teacher shared that “Student grouping is huge. I use a lot of different data points. If I'm working with my EL's, I

might use their reading levels. I can [also] use cognitive skill data from past projects. That's all live for me within the Summit platform. If I know I'm working on argumentative claims that day, I might group them by 1-hasn't met, 2-met, and 3-exceeded [in order to make] sure that I'm giving targeted instruction to all three groups." Another SL/PLT teacher referenced the ease of access to the data and how that helps with student grouping: "The data is there for me already. I don't have to comb through and make my own spreadsheets. Everything is there, within the platform, color-coded. And then the students can see that too, and they can understand why they're getting what they're getting and why they might be in that group." One teacher at the BL site mentions daily use of data for instruction, but it is unclear what data are being accessed. They said, "I'm constantly reassessing formatively how these kids are doing so we're not stuck on the same topic. If we're getting it, we keep moving."

### **Use of Data: Teacher and Student Survey Data**

Teachers and students at both sites were asked to rate their agreement with statements around the use of data in their classrooms. For the four survey items used to measure this construct, teachers at the SL/PLT site rated themselves higher on average than teachers at the BL site (SL/PLT = 4.5; BL = 3.56; overall = 4.03). This difference in rating is consistent with the observation data and teacher interview data, though teachers at the BL site rated themselves higher on average than teachers at the SL/PLT site for one survey item: "I encourage students and their families to access computer data at home and talk about how and what students are learning." (BL = 4.5; L/PLT rating = 4).

The greatest disparity across sites was for a teacher survey item assessing the extent to which teachers integrate and analyze data generated from technology platforms with data from non-digital sources to understand each student's learning needs (BL = 2.25; SL/PLT = 4.5). When asked about whether teachers meet with students and invite them to reflect on data about their progress and set their own learning goals, there was a substantial difference across the sites, (BL = 3.75; SL/PLT = 4.75). The same mean difference across sites existed when teachers were asked whether they strive to help their students understand how to use feedback from technology to help set the pace of their learning.

Overall, with respect to how teachers use data, the four SL/PLT teachers reported with greater frequency their efforts to a) intentionally integrate and analyze student data, b) use data analysis to plan lessons, and c) help students understand how to use feedback from technology to set their learning pace. The four BL teachers reported more often encouraging students and families to access data at home to discuss what students are learning. Summit platform and PLT structures may support use of data, while the culture of the BL school may foster more explicit connections to home.

Student survey data did not support the same trend as the rest of the data. When students were asked if their teacher meets with them to talk about how to use data from the computer to set learning goals, the BL site students responded slightly more favorably (BL = 3.31; SL/PLT = 3.04). This pattern in the student survey data persisted when students were asked if their teacher meets with them to talk about how they can use results from activities not on the computer to improve their learning (BL = 3.09; SL/PLT = 2.84).

## **Classroom Culture**

### **Classroom Culture: Classroom Observations**

Our coding scheme broadly defined classroom culture as how a teacher designs and communicates to students classroom systems, expectations, routines, and strategies. When we averaged coded scores for designing the culture in each classroom across the three classroom

observations for each teacher (see Table 13), the average score across the visits ranged from 1.33 to 4.00 (on a scale from 1-5) and overall patterns in these scores played out similarly across the two school sites. One BL teacher averaged a score of 1 (on a five point scale), two teachers (one SL/PLT teacher and one BL teacher) averaged scores between 2.3 and 3.0, and four teachers (two SL/PLT and two BL) averaged scores between 3.6 and 4.0.

Similar patterns were observed in the coded scores for each of the three individual lessons, although scores for Teachers 3 and 5 varied more from lesson to lesson (up to 3 points) than scores for other teachers (less than 2 points difference between the three lessons). This suggests that while teachers in our sample tended to communicate similar expectations across the three lessons, lessons designed for different purposes or for students with different kinds of needs may introduce a wider range of classroom routines and types of expectations than those with more similar purposes or needs. Next, we offer examples of the range of classroom expectations and routines relative to personalize learning practices we observed across the eight classrooms.

Table 13.  
Coded Score (from 1-5) for Classroom Culture (CC) experiences for each classroom observations and averaged across observations

Teacher	CC Visit 1	CC Visit 2	CC Visit 3	CC Average Across 3 Visits
Teacher 1 (BL)	2	1	1	1.33
Teacher 2 (BL)	4	3	4	3.67
Teacher 3 (BL)	5	2	2	3.0
Teacher 4 (BL)	4	3	4	3.67
Teacher 5 SL/PLT	2	5	5	4.0
Teacher 6 SL/PLT	2	3	2	2.33
Teacher 7 SL/PLT	5	4	3	4.0
Teacher 8 SL/PLT	3	4	5	4.0

CC - Classroom Culture

In lessons coded as 1 or 2 in classroom culture (33% of the 24 lessons observed), the teacher focused mostly on teaching the content of a lesson, while putting less emphasis on highlighting the purpose of the lesson or teaching specific strategies for staying positive and working hard. For example, in one scored as a 1 for classroom culture, students engaged in two short brain teasers posted on the board and then they watched a video for the remainder of class. The teacher stopped the video twice for a brief explanation of key points related to expectations for a future assignment, but the students were generally quiet for most of the class. Although some expectations around video viewing activities may have been discussed at different times in the year, they were not observed in this lesson. In two other lessons that scored a 2 for classroom culture, we observed the teachers focusing their instruction on teaching new content while weaving in a few personal stories, perhaps in an effort to build positive relationships with students. We did not observe in these lessons teachers setting expectations around quality work or related mindsets needed to successfully complete their assignments.

Lessons were coded as 3 in classroom culture (21%) when the teacher was observed to have clearly communicated positive expectations about work quality and respect for others with some expectation that students work toward pursuing their own interests around the topic of study. For example, during one lesson in the SL/PLT context, the teacher shared clear expectations for high quality work (i.e., “It’s my expectation that by the end of this class, you will have selected a decision, and highlighted corresponding evidence in the text you are reading”), the teacher explicitly encouraged students to contribute to the whole group discussion at the beginning of the lesson and then reinforced a student response with “great minds think alike” (because it aligned with accurate content that others were expressing), and the teacher encouraged students to use a translation app on their phones or computers as a strategy for checking their understanding of key vocabulary words in that day’s lesson.

Similarly, we observed the a teacher in the BL context giving explicit encouragement for high quality work (“I love how you are showing some creativity here”; “Thank you for thinking”) and demonstrating risk-taking (“I need someone else to come up. Who is ready to be brave?”) and a respect for effort (“That is ok, you’ve got this.”). In the same lesson, the teacher offered opportunities for students to choose if they preferred to watch tutorial videos or read through a modeled sequence to help them learn how to solve the task they were assigned.

For lessons coded as 4-5 in classroom culture (46% of the lessons), we observed teachers focusing instruction on content while also making efforts to connect with students on a personal level and to communicate expectations that reinforce the importance of collaboration, problem solving, and/or hard work. In the SL/PLT context, for example, a teacher moved between several small working groups, stopping first to clarify directions while stressing the importance of working to meet their deadline, then checking in a student working quietly by himself (“How you doing buddy?”) before listening to a quick story about something that happened before class, and finally joking with students at the end of class who cheer when he explains, “I’m going to extend the deadline until tomorrow for those who need a little more time,” to which he responds, “Hey, don’t say yes, you should be disappointed!” and the students laugh quietly as they pack up their laptops for the next class.

### **Classroom Culture: Interview Data**

Teacher responses to open-ended interview questions about the underlying culture in their classroom reinforce what we saw across the three observations. When asked about what habits of mind are important for students to have in their classroom, teachers in both contexts frequently design supportive structures that foster positivity, problem solving, and risk taking, alongside expectations to respect one another and appreciate differences. For example, teachers across both contexts shared their expectations that students and teachers treat each other with respect. One BL teacher succinctly captured the essence of these common expectations: “Ideally they don’t have to be best friends, but I feel like they have to be able to talk and respect and care about each other and what they have to say...respond to kindness....and be a good person.” Similarly, teachers in both contexts regularly communicate their expectation that students take responsibility and ownership for their learning. A SL/PLT teacher reported, “I try to slow them down and make them think before they speak,” and several other teachers talked about holding students accountable for turning work in on time and/or revising their work to meet higher standards and reflect deeper thinking.

However, teachers in both contexts also acknowledge the challenge of teaching middle schoolers how to be more responsible for their learning. As one BL teacher reported, “I realized they’re not used to managing their time, they’re used to being told, ‘do this tomorrow.’ So, I have to kind of really show them that.” In the SL/PLT context, teachers explain how the Summit

Learning platform offers explicit structures to help them facilitate this culture of accountability: “They [the kids] see that something's turning red [in the system] or they're running behind on something. It builds that responsibility into them where they're thinking about, ‘Oh wow, there's this many days left and I've got this much still to do, I've need to step my game up.’ I've got them starting to make themselves responsible for their own work.”

Some common dimensions of classroom culture emerged within each school context as well, seeming to reflect the unique needs of the students in their community. Among the four teachers in the SL/PLT classrooms, they stressed curiosity, positivity, and the ability to persevere, seeing the struggle as a chance to learn about how to face both academic and out-of-school challenges. One Grade 8 teacher said, “I'm just constantly being a cheerleader in trying to keep them positive...In building these relationships I get to know what is important to them, what's going on in their lives that might hinder their ability to be successful, whether it be they have home trouble, or if they have some type of brother or sister that they have to take care of. There's so many scenarios that go on here.” Another teacher explained, “It's basically looking at your students as individuals and how every child needs to hear positive...No children will listen to negative if you don't give them positive.”

These four teachers also acknowledge the challenges created by choosing to teach within the structures of a digital platform; one explains, for example, “This is a whole different way of learning to them. At different points throughout the year they have their breakdowns. They are constantly getting...status updates by the second as they're doing their work, because they have a computer screen that's literally monitoring everything they do, and it's color-coded.” Several teachers discussed their role in teaching students how to work in these new digital contexts.

One SL/PLT teacher spoke in particular about the regular and explicit language supports she offers to her students: All of those [things they say like] ‘I can't do this yet’...how about [if you say] ‘I'll try again,’ ‘I'll ask for help,’ ‘I know that I'm a good person.’ Just thinking positively about themselves, and seeing struggle as a chance to learn and not that they're a failure. And seeing, especially in my English language learners, seeing their bilingual or multilingual identity as an asset...I also show the vulnerability in that, because I try to speak in Spanish to them, and they laugh at me when I make a mistake and they help me.”

Finally, the third 8th grade teacher described her design of classroom culture as “tough love” and explains, “a lot of kids aren't always excited to come in here, because there is structure and there are expectations whereas in some other class they're getting away with other things. We often give them the speech about, ‘This is why we're doing what we're doing. This is why we need you to do what you need to do. We care, we want you to be successful.’ I think all the kids respect us and I do think they're respectful of each other.”

As we looked across the interview data from the BL school context, the four teachers talked about designing classroom cultures that stress a strong work ethic, patience, critical thinking, and active problem solving. As one BL teacher explained, “I always tell them to come in with an open mind and don't be so hard on yourself, give yourself a chance. Really, no stress, I use those two words a lot because there's a lot of stress in our daily lives. No stress, one thing at a time, that kind of thing to try to relax them so that they can absorb as much as they can without having that barrier up so they can learn.” Another reported, “I don't like those one dollar questions. What are the directions? How do I do that? Where do I go? I don't want those questions. I want them to be able to apply and actually read the directions and then apply that.”

Another teacher elaborated on her classroom expectations, alluding to the importance of talk and conversation as a way of understanding different ways to solve a problem: “Active learning is really important in a sense that teachers are communicating with students, students

are communicating with teachers, students are communicating with one another. There might be a concept that I'm teaching and the way I say it versus the way one of their peers says it, and all of a sudden something clicks for them. Just a lot of reciprocal conversations around what we're learning, to understand, and to help them understand.”

Other teachers in the BL context reported similar ideas around intentionally designing a classroom culture that supports students, but this time through high expectations and positive relationships. “I try to tell them that not everything comes out right the first time. I try to encourage them to fix something that doesn't look right, to revise a grade they didn't get. To also not be afraid to take risks” explained one teacher. Another suggested, “I think that the teacher needs to be able to connect with those students, but make sure that they're understanding that concept too” and another teacher suggested, “Relationships really are just like bonds that kind of connect them [students] over time.” And a third explained, the kids' role [in my class] would be to be curious and interested, and kind of participate and have that spirit of excellence. You know- and have responsibility...like take ownership of what they're doing and learning.

Like teachers in the SL/PLT school context, one teacher in the BL context alluded to the new teaching challenges presented by choosing to embed content in digital spaces. “When I started doing playlists, I started teaching things I didn't think I had to teach. Like, [how to] follow the directions or even like time management and different things like that. They're very used to, tell me what I need to do to get an A...I think taking risks and taking ownership of learning is really important and I think it's something - we've always strived for that, but I think even more so now.”

### **Classroom Culture: Survey Data**

Across the two sites, averaged teacher ratings for the frequency of opportunities that supported a strong and positive classroom culture over the school year ranged from 4.25 (often true) to 5.00 (almost always true) with an overall mean of 4.24. Teachers at both sites reported, on average, similar dimensions of positive classroom culture across the eight items (SL/PLT site = 4.31; BL site = 4.17), suggesting teacher ratings across the school year were higher than researcher ratings of each teacher's three classroom observations. In terms of their perceptions about their classroom culture during the past school year, SL/PLT teachers reported designing slightly more frequent opportunities for students to a) listen in on groups and grapple with ideas without teacher support (BL = 4.25; SL/PLT = 4.75); b) practice developing the confidence and skills to independently solve learning tasks (BL = 4.00; SL/PLT = 4.75); and c) actively be made aware that they are capable of applying their knowledge to make a difference (BL = 4.5; SL/PLT = 5.0).

Teachers in both BL and SL/PLT classroom settings report similar amounts of time (often or almost always) spent a) taking time to let students know they care about them (BL = 4.75; SL/PLT = 5.00), b) explaining how the skill sets students are using can help inspire curiosity, answer questions, and think deeply about their world (BL = 4.25; SL/PLT = 4.50), c) encouraging students to stay focused and motivated (BL = 4.75; SL/PLT = 5.00), d) encouraging reflection in order to learn from their mistakes (BL = 4.50; SL/PLT = 4.75), e) treating my students with respect (BL = 5.0; SL/PLT = 5.0), and f) weaving time for talking and building relationships into their learning routines (BL = 5.0; SL/PLT = 5.0),

Students were also asked to rate their agreement (on a 1-5 scale) with the following statements about classroom culture:

- I have opportunities in this class to pursue my personal interests in creative ways.
- I feel like what I am learning in this class can help me make a difference in the world.
- My teacher encourages me to be curious and ask questions about the world.

- My teacher encourages me to solve learning challenges by myself.
- My teacher encourages me to reflect on what I've learned and how to learn from my mistakes.
- In this class, my teacher makes an effort to build a positive relationship with me.
- In this class, I feel like my teacher cares about me.
- In this class, I have the confidence and skills to work in a group to solve learning challenges without help from the teacher.

On average, students rated each of these items as something that that happens “often” in their classrooms (BL school = 3.7, SL/PLT school = 3.2), with very little difference on each item reported between students at each school. Looking across the two surveys, these data indicate that student perceptions about different characteristics of their classroom culture appeared to be slightly less than teacher perceptions of their efforts to design cultures that fostered curiosity, problem solving, reflection and confidence.

## DISCUSSION

Our research reveals at least six key ideas worthy of more discussion and consideration in how PL is defined and implemented in Rhode Island.

### **1. A teacher’s intentions and beliefs about kids and learning are central drivers of their PL practices**

Of note in our findings is that teachers play a key role in selecting content, identifying various pathways for student learning, and bridging student and curricular needs and expectations. Teachers make intentional decisions about the degree to which they incorporate the elements of personalized learning as we have identified in this paper based on their perceptions of their students’ needs, abilities, and personalities.

The research literature discusses that expert teaching requires several types of instructional knowledge, including pedagogical content knowledge--knowledge of how to help learners understand particular concepts (Shulman, 1986), that teaching, is, by nature, reflective (Schon, 1983), and that teaching should be about caring relationships (Noddings, 2012). Teachers organize their knowledge around a core collection of intentions and concerns that facilitate what is ultimately a flexible and constant decision-making process (Kennedy, 2006).

It is challenging then to describe the teachers’ implementation of personalized learning elements outside of understanding their intentionality. A teacher who may seem, by our scores, to use less of a particular personalized learning element, does so in what the teacher considers as the best interest of the students. For example, a teacher who rated elements of agency as less often implemented, and whose students agreed, discussed in the interview that the students in a particular class were not developmentally ready to take charge of their own learning, that they, “need structure...I think if you gave them a choice, they wouldn't even know necessarily what to do, because they're so new to [environment]. I think the structure is good and I think when they get to [the next environment] they're ready...I think it's okay to be structured with them now.” This teacher intentionally limits students’ choices as part of a larger goal of scaffolding their developing independence. Teachers’ intentionality seemed targeted toward their ultimate desire to scaffold their students in becoming self-directed learners. Technology not only gives them one way to achieve that end, but teachers feel it also helps students choose the learning that is

best for them. Reform initiatives that do not take into account the intentions and concerns of practicing teachers are very difficult to scale (Kennedy, 2005).

## **2. Opportunities to mentor and build positive personal relationships with students play a critical role in teachers' perceptions of blended and personalized learning.**

Across the teacher interviews, when asked to discuss the role of relationships in their classroom, teachers consistently talked about their desire for their students to feel supported, prepared, confident, and validated. One teacher in the BL setting put it succinctly: “We spend a lot of hours in our school day and we want to make sure that [students] feel comfortable, that they feel confident. Studies have proven that the more confident and comfortable kids feel and the better relationships with our children, the better they perform.”

Yet, teachers in our study also often reference high expectations of their students. One SL/PLT teacher described her classroom as respectful due in part to high expectations: “A lot of kids aren't always excited to come in here, because there is structure and there are expectations whereas in some other class they're getting away with other things. We often give them the speech about, ‘This is why we're doing what we're doing. This is why we need you to do what you need to do. We care, we want you to be successful.’... I think all the kids respect us and I do think they're respectful of each other.”

The SL/PLT setting has specific time set aside for one-on-one mentoring between teachers and students. It comes as no surprise that the teachers in this setting frequently referenced the role of mentoring in their interview data. One teacher reflected, “When the mentoring piece is implemented correctly, every kid has at least one touch point that they're going to see every single day that they can go to as their advocate. When you know a kid on the level that a mentor does, you will advocate for your mentees with other teachers, and provide insights to them to those teachers that might need them, and supports that they can use.” The SL/PLT model specifically leaves room for the development of the natural mentorship referenced above.

These findings from the interviews are consistent with the higher coded dimensions of “roles and relationships” in the DDD framework we used to inform our study; where interactions reflect a balance of both academic and personal purposes (e.g., building relationships, letting students know you care) and teachers play different roles (e.g., expert, process mentor, learning companion, coach) while aiming to engage students in multiple roles as well. These findings are also in line with those of a recent report by the Connected Learning Alliance (2018) that highlights the positive impact and critical importance of mentoring relationships for youth. The report discusses “natural mentors,” those who emerge from a young person’s set of existing relationships such as family members, community members, and teachers. Over 75% of young people indicate that they have a natural mentor, but students living in poverty report having a natural mentor less often.

## **3. In some ways, PL approaches make a teacher’s work more challenging, especially when technology is involved.**

Designing high quality, personalized instruction is hard work. For the teachers at the BL site to bring new digital learning experiences into their classrooms, they have to learn the affordances and constraints of each technology (e.g., learning platforms, digital texts and tools included in digital playlists) to determine which will meet their learners needs in different

contexts. They also invest a great deal of time outside of the classroom curating relevant resources into playlists for their students to choose from, giving feedback on student work, and designing plans for how to support students in monitoring and reflecting on their learning progress and growing independence. During class time, we observed teachers in both contexts grappling with how best to balance the use of digital feedback with opportunities to support their students socially and connect with them on a personal level. Structures built into the SL/PLT model such as a sequenced digital curriculum and daily mentoring sessions (in addition to daily content-specific class time) do appear to ease the transition to personalized learning practices.

The ability to monitor progress, coach, and provide targeted feedback raises new questions about how to most productively use digital data before, during, and after instruction; how to incorporate data from work students choose to complete off of the computer; and how to more actively engage students in decisions about when and how to use data to inform their learning. This shift toward personalized learning requires, among other efforts, a re-prioritization of how instructional preparation is carried out, how and when feedback is delivered to students, and how student work is assessed. In addition, mentoring structures often require the support of additional teachers or school counselors as well as the larger community of educators to address the cognitive and socio-emotional needs of middle school students. Cuban (2017) points out that the degree that traditionally organized schools (i.e. self-contained classrooms and age-graded cohorts) can deliver student-centered instruction is fundamentally limited by the time demands placed on teachers in these settings.

#### **4. Differences in context, content, and development regularly influence PL experiences.**

The role of context matters and developmental differences among both students and teacher matter. In order for personalized learning to be enacted, students require foundational content knowledge, self-awareness of strengths and areas of growth, and self-regulation as a learner. Students demonstrate varied levels of self-regulation, motivation and abilities for self-direction and personalized learning in different contexts and across content areas. Young adolescents aged 11 to 13 years are characterized by a growing desire to think and act independently while at the same time caring deeply about being accepted by peers and being part of a group (Caskey & Anfara, 2014). Keeping middle school students focused and engaged in the classroom is a challenge situated within the context of complex changes that middle school students experience during this time of their lives (e.g., physical, intellectual, emotional, and social changes). Student survey data suggests that when middle school students feel more confident in a content area, they are more likely to engage more independently in their learning. One illustrative student shared, “My favorite learning experience this year was writing our short stories. Because I am a writer, writing short stories is always my favorite unit, and I always have a lot of fun with it.” Another, “I felt extra nervous with this class at the beginning of the year because I am not good at language arts and I am still nervous with next year’s language arts.”

Many additional factors such as race, ethnicity, gender, culture, family, and environment influence development. Most likely some of these factors may have been at play, especially in consideration of English Language learner responses in the SL/PLT context. Some of the incomplete and/or brief students survey responses in Spanish suggest that a possible lack of understanding of the meanings of survey items may have played a role in how this subset of students responded to certain items. Additionally, both sixth grade teachers expressed that the classroom structures and level of choice offered to their younger students was not as expansive based on intentional instructional practices developmentally geared to younger students. Finally,

as stated before, students at both sites perceived less PL practices than their teachers. At the BL site, however, these differences are less pronounced, with teachers and students agreeing most closely about there being a heavy reliance on technology and there being a strong classroom culture. Areas of greatest difference included the degree to which that instruction was flexible, authentic, and promoted student agency. At the SL/PLT site, the degree that students perceived PL practices is markedly less than what was reported by their teachers. This difference corresponds to students reporting practices occurring ‘occasionally’ instead of teachers’ perception of them occurring ‘almost always.’ These results suggest that while teachers are confident in their purposeful intentions to design instruction that personalizes learning practices along these seven dimensions, students may not yet recognize how these practices shape the learning opportunities they have access to in their classrooms.

According to the Better Lesson Continuum (2017), varied levels of PL practice for teachers also manifest themselves based on teacher dispositions, skills, understanding, and professional development. Teacher interview data supported this framework, as the teachers with the least professional development expressed the most uncertainty with concretely defining the terms of blended and personalized learning, as well as emphasizing the important role of their colleagues’ support for the improvement of their practice and for engaging in informal opportunities for reflection. Teachers who reported more extensive professional development opportunities expressed more confidence and enthusiasm in their personalized learning practices. This finding makes sense given that the eight participating teachers were only introduced to these practices 1-2 years ago, and it takes hundreds or even thousands of accumulated experiences with ample opportunity for reflection in order for learners to fully develop their craft as experts in any field (Dreyfus & Dreyfus, 1986). Further, the expectation that teachers are able to articulate how best to define and implement personalized learning practices when their learners, and the research around these practices, is emerging with each new year makes it even more challenging.

## **5. Personalized learning, and student agency in particular, represents a complex and multifaceted set of ideas.**

Similar to recent findings from numerous other reports, including the 2018 report titled Personalized Learning at a Crossroads (see <http://research.crpe.org/reports/personalized-learning/>) teachers in our study reported varied definitions of blended and personalized learning practices and what these practices actually look like in their classroom. Across the two sites, teachers’ explanations often focused on changing classroom structures (e.g., flexible grouping), diversifying learning materials (e.g., media with varied reading levels) and providing customized and regular feedback to students in order to foster opportunities for student choice and voice in their learning. Indeed, many teachers reported students were completing more work than in previous years and that some students were more engaged and more willing to revise their work, when given the opportunity.

However, while many teachers spoke about increased voice, choice, and ownership in their efforts to personalize learning, fewer teachers talked explicitly about four additional elements found to contribute to learner agency, including engagement, motivation, self-efficacy, and purpose (see Bray & McClaskey, 2017). This multifaceted definition of student agency also highlights the role of personal relationships, social interactions, and reflection in supporting learners; elements observed in our study to some extent, but less often used by the teachers in our study as terms associated with student agency or personalized learning practices.

In turn, the details in Kathleen McClaskey's explanations of Seven Elements of Learner Agency (see <http://kathleenmcclaskey.com/continuums/>) and the extended of Crosswalk of Agency (see <http://kathleenmcclaskey.com/crosswalk-of-learner-agency-across-the-stages/>) offer teachers a concrete language for talking about the complex nuances of student agency beyond familiar goals of increased voice and choice. Similarly, they help focus attention more explicitly on how learners progress, one step at a time, across each of the seven dimension of student agency (each on its own continuum). These ideas can also help the larger educational community appreciate the challenges teachers face in supporting learners as they grow from being extrinsically to intrinsically motivated to pursue their own learning goals, or from approaching difficult learning tasks with caution and compliance to tackling real-world problems with a sense of self-confidence and purpose.

Most noteworthy, McClaskey's (2018) Stages of Personalized Learning Environments (see <https://goo.gl/mBhMCB>) pushes the educational community to envision personalized learning as not only moving from teacher-centered to *learner-centered* practices (as Larry Cuban's PL continuum suggests), but in moving even further toward promoting more *learner-driven* environments in which students develop "the capacity to engage strategically...without heavy dependence on external structures and direction."

## **6. Differences between teacher perceptions and student perceptions indicate an opportunity to further empower students as learners.**

There were stark differences between how students and teachers perceived instruction at both sites. On their respective surveys, teachers and students were asked to describe their own perceptions of how PL is implemented in their classrooms. Teachers at both sites reported using PL elements at the highest levels, i.e. between 4 (often) and 5 (almost always) on a scale from 1-5, consistent with the PL framework in all but one of the dimensions. The high frequencies at both sites suggest that teachers see these elements as a significant component of their overall planning and instruction. The only pronounced difference occurred for Using Data to Inform Instruction. On average, the teachers using the BL approach reported that they "occasionally" relied on student data compared to teachers using the SL/PLT approach who reported that they "often" relied on student data to inform their teaching. Students were also asked a range of questions related to each PL elements, and consistently scored their classes close to 3 (occasionally).

Student perceptions of the degree that their classes were personalized may have depended on their perceptions about how their experiences differed from traditional schoolwork. Some of the PL elements students were asked about are more consistent with effective traditional instruction while others probed for instruction that enabled students to have a greater degree of say over what and how they were learning. At the BL site, students' highest scores acknowledge their teachers' efforts to convey a sense of caring (4.0) and encourage independent problem solving (3.9) while scoring them lowest for facilitating creative group work (3.1) and conveying the real world relevance of what they are learning (3.2). At the SL/PLT site, students also acknowledged teachers' care (3.4) and encouragement to reflect and learn from one's mistakes (3.4), while reporting lowest scores for being curious (3.0), facilitating creative group work (3.0), and integrating personal interests into their studies (3.0).

Teachers' reporting of the high frequency of their PL practices across both sites could be influenced by their own contexts. Both the BL and PL initiatives were schoolwide efforts and therefore were supported by school administration. In their interviews, teachers at both sites

indicated that they were committed to incorporating PL/BL practices and activities into their classrooms. Teachers at both sites described ways in which these approaches were influencing their planning and teaching practices.

Given the high level of professional commitment on the part of the teachers, it is an interesting question to ask whether teacher and student perceptions of personalization will converge over time. Larry Cuban (2017) suggests that efforts to personalize instruction in the context of standards-aligned curriculum in age-graded schools will probably result in only a modest movement away from teacher-centered teaching. Other PL advocates, such as *Making Learning Personal*, also emphasize the need for students and teachers to co-construct more instructional elements (McClaskey, 2018). Some of the efforts to sustain and amplify personalized learning at these (and other) sites should focus on addressing teachers' beliefs, capacities, and supports for increasing the students' role in their learning as well as their perceptions of themselves as empowered learners.

### **Conclusion**

The promise of educational technology to enhance student learning has been both lauded and become a widely challenged notion since the personal computer made its debut into private homes in the 1970's. In recent years, increased national attention (National Educational Technology Plan, 2016; U.S. Department of Education 2012, 2015) and increases in private sector funding for personalized learning (PL) have captured the public's attention (Bingham, 2017; Basham, Hall, Carter, & Stahl, 2016; Roberts-Mahoney, Means, & Garrison, 2016).

Some concerns by critics of personalized learning are that students will spend hours of their school days passively sitting in front of computer screens and that students will lose capacity for engaging in self-regulation and self-directed learning (Bingham, Pane, Steiner, and Hamilton, 2016; Zimmerman, 1998). Others make the case that PL needs to support both academic and social emotional learning to truly foster student agency and self-directed student learning behaviors (e.g., Rutledge, Cohen-Vogel & Roberts, 2015).

Widespread concern by teachers also persist about implementation challenges and how the role of the teacher may shift in this new teaching paradigm (Bingham, 2017; Bingham, Pane, Steiner & Hamilton, 2016). Some studies suggest that public perception is that technology used for PL will completely replace teachers in education as a cost-saving measure (Patrick, Kennedy, & Powell, 2013; Watson, Murin, Vashaw, Gemin & Rapp, 2011).

Our findings suggest this is simply not the case at all for the eight RI middle school classrooms we observed. Across the classrooms, each teacher's beliefs and intentions are critical drivers of PL practices, as they incorporate efforts to build positive relationships, deepen learning, encourage student ownership, and prepare students for academic and social success. In addition, teachers in both BL and SL/PLT school contexts face challenges as they strive to understand how best to personalize their instruction to meet the developmental and discipline-specific needs of their students. Our findings support the idea that implementing personalized learning "depends upon teachers adapting lessons in the contexts in which they find themselves and modifying what designers have created" (Cuban, 2017, paragraph 27). Put simply, the teacher plays a critical role in any interpretation of personalized learning and how it plays out in school contexts.

The six key findings from our study can contribute to the body of knowledge around personalized learning and provide direction for future work - locally, regionally and nationally. The ideas can provide current and aspiring teachers with practitioner knowledge relating to personalized learning, inform district-level decision-making around initiating personalized

learning initiatives, and offer insight for long-term planning to support scalable shifts to personalized learning practices. Research into what is actually occurring in classrooms where teachers are trying to meet the challenge of personalizing instruction is just beginning to emerge. The knowledge generated from our work provides a concrete representation of some of these efforts in our state. We hope that our work can also serve to broaden definitions of personalized learning in Rhode Island with additional research while offering recommendations for policymakers, educators, aspiring educators and school leaders interested in implementing personalized learning.

## **Recommendations for Stakeholders**

Our findings suggest a number of issues for administrators, teachers, and other stakeholders to consider as they seek to promote personalized learning:

1. **School Districts & Administrators:** Creating an instructional environment that incorporates personalized learning requires concerted teacher effort. In this study, teachers discussed the importance of professional development to advance their practices. Extended professional development targeted to what teachers want and need to learn is essential to the success of personalized learning initiatives.
2. **School Districts & Administrators:** Although large-scale technological solutions can be tempting, the effort and thought needed to successfully implement personalized learning practices means that teacher buy-in and commitment are essential. In this study, teachers demonstrated the intentionality and preparation necessary to change their practices. One effective way to prepare teachers is to create opportunities for them to observe personalized learning in action, and to promote successful classrooms as models for others.
3. **School Districts & Administrators:** Teachers in this study discussed the importance of working with colleagues to improve their practice. Although some of this happens informally, teachers need built-in time to problem-solve, plan, and discuss personalized learning practices with their peers.
4. **Instructional Coaches:** Teachers in this study discussed the value of having another set of eyes to observe and provide feedback on the alignment between their teaching practices and students' learning, self-direction, and agency. Coaches can be that lens, helping teachers adapt their practices and continually push themselves to release more responsibility to students.
5. **Teachers:** This study sheds light on the importance of teacher-student relationships in a personalized learning environment. Teachers should continue to build these relationships to foster student independence and help students set and achieve their goals.
6. **Teacher Educators:** Some teaching practices aligned with personalized learning may conflict with more traditional frameworks for teaching middle school students. In addition, teacher-driven decisions about what works best for students in specific learning contexts are a necessary part of personalizing instruction. Thus, new teachers need a strong theoretical understanding of the importance of personalized learning and the various practices that support it. They should have opportunities in their practicum and student teaching experiences to engage in PL practices and work within systems designed to support personalized learning in different contexts.

## **Future Questions To Explore**

We acknowledge that our study of eight teachers in two schools cannot describe all teachers in all personalized learning contexts. Therefore, much more research is needed to understand successful personalized learning practices, and ultimately, their impact on student learning and development. Some questions to explore related to our findings and recommendations are as follows:

1. How do teachers plan for personalized learning (content, time, tools, etc.)?
2. What supports do educators need to be successful in student-directed, personalized learning environments?
3. How do teachers reconcile personalized learning principles with their concerns, intentions, and beliefs about teaching and learning?
4. What school-based practices and routines can school leaders institute to build a school culture that supports student-directed, personalized learning?
5. How do personalized learning classroom practices impact instruction and achievement for diverse populations (Special Education, ELL)?
6. What new grading policies and structures are needed to support students who are unable to master content by the end of the school year or those who move far ahead of their grade level peers?
7. What kinds of student outcomes (academic and social-emotional) are likely to be impacted by personalized learning practices, and how might teachers validly and reliably capture performance on these outcomes over time?

## References

- Basham, J.D., Hall, T.E., Carter Jr., R. A., and Stahl, W.M. (2016). An Operationalized Understanding of Personalized Learning. *Journal of Special Education Technology*, 31(3), 126-136.
- Better Lesson (2017, July). *Personalized learning on a continuum: Strategies that work for different teacher archetypes*. Available at <https://goo.gl/ucX5Qz>
- Bingham, A. J. (2017). Personalized learning in high technology charter schools. *Journal of Educational Change*, 18(4), 521-549. doi: 10.1007/s10833-017-9305-0
- Bingham, A. J., Pane, J. F., Steiner, E. D., & Hamilton, L. S. (2016). Ahead of the curve: Implementation challenges in personalized learning school models. *Educational Policy*, 1-36. doi: 10.1177/08959048166637688
- Bray, B., & McClaskey, K. (2015). *Make learning personal: The what, who, WOW, where, and why*. Thousand Oaks, CA: Corwin, A SAGE Company.
- Calkins, A. & Vogt, K. (2013). *Next generation learning: The pathway to possibility*. Available at <https://library.educase.edu/~media/files/library/2013/4/ngw1301-pdf.pdf>
- Christensen Institute (2018). *Blended learning definitions*. Available at <https://www.christenseninstitute.org/blended-learning-definitions-and-models/>
- Cuban, L. (2017). *A continuum on personalized learning: first draft*. Available at <https://larrycuban.wordpress.com/2017/03/22/a-continuum-on-personalized-learning-first-draft/>
- Cuban, L. (2018). *The flight of a butterfly or the path of a bullet? Using technology to transform teaching and learning*. Cambridge, MA: Harvard Education Press.
- Dreyfus, H., & Dreyfus, S. (1986). *Mind over machine: The power of human intuition and expertise in the era of the computer*. New York: Blackwell Publishers.
- EduvateRI. (2017). *Creating a Shared Understanding of Personalized Learning for Rhode Island*. Rhode Island Office of Innovation. Retrieved August 31, 2018 from <http://eduvateri.org/projects/personalized/personalizedlearningpaper/>
- Every Student Succeeds Act of 2015, Pub. L. No. 114-95, Sect. 4104 (2015).
- Gross, B. & DeArmond, M. (2018). *Personalized learning at a crossroads: Early lessons from the Next Generation Systems initiative and the Regional Funds for Breakthrough Schools initiative*. Center on Reinventing Public Education (CRPE), Available <http://research.crpe.org/reports/personalized-learning/>
- Horn, M. & Staker, H. (2015). *Blended Learning: Using disruptive innovation to improve schools*. San Francisco, California: Jossey-Bass.
- Jahnke, I., Bergström, P., Marell-Olsson, E., Häll, L., and Kumar, S. (2017). Digital didactical designs as research framework: iPad integration in Nordic schools. *Computers & Education*, 113, 1-15.
- Kennedy, M. (2006). *Inside Teaching: How Classroom Life Undermines Reform*. Harvard University Press.
- Luyre, S. (2018, May 30): *The massive experiment in New Orleans schools that few have noticed*. The Hechinger Report, Available: <http://hechingerreport.org/the-massive-personalized-learning-experiment-in-new-orleans-schools/>
- Lund, A., & Hauge, T. E. (2011). Designs for teaching and learning in technology-rich learning environments. *Nordic Journal of Digital Literacy*, 4, 258-272.
- Mack, Wilka, & Schalliol (2017). *Implementing Summit Learning: Lessons from Year 2*. FSG Consulting.

- McClaskey, K. (2018, July 9). Stages of Personalized Learning Environments, v5 Infographic [Make Learning Personal]. Retrieved August 31, 2018, from <http://kathleenmcclaskey.com/2018/07/09/stages-of-personalized-learning-environments-v5-infographic/>
- Nagaoka, Farrington, Ehrlich, & Heath (2015). Foundations for Young Adult Success: A Developmental Framework. *UChicago Consortium on School Research*.
- National Educational Technology Plan. (2016). *Future ready learning: Reimagining the role of technology in education*. Office of Educational Technology, U.S. Department of Educational Technology. Retrieved March 17, 2018 from <http://tech.ed.gov/files/2015/12/NETP16.pdf>
- Olofson, M., Downes, J., Petrick Smith, C., Legeros, L., & Bishop, P. (2018). An Instrument to Measure Teacher Practices to Support Personalized Learning in the Middle Grades. *RMLE Online*, 41(7), 1-21.
- Paine, J. P., Steiner, E., Baird, M. D., Hamilton, L. S., & Pane, J. D. (2017). *Informing progress: Insights on personalized learning implementation and effects*. RAND Corporation. Available at [https://www.rand.org/pubs/research\\_reports/RR2042.html](https://www.rand.org/pubs/research_reports/RR2042.html)
- Patrick, S., Kennedy, K., & Powell, A. (2013). *Mean what you say: Defining and integrating personalized, blended and competency education*. Vienna, VA: International Association for K-12 Online Learning.
- Roberts-Mahoney, H., Means, A. J., & Garrison, M. J. (2016). Netflixing human capital development: Personalized learning technology and the corporatization of K-12 education. *Journal of Education Policy*, 31(4), 405-420.
- Rutledge, S. A., Cohen-Vogel, L., & Roberts, R. L. (2015). Understanding effective high schools evidence for personalization for academic and social emotional learning. *American Educational Research Journal*, 52(6), 1060-1092.
- Sensevy, G. (2012). About the joint action theory in didactics. *Zeitschrift fur Erziehungswissenschaft*, 15(3), 503-516. Available <https://link.springer.com/article/10.1007/s11618-012-0305-9>
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 12(2), 4-14.
- U.S. Department of Education. (2012). *Absolute priorities*. Retrieved from <https://www.ed.gov/race-top/district-competition/absolute-priorities>.
- U.S. Department of Education. (2015). *Competency-based learning or personalized learning*. Retrieved from <https://www.ed.gov/oii-news/competency-based-learning-or-personalized-learning>.
- Watson, J., Murin, A., Vashaw, L., Gemin, B., and Rapp, C. (2011). *Keeping pace with K-12 online learning: An annual review of policy and practice*. Evergreen, CO: Evergreen Education Group.
- Wildt, J. (2007). On the way from teaching to learning by competencies as learning outcomes. In A. Pausits, & A. Pallert (Eds.) *Higher Education Management and development in central, southern, and eastern Europe* (pp. 115-123). Munster, Germany: Waxmann.
- Zimmerman, B. J. (1998). Developing self-fulfilling cycles of academic regulation: An analysis of exemplary instructional models. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice* (pp. 1-19). New York, NY: Guilford Press.

**APPENDIX A**  
**Teacher Interview Questions**

*Instructions*

The purpose of this interview is to gather information about your experience with blended and personalized learning practices. (NOTE: Actual questions varied for each interview, depending on teacher responses and how much time teachers had to participate in interview.)

1. Background Information: <i>Please tell us a little about yourself as a teacher.</i>		
1	Why did you get into teaching?	<i>Getting started</i>
2	How long have you been teaching?	<i>Getting started</i>
3	How long have you been teaching at this school?	<i>Getting started</i>
4	Do you have other roles beyond your role of classroom teacher at this school?	<i>Getting started</i>
5	What is your teaching philosophy?	<i>Getting started</i>
6	What has shaped your teaching philosophy?	<i>Getting started</i>
2. Classroom and School Context: <i>Please tell us a little about your school and how you teach.</i>		
7	In the ideal version of your classroom, what does teaching and learning look like?	<i>Vision</i>
8	Where do see technology fitting in to the type of teaching and learning you would like to see in the classroom?	<i>Vision</i>
9	Regarding your school context, what are the expectations that your administrators have of you related to professional growth and support of current school improvement plans? To what extent do you feel supported?	<i>School context</i>
10	Right now, are you actively trying to change how teaching and learning happens in your classroom? What are you doing that is new or different?	<i>Reflection and intentional teaching</i>
11	Is this a change that others at the school are involved in or working on?	<i>Add to the picture of how PL is being implemented in their school</i>
3. Blended and Personalized Learning - Definitions and the Big Picture		
12	What do you think of when you hear “blended learning”?	<i>Definitions and understandings</i>
13	What do you think of when you hear “personalized learning”?	<i>Definitions and understandings</i>
14	How do you think <u>students</u> have benefitted from	<i>Definitions and understandings</i>

	blended/personalized learning in the classroom this year? What makes you say this?	
15	How do you think you have benefitted from blended/personalized learning in the classroom this year? What makes you say this?	<i>Definitions and understandings</i>
16	How have your students responded?	<i>Definitions and understandings</i>
17	From your perspective, what habits of mind are important for students to have in your classroom? How do you try to foster these habits of mind across the school year?	<i>Classroom culture</i>
<b>4. Typical Blended/PL Lesson</b>		
18	Please describe a typical blended/personalized learning lesson. How did you prepare? What did you do?* What did the students do?* What resources did students use?* How much time?*	<i>Teaching goals, learning activities, social relations, technology use, assessment.</i>
19	[In a typical blended/personalized learning lesson], do students work individually and/or with others?	<i>Ask only if unaddressed in response to Q above.</i>
20	[In a typical blended/personalized learning lesson], what role does technology play in your instruction?	<i>Role of technology</i>
21	[In a typical blended/personalized learning lesson], what role does technology play in student learning?	<i>Role of technology</i>
22	[In a typical blended/personalized learning lesson], what kind of products do students produce?	<i>Authentic learning</i>
23	How do you assess their work? How do you gauge your students' understanding? And progress?	<i>Assessment, authentic learning</i>
24	[In a typical blended/personalized learning lesson], what role does student grouping play in your teaching to be able to meet different students' needs?	<i>Flexible instructional modalities</i>
25	[In a typical blended/personalized learning lesson], how often do students engage in small groups and for what purposes? Do you find these experiences productive?	<i>Collaboration</i>
26	What do you think of the role of relationships for learning in the classroom?	<i>Roles and relationships</i>
27	[In a typical blended/personalized learning lesson], how often and in what ways do students reflect on their performance and set future learning goals?	<i>Student agency</i>
28	[In a typical blended/personalized learning lesson], what	<i>Use of data</i>

	role does data play in student learning? Do students see their performance data?	
29	[In a typical blended/personalized learning lesson], what role does assessment/performance data play in your instruction?	<i>Use of data</i>
30	How do you typically deliver feedback to students?	<i>PL Feedback/Use of Data</i>
31	In a typical lesson, do your students use any kind of data to make decisions about their learning goals?	<i>Use of data, goals</i>
32	How do you see your teaching fitting in with what students are interested in outside of school?	<i>Authentic learning</i>
33	[In a typical blended/personalized learning lesson], in what ways do students have the opportunity to use their voices in your class?	<i>Student agency</i>
34	[In a typical blended/personalized learning lesson], in what ways do students have the opportunities to make choices in your classroom? (materials, learning tasks, where they sit)?	<i>Student agency</i>
35	What kinds of challenges and barriers have you encountered implementing blended/personalized learning in your classroom?	<i>Challenges</i>
36	How have you addressed these challenges?	<i>Challenges</i>
4. Professional Development: <i>Please tell me about the professional development that you have received.</i>		
37	Please describe the type of professional development you have received related to blended/personalized learning.	<i>Knowledge, experience, and comfort level</i>
38	What did you find most valuable about those experiences?	<i>Knowledge, experience, and comfort level</i>
39	In what ways do you think that professional development could be improved to support your teaching practices?	<i>Knowledge, experience, and comfort level</i>
5. <b>OPTIONAL: Ongoing Support*</b> : Please tell us the various kinds of support (support for implementation, support from school admin, technical support, support from colleagues) that you have received to support your practices related to blended/personalized learning.		
40	How have school administrators explained blended/personalized learning to you?	<i>ONGOING SUPPORT</i>
41	What support were you offered to support your blended/personalized learning practice?	<i>ONGOING SUPPORT</i>

42	Has implementation been carried out in the way that it was originally planned and communicated?	<i>ONGOING SUPPORT</i>
43	Have you encountered technical difficulties in implementing blended/personalized learning? How has technical support been? What is the nature of the ongoing technical support that you receive? Who provides it? How often do you receive it? Is support usually in response to challenges or is it proactive?	<i>ONGOING SUPPORT</i>
44	To what extent do you feel supported by school admin?	<i>ONGOING SUPPORT</i>
45	To what extent do you feel supported by colleagues?	<i>ONGOING SUPPORT</i>
Wrap-Up		
46	Is there anything else that you would like to add? Specific to what researchers have observed?	
47	Do you have any questions?	
Follow-Up: Thank you so much for participating!		
48	Please do not hesitate to follow-up if you think of anything later. If we have some follow-up questions later, what is the best way to contact you?	

Modifications \* = These questions are follow-up questions and they can be omitted if responses to the prior questions yield responsive answers.

## APPENDIX B

### Coding Scheme for Digital Didactical Designs (DDD) Elements: Design of teaching & learning with web-enabled technologies

[Adapted from Jahnke, I., Bergstrom, P., Marell-Olsson, E. & Hall, L. (2017). Digital didactic designs as a research framework: iPad integration in Nordic schools. *Computers & Education*, 113, 1-15.]

#### Teaching Goals / Intended Learning Outcomes (TG/ILO)

Character of teaching goals and intended learning outcomes (clear and visible?)

- 1 = Not clear, not visible, no communication about teaching goals or learning intentions; focus on content
- 2 = (shows indicators of 3 and 1 but not fully 3 or 1)
- 3 = Oral communication
- 4 = (shows indicators of 5 and 3 but not fully 5 or 3)
- 5 = Teaching goals are clear and visible for students; intended learning outcomes in forms of development of skills; a source is available where students can go and read goals/objectives; at best, co-aims of students are included

#### Learning Activities (LA)

Character of learning activities (toward deep learning by producing in engaged, authentic, open settings?)

- 1 = Students hear what teachers read from the textbook or resource (i.e., surface learning; memorizing, remembering/recalling, repetition of facts); theoretical problems without connecting to real-world problem
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = Shows signs of shallow learning and signs of meaningful learning (i.e., active, collaborative, authentic, goal-directed, and reflective) however, students are not as engaged as in 5; they have too much time for doing other things (e.g., playing cards), they are distracted in one way or the other (e.g., texting, off topic chatting)
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = Learning activities have a range from surface but a focus on deep, meaningful learning with indicators such as active, collaborative, authentic, goal directed, and reflective; students produce something, engaged classrooms, collaboration with peers, the activities are connected to students' world and include a real-world problem (e.g., everyday experiences); a real audience, students critically reflect on existing content (e.g., evaluating), creating/making, relate knowledge to new knowledge, "organize and structure content into a coherent whole"; students are engaged in producing, using the Internet or other sources beyond the physical school walls (e.g., signs of cross-actions, e.g., communicating/learning with people who are not in the classroom)

(Continued on next page)

**Assessment (AS)**

Character of assessment: (Process-based assessments?)

- 1 = Feedback only at the end (i.e., summative feedback); character of the feedback is rather summative, not formative
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = Feedback during the class by coincidence but not only technical help; teacher only gives feedback when students ask for support; passive support
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = Criteria for learning progress are visible for students from the beginning of the learning process; feedback/feed-forward at the end, but mainly process-based assessment (i.e., formative evaluation); a range of forms such as self-assessment, peer-reflective learning, and feedback by the teacher (e.g., students document learning electronically, with a map, text, whiteboard on desk, on paper) and the teacher asks them to go back and reflect

**Roles and Relationships**

Character of personal and social relations (positive personal connection?) between teacher-student and peer-to-peer interactions; multiple roles (not only consumers?)

- 1 = T-S interactions are primarily for academic purposes; Teacher in traditional role of expert only; students only seen as consumers (of solving closed questions and tasks in which only one correct answer is possible)
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = T-S interactions are occasionally personal, but primarily academic; Teacher is in one of two roles but spends majority of time as expert; teacher is less likely to support students as active and self-directed
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = T-S interactions reflect balance of both academic and personal purposes (e.g., building relationships, letting students know you care); Teacher plays different roles (eg; expert, process mentor, learning-companion, coach); T. fosters students to be in different roles such as consumers, producers, collaborators, critical reflectors. teacher engages students; teacher activates the students to change their roles, students are in several roles (e.g, teachers for their peers, finding own learning aims, creating own learning tasks); teacher supports the student, reflection of roles, and development of new roles

**Technology Integration**

Character of web-enabled technology/digital tools (for cross-actions)?

- 1 = Low extent, drill and practice; students work primarily along while using technology, not related to the real world (e.g., technology substitutes for pen and paper) – Substitution in SAMR frame
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = Medium extent (e.g., new technology is substitute for existing media); between Augmentation and Modification in SAMR frame
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = High extent (multimodal such as writing texts, camera apps, digital paintings, using apps for collaborative creation; students construct, share, create, publish and reflect on their knowledge (to a real audience); students use online resources, actively select topics beyond the limitations of even the best school library; signs of cross-action (e.g., using the online world to solve a learning activity) –Redefinition in SAMR frame

## APPENDIX C

### Coding Scheme for Personalized Learning [PL] Elements

Created using elements from Better Lesson (2017, July). *Personalized learning on a continuum: Strategies that work for different teacher archetypes*. Available <https://goo.gl/ucX5Qz>

**Authentic Learning (AL):** how teacher organizes content and processes of learning while accounting for student goals and backgrounds

- 1 = Teacher connects learning goals to academic performance (e.g., high rubric score, report card grade) without focusing on how skills connect or transfer to the real world; few opportunities to collaborate or creatively demonstrate mastery; few opportunities to share beyond the classroom
- 2 = (shows indicators of 3 and 1 but not fully 3 or 1)
- 3 = Teacher shows signs of promoting collaboration and linking content to the real world with less emphasis on creativity in demonstrating mastery of content; however connections to personal learning goals or real world application is not as explicit as in 5
- 4 = (shows indicators of 5 and 3 but not fully 5 or 3)
- 5 = Teacher explicitly makes clear and visible how the content and learning processes are relevant and connected to real life and, optimally [if possible or appropriate], students personal learning goals; learning activities encourage creativity and collaboration that enables students to demonstrate their mastery and synthesis of skills and showcase their learning beyond the classroom or school

**Student Agency (SA):** how teacher designs learning experiences to promote and support ownership of content and learning processes

- 1 = Teacher directs most decisions related to setting and monitoring student learning goals; setting or adjusting the pace, sequence, and modality of learning activities to meet teacher identified student needs; and how/which format students will use to share their learning with others.
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = Teacher shows signs of promoting student voice and choice related to learning goals, learning activities, and learning products; however, evidence of student-directed efforts and active student ownership involving decisions in these areas are not as common or explicit as in 5
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = Teacher designs and supports meaningful, age-appropriate opportunities for students to determine what skills they need to be successful and then use these skills to set and monitor their own learning goals; set or adjust the pace, sequence, or modalities for learning to meet their needs; and have an active role in deciding how they will creatively share/showcase their learning.

**Flexible Instructional Formats (FI):** how teacher designs instructional formats or modalities to engage students with content and learning processes

- 1 = Teacher uses mostly whole group activities with little or some degree of small group work to engage students with content. Some evidence of teachers interacting with students to build a positive rapport during class time may also be observed.
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = Teacher selects a variety of instructional modalities to encourage positive peer-to-peer and teacher-student interactions. However, efforts to intentionally foster productive interactions aligned with learning goals, individual student personalities, and groupings across varied ability levels are not as common or explicit as in 5.
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = Teacher intentionally designs and selects a variety of instructional modalities (e.g., small, collaborative groups, independent, whole-class, conferences, performances, etc.) in ways that

encourage students to seek out classmates with similar interests for group projects and engage in F2F conversations with peers of similar and different abilities in order to solve problems, complete challenging learning activities, or gain mastery of content before moving on; optimally teacher actively strives to build personal relationships with students in ways that implicitly or explicitly communicate to students they are cared about, respected, and safe to take risks in their learning.

**Role of Technology (RT):** how teacher selects and deploys educational technology in support of content and learning processes

- 1 = Teachers show evidence that they do not understand the fundamental concepts of technology operations. Teachers do not demonstrate ability to choose, use and troubleshoot current technologies. Teachers are not able to transfer their knowledge to flexibly use relevant technologies or learning platforms to meet the needs of diverse learners, enhance instruction and support creative application of content knowledge.
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = Teachers show some evidence that they understand the fundamental concepts of technology operations, demonstrate ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to flexibly use relevant technologies or learning platforms to meet the needs of diverse learners, enhance instruction and support creative application of content knowledge.
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = Teachers show strong evidence that they understand the fundamental and sophisticated concepts of technology operations, demonstrate ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to flexibly use relevant emerging technologies or learning platforms to meet the needs of diverse learners, enhance instruction and support creative application of content knowledge.

**Collaboration (CL):** how teacher designs experiences to foster skills, habits, and dispositions of effective collaborators

- 1 = Teacher uses and/or allows some form of partner work (e.g., think-pair-share, helping a neighbor with a task) but few intentionally planned opportunities for students to collaborate on group projects (over several days) and little evidence of intentional structures in place to give students supported practice in working together to listen to other perspectives and settle differences.
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = Teacher designs opportunities for students to engage in productive learning conversations but less evidence on working together to settle differences; Efforts to promote collaborative project planning and collaborative reflection on individual and group progress are not as common or explicit as in 5.
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = Teacher intentionally designs opportunities (in person and digital) for students to actively listen and engage in productive learning conversations with peers (and teachers when appropriate) that build on their ideas and to practice advocating for themselves while respectfully listening and working with others to settle differences; optimally teacher promotes students' collaborative project planning (e.g. setting joint learning goals, creating realistic timelines), effective time management among group members; and ways for students to document, track, and reflect on individual and group progress over time.

**Use of Data (UD):** how teacher uses data from diverse sources, including technology platforms, to inform teaching and learning

- 1 = Teacher does not show evidence of the use of data to design and implement various instructional modalities. Teacher does not foster a data culture to support self-directed learning.
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = Teacher shows some evidence of using data to implement various instructional modalities (whole group, partial group, 1:1). Teachers use some assessment data to guide progress and communicate with students to build student self-direction. Teachers somewhat foster a data culture where students take ownership of their data to create learning goals and outcomes in both independent and group settings. Teachers generate a way for students to document, track, and reflect on individual and group progress and outcomes.
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = Teacher uses various data sources (print, digital, behavioral) to intentionally design and implement a variety of flexible instructional modalities (whole group, partial group, 1:1) based on a gradual release methodology. Teachers use assessment/performance data to guide progress and communicate with students to build student self-direction. Teachers foster a data culture where students take ownership of their data to create learning goals and outcomes in both independent and group settings, and generate ways for students to document, track, and reflect on individual and group progress and outcomes over time.

**Classroom Culture (CC):** how teacher designs and communicates to students classroom systems, expectations, routines, and strategies

- 1 = Teacher moves through daily routines with little to no explanation or rationale. Efforts to communicate classroom expectations, routines, and strategies for staying positive, working hard, and pursuing personal interests are not clear and rarely visible.
- 2 = (shows indicators of 3 and 1 but not fully 3)
- 3 = Teacher clearly communicates positive expectations about quality work and respects for others in the classroom and shows some evidence of building positive relationships with students and reminding them they are capable of accomplishing learning goals. Expecting students to work toward pursuing personal interests and/or transforming their knowledge into action is not as common or explicit as 5.
- 4 = (shows indicators of 5 and 3 but not fully 5)
- 5 = Teacher develops, models, and reinforces routine and strategies to ensure learning is safe, respectful, and productive; teacher explicitly communicates positive expectations about quality work and respect for students and adults in the classroom, regularly reminds students they are capable, and makes conscious efforts to build positive relationships with all students. Optimally, teacher encourages students to stay focused and work hard to collaboratively or independently pursue their personal interests, solve their personal learning challenges, and make a difference by transforming their knowledge into action.

**APPENDIX D**

**TEACHER SURVEY – SEE NEXT PAGES**

**APPENDIX E**

**STUDENT SURVEY – SEE NEXT PAGES**

Personalized Learning Teacher Survey

Personalized learning has been defined in many ways and teachers integrate different sets of practices in their classrooms to meet the unique needs of their learners. The best strategies for creating an educational environment that is highly personalized have yet to be identified through research.

The purpose of this survey is to gather information about how you are incorporating personalized learning practices into your instruction this school year. This information will help the researchers better understand what personalized learning looks like among a small sample of middle school teachers in Rhode Island. There are no right or wrong answers and this is not an evaluation of your teaching. Rather, we will use your responses to learn more about how you define personalized learning in your teaching context and how you create opportunities for personalized learning in your classroom. Your answers will also help the researchers understand some of the commonalities and differences in implementation across the classrooms. We recognize that teachers are at different stages of exploring how to implement these ideas and we want to understand and validate your work, no matter where you are in the process.

Thank you for answering each statement as honestly as you can so we can accurately showcase the important work you are doing to personalize learning in your classroom.

The survey consists of two groups of items:

- A. Your personal background information
- B. 56 survey items related to different aspects of personalized learning models

There are no right or wrong answers and you should answer each item as honestly as you can.

Please click next to Continue.

Part 1. Background Information

What grade level do you teach?

- Grade 6
- Grade 7
- Grade 8

How many years have you been a teacher?

What primary subject area do you teach?

Math

English Language Arts

Science

Social Studies

Other (please specify)

How many years have you used technology to personalize learning in your classroom?

In my first year

Four years

Two years

Five years

Three years

Other (please specify)

Which model best describes how you use technology to personalize learning in your classroom this year?

Summit Learning Platform

Blended Learning/Station Rotation

Briefly describe any training/professional development have you received to help you personalize learning in your classroom.

Teacher PL Survey 2018 v2

Part 2. Survey Items

**Please read each statement and indicate how often each statement is true of you and your classroom instruction this school year.**

**1 = Almost Never True and 5 = Almost Always True**

Click the circle under the phrase that best explains how often each statement is true of you and your classroom instruction this year.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
1. I organize opportunities for students to create personally meaningful products that demonstrate their mastery of skills and content.	<input type="radio"/>				
2. I make a conscious effort to treat my students with respect.	<input type="radio"/>				
3. I select and use appropriate educational technologies to help identify and understand my students' learning challenges.	<input type="radio"/>				
4. I actively encourage students to reflect on their learning and how they can learn from their mistakes.	<input type="radio"/>				
5. I design activities that encourage students to use technology to share their ideas in creative ways.	<input type="radio"/>				
6. I stress that working collaboratively to deeply understand new ideas is the goal of classroom activities and lessons.	<input type="radio"/>				

Click the circle under the phrase that best explains how often each statement is true of you and your classroom instruction this year.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
7. I avoid encouraging my students to develop creative ways of solving problems they encounter during learning.	<input type="radio"/>				
8. I encourage students and their families to access computer data at home and talk about how and what students are learning.	<input type="radio"/>				
9. I select and design digital activities that help students solve difficult learning challenges.	<input type="radio"/>				
10. I organize experiences that encourage students to share their learning in a variety of different formats.	<input type="radio"/>				
11. I design and select a variety of instructional modalities (small group, whole class, student conferences, etc.) to engage students and ignite their passions.	<input type="radio"/>				
12. I listen in on groups and allow them to collaboratively grapple with ideas, rather than always inserting myself into the process.	<input type="radio"/>				

Click the circle under the phrase that best explains how often each statement is true of you and your classroom instruction this year.

Almost never true      Rarely True      Occasionally True      Often True      Almost Always True

13. I am not likely to use data analysis to plan effective interventions and opportunities to accelerate learning.

14. I hesitate to give students time to interact with classmates who work at different ability levels.

15. I design experiences that encourage students to seek and find classmates with similar interests before deciding on a group project

16. I integrate and analyze data generated from technology platforms with data from non-digital sources to understand each student's learning needs.

17. I explicitly focus students' attention on discussing meaningful connections between what they are learning and their everyday lives outside of school.

18. I make a conscious effort to weave time for talking and building relationships with my students into learning routines and project schedules.

Click the circle under the phrase that best explains how often each statement is true of you and your classroom instruction this year.

	Almost never true	Rarely True	Occasionally True	Often True	Almost Always True
19. I avoid opportunities for my students to pursue their own interests and passions in creative ways.	<input type="radio"/>				
20. I make a conscious effort to create opportunities for students to showcase and celebrate their important work with friends, family, and people in their community.	<input type="radio"/>				
21. I ensure students have time to interact with classmates who work at similar ability levels.	<input type="radio"/>				
22. I ensure my students have opportunities to track their progress in meeting learning goals	<input type="radio"/>				
23. I work with students to design learning activities that allow them to use technology to give and receive feedback to their peers.	<input type="radio"/>				
24. I organize learning opportunities that help my students demonstrate how to learn in creative ways.	<input type="radio"/>				

Click the circle under the phrase that best explains how often each statement is true of you and your classroom instruction this year.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
25. I hesitate to create opportunities for students to regularly set their own learning goals.	<input type="radio"/>				
26. I actively develop a classroom community that encourages students to stay focused and motivated in order to solve their learning challenges.	<input type="radio"/>				
27. I take time to meet with students and invite them to reflect on data about their progress and set their own learning goals.	<input type="radio"/>				
28. I explain how the skill sets we are using help to inspire curiosity, answer questions, and think deeply about our world.	<input type="radio"/>				
29. I design activities that encourage students to work with others to create a realistic timeline for completing a group project.	<input type="radio"/>				
30. I give my students some responsibility for selecting the most appropriate technologies for their learning or sharing purpose.	<input type="radio"/>				

Click the circle under the phrase that best explains how often each statement is true of you and your classroom instruction this year.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
31. I design activities that encourage students to find others who have common interests and work to set learning goals for a group project.	<input type="radio"/>				
32. I avoid using technology to partner with people outside of our school community to enhance lessons for my students.	<input type="radio"/>				
33. I share with students the purpose(s) of classroom activities and explain how the skills they are using can help them in their lives.	<input type="radio"/>				
34. I use technology to design experiences for students to digitally collaborate and learn from their classmates.	<input type="radio"/>				
35. I encourage students to have small group, face-to-face conversations to better understand a challenging issue or topic.	<input type="radio"/>				
36. I communicate to students that they are capable of applying their knowledge to make a difference in the world.	<input type="radio"/>				

Click the circle under the phrase that best explains how often each statement is true of you and your classroom instruction this year.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
37. I avoid opportunities for my students to take some responsibility in selecting digital tools that challenge their thinking.	<input type="radio"/>				
38. I ensure my students are able to adjust the pace and sequence of their learning to meet their needs.	<input type="radio"/>				
39. I design face-to-face experiences for students to collaborate and learn from their classmates.	<input type="radio"/>				
40. I actively use technology to foster creative ways for students to express their knowledge in ways they couldn't without technology.	<input type="radio"/>				
41. I design activities that engage students in reflecting on ways their group is working well together and ways they can improve their team process.	<input type="radio"/>				
42. I create opportunities for students to actively seek challenges in classes related to their interests outside school.	<input type="radio"/>				

Click the circle under the phrase that best explains how often each statement is true of you and your classroom instruction this year.

Almost Never True      Rarely True      Occasionally True      Often True      Almost Always True

43. I create opportunities for students to develop the confidence and skills to independently solve challenging learning tasks without help from me.

44. I create opportunities for students to design their own action steps for completing learning tasks.

45. I am not likely to design activities teach students how to give and receive feedback from each other.

46. I design activities that engage students in documenting and tracking their team process over the course of a group project.

47. I ensure that my students know the skills they need to develop to be a successful learner.

48. I take time to let my students know I care about them.

49. I ensure students have time to work independently to fully master new information before moving on.

Click the circle under the phrase that best explains how often each statement is true of you and your classroom instruction this year.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
50. I am not likely to connect classroom activities to my student's interests and life goals.	<input type="radio"/>				
51. I provide time and space for students to actively listen to other students and engage in conversations that build on their ideas.	<input type="radio"/>				
52. I design activities that teach students how to advocate for themselves while respectfully working with others to settle differences.	<input type="radio"/>				
53. I arrange the space in my classroom to encourage students to talk with others and come up with creative ideas.	<input type="radio"/>				
54. I select and deploy technologies that provide my students and their families with immediate and actionable feedback.	<input type="radio"/>				
55. I encourage students to use or act on their creative learning products in order to raise awareness in their classroom, community, and beyond.	<input type="radio"/>				
56. I strive to help my students understand how to use feedback from technology to help set the pace of their learning.	<input type="radio"/>				



Student Survey: Personalized Learning

The purpose of this survey is to learn about how your teacher uses teaching and technology to tailor learning for students in your classroom this year. This is sometimes called “personalized learning.” This will help the researchers better understand what personalized learning looks like in middle school classrooms in Rhode Island.

The survey has three parts:

**Part 1: Background Information about you**

**Part 2: Four questions about your class this year**

**Part 3. Survey items about you and your teacher**

There are no right or wrong answers and you should answer each item as honestly as you can.

Please click next to Continue.

Student PL Survey 2018

Part 1. Background Information

1. What is your gender?

Male

Female

2. What grade are you in?

Grade 6

Grade 7

Grade 8

3. What subject is the class you are in right now?

Math

History

Science

Other

Language Arts

4. Which of the following best describes the grades you have been getting in this class this year? (select one)

- Don't Know
- Poor
- Average
- Excellent

5. Do you have a computer connected to the Internet at home that you can use for homework?

- Yes
- No

## Student PL Survey 2018

### Part 2: Questions About Your Class

6. How did you feel about your learning in this class at the beginning of the school year? And how do you feel now?

7. Describe one of your favorite learning experiences in this class this year.

8. Describe one of your most challenging learning experiences in this class this year.

9. Describe how your teacher uses technology in your class this year.

Part 3. Survey Items

Please read each statement and tell how often each statement is true of you and your teacher for the classroom you are sitting in right now.

1 = Almost Never True and 5 = Almost Always True

10. Click the circle under the phrase that best explains how often each statement is true of you and your teacher.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
A. My teacher shares with me the purpose for classroom activities.	<input type="radio"/>				
B. My teacher explains how the skills I am learning can help me in my life.	<input type="radio"/>				
C. In this class, I have opportunities to share and celebrate my important work with friends, family, and people in my community.	<input type="radio"/>				

11. Click the circle under the phrase that best explains how often each statement is true of you and your teacher.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
D. I actively seek challenges in this class related to my personal interests.	<input type="radio"/>				
E. In this class, I have opportunities to adjust the pace of my learning to meet my needs.	<input type="radio"/>				
F. My teacher meets with me to talk about how to use data I get from the computer to set my learning goals.	<input type="radio"/>				

Student PL Survey 2018

12. Click the circle under the phrase that best explains how often each statement is true of you and your teacher.

	Almost never true	Rarely True	Occasionally True	Often True	Almost Always True
G. In this class, my teacher meets with me to talk about how I can use results from activities NOT on the computer to improve my learning.	<input type="radio"/>				
H. In this class, my teacher uses digital activities to help me solve problems and learn new things.	<input type="radio"/>				
I. In this class, I have opportunities to use technology to express myself in creative ways that aren't possible without technology.	<input type="radio"/>				

Student PL Survey 2018

13. Click the circle under the phrase that best explains how often each statement is true of you and your teacher.

	Almost never true	Rarely True	Occasionally True	Often True	Almost Always True
J. In this class, I have opportunities to work with and learn from other students in both digital and face-to-face experiences.	<input type="radio"/>				
K. My teacher creates activities that allow me to practice sharing my feelings with others and working to respectfully settle our differences.	<input type="radio"/>				
L. My teacher creates a variety of ways for me to learn with others (e.g., in small groups, as a whole class, student conferences, etc.).	<input type="radio"/>				

## Student PL Survey 2018

14. Click the circle under the phrase that best explains how often each statement is true of you and your teacher.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
M. My teacher organizes different places in our classroom to help me talk with others and come up with creative ideas.	<input type="radio"/>				
N. I have opportunities in this class to pursue my personal interests in creative ways.	<input type="radio"/>				
O. I feel like what I am learning in this class can help me make a difference in the world.	<input type="radio"/>				

## Student PL Survey 2018

15. Click the circle under the phrase that best explains how often each statement is true of you and your teacher.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
P. My teacher encourages me to be curious and ask questions about the world.	<input type="radio"/>				
Q. My teacher encourages me to solve learning challenges by myself.	<input type="radio"/>				
R. My teacher encourages me to reflect on what I've learned and how to learn from my mistakes.	<input type="radio"/>				

## Student PL Survey 2018

### Survey Items

16. Click the circle under the phrase that best explains how often each statement is true of you and your teacher.

	Almost Never True	Rarely True	Occasionally True	Often True	Almost Always True
S. In this class, my teacher makes an effort to build a positive relationship with me.	<input type="radio"/>				
T. In this class, I feel like my teacher cares about me.	<input type="radio"/>				
U. In this class, I have the confidence and skills to work in a group to solve learning challenges without help from the teacher.	<input type="radio"/>				

Student PL Survey 2018

Thank you for taking our survey. Please click Done to finish.