PACIFIC
Research & Evaluation, LLC

TechSmart Initiative for Student Success

SY 17-18 Evaluation Report

PREPARED FOR

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Introduction

The Mt. Hood Cable Regulatory Commission (MHCRC) launched the TechSmart Initiative for Student Success in fall 2014, with plans to strategically invest a total of about $19 million through 2021 in local public schools to positively impact academic outcomes for all students in Multnomah County. The TechSmart Initiative provides grants and evaluation resources for Multnomah County school districts to identify effective classroom instruction that uses technology to foster improvement in academic outcomes for all students and to share the successful strategies across the school districts. The TechSmart Initiative is aligned with the collective effort of the broader community engaged in the All Hands Raised Partnership. The MHCRC invests in District efforts to close the achievement gap and make progress on the following academic outcomes key to student success:

Kindergarten Readiness ▌ 3rd Grade Reading ▌ 8th Grade Math ▌ 9th Grade Credit Attainment ▌ High School Graduation ▌ English Language Learners' Annual Progress

The MHCRC works closely with each school district as a planning and funding partner to develop a grant project plan tailored to each individual district's priorities. The MHCRC has two overarching goals for the TechSmart Initiative:

Goal 1: School districts funded by MHCRC grant investments will understand and implement effective instructional strategies and practices that use technology to foster improvement in academic outcomes for all students.

Goal 2: The MHCRC and school districts will validate and disseminate effective instructional strategies and practices that use technology to foster improvement in academic outcomes for all students.

The MHCRC developed a Framework for Successful Technology Implementation, which drew upon research and evidence-based practice for successful implementation of technology integration in education. Pacific Research and Evaluation (PRE), as the leader of an evaluation for the TechSmart Initiative, worked with MHCRC and its staff to design an evaluation around the Framework and create a logic model with outcomes for each of the seven factors described below. A copy of this logic model is included in the evaluation planning tool in Appendix A.

The MHCRC framework encompasses seven factors identified as essential for schools to effectively transform into technology-rich teaching and learning environments. The factors are not isolated from each other; many are linked and substantially overlap.

- **Teaching Effectiveness:** District supports regular, inclusive and shared professional development among teachers.
- **Digital Age Learning Culture:** District embraces cultural shift and views technology as positive.
- **Visible Leadership:** District leaders are actively involved and working with key communities to accomplish change.
- **Data Driven Improvement:** Current, relevant and high quality data from multiple sources are used to improve schools, instruction, professional development and other systems.

- **Funding & Budget:** District's budget repurposes resources and seeks outside funding to focus on promising practices and technology supports.
- **Strategic Planning:** District strategic plan reflects shared commitment to improving outcomes for students.
- **Engaged Communities & Partners:** Parents, stakeholders, community groups and others are actively and systemically involved in helping students develop, learn and achieve.

The TechSmart logic model includes short-term, intermediate, and long-term outcomes within each of these elements. This evaluation report assesses the short-term outcomes associated with each element of the framework. To assess these outcomes within each district, PRE and the MHCRC project manager worked with each district to develop an evaluation planning tool (see Appendix A). Table 1 shows when each district received its TechSmart grant funding and the project's area of focus.

Table 1. Grantee Funding Date and Focus Area

District	Year Funded	Grade	Focus Area
David Douglas	2014	K-3	Kindergarten Readiness; 3rd Grade Reading; ELL
Parkrose	2014	9-12	9th Grade Credit Attainment; High School Graduation; ELL
Reynolds	2015	7-9	8th Grade Math; ELL
Portland Public Schools	2015	K-3	3rd Grade Reading; ELL
Gresham-Barlow	2016	K-3	3rd Grade Reading; ELL
Centennial	TBD	TBD	TBD

Table 2 is a timeline for the TechSmart grant investments for each district. David Douglas and Parkrose were the first grantees in 2014-15 (SY 14-15). David Douglas wrapped up its initial grant in the 2016-17 school year (SY 16-17) and evaluation findings from the first year after grant implementation are presented in this report. David Douglas received another grant and began implementing with their second round of funding in the 2018-19 school year (SY 18-19). Parkrose received a one year grant extension and operated through this past school year (SY 17-18). Reynolds School District received its grant in SY 15-16 and began implementation immediately. Portland Public Schools received a five-year grant in 2015 and used the SY 15-16 as a planning year, with implementation starting in SY 16-17. Gresham-Barlow School District began implementation in SY 16-17 and Centennial School District began implementation in SY 18-19.

Table 2. Grant Timelines

District	SY 14-15	SY 15-16	SY 16-17	SY 17-18	SY 18-19	SY 19-20	SY 20-21	SY 21- 22
DDSD								
Parkrose								
Reynolds								
PPS		Planning						
GBSD								
Centennial								

This report describes evaluation results for the five districts that were implementing their grants by the beginning of the SY 17-18. Project descriptions for each of these school districts are included below followed by the data collection methods used for the evaluation in each district during SY 17-18, results specific to each district, and a summary of results across all grants. Each district's section of this report is organized by the Framework factors with corresponding evaluation questions and outcomes; each section includes a project summary as an introduction to the evaluation results.

Project Descriptions

David Douglas School District

David Douglas School District (DDSD) began implementation of its 3-year MHCRC TechSmart grant during the SY 14-15 with PreK-3rd grade classes at Earl Boyles Elementary School. The grant allowed for the purchase of equipment such as iPads, Chromebooks and Smart Boards and also funded extensive professional development (PD) to support teachers and staff members in transitioning to and understanding effective uses of online digital content and resources that utilize technology to create engaging and supportive learning environments for all students. DDSD's goal for these efforts was to improve Kindergarten readiness, 3rd grade reading outcomes, and English language learners progress. DDSD's first round of funding ended in SY 16-17 and PRE conducted a post-grant evaluation of SY 17-18. DDSD received another grant and began their second round of implementation in SY18-19.

Parkrose School District

Parkrose School District's (PSD) MHCRC TechSmart grant began implementation of its TechSmart grant in SY 14-15 and was funded through SY 17-18. This grant provided technology infrastructure and teacher PD to support one-to-one student devices at Parkrose High School and also funded PD to support high school teachers in transitioning to the use of online digital content and resources that take advantage of technology to create effective learning environments for students. PSD's goal for these efforts was to improve the district's performance on the student success indicators of 9th grade credit attainment, English language learners progress, and high school graduation.

Reynolds School District

Reynolds School District's (RSD) MHCRC 4-year TechSmart grant was funded in SY 15-16 and focuses on improving student achievement in 8th grade math, 9th grade credit attainment, and English learners' progress. Through the grant, cohorts of middle and high school math teachers receive teacher and student technology devices including Microsoft Surface Pros (teachers), short throw projectors, Dell Venues (students), and 3D printers. In addition to receiving the devices, the math teacher cohorts participate in PD sessions in the summer prior to the school year and throughout the year that focused on using technology to support math education and English language development.

Portland Public Schools

Portland Public School District (PPS) received their five year TechSmart grant in SY 15-16 and after one year of planning began implementation in SY 16-17. The TechSmart grant is supporting the K-5 Equity-

Based Balanced Literacy (EBBL) framework adoption at PPS. By the end of the grant, 20 schools across the district will have the opportunity to receive professional development and pilot the technological infrastructure provided by the funding. PPS's goal for these efforts is to improve 3rd grade reading outcomes and English language learners progress.

Gresham-Barlow School District

Gresham-Barlow School District (GBSD) began implementation of its 4-year MHCRC TechSmart grant during SY 16-17 with Kindergarten through third grade classes at North Gresham Grade School and Kelly Creek Elementary School. The grant allows for the purchase of iPad devices for Kindergarten students and Chromebook devices for students in grade 1-3 and provides professional development (PD) to support teachers and staff members through the implementation of the grant. GBSD's goal for these efforts is to improve 3rd grade reading outcomes and English language learners progress.

Methods

Teacher Technology Surveys

Each district completed a teacher survey at one or two time points during the SY 17-18 depending on the district's preexisting teacher surveys. The teacher survey asked questions about PD activities, technology skill level, frequency and level of technology integration, most commonly used digital resources, and the culture of support for technology integration in the district. For DDSD teachers, questions were added to the survey regarding the sustainability of the technology integration post-grant (see Appendix B).

Teacher Interviews

PRE conducted teacher interviews with a sample of teachers from each district during SY 17-18. Teacher interview questions focused on examples of enhanced instructional strategies, the usefulness of the PD activities, the culture of support for technology integration, the impact of the grant on student subgroups, and effects on student engagement and academic outcomes. For DDSD teachers, questions were added to the interview protocol regarding the sustainability of the technology integration post-grant. See Appendix C for the complete interview protocol.

District Leader Interviews

PRE facilitated district leader interviews or focus groups in spring 2018 with school principals, administrators, and technology coaches in each TechSmart district. Leaders discussed perceptions of teacher progress and student achievement outcomes related to the project, the district's strategic plan for technology including funding decisions, and how they were working to engage communities in their efforts. For DDSD leaders, questions were added to the interview protocol regarding the sustainability of the technology integration post-grant. See Appendix D for the complete interview protocol.

Student Surveys

For TechSmart projects targeting middle and high school students, a student survey was administered to answer questions on how technology in the classroom has affected student engagement and learning, and whether student opinions about the use of technology have changed as a result of the enhanced integration. Students provided examples of technologies that they would like to see more of in the classroom. The survey is in Appendix E.

Observation Tools

Leadership Rubric

One of the elements of the TechSmart grant is to examine how technology is supporting effective instructional practices across the TechSmart grantees. In order to learn about this key outcome, PRE partnered with the TechSmart grantees and the MHCRC to develop a rubric that can be used to rate the use of technology to support instruction. The items were created using elements of the Danielson Framework[1] as described below. Teachers were asked to self-assess using the rubric on the year-end survey and leaders (coaches and principals) were asked to complete the rubric "thinking about their

[1] The Danielson Group (2013). The Framework for Teaching Evaluation Instrument. Retrieved from http://www.danielsongroup.org/framework/

TechSmart teachers a whole" following their leadership interview in the spring. Each element of the rubric is described below and raters were asked to evaluate the extent to which technology supports each aspect of instruction (See Appendix F).

- **Planning and Preparation**: Includes knowledge of content and pedagogy, knowledge of students, setting instructional outcomes, knowledge of and access to resources, designing coherent instruction, and designing student assessments.
- **Managing Classroom Procedures**: Includes instructional groups, transitions, materials and supplies, non-instructional duties, and efficient classroom procedures.
- **Organizing Physical Space**: Includes safety and accessibility, and arrangement of furniture and resources.
- **Communicating with Students**: Includes expectations for learning, directions and procedures, explanations of content, use of oral and written language.
- **Using Questioning and Discussion Techniques**: Includes quality of questions, discussion techniques, and student participation.
- **Engaging Students in Learning**: Includes activities and assignments, student groups, instructional materials and resources, and structure and pacing.
- **Using Assessment in Instruction**: Includes assessment criteria, monitoring of student learning, feedback to students, and student self-assessment and monitoring.
- **Demonstrating Flexibility and Responsiveness**: Includes lesson adjustment, response to students, and persistence.

Table 5 below details the leaders in each district who completed the leadership rubric. In SY 17-18, David Douglas School District did not have any leaders complete the rubric. In last year's evaluation, a goal was set for 3 leaders per school to complete the rubric. Though this goal was not met in SY 17-18, it remains a goal for the SY 18-19 evaluation.

Table 5. Leadership Rubric Participants

District	n	Role within District
David Douglas School District	--	--
Parkrose School District	2	Project Lead; One Principal
Reynolds School District	1	One Assistant Principal
Gresham-Barlow School District	3	One Principal; Two Coaches
Portland Public School District	5	Two Principals; Three Coaches

Reynolds Walk Through Tool

RSD developed a district specific walk-through tool for the evaluation of their TechSmart grant and shared this data with PRE for inclusion in the Year 4 evaluation report. District administrators completed 10 observations for cohort 1 teachers and 6 observations for cohort 2 teachers. A copy of this tool can be found in Appendix G.

Project Status Reports

Each district submits grant project status reports twice yearly through the MHCRC grants management system. PRE and MHCRC staff developed the report requirements to provide updates from each district on various elements of the logic model. Information from the status reports relevant to the TechSmart logic model is used by PRE in the evaluation of a district's progress on TechSmart goals. David Douglas School District was not required to submit status reports in their first year post-grant.

Student Achievement Data

PRE is receiving student-level data from the Oregon Department of Education (ODE) and directly from the school districts, in order to analyze the relationship between TechSmart investments and key student outcomes. The key outcomes to be examined for students are included in Table 1. The 3rd grade reading and 8th grade math outcomes will be evaluated using data from the Smarter Balanced Assessment which is referenced many times throughout this report and described below. There is a one-year time lag in ODE data which is used to create the district's Treatment Cohorts of students each year. As a result of this one-year time lag, the data presented in this report are for Treatment Cohorts starting in SY 14-15, SY 15-16, and SY 16-17. In the instances that districts were able to provide PRE with student achievement data for SY 17-18, the data are presented for these three Treatment Cohorts.

Smarter Balanced Assessment

Oregon is part of a team of states working together voluntarily to develop K-12 assessments in English language arts/literacy and mathematics aligned to Oregon's Common Core State Standards. These tests are called Smarter Balanced assessments. Delivered online, these tests include questions that adapt to each individual's performance and feature new "Performance Tasks" that mimic real world application of students' knowledge and skills.

ELPA Assessment

The English Language Proficiency Assessment, or ELPA, is one of the required Oregon state assessments. The No Child Left Behind Act (NCLB) mandates that English learners in kindergarten through 12th grade are assessed annually to measure their level of English proficiency. The Oregon Department of Education developed the ELPA to meet this federal requirement and to provide a common assessment for all English learners in the state of Oregon.

Beginning in 2015-16, the state of Oregon began implementation of the ELPA21 assessment. The goal of ELPA21 is to provide online assessments that are aligned with the ELP standards adopted by the Oregon State Board of Education in 2013 and that best measure English Learner's mastery of the communication demands of the Common Core State Standards and the Next Generation Science Standards. As required by federal law, ELPA21 will continue to measure English proficiency in the four language domains of reading, writing, speaking, and listening. Additionally, ELPA21 consist of more interactive item types, especially for speaking and listening, compared with Oregon's former ELPA. ELPA21 scoring is quite different from Oregon's previous ELPA. There is not a single, more traditional composite score provided for ELPA21 results. Students receive an "Overall Proficiency Determination" which is a label and not a numerical score. Students are labeled as either, "Emerging", "Progressing", or "Proficient". Students receive 4 domain level results that are on different scales. Domain results include both a numeric score and a proficiency label. The overall proficiency descriptors for ELPA21 are included in Table 6 below.

Starting with data from SY 15-16, PRE will be examining test scores for the ELPA21 assessment. Since ELPA21 is scored differently, we will not be able to make comparisons to historical Cohorts.

Table 6. Official ELPA21 Proficiency Descriptions

	Proficiency Level Description
Emerging	Students are Emerging when they have not yet attained a level of English language skill necessary to produce, interpret, and collaborate on grade-level content-related academic tasks in English. This is indicated on ELPA21 by attaining a profile of Levels 1 and 2 in all four domains. Students scoring Emerging on ELPA21 are eligible for ongoing program support.
Progressing	Students are Progressing when, with support, they approach a level of English language skill necessary to produce, interpret, and collaborate, on grade-level content-related academic tasks in English. This is indicated on ELPA21 by attaining a profile with one or more domain scores above Level 2 that does not meet the requirements to be Proficient. Students scoring Progressing on ELPA21 are eligible for ongoing program support.
Proficient	Students are Proficient when they attain a level of English language skill necessary to independently produce, interpret, collaborate on, and succeed in grade-level content-related academic tasks in English. This is indicated on ELPA21 by attaining a profile of Level 4 or higher in all domains. Once Proficient on ELPA21, students can be considered for reclassification.

Project Summary

David Douglas School District (DDSD) began implementation of its MHCRC TechSmart grant during the 2014–15 school year (SY 14-15) with PreK-3rd grade classes at Earl Boyles Elementary School. This was a three year grant that ended in spring of 2017. The grant assisted in the creation of a technology-supported early learning program at Earl Boyles in two ways: First, the grant allowed for the purchase of equipment including iPads, Chromebooks, SMART Boards, translation headsets, and other hardware for students and teachers, along with the appropriate educational software needed to support learning. Second, the grant provided extensive professional development (PD) to support teachers and staff members in transitioning to and understanding effective uses of online digital content and resources that utilize technology to create engaging and supportive learning environments for all students. The PD included formal workshops and informal support from an onsite technology integration coach. DDSD's grant focused on academic outcomes of kindergarten readiness, 3rd grade reading, and English language learners' progress. During the 2016-17 school year (SY 16-17), DDSD scaled up its technology integration efforts to include 4th and 5th grade classrooms at Earl Boyles. DDSD completed its third and final year of implementation in SY 16-17; the SY 16-17 evaluation provided evidence that DDSD accomplished many of the MHCRC TechSmart Initiative short-term outcomes included in the initiative logic model. In SY 17-18 DDSD continued with its technology integration efforts at Earl Boyles without grant funding. DDSD's evaluation results from SY 17-18 are presented below in terms of the seven essential factors for effective transformation to a technology-rich teaching and learning environment.

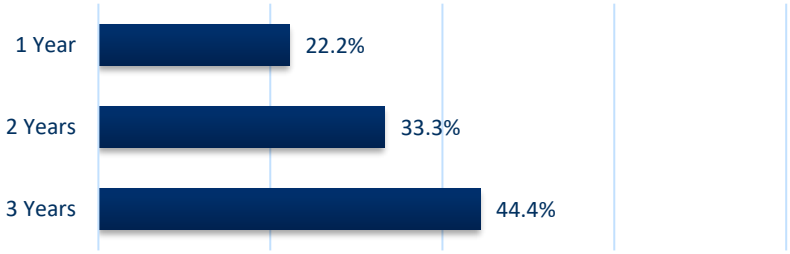
Methods

A general description of the methods included in the TechSmart evaluation is provided in the introduction to the full report. Data collection efforts for the SY 17-18 evaluation at Earl Boyles are summarized below.

Teacher Survey

PRE administered a year-end teacher technology survey in the spring of 2018 which was completed by a total of nine teachers. Due to the fact that the DDSD grant was only targeting one school, a sample size of nine is adequate for research purposes. Figure 1 below shows the distribution of teacher responses in terms of years of involvement with the TechSmart grant. In the SY 16-17 report, the teacher survey data was reported by teacher experience, with data from new teachers reported separately from data from veteran teachers. Veteran teachers were those who had been implementing prior to SY 16-17 and new teachers were those who began implementation in SY 16-17. In SY 17-18, data from all teachers is reported in aggregate. Comparisons are made between the two years throughout this report refer to SY 17-18 aggregate teacher data and SY 16-17 veteran teacher data as these two groups are most comparable in terms of exposure to the technology integration efforts.

Figure 1. Years Involved with TechSmart Grant
(n = 9)



Teacher Interviews

PRE contact the Earl Boyles principal to request contact information for teachers to include in the interviews. PRE conducted phone interviews with four teachers during the spring of 2018. Additional questions were added to the interview protocol to address sustainability of grant efforts in SY 17-18.

District Leader Interviews

In spring 2018 PRE conducted interviews with the director of curriculum and instruction. Additional questions were added to the interview protocol to address sustainability of grant efforts in SY 17-18.

Student Achievement Data

The impact of the TechSmart grant investment at Earl Boyles is being examined through a quasi-experimental comparison croup design which uses a concurrent Comparison Group of students. For this comparison cohort analysis, the treatment groups include students who were kindergarteners in SY 14-15 (Cohort 1), SY 15-16 (Cohort 2), and SY 16-17 (Cohort 3) at Earl Boyles during Year 1, Year 2, and Year 3 of the TechSmart funding, and the concurrent Comparison Group which is a matched cohort of students created from all the SY 14-15 kindergarteners in DDSD outside of Earl Boyles. Students were matched to the Cohort 1 students using case control matching on the following at-risk indicators: Limited English Proficiency (LEP) status, special education status, free and reduced lunch status, and ethnicity. This resulted in 67 treatment students and 67 comparison students. These groups have been followed throughout the grant implementation to assess the impact of the grant investment on student achievement outcomes. For SY 17-18, outcomes include ELPA and DIBELS scores for Cohorts 1-3 and the Comparison Cohort.

DIBELS assessment data are collected for the purpose of informing teachers where their students stand with their odds of achieving certain literacy outcomes. According to researchers from the University of Oregon, reviewing these outcomes is an important step in the Outcomes Driven Model of early literacy problem solving.[1] This model uses assessments like DIBELS as part of a feedback loop that operates within each classroom each year, serving as a tool for teachers to reevaluate their lesson plans and strategies. For this reason, the assessment is not designed to compare student achievement across grade

[1] Good, R. H., Kaminski, R. A., Smith, S., Simmons, D., Kame'enui, E., & Wallin, J. (In press). Reviewing outcomes: Using DIBELS to evaluate a school's core curriculum and system of additional intervention in kindergarten. In S. R. Vaughn & K. L. Briggs (Eds.), Reading in the classroom: Systems for observing teaching and learning. Baltimore: Paul H. Brookes.

levels and should be used as a descriptive tool rather than an evaluative tool. Due to the fact that DIBELS is the only assessment given to students prior to 3rd grade, we include these results in this report for descriptive purposes but warn about giving too much weight to the findings across grade levels.

One of the longer-term outcomes of the TechSmart Initiative is to reduce the achievement gap by improving academic outcomes for LEP learners, Special Education students, and students of color. These are referred to as "student subgroups." The TechSmart Initiative Logic Model uses "Common Criteria" for identifying promising and effective instructional strategies and practices. The criteria include, among others:

- Promote progress for all student subgroups in achieving outcomes. (Promising)
- Indicate promise as a means of closing the achievement gap. (Promising)
- Correlate with measurable improvement for a student cohort in an AHR academic outcome area. (Effective)
- Be validated in multiple settings and with additional student cohorts. (Effective)
- Indicate evidence of reducing the achievement gap among student subgroups. (Effective)

In order to assess progress toward reducing the achievement gap, student outcomes for each subgroup will be examined over time for Treatment and Comparison Groups. Figure 2 shows the student subgroups for the treatment Groups for SY 14-15 (Cohort 1), SY 15-16 (Cohort 2), SY 16-17 (Cohort 3), and Comparison Group DDSD kindergarteners. Table 1 below details the number of students in each Treatment Cohort and the Comparison Group by year.

Table 1. Treatment and Historical Comparison Group Sample Size

Cohort 1		Cohort 2		Cohort 3		Concurrent Comparison Group	
Year	**N**	**Year**	**N**	**Year**	**N**	**Year**	**N**
2014-15 (K)	67	2015-16 (K)	83	2016-17 (K)	85	2014-15 (K)	66
2015-16 (1st)	64	2016-17 (1st)	79	2017-18 (1st)	*	2015-16 (1st)	66
2016-17 (2nd)	55	2017-18 (2nd)	*	--	--	2016-17 (2nd)	60
2017-18 (3rd)	*	--	--	--	--	2017-18 (3rd)	*

*Student data from 2017-18 will be available in spring 2019

Figure 2 below presents each cohort broken down by at-risk subgroup. Students were placed into subgroups based on their subgroup affiliation in Kindergarten.

Figure 2. David Douglas At-Risk Subgroups

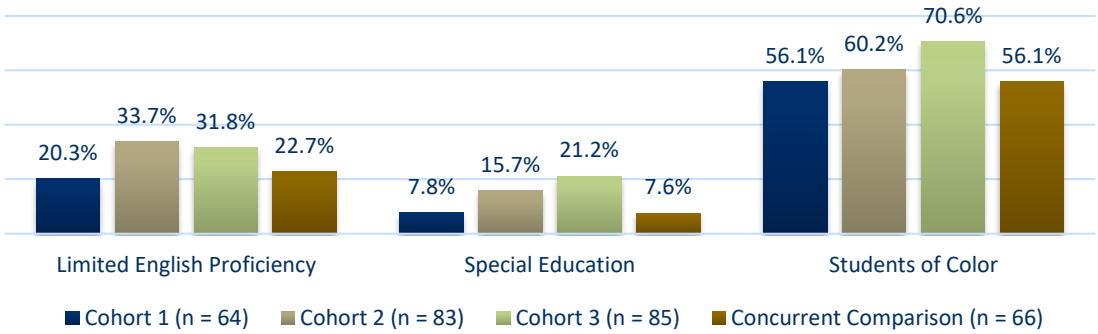
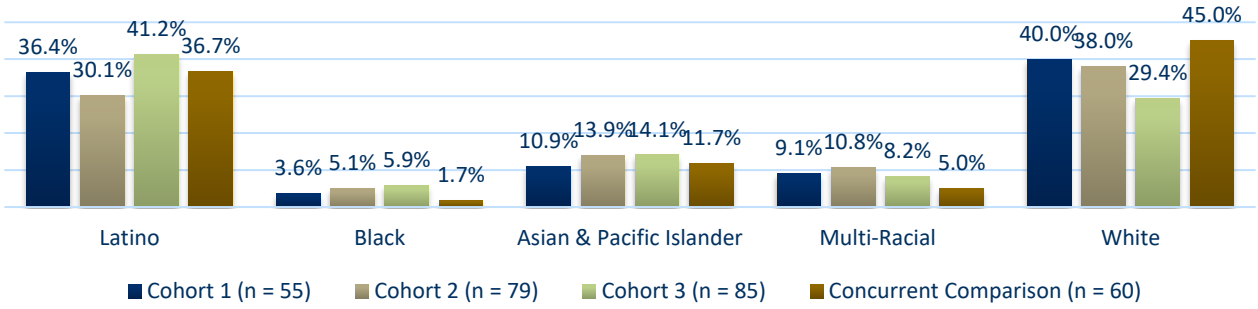


Figure 3 presents the race/ethnicity of each cohort based on the data received in their Kindergarten year. Cohorts 2 and 3 show a slightly higher percentage of students of color than Cohort 1 and the concurrent Comparison Group.

Figure 3. David Douglas Race/Ethnicity



Findings

The evaluation findings from the SY 17-18 evaluation at Earl Boyles are presented below and organized by the seven factors identified as essential for schools to effectively transform into technology-rich teaching and learning environments.

Teaching Effectiveness

Districts support regular, inclusive and shared professional development among teachers.

The PD provided through the TechSmart grant was a mix of formal and informal opportunities. During Year 3 of the grant, the technology integration coach offered two formal PD sessions in the summer of 2016. In all three grant years informal PD took the form of an onsite technology integration coach offering support throughout the year. During SY 16-17, the technology integration coach was onsite at Earl Boyles half-time and supporting other schools within the district half-time. The ratings of PD usefulness decreased from SY 15-16 to SY 16-17 which may have been due to the fact that the technology integration coach was no longer onsite full time and did not offer as many training sessions.

In SY 17-18 DDSD was no longer able to fund an onsite technology integration coach at Earl Boyles. Without a technology integration coach onsite, formal PD sessions were not offered and informal onsite support was minimal. The former technology integration coach served at a district level in SY 17-18 and was available for drop-ins at Earl Boyles and to answer questions electronically. When surveyed, teachers were asked what types of PD they received in SY 17-18 to support technology integration in the absence of a coach. The majority of teachers reported that they had not received any PD, others reported seeking help from the district technology integration coach, and one teacher reported receiving teacher-led training. Quotes from the teacher survey as well as the teacher interviews regarding PD are presented in the following section.

How is the professional development impacting teacher instruction?

Section Highlights:

The results of this evaluation question suggest that the professional development, and specifically the onsite coaching offered during the grant, provided teachers with a certain level of confidence that has decreased in the absence of the onsite technology coach. Teachers are utilizing the district coach and beginning to support one another but the evaluation results do not suggest they have been able to move forward with new innovations in the absence of additional support from a technology integration coach. As shown in the figures below, teachers' instructional technology use, technology skill level, and teaching instructional strategies have decreased dramatically from the year before.

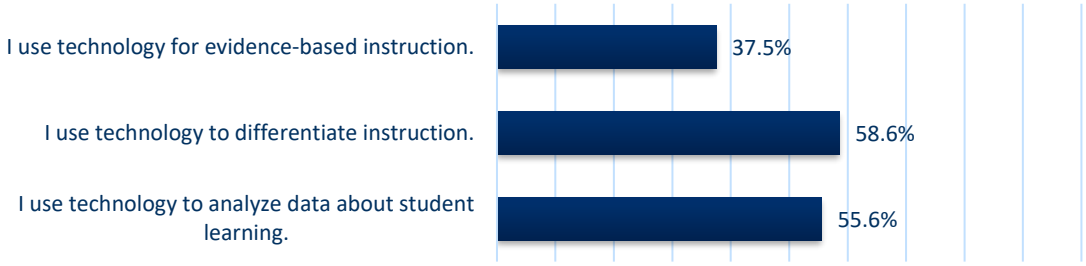
The year-end survey asked teachers how effective the professional development model has been in impacting teacher instruction. Table 2 below includes a selection of quotes from teachers indicating the type of PD received in SY 17-18 to support technology use. While some teachers reported that they did not receive any PD this year, others noted working closely with the district technology integration coach or with other teachers in order to access PD related to technology use. One teacher shared how they have participated in teacher led training; "There has been teacher led training for math talks using the SMART Board and smart exchange."

Table 2. Earl Boyles ES PD Received this Year to Support Technology Use

Theme	Sample Quotes
None (n = 3)	• *"None this year."* • *"I have not received any professional development this year. We no longer have a tech coach."* • *"I haven't received any professional development to support technology this year."*
Technology Coach (n = 2)	• *"I worked with my coach on introducing the recap app into my classroom for ELD practice and assessment."* • *"Several full day summer sessions with the Tech coach: Google classroom, SMART Board set up/use/lessons/bank of lessons, Red Cat Mic, Kahoot, Chromebook know how."*

On the year-end survey, teachers were asked about the ways they use technology to inform their instruction. Figure 4 shows that in SY 17-18, only 37.5% of teachers who completed the survey reported using technology for evidence-based instruction, compared to 90.0% of veteran teachers who reported doing so in SY 16-17. Further, the number of teachers who used technology to differentiate instruction and analyze data about student learning decreased by approximately 30 percentage points from SY 16-17 to SY 17-18.

Figure 4. Earl Boyles ES Instructional Technology Use
(% A Moderate Amount/A Great Deal; n = 9)



As in previous years, teachers reported their technology skill level on the year-end survey and rated themselves at one of the following five levels:

Level 1: I get someone else to do technology-based tasks for me.

Level 2: I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.

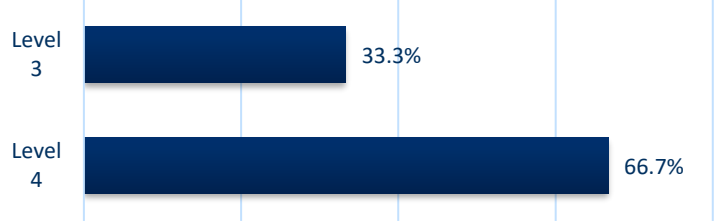
Level 3: I have enough skills to complete the management and communication tasks expected of me and occasionally will choose to use technology to accomplish something I choose.

Level 4: I use a variety of technology tools and I use them efficiently for all aspects of my job.

Level 5: I use technology efficiently, effectively, and in creative ways to accomplish my job.

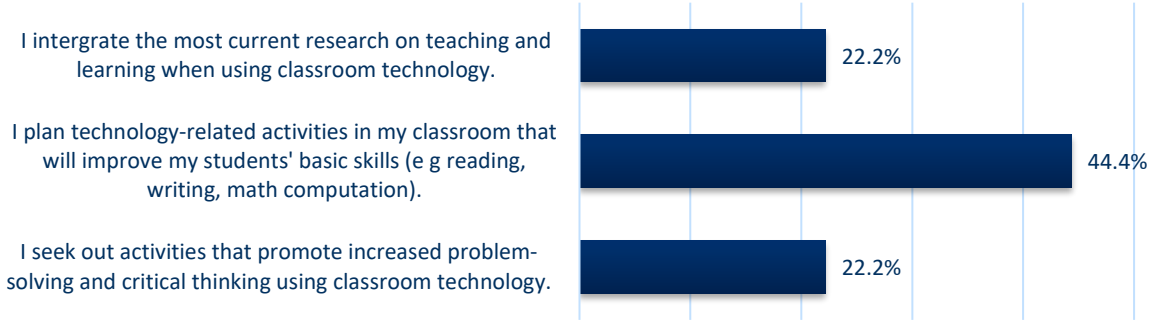
As illustrated in Figure 5, at the end of SY 17-18 100.0% of teachers rated themselves at a Level 3 or 4. At the end of SY 16-17, the majority of teachers rated themselves at a level 4 or 5 (66.7% for new teachers and 90.0% for veteran teachers). Teacher confidence in their own technology skill levels appears to have decreased in SY 17-18 with no teachers rating themselves at a level 5.

Figure 5. Earl Boyles ES Teachers' Technology Skill Level
(n = 9)



Self-rated technology integration appears to have decreased in SY 17-18 as well, as shown in Figure 6 below. The percentage of teachers responding "true or very true of me" on these three items has decreased since the 16-17 evaluation. Additionally, zero percent of teachers (0.0%) responded "true of me" or "very true of me" for the item "I alter my instructional use of classroom technology based upon the newest application and research on teaching, learning, and standards-based curriculum" (compared to 50.0% of veteran teachers who indicated doing so in SY 16-17).

Figure 6. Earl Boyles ES Teaching Instructional Strategies
(% True of Me/Very True of Me; n = 9)



What new instructional strategies are teachers reporting?

Section Highlights:

Teachers reported that the most effective technologies used for instruction in SY 17-18 were games (online and apps), SMART Boards, and videos. The most commonly cited use of technology to support instruction is for differentiating instruction and the practice with the highest effectiveness rating was using technology to support hands-on engagement activities. This shows that teachers are continuing to integrate technology into their instruction but there is no evidence that new tools or strategies were integrated during this first year after grant implementation.

Teachers provided examples of instructional strategies that have been particularly effective in their classrooms and rated them on a scale of one to five. Some teachers responded to this question by listing the technology supports that they were using to alter instruction. The most common tools reported are listed in Table 3, along with the average effectiveness rating. Online assessment tools were most commonly reported by teachers and were rated at a 4.0 for effectiveness. The supports listed in Table 3 are similar to those reported to be used by Earl Boyle's teachers during grant implementation. This provides evidence that teachers are continuing to use the technology supports learned during the grant but not necessarily learning new tools.

Table 3. Earl Boyles ES New Technology Used for Instruction

Technology Supports	Effectiveness Rating
Online Assessment Tools (Kahoot, MobyMax, & ReCap)	**4.0** (n = 3)
Online and Application Games	**5.0** (n = 1)
SMART Board	**5.0** (n = 1)
Videos	**5.0** (n = 1)
Virtual Math Manipulatives	**4.0** (n = 1)

Other teachers responded to this question by listing the ways they use new technology to alter instruction. The most common practices reported are listed in Table 4, along with the average effectiveness rating. As in the SY 16-17 evaluation, the most commonly reported practice was using technology to differentiate instruction. This practice was identified by three teachers and was assigned an average effectiveness rating of 3.7. The most effective practice identified was using technology for hands-on engagement activities. This practice was identified by two teachers and was assigned an average effectiveness rating of 4.5.

Table 4. Earl Boyles ES How New Technology is Used for Instruction

Technology Supports	Effectiveness Rating
To Differentiate Instruction	**3.7** (n = 3)
For Hands-on Engagement Activities	**4.5** (n = 2)
For Whole Group Instruction	**4.0** (n = 1)
To Demonstrate Learning	**4.0** (n = 1)
For Students to Access Books	**4.0** (n = 1)
To Complete Final Drafts of Papers	**3.0** (n = 1)
For Daily Fact Practice	**3.0** (n = 1)

As shown in Table 4 and similar to the SY 16-17 evaluation, several teachers chose to respond to the question by listing the ways they *use* new technology for instruction, rather than simply listing out the applications or physical technology assets they have in their classroom. This provides evidence that teachers are continuing to think about technology more in terms of how it informs new instructional practices, rather than simply listing the names of the technologies themselves.

Table 5 presents results from the rubric designed to rate the use of technology to support instruction in eight different areas. Aggregate teacher self-ratings for the rubric are presented below. The elements of the rubric with the highest ratings by teachers were "using technology to engage students in learning" and "using technology to support planning and preparation". These two elements also received the highest ratings by teachers in SY 16-17. The leadership rubric was not completed by anyone in DDSD and as a result there are not leadership rating for comparison as there were in SY 16-17.

Table 5. Technology Used for Supporting Instructional Practices

(1 = Not at all, 2 = Very Little, 3 = Somewhat, 4 = To a Great Extent)

	Teacher Survey (n = 9)
Engaging Students in Learning	3.67
Planning and Preparation	3.22
Demonstrating Flexibility and Responsiveness	3.11
Using Assessment in Instruction	3.00

	Teacher Survey (n = 9)
Managing Classroom Procedures	2.89
Communicating with Students	2.78
Using Questioning and Discussion Techniques	2.67
Organizing Physical Space	2.44

How are the new instructional strategies impacting student engagement?

Section Highlights:

In all years of the TechSmart grant, the evaluation has provided evidence that the use of technology has increased teachers' ability to engage students in classroom instruction. Consistent with previous years, the SY 17-18 evaluation provided several examples of how the use of technology to support instruction has continued to impact student engagement. Teachers also gave "using technology to engage students in learning" the highest rating on the self-assessment rubric presented in the previous section.

Teachers provided several examples of how technology has continued to impact student engagement in SY 17-18. In SY 16-17 teachers reported that SMART Boards, WriteReader, and MobyMax were successful tools for increasing student engagement. In SY 17-18 teachers reported that they are still having success using their SMART Boards to keep students engaged. Teachers explained that their students love the interactive aspects of SMART Board lessons as noted in a teacher interview:

> *Whenever I am introducing a lesson they love to get up and interact with the lesson on the SMART Board, and the practice that they get is more engaging. Rather than having them do a worksheet, they are reading real books or practicing skills with one-to-one feedback, which I wasn't able to give them before technology.*

Teachers also reported that their students are more engaged when using Chromebooks and working in Google Classroom. One teacher reported that her students as young as six years old have become more engaged in writing when using these tools. Teachers noted that students are more engaged overall when technology is used in the classroom. One teacher explained that their students, "live in a technology world, and kids are into technology, so their focus is much better when I use technology."

Are the new instructional strategies showing promise for improving academic outcomes?

Section Highlights:

The results of the student impact analysis show promising results for Cohort 1 as the percentage of students testing a benchmark on the DIBELS assessment continued to increase in SY 17-18. Cohort 1 students also continued to outperform the Comparison Group in SY 17-18. Cohort 3 students are beginning to show a similar upward trend from 16-17 to 17-18. Cohort 2 showed minimal change on the DIBELS assessment from SY 16-17 to SY 17-18.

Teachers and leaders were asked to comment on whether their new instructional strategies are showing promise for improving student outcomes. In SY 16-17 teachers reported seeing growth in students' reading and math skills. They also reported that students were taking more ownership of their own learning and improving in their communication skills, including explaining their processes for solving problems. In SY 17-18, teachers reported seeing continued improvement in students' communication and writing skills. Teachers observed that students have become more articulate, especially in their writing, through the use of technology. One teacher explains that using technology in writing helps to take the focus away from the handwriting piece of an activity and allows students to focus on articulating their thoughts. This teacher has seen technology level the playing field for her students who struggle with handwriting and allow equal opportunity for her students to articulate what they want to share. Teachers in SY 17-18 have also seen a continued improvement in their students' reading and mathematical skills. Though she does not know if the improved outcomes can be attributed to technology alone, one 3rd grade teacher says this of her students who have been using technology since pre-school:

> *They're very savvy when it comes to their reading. They're very savvy when it comes to their writing. And their mathematical skills are amazing. They just latched onto that technology piece. And they use it as a tool. And it's not a struggle for them. It's like picking up a pencil for them.*

All teachers agree that the use of technology has removed barriers for their students. One teacher explained how technology has given her the ability to individualize lessons for her students. She said that with technology she can prevent students from "checking out" if a lesson is too hard or too easy, which results in better student outcomes. She says, "I'm not holding those kids back who can really excel at math and reading, I can push them on to an app or a program that will stretch them, whereas I'm not leaving behind kids wo aren't ready for that yet." Another teacher attributes the improved student outcomes in her classroom to the accountability technology provides to her students. She explains that students are required to post what they read every day for her to see; this results in students reading more frequently, and as a result becoming better readers.

Student Achievement Data

As described in the methods section of this report, at this point in the evaluation PRE can present data for three Earl Boyles' TechSmart cohorts and a Comparison Group. Table 6 below presents the data we have available at this time for each group.

Table 6. DDSD Student Achievement Data

	Kindergarten	1st Grade	2nd Grade	3rd Grade
Earl Boyles Cohort 1 (Kindergarten in SY 14-15)	Kindergarten Readiness Easy CBM ELPA	DIBELS ELPA	DIBELS ELPA	DIBELS
Earl Boyles Cohort 2 (Kindergarten in SY 15-16)	Kindergarten Readiness DIBELS ELPA	DIBELS ELPA	DIBELS ELPA	DIBELS
Earl Boyles Cohort 3 (Kindergarten in SY 16-17)	Kindergarten Readiness DIBELS ELPA	DIBELS		
Comparison Group (Kindergarten in SY 14-15)	Kindergarten Readiness Easy CBM ELPA	DIBELS ELPA	DIBELS ELPA	DIBELS

Kindergarten Readiness

In order to provide context for Cohort 1, Cohort 2, and Cohort 3 academic outcomes at baseline for the comparative analyses, PRE examined Kindergarten Readiness Assessment results for Cohort 1, Cohort 2, Cohort 3 and the Comparison Group. The Kindergarten Readiness Assessment is administered in the first six weeks of kindergarten and is designed to measure what students know upon entering kindergarten. The components of the Kindergarten Readiness Assessment include Early Literacy, Early Math, and Approaches to Learning.

The SY 15-16 evaluation report presented Kindergarten Readiness data for Cohort 1 and results from this assessment showed that Earl Boyles' Cohort 1 students entered into kindergarten slightly more "ready" in terms of Early Literacy, Early Math, and Approaches to Learning than the Comparison Group students. Specifically, there were significant differences on the average English letter sounds correct, average early numeracy items correct, and interpersonal skills. This placed the Cohort 1 treatment group students at a slight advantage in terms of achieving academic outcomes.

In SY 16-17, results from this Kindergarten Readiness Assessment showed that Cohort 2 and the Comparison Group were comparable in terms of their readiness for Kindergarten. Cohort 2 Earl Boyles' students had slightly higher scores on Early Literacy, Early Math, and Approaches to Learning than the Comparison Group students but the only significant difference was in the self-regulation subdomain of Approaches to Learning.

In SY 17-18, Kindergarten Readiness Scores for Cohort 3 showed that Cohort 3 and the Comparison Group were comparable in terms of their readiness for Kindergarten. Cohort 3 Earl Boyles' students had slightly higher scores on Early Literacy, Early Math, and Approaches to Learning than the Comparison Group students but the only significant difference was in the English Letter Sounds Correct subdomain of Early Literacy. Cohort 3 Kindergarten Readiness Scores are presented at the end of this report.

EasyCBM

The SY 15-16 evaluation also examined EasyCBM scores for Cohort 1 and the Comparison Group during SY 14-15. The EasyCBM is a standardized test that Oregon students complete at three time points throughout the school year: fall, winter, and spring. The results of a Kindergarteners' reading subject test from the first year of the grant at Earl Boyles showed that by the spring of 2015, 88.1% of Cohort 1 students were considered to be at benchmark and 70% of Comparison Group students (69.7%) were at benchmark. A chi-square test of independence was conducted and showed that the relationship between these variables was significant, X^2 (2, N = 133) = 9.60, p <.01. This assessment is no longer used in DDSD to assess student outcomes.

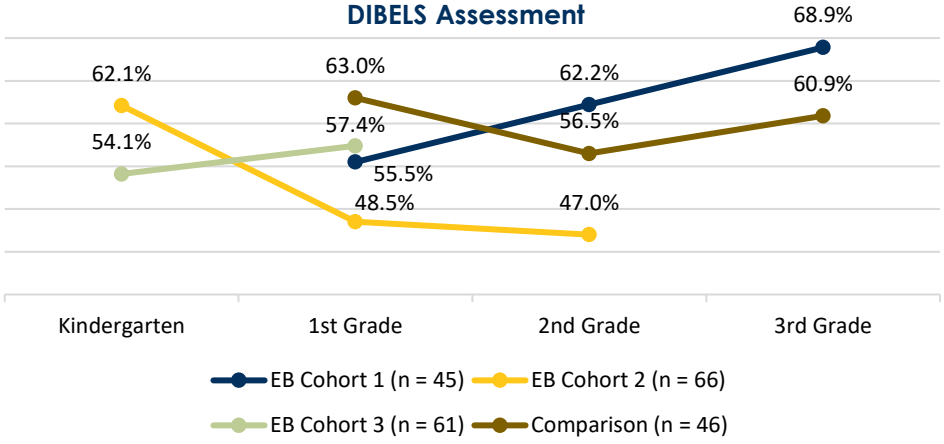
DIBELS

In SY 15-16, David Douglas School District started using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment for K-3 students rather than the Easy CBM assessment. DIBELS are a set of procedures and measures for assessing the acquisition of early literacy skills from Kindergarten through sixth grade. As a result of this change, we are not able to make growth comparisons from Kindergarten to first grade for the Cohort 1 students or for the Comparison Group students. DIBELS data were available from the district through SY 17-18 and these results are presented in Figure 7 for Cohort 1, Cohort 2, Cohort 3, and the Comparison Group.

For Cohort 1 Earl Boyle's students, DIBELS results showed a steady increase in students meeting benchmark from spring of 1st grade to spring of 3rd grade. The percentage of Cohort 1 students performing at benchmark was 7.5 percentage points below the Comparison Group in 1st grade and increased to be 8 percentage points above the Comparison Group by 3rd grade. This provides promising evidence that the technology supported instructional strategies are impacting achievement for Cohort 1 students over time.

For Cohort 2 Earl Boyle's students, the percentage of students meeting benchmark on the DIBLES assessment continued to decrease from spring of 1st grade to spring of 2nd grade, though not as drastically as the year before. DIBELS results for Cohort 3 students showed an increase in students meeting benchmark from 54.1% in the spring of kindergarten to 57.4% by the spring of 1st grade.

Figure 7. Percentage of Students at Benchmark in the Spring on DIBELS Assessment



*DIBELS data not available for Cohort 1 or Comparison Group during their Kindergarten year (SY 14-15) as DDSD was using EasyCBM assessment.

Instructional practices show promise for improving student academic outcomes with at-risk student subgroups (i.e., students of color, low SES, LEP, special education (or those with an IEP), and those not on track to meet academic standards).

Section Highlights:

Results of the subgroup analysis for Cohort 1 students showed promising evidence that the technology supported instructional practices at Earl Boyles are improving academic outcomes for at-risk subgroups. The Comparison Group students started out with a higher percentage of student at benchmark in 1st grade and has remained relatively consistent over the past 3 years. For both LEP students and minority students, the gap between the percentage of Cohort 1 and Comparison Group students performing at benchmark has decreased over the past three years and has been eliminated for minority students. Although the overall trend for Cohort 2 has shown a decline over the past three years in the percentage of students at benchmark, the SPED subgroup within Cohort 2 has increased steadily each year. This is a promising finding for SPED students in Cohort 2.

In SY 17-18, teachers and leaders provided several examples of how technology is being used to support instruction for student subgroups. When interviewed, teachers explained that the most effective way they have used technology to improve outcomes for at-risk subgroups is to differentiate their lessons. Teachers reported using physical technology assets like Chromebooks and Redcat audio systems as well as online tools like Math IXL and Imagine Learning for differentiation. Teachers explain that Chromebooks allow them to individualize student learning in a way that they were not able to before as single classroom teachers. One teacher uses Excel spread sheets to give math inventories to her students. She gives them individualized documents that show them which skills they are missing. Each student then works in Math IXL on the skills that they are missing on their sheet.

During their interview, the Director of Curriculum explained that Imagine Learning is a software program designed specifically to help English Language students work on their language skills and reading skills simultaneously. She said that those students can work independently in Imagine Learning while the rest of the class is in a whole group or small group lesson. She also explained that students with IEPs have a similar software that focuses on their IEP goals. Earl Boyles uses Redcat audio systems which allow each teacher to be set up with microphone and speaker systems in their classrooms. The Director of Curriculum explained that this is helpful for ELL students because it allows them to hear the annunciation of the teacher's words. Quotes from the teacher survey regarding how other teachers use technology supported instruction with at risk subgroups are presented in Table 7 below.

Table 7. Teachers' Use of Technology Supported Instruction with At-Risk Subgroups

"I have been using ReCap. This allows students who are reluctant writers or too shy to answer in class to video/record their answers. It offers more opportunities for more people to respond. I can check answers later and also evaluate language such as grammar."
"I have used the program ReCap to enable students to practice for their assessments verbally, allowing them to have more confidence and providing quality and proficient answers."

"I use my SMART Board for engagement during math lessons. The use of iPads for learning activities is very motivating for students, especially those at risk."
"I mostly use technology to differentiate instruction. It allows me to have students engaged in meaningful learning while I meet with a small group for instruction."
"I use vocabulary programs for ELL and paced math programs for SpEd."

Student Achievement Data

Easy CBM

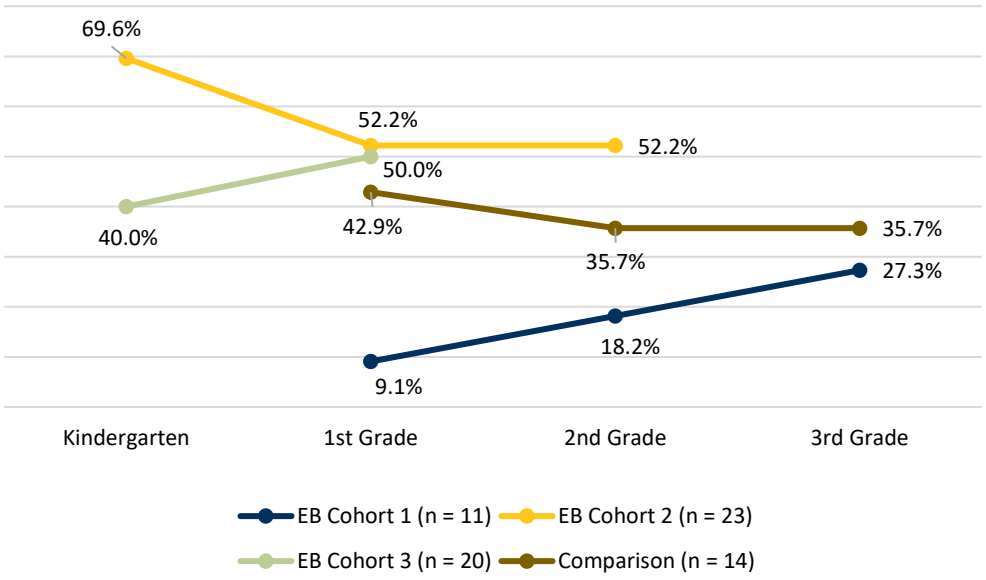
During the SY 15-16 evaluation, EasyCBM scores were examined for at-risk subgroups within Cohort 1 and the Comparison Group. In order to gain insight into whether instructional practices are showing promise for improving academic outcomes with at-risk student subgroups, EasyCBM scores were examined by subgroup for treatment and Comparison Group students. Examination of EasyCBM scores for these four subgroups showed that there was not strong evidence at that point in time that the new instructional practices are improving academic outcomes for treatment group students over and above the instruction received by the Comparison Group of students.

DIBELS

For the SY 17-18 evaluation, DIBELS scores were examined for at-risk subgroups within Cohort 1, Cohort 2, Cohort 3, and the Comparison Group and these results are presented below. Similar to the overall trend for Cohort 1, the number LEP students in this Cohort performing at benchmark showed a steady increase from spring of 1st grade to spring of 3rd grade. The percentage of LEP students in the Comparison Group performing at benchmark has remained higher than Cohort 1 over the last three years but the gap between the two groups has become smaller with each year.

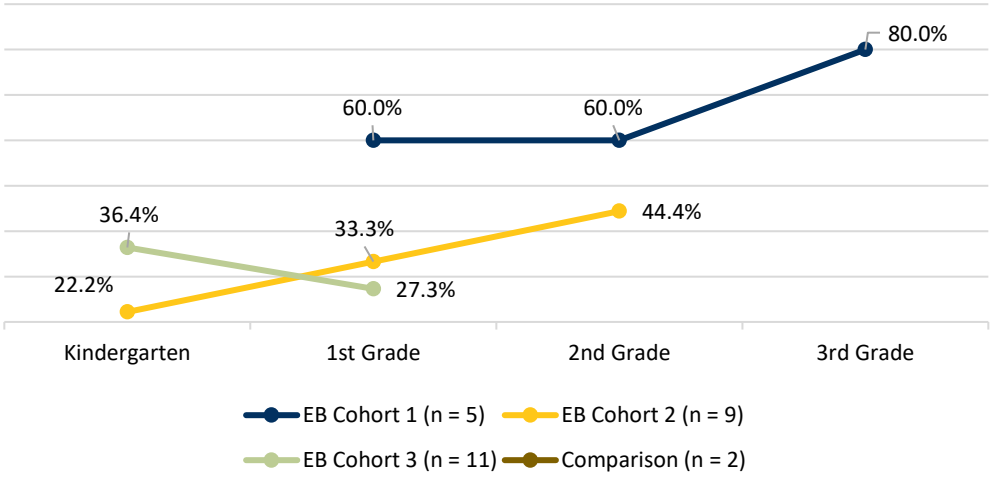
Cohort 2 LEP students showed no change from 1st to 2nd grade on the DIBELS assessment but Cohort 2 LEP students are outperforming the Comparison Group in 1st and 2nd grade. Similarly, the percentage of Cohort 3 LEP students testing at benchmark increased from Kindergarten to 1st grade and was slightly higher than the Comparison Group in 1st grade (see Figure 8).

Figure 8. Percentage of Treatment and Comparison LEP Students at Benchmark in Spring on DIBELS



The percentage of SPED students meeting benchmark on the DIBELS assessment were examined over time for each Cohort as shown in Figure 9. Similar to the overall trend for Cohort 1, the number SPED students in Cohort 1 performing at benchmark showed a steady increase from spring of 1st grade to spring of 3rd grade. The percentage of Cohort 2 SPED students performing at benchmark has doubled since Kindergarten but Cohort 3 SPED students performing at benchmark decreased about 10% from Kindergarten to 1st grade. The number of Comparison Group SPED students with data at all three time points was less than 5 and these students are not included in the analysis.

Figure 9. Percentage of Treatment and Comparison SPED Students at Benchmark in Spring on DIBELS

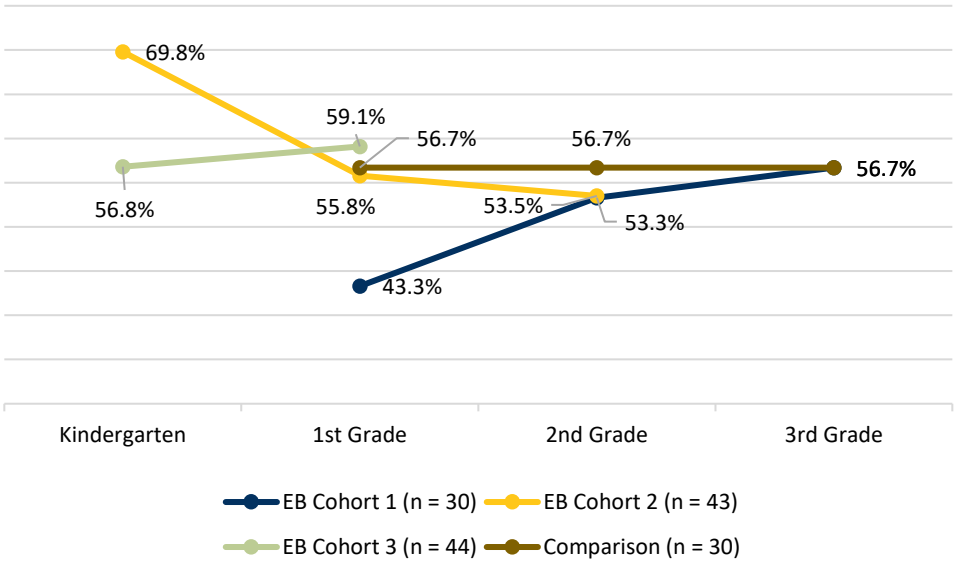


DIBELS data were only available for 2 students in the Comparison Group and are not presented in Figure 9.

The number of minority students in Cohort 1 performing at benchmark showed a notable increase from spring of 1st grade to spring of 3rd grade. The percentage of minority students in the Comparison Group performing at benchmark has been higher than Cohort 1 over the two years but the gap between the two groups was closed in 3rd grade when both Cohort 1 and the Comparison Group had 56.7% of students performing at benchmark. This is a very promising finding for Cohort 1 students of color.

The percentage of Cohort 2 minority students performing at benchmark looked similar to the overall trend for Cohort 2 with a decrease from kindergarten to 1st grade and declining slightly again in 2nd grade. The percentage of Cohort 3 LEP students testing at benchmark increased from Kindergarten to 1st grade and was slightly higher than the Comparison Group in 1st grade.

Figure 10. Percentage of Treatment and Comparison Minority Students at Benchmark in Spring on DIBELS



Is the rate of student growth in one or more AHR outcomes greatest for at-risk student subgroups (i.e., students of color, low SES, LEP, special education (or those with an IEP), and those not on track to meet academic standards).

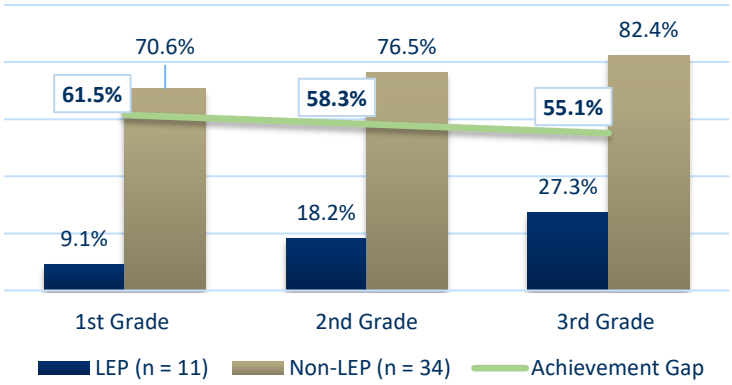
Section Highlights:

Evidence for closing the achievement gap can be seen in the evaluation of DIBELS data for Cohort 1 and Cohort 3 LEP students and Cohort 2 SPED students. The results of the subgroup analyses are largely consistent with the trends seen for the full group DIBELS analysis. Noteworthy findings from this analysis include the high percentage of Cohort 2 LEP students and minority students and Cohort 3 minority students performing at benchmark. This provides preliminary evidence that student growth, as measured by the DIBELS assessment, is greater for Cohort 2 LEP students as well as Cohort 2 and 3 minority students within Earl Boyles. In general, the ELPA21 results show improvement for Cohort 1 and Cohort 2 over the past two years.

PRE examined DIBELS data to assess how student progress may differ for at-risk subgroups as compared to non-at-risk subgroups within Earl Boyles. Results are presented below for Cohort 1, Cohort 2, and Cohort 3. In the figures to follow, trend lines are presented only when there is evidence of closing the achievement gap.

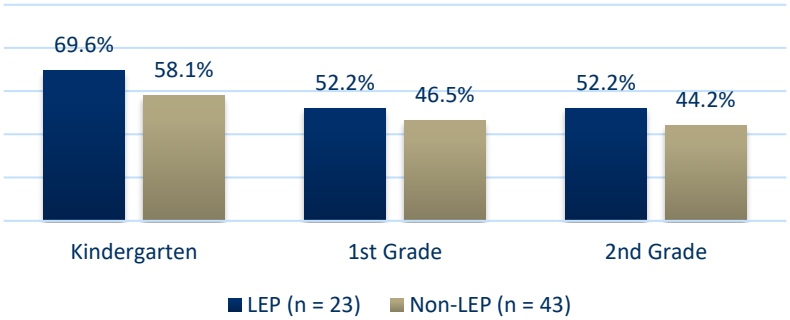
For Cohort 1, the percentage of LEP students at benchmark was lower than the percentage of non-LEP students in 1st, 2nd, and 3rd grade. However, the achievement gap between LEP and Non-LEP students decreased slightly from year to year providing evidence of closing the achievement gap. In Figure 11 below, the trend line represents the achievement gap over time for Cohort 1 students and shows a steady decrease (see Figure 11).

Figure 11. Cohort 1 LEP vs. Non-LEP DIBELS Spring Benchmark



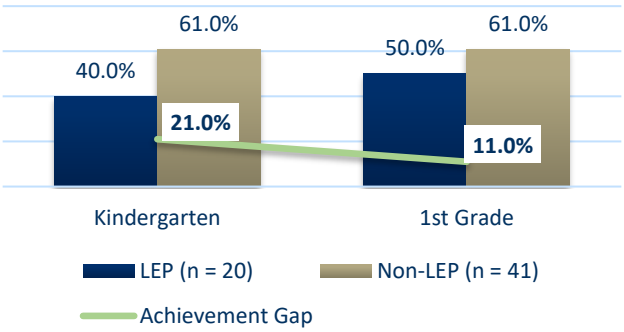
The trend for Cohort 2 is different with a greater percentage of LEP students performing at benchmark than non-LEP students at all three time points (see Figure 12). A trend line was not presented in this graph as there is no evidence of closing the achievement gap.

Figure 12. Cohort 2 LEP vs. Non-LEP DIBELS Spring Benchmark



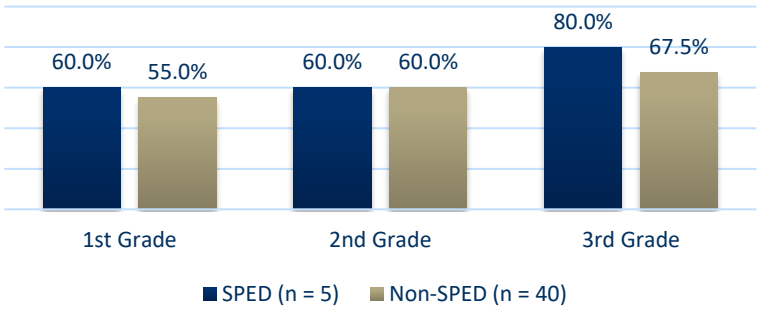
Cohort 3 non-LEP students outperformed LEP students on the DIBELS assessment in kindergarten and 1st grade. However, the gap between LEP and non-LEP students performing at benchmark decreased from kindergarten to 1st grade for Cohort 3 students providing preliminary evidence that the achievement gap is closing between these two subgroups (see Figure 13). In Figure 13 below, the trend line represents the achievement gap from kindergarten to 1st grade students and shows a 10% decrease.

Figure 13. Cohort 3 LEP vs. Non-LEP DIBELS Spring Benchmark



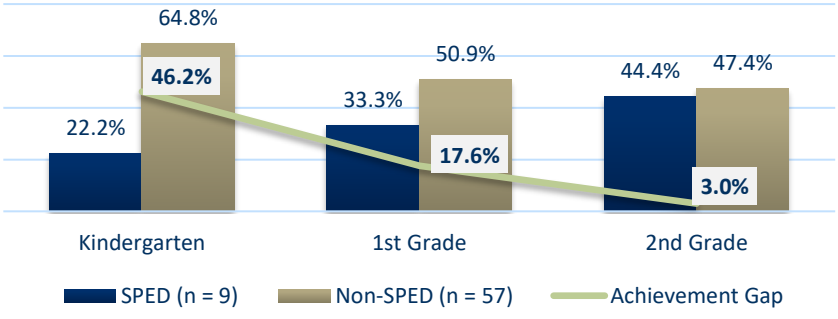
For Cohort 1 SPED students, there were minimal differences between SPED and non-SPED students on the DIBELS assessment but in 3rd grade, SPED students increased by 20 percentage points (see Figure 14). A trend line is not presented in Figure 14 as there is no evidence of closing the achievement gap.

Figure 14. Cohort 1 SPED vs. Non-SPED DIBELS Spring Benchmark



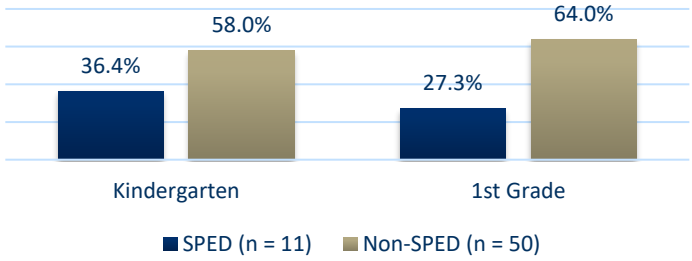
As shown in Figure 15, the gap between SPED and non-SPED students in Cohort 2 has decreased over the past three years providing evidence of closing the achievement gap for SPED students in this Cohort. The trend line in Figure 15 shows that the gap decreased from 46.2% in Kindergarten to 3.0% in 2nd grade for SPED students.

Figure 15. Cohort 2 SPED vs. Non-SPED DIBELS Spring Benchmark



With a higher percentage of non-SPED students performing at benchmark in Kindergarten and 1st grade, Cohort 3 did not show evidence of closing the achievement gap for SPED students (see Figure 16).

Figure 16. Cohort 3 SPED vs. Non-SPED DIBELS Spring Benchmark



For Cohort 1, the percentage of minority students performing at benchmark was much less than the percentage of non-minority students in 1st, 2nd, and 3rd grade and there was no evidence of the achievement gap closing (see Figure 17). For Cohort 2, minority students were performing better at all three time points (see Figure 18).

Figure 17. Cohort 1 Minority vs. Non-Minority DIBELS Spring Benchmark

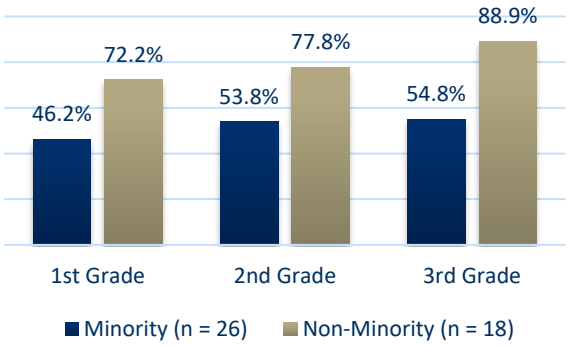
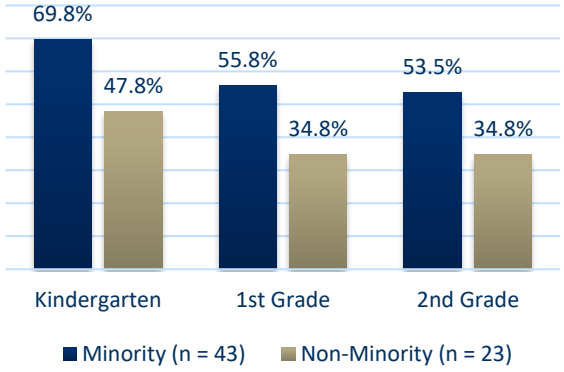
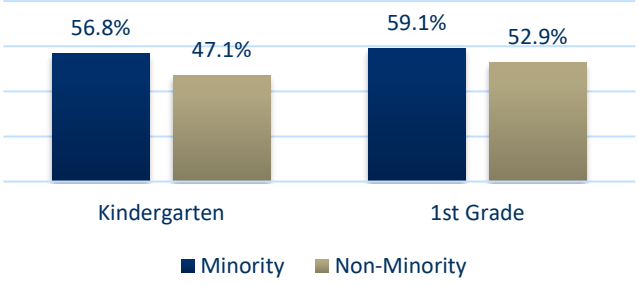


Figure 18. Cohort 2 Minority vs. Non-Minority DIBELS Spring Benchmark



For Cohort 3, the percentage of minority students performing at benchmark was slightly higher than non-minority students in both Kindergarten and 1st grade (see Figure 19).

Figure 19. Cohort 3 Minority vs. Non-Minority DIBELS Spring Benchmark



The results of the subgroup analyses are largely consistent with the trends seen for the full group DIBELS analysis for Cohort 1 and Cohort 3. For Cohort 2, the percentage of LEP and minority students performing at benchmark were higher than non-LEP and non-minority students.

ELPA Test Scores

As presented in the SY 15-16 evaluation report, PRE was able to examine ELPA test scores for Cohort 1 and the Comparison Group in Kindergarten utilizing results from the previous version of Oregon's ELPA assessment. ELPA test scores were examined for those students in Cohort 1 and the Comparison Group who took the ELPA assessment in kindergarten and the results are presented in Table 8 by ELPA levels of proficiency. No students in either group scored above a Level 3 at either time point.

Table 8. ELPA Test Scores by Level of Proficiency

	Cohort 1 Kindergarten (n = 14)	Comparison Group Kindergarten (n = 14)
Level 1 (Beginning)	42.9% (6)	14.3% (2)
Level 2 (Early Intermediate)	42.9% (6)	57.1% (8)
Level 3 (Intermediate)	14.3% (2)	28.6% (4)
Level 4 (Early Advanced)	--	--
Level 5 (Advanced)	--	--

Starting in SY 15-16, PRE began examining ELPA test scores for the ELPA21 assessment. Since ELPA21 is scored differently, we will not be able to make comparisons to Cohort 1 and the Comparison Group's Kindergarten scores. Table 9 below presents the ELPA21 results for Cohort 1 and the Comparison Group in 1st and 2nd grade. Appendix I contains descriptions of the three ELPA21 proficiency levels. All Cohort 1 students tested at "progressing" in 1st grade compared to 80.0% in the Comparison Group. A higher percentage of the Comparison Group students tested at "proficient" in 2nd grade. These findings are not particularly meaningful for Cohort 1 students.

Table 9. ELPA21 Results Cohort 1 and Comparison Group

Proficiency Determination	Cohort 1 1st Grade (n = 13)	Comparison Group 1st Grade (n = 15)	Cohort 1 2nd Grade (n= 11)	Comparison Group 2nd Grade (n = 15)
Emerging	--	13.3% (2)	--	--
Progressing	100.0% (13)	80.0% (12)	90.9% (10)	80.0% (12)
Proficient	--	6.7% (1)	9.1% (1)	20.0% (3)

Table 10 below presents the ELPA21 scores for Cohort 2 student in kindergarten and 1st grade and Cohort 3 students in kindergarten. The percentage of Cohort 2 students scoring at "progressing" increased from 82.8% from kindergarten to 1st grade providing promising evidence for Cohort 2 students.

Table 10. ELPA21 Results Cohort 2 and Cohort 3

Proficiency Determination	Cohort 2 Kindergarten (n = 29)	Cohort 2 1st Grade (n = 26)	Cohort 3 Kindergarten (n = 28)
Emerging	13.8% (4)	--	32.1% (9)
Progressing	82.8% (24)	100.0% (26)	67.9% (19)
Proficient	3.4% (1)	--	--

Digital Age Learning Culture

Districts embrace a cultural shift and views technology as positive.

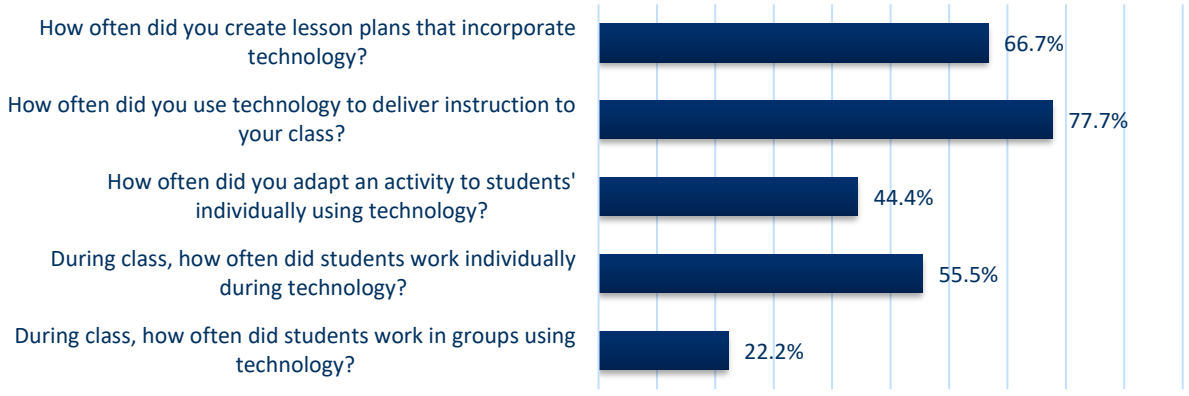
Has the use of technology to support instructional practices increased?

Section Highlights:

Results from the self-assessment rubric presented in the previous section on teaching effectiveness provide evidence that teachers have continued use technology to support instructional practices after the end of the grant. Most teachers create lesson plans that incorporate technology and use technology to deliver instruction. These outcomes seem to have remained relatively consistent since the SY 16-17 evaluation but there does not appear to be an increase in the use of technology to support instruction at this point in time.

As noted in the previous section on teaching effectiveness, teachers provided several examples of how they have continued to use technology to support instructional practices in SY 17-18. Figure 20 presents self-reported frequency of technology integration from the year-end teacher survey. Sixty-seven percent (66.7%) of teachers indicated that they create lesson plans that incorporate technology. In addition, 77.7% of teachers reported that they used technology to deliver instruction to their class a moderate amount or a great deal. These numbers are relatively consistent with last year's report. There is still room for improvement in the areas of teachers adapting an activity to students individually using technology and having students work in groups using technology during class.

Figure 20. Earl Boyles ES Frequency of Technology Integration
(% A Moderate Amount/A Great Deal; n = 9)



Is the learning management system useful for identifying effective instructional practices (more efficient, easier, data driven)?

Section Highlights:

Earl Boyles has not formally adopted a learning management system and instead relies on the use of Google Classroom to aide in the identification and development of effective instructional practices. During the grant years, evaluation results showed that teachers used Google Classroom to provide opportunities for differentiation and increased communication with students and parents. The SY 17-18 evaluation provided evidence of teachers' continued use of Google Classroom.

Although they do not have a formal learning management system, Earl Boyles is using Google Classroom for this purpose. The school has adopted Google Classroom, which is used by many teachers as a tool for instruction, communication with students and families, and grading. During the grant years, many of the teachers rated Google Classroom as one of their most effective instructional tools. In SY 17-18, Google Classroom was not rated as one of the most effective instructional tools on the teacher survey. However, all teachers interviewed mentioned using it in their classrooms.

Do teachers have increased access to and use of digital content and resources?

Section Highlights:

This report provides a significant amount of evidence that teachers have increased access to digital content and resources as a result of the grant but since the grant has ended, there does not appear to be any new digital content reported. In the SY 17-18 evaluation, 77.7% of teachers reported using digital content and resources in their instruction which is a slight decrease from the 90.0% reported in SY 16-17.

As emphasized in previous sections of this report, the TechSmart grant funding provided teachers with increased access to a variety of digital content and resources. While these resources are still being used post-grant, the amount that teachers use digital content and resources has decreased since SY 16-17. By the end of SY 17-18, 77.7% of teachers reported using digital content and resources in their instruction a moderate amount or a great deal, compared to 90.0% of veteran teachers in SY 16-17.

Additionally, in SY 17-18, eighty-nine percent (88.9%) of teachers reported that their students have adequate access to technology resources in their classrooms. This is about equal with the percentage of teachers who agreed with this statement in SY 16-17 (90.0%). In terms of the digital content and resources being used by teachers, they continued to use the SMART Board as well as several online resources and applications. The most commonly mentioned resources are included in Table 11 below with sample quotes regarding the application.

Table 11. Earl Boyles ES Teachers' Use of Digital Content

Theme	Sample Quotes
SMART Board (n = 2)	• *"Daily ELD visual sentence frames and practice using SMART Board."* • *"Math talks utilizing the SmartBoard."*

Theme	Sample Quotes
Moby Max (n = 1)	• *"I use Moby Max for leveled math work."*
As a supplement (n = 1)	• *"Final drafts for writing papers and for extra practice in reading and math."*

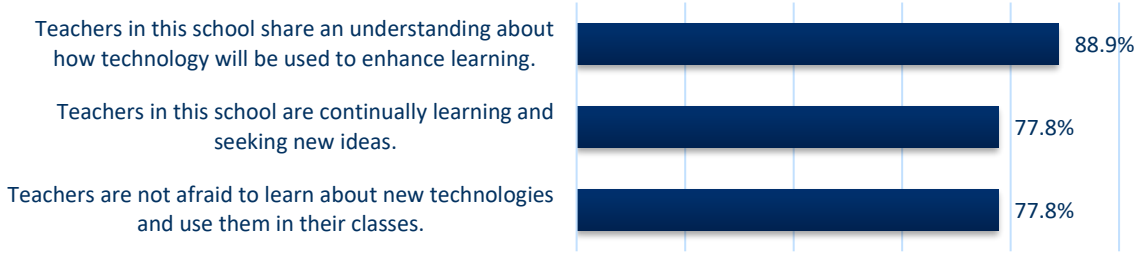
Is there evidence of districtwide support for technology integration?

Section Highlights:

Survey and interview data from the SY 17-18 evaluation show evidence of support for technology integration at Earl Boyles. Survey data shows that districtwide support for technology integration has largely remained consistent since last year's evaluation. Although there was a sentiment to disappointment in losing the technology integration coach, most of the teachers interviewed felt supported, especially in regard to teacher-to-teacher support.

Despite the absence of the building technology integration coach, on the survey teachers continued to report a culture of support for technology by the end of SY 17-18. As illustrated in Figure 21, 88.9% of teachers reported a shared understanding among teachers about how technology is used to enhance learning. Additionally, all teachers (100.0%) reported that administrators are supportive of technology integration efforts and that there is a culture of continuous learning. This result is consistent with the SY 16-17 evaluation findings.

Figure 21. Earl Boyles ES Teacher Perceptions of a Culture of Support for Technology Integration
(% Agree/Strongly Agree; n = 9)



In interviews, teachers' perceptions of the culture of support for technology integration were mixed. Most teachers interviewed shared experiences of receiving support from one another with regards to technology integration. Teachers shared that they often email out questions and receive help from others that way. Teachers also reported sharing what they have learned and asking questions about technology frequently during staff meetings. One teacher explained that she attended a training put on by a fellow teacher on how to develop lesson plans for math instruction around using the SMART Board. This same teacher also expressed that she believes follow-up support and support with classroom integration provided by a technology integration coach remains necessary. Another teacher does not believe they have received any support in SY 17-18 from the district level nor the school level. This teacher finds it frustrating when the district implements new technologies without providing proper training at the school level.

Do parents have an increased understanding and utilization of districts' technology assets?

Section Highlights:

There is less evidence from teachers in SY 17-18 of parent involvement using the districts' technology assets compared to SY 16-17. Teacher interviews provide a few examples of doing so, and all teachers expressed a desire to improve in this area.

Compared to SY 16-17 when teachers and the technology integration coach described how they are engaging parents utilizing classroom blogs, Classroom Dojo, and Seesaw, in SY 17-18, teachers reported using fewer tools to engage parents in understanding and utilizing the districts' technology assets. One teacher reported using Facebook to correspond with parents, however, she uses her own devices rather than the districts' technology assets. Another teacher explains that she is trying to do so, though she is not always successful. This teacher explains that she utilizes technology to engage parents in these ways:

> *It totally changed my homework. I no longer print homework and send it home, it's all done online. They're able to access different websites though the portal that I've set up, also the ones we practice in class. So if they don't have books at home there's level readers they can access, if they don't have math things at home there's online things they can access.*

This teacher also explains that she has recently learned of Classroom Dojo and plans to use it in the next school year. Another teacher records student input on each lesson using the SMART Board. She then prints off these notes and displays them on the classroom door for parents to see. This sparks conversations between parents and students about what they are learning in class and how they are using technology. One teacher uses Seesaw to allow her students to record themselves reading and upload the video to share with their parents.

Visible Leadership

District leadership is actively involved and working with key communities to accomplish change.

Are districts identifying effective instructional practices and disseminating information and results to other districts?

Section Highlights:

Similar to past evaluation findings, the district has continued to disseminate information internally throughout the district through the Google Ninja program and also across the East County districts.

In SY 16-17, DDSD continued to offer support to other East County districts involved in the TechSmart Initiative. The technology integration coach shared learnings with a principal in Centennial and the principal at Earl Boyles described how the school has been a demonstration site for other districts and has hosted many site visits. David Douglas leadership described how they have also shared learnings from the grant internally across the district using the technology integration coach and Google Ninja. The school's technology integration coach spoke at a principals' conference about technology integration. A summary of the Google Ninja program was described in the SY 15-16 evaluation report: "Teams apply from every elementary school for the program, and as part of this program they will receive Chromebooks, commit to two days of training sessions, receive coaching, and try the new techniques throughout the year."

In SY 17-18, Earl Boyles sustained its support of the Google Ninja program. The Director of Curriculum is part of a regional group of curriculum directors who meet once a month and many of their discussions are surrounding technology integration. Earl Boyles served as an example for schools in their districts as well as other districts in their area for how to integrate technology. Post-grant, Earl Boyles continues to serve as an example for technology integration efforts.

Do teachers feel increased support from district leaders regarding technology integration?

Section Highlights:

Consistent with previous evaluations, 100.0% of teachers in SY 17-18 indicated that administrators were generally supportive of technology integration efforts. Some teachers still feel support from the district post-grant and other teachers are frustrated by the lack of communication and/or training provided by the district. All teachers reported desiring more support as far as coaching and PD.

On the year-end teacher survey, 100.0% of teachers indicated that administrators were generally supportive of technology integration efforts. This is consistent with the SY 16-17 results in which 100.0% of new and veteran teachers indicated that administrators were supportive. In the SY 16-17 report, teachers and leaders focused on the support they had received from the technology integration coach.

Based on the results from the teacher survey as well as the teacher and leader interviews, the majority of teachers still felt supported by the district in in SY 17-18. While all teachers expressed that they would like to have continued coaching or PD of some kind, and that they feel the absence of the onsite coach, most teachers felt supported in their continued integration efforts. A few teachers expressed a lack of support as noted by one teacher who shared that she hasn't received any support at all aside from the grant money, which is no longer available. Another teacher expressed a disconnect between how things function on the school level versus the district level:

When we had our coach we received a lot. But even when the district changed from reporting things on a paper form, they've gone to an electronic form, we don't receive any kind of instruction about where to access that form or how to fill out that form. So that is kind of frustrating, when they go to new technology things they don't really give us much to go with.

Data Driven Improvement

Current, relevant, and high-quality data from multiple sources are used to improve schools, instruction, professional development, and other systems.

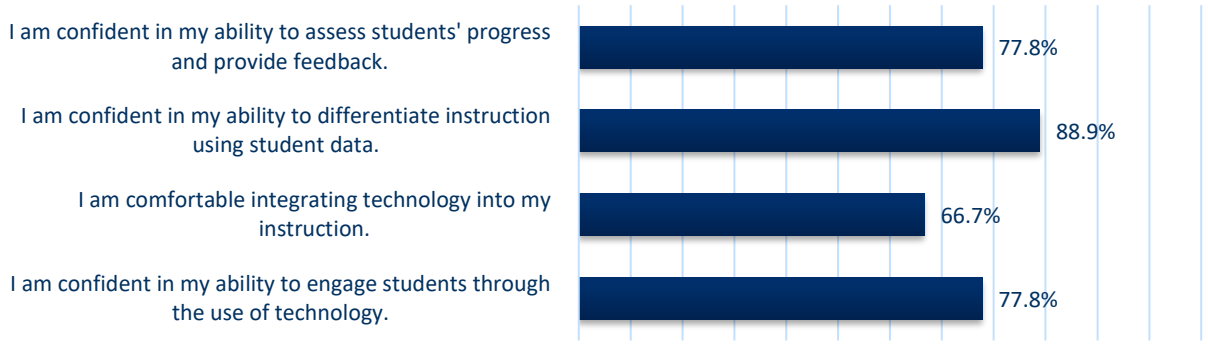
How are schools using data to improve instruction, professional development, and student performance?

Section Highlights:

While the SY 17-18 teacher survey results show a decrease in teachers' levels of confidence and comfort surrounding using data to drive instructional improvement from SY 16-17, the majority of teachers surveyed are still comfortable and confident in this area. Teachers also reported in their interviews that they are continuing to use data in their classrooms. Teacher agreement on these items is higher than other survey responses regarding the extent which technology is actually used to support data driven instruction. These differing findings show that teacher confidence may need to be higher to impact increased use of technology to support instruction.

As highlighted in the previous section on teaching effectiveness, teachers have been increasing their use of data-driven instructional strategies. Figure 22 shows that the majority of teachers are comfortable and confident using data-driven improvement in instruction but agreement from these items decreased from SY 16-17 when 100.0% of veteran teachers agreed or strongly agreed with all four statements in Figure 22. Again, this shows a decrease in confidence level for Earl Boyles teachers in SY 17-18.

Figure 22. Earl Boyles ES Data Driven Improvement
(% Agree/Strongly Agree; n = 9)



When interviewed, teachers discussed ways in which they use technology to track their students' outcomes and use the data to improve instruction. One teacher reported using XtraMath with her students to keep track of how they are progressing through a lesson. She also uses results from the school's formative assessments to group students based on skill level. Another teacher uses the SMART Board to summarize what students have learned from each lesson and gauge her students learning. One teacher explained that they have created a formative assessment in Google Classroom to help students prepare for the Smarter Balanced Assessment and other computer based standardized tests. Teachers can use these formative assessment scores to gauge their students' skill levels and then help them prepare for the test.

Funding & Budget

District's budget repurposes resources and seeks outside funding to focus on promising practices and technology supports.

Have districts identified at least one opportunity for repurposing resources to support technology integration?

Section Highlights:

DDSD has continued to support technology integration by employing an onsite technology support staff to maintain the physical technology assets provided by the grant, although the presence of this staff as a resource should be more clearly communicated to Earl Boyles teachers. The Director of Curriculum hopes that coaches and specialists onsite can expand their roles to serve as technology support for teachers in addition to their current roles. Earl Boyles has continued to fund the Google Ninja program which makes teacher-to-teacher trainings readily available.

In their first year post-grant, leadership and teachers reported that while they miss having a technology integration coach, they have not experienced a lack of physical technology resources in their classrooms. However, the teachers are concerned about how their new physical technology assets will be sustained without the grant money. One teacher explained that she doesn't think the lack of funding will present an issue unless something in her classroom breaks down. She explains, "I don't know how that problem will be solved because I haven't had anything break down yet, but I'm assuming that the district will help solve that problem for us." Another teacher expressed uncertainty about whether her devices will be replaced:

> *When my iPads break down, I'm not going to be able to get new iPads. When my SMART board breaks down I'm not going to be able to get a new SMART board. It could be sustainable if the district would invest in making sure they replace the items as they break down. But I'm assuming that's not the case.*

Strategic Planning

District strategic plan reflects shared commitment to improving outcomes for students.

Does the district's strategic plan reflect shared commitment to improving outcomes for students?

Section Highlights:

The DDSD strategic plan identified technology as one component of their STEAM initiative to impact student achievement. According to the Director of Curriculum, this is a long-term initiative that will be sustained moving forward. This provides evidence that the district is committed to the use of technology to improve student outcomes.

Similar to the SY 15-16 and SY 16-17 evaluations, the leadership at DDSD identified the district's STEAM initiative (Science, Technology, Engineering, Arts, and Math) as a part of the district's strategic plan and explained how technology is interwoven into the four main components of the strategic plan: "We're using technology to integrate the science, the math, and the engineering design, and all those other pieces." The Director of Curriculum explains, "When we say 'what are our core district initiatives?' STEAM is one of them, and it keeps technology at the forefront".

How is the district sustaining the technology integration?

Section Highlights:

In their first year post-grant DDSD is making up for the loss of their technology integration coach and grant funding in innovative ways. While the teachers still desire coaching and professional development opportunities, they are implementing new methods such as conducting their own research, sharing new knowledge with each other, and even learning from their students.

In terms of sustainability, teachers reported that they are using the strategies and tools learned during the grant implementation period and that they are grateful to have had a coach who gave them the confidence to explore technology integration. Each of the teachers interviewed expressed concerns about sustaining the knowledge gained without a technology integration coach onsite. Teachers interviewed also expressed that while having a technology integration coach would be ideal, they have found other creative ways to troubleshoot technology problems, stay up-to-date on programs, and grow in their knowledge of technology. One teacher explained that her students now have the troubleshooting skillset to assist her and guide her when something goes wrong in class. Other teachers reported doing their own research to stay up-to-date and to expand their knowledge. When surveyed, teachers were asked what suggestions they

had for sustaining knowledge post-grant. Their responses indicated that they desire ongoing coaching and professional development to sustain their knowledge of technology integration (see Table 11).

Table 11. Earl Boyles ES Teachers' Suggestions for Sustaining Knowledge

Theme	Sample Quotes
Technology Coach (n = 3)	• *"I'm more efficient this year with the tech stuff that I started last year, but without a coach making suggestions and modeling, I haven't tried anything new."* • *"I need a tech person to go to for ideas, help etc. When there is a person whose job is to help and educate, I will ask for help and listen to ideas. I will not ask a peer to give up their time to help me."* • *"Teachers that are in the classroom are so busy that there should be someone dedicated to this task and to helping teachers implement these tools long after the grant has expired."*
Professional Development and Training (n = 3)	• *"Add more professional development around the area of technology in the classroom."* • *"Continued trainings (on occasion) and sharing of new ideas would be beneficial. Having a 1-2 x a year 'share out' would be helpful"* • *"I think that this is an ongoing professional development need."*

Teachers reported similar suggestions in the teacher interviews. Two teachers suggested that the school should be "weened" off their coach, rather than them leaving so abruptly. Another teacher expressed a desire to learn more about Google Classroom, but that she is unable to because there is not anyone to lead the professional development. In the survey, teachers were asked for their suggestions for sustained training as presented in Table 12 below.

Table 12. Teachers' Suggestions for Sustained Training

Sample Quotes
"None really, other than release time to have the coach come back for consult."
"It's hard to keep it all going without a coach. I don't have any suggestions."
"We need to have an expert teacher in each school that we can go to with technology questions after our coach is finished."
"What happens when something doesn't work? Maybe training for our tech people."
"Smartboard activities would be beneficial in using with our new math adoption, Learn Zillion."
"Setting up Chromebooks for new students at the beginning of the year. Apps to add, games or programs that are effective and we can use."

The Earl Boyles Director of Curriculum explained in their interview that while the technology integration coach is no longer onsite, the school does have other coaches available including a student achievement specialist and a language development specialist who she hopes the teachers will begin to utilize. She also explained that the school is writing grants in pursuit of more funding for technology coaching. Earl Boyles also has a technology support staff in the building who ensures students have access to their devices and maintains the devices. The Director of Curriculum also explained that Earl Boyles has contributed support funds to the district's Google Ninja program that provides teachers access to teacher-to-teacher trainings.

Evaluation Insights at David Douglas School District

The SY 17-18 evaluation at Earl Boyles ES produced the following insights:

- The results of the student impact analysis show promising results for Cohort 1 as the percentage of students testing at benchmark on the DIBELS assessment has increased 13 percentage points over the last three years. Further, the percentage of Cohort 1 students performing at benchmark was eight percentage points below the Comparison Group in SY 15-16 and by the spring of 17-18, the percentage of Cohort 1 students performing at benchmark was eight percentage points above the Comparison Group. Not only has Cohort 1 closed the gap with the Comparison Group but they are now outperforming them. Cohort 3 students are beginning to show a similar upward trend from 16-17 to 17-18. Cohort 2 showed minimal change on the DIBELS assessment from SY 16-17 to SY 17-18.

- Results of the subgroup analysis for Cohort 1 students showed promising evidence that the technology supported instructional practices at Earl Boyles are improving academic outcomes for at-risk subgroups. The Comparison Group students started out with a higher percentage of students performing at benchmark in 1st grade and has remained relatively consistent over the past 3 years. For both LEP students and students of color, the gap between the percentage of Cohort 1 and Comparison Group students performing at benchmark has decreased over the past three years and has been eliminated for students of color. Although the overall trend for Cohort 2 has shown a decline over the past three years in the percentage of students at benchmark, the SPED subgroup within Cohort 2 has increased steadily each year. This is a promising finding for SPED students in Cohort 2.

- The results of the evaluation suggest that the professional development, and specifically the onsite coaching offered during the grant, provided teachers with a certain level of confidence that has decreased in the absence of the onsite technology coach. Specifically, teacher's confidence around the use of technology as well as their self-reported skill level decreased in SY 17-18. Teachers are utilizing the district coach and starting to support one another but the evaluation results do not suggest they have been able to move forward with new instructional strategies or new tools in the absence of additional support from a technology integration coach.

- While the teachers still desire coaching and professional development opportunities, they also provided evidence that they are taking ownership of their own PD. Teachers noted that they are beginning to conduct their own research regarding ideas for using technology to support instruction, they are sharing technology tips with each other, and even learning from their students. The Director of Curriculum explained that, on the district level, the Google Ninja program will be sustained providing teachers access to online trainings created by other teachers. At the school level, Earl Boyles does have other resources available to teachers including a student achievement specialist, a language development specialist, and a technology support staff.

- Teachers expressed concerns about device maintenance post-grant. Teachers seem to be unaware of what process is in place to ensure the replacement of broken devices, access to software updates, and other factors related to technology upkeep. Functioning devices are an integral piece of the technology integration and maintaining them is an important aspect of overall sustainability. Increased communication with teachers regarding the process for device maintenance in the absence of the onsite technology integration coach is recommended.

Supplemental Data: Kindergarten Readiness Outcomes for Cohort 3

The Kindergarten Readiness Assessment measures Early Literacy in two ways: the number of correctly named letters, and the number of letter sounds correctly identified. Figure 23 shows that students in Cohort 3 scored higher on the English Letter Sound assessment on average than students in the Comparison Group. An independent-samples t-test revealed these differences were significant for English sounds correct, t (143) = -5.24, p < .05. The assessment of English Letter Names has been changed this year and cannot be shown in relation to the Comparison Group. Figure 24 shows that Cohort 3 students scored better when naming uppercase letters than when naming lowercase letters.

Figure 23. Average English Sounds Correct

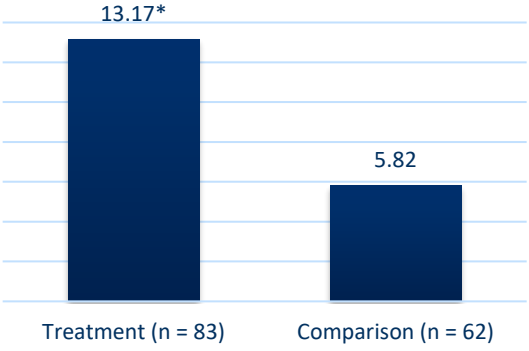
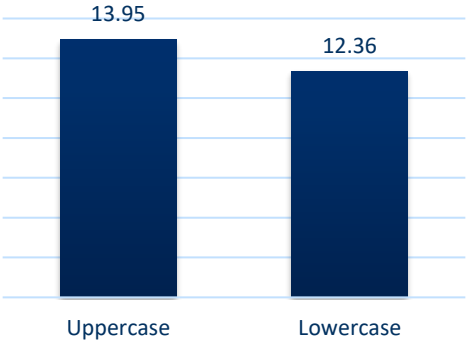


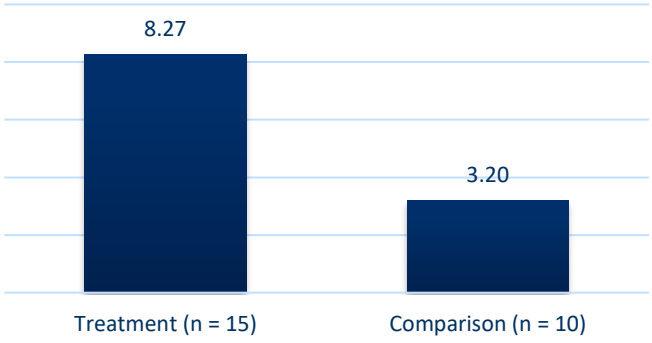
Figure 24. Average English Letter Names Correct



*Indicates a significant difference between groups

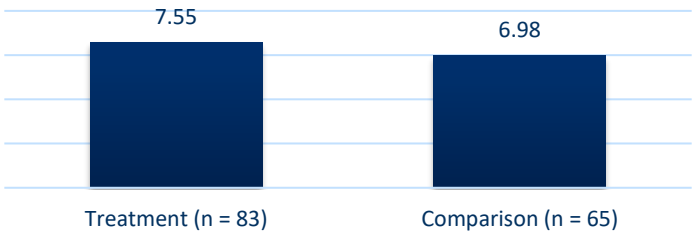
LEP Students whose home language is Spanish are given the opportunity to identify Spanish letter sounds, rather than English. Figure 25 shows that Cohort 3 students at Earl Boyles identified more Spanish letter sounds than those in the Comparison Group. An independent-samples *t*-test revealed this difference was not significant.

Figure 25. Average Spanish Letter Sounds Correct



The Early Numeracy section of the Assessment involves a test with 16 multiple-choice items related to number concepts and operations (counting the number of items, for example). As shown in Figure 26, Cohort 3 students answered an average of 7.55 questions correctly, and Comparison Group students answered an average of 6.98 questions correctly. An independent-samples t-test revealed this difference was not significant.

Figure 26. Average Early Numeracy Items Correct

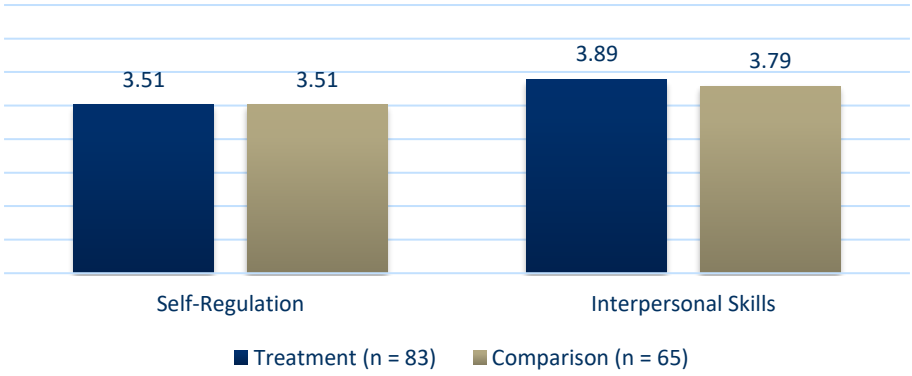


The Approaches to Learning section of the Assessment is completed by teachers for each student through observations. This section measures self-regulation and interpersonal skills. There are ten self-regulation items and five interpersonal skill items that are rated on the following scale:

1. The child never exhibits the behavior described by the item.
2. The child rarely exhibits the behavior described by the item.
3. The child sometimes exhibits the behavior described by the item.
4. The child frequently or usually exhibits the behavior described by the item.
5. The child always exhibits the behavior described by the item.

Figure 27 presents average teacher ratings of students on self-regulation and interpersonal skills items. As shown, the Comparison Group scored about the same as Cohort 3 on average for self-regulation, and an independent-samples *t*-test revealed this difference was significant, t (146) = -.047, p >.05. In addition, students in the treatment group scored higher on interpersonal skills than students in the Comparison Group. An independent-samples *t*-test revealed this difference was not significant, t (146) = -.680, p >.05.

Figure 27. Approaches to Learning Average Scores



Project Summary

Parkrose School District's (PSD) MHCRC TechSmart grant provides technology infrastructure and teacher professional development (PD) to support one-to-one student devices at Parkrose High School. The grant funded the creation of a reliable wireless network at Parkrose High School to support the implementation of all students using iPad Minis, which commenced in fall 2014, and to seamlessly access content throughout the school. The TechSmart grant also funds PD to support high school teachers in transitioning to the use of online digital content and resources to create effective learning environments for students. The district has moved towards a Bring Your Own Device (BYOD) model where students are expected to show up to a class with an internet capable device of their own. PSD's goal for these efforts is to improve the district's performance on the student success indicators of 9th grade credit attainment, English Language Learners' (ELL) progress, and high school graduation.

Methods

A general description of the methods included in the TechSmart evaluation are included in the introduction to the full report. Data collection efforts for the SY 17-18 evaluation at Parkrose are summarized below.

Teacher Survey

In May 2018 the Director of Technology distributed an online survey via email to all Parkrose High School teachers involved in the TechSmart grant. Twenty-two out of the 45 teachers at Parkrose High School completed the year-end survey for a response rate of 48.8%. This was slightly lower than the teacher response rate of 52.5% in the SY 16-17 evaluation.

Teacher Interviews

PRE conducted face to face interviews on April 18, 2018 with eight teachers who were involved in TechSmart grant implementation at Parkrose High School.

District Leader Interviews

In spring 2018 PRE conducted phone interviews with three district leaders from Parkrose High School, which included a principal, the Director of Technology and the School Improvement Director.

Student Surveys

The online student survey was distributed in May 2018 to all students and 43 students completed it. The number of students in each grade who completed the survey is shown in Table 1. Two students did not report their grade level.

Table 1. Parkrose HS Student Survey Responses

Grade	n	% of Total Responses
9th	34	82.9%
10th	3	7.3%
11th	1	2.4%
12th	3	7.3%

Leadership Rubric

The leadership rubric was completed by the Director of Technology.

Student Achievement Data

In order to examine the impact of the TechSmart grant investment in Parkrose HS, comparative analyses were conducted using a historical Comparison Group. A concurrent Comparison Group was not created for Parkrose since the grant targets high school students and PSD has only one high school. Table 2 below presents the number of students in the Treatment and historical Comparison Groups by year. The results presented in this report compare three cohorts of students at Parkrose HS (9th graders in 2014-15, 9th graders in 2015-16, and 9th graders in 2016-17) to 9th grade students starting in the 2010-11 school year. Each Treatment Cohort will be tracked throughout grant implementation in order to understand the grant investment impact on student achievement. The All Hands Raised outcomes of 9th grade credit attainment and ELPA test scores for the Treatment and historical Comparison Groups are examined in later sections of this report.

Table 2. Treatment and Historical Comparison Group Sample Size

Cohort 1		Cohort 2		Cohort 3		Historical Comparison Group	
Year	**N**	**Year**	**N**	**Year**	**N**	**Year**	**N**
2014-15 (9th)	247	2015-16 (9th)	288	2016-17 (9th)	247	2010-11 (9th)	182
2015-16 (10th)	212	2016-17 (10th)	216			2011-12 (10th)	182
2016-17 (11th)	200					2012-13 (11th)	177

Figure 1 below presents the at-risk indicators for the Treatment and historical Comparison Groups of students at Parkrose HS. Overall, there were a higher percentage of students identified as students of color and in Special Education in the Treatment Cohorts as compared to the historical Comparison Group. There were fewer LEP students in Cohorts 1, 2, and 3 compared to the historical Comparison Group.

Figure 1. Parkrose School District At-Risk Indicators

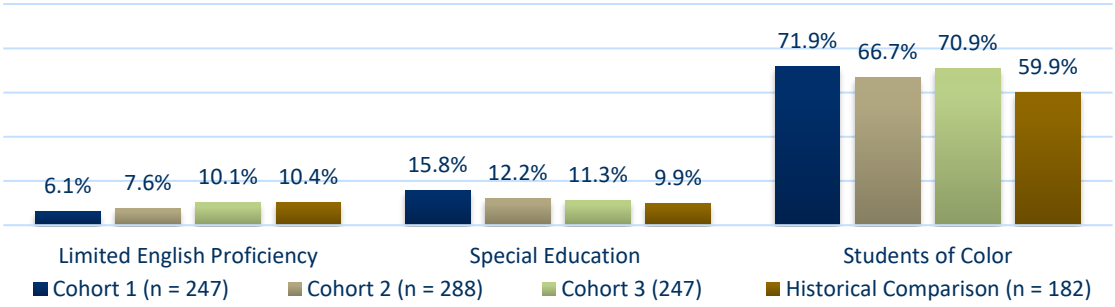
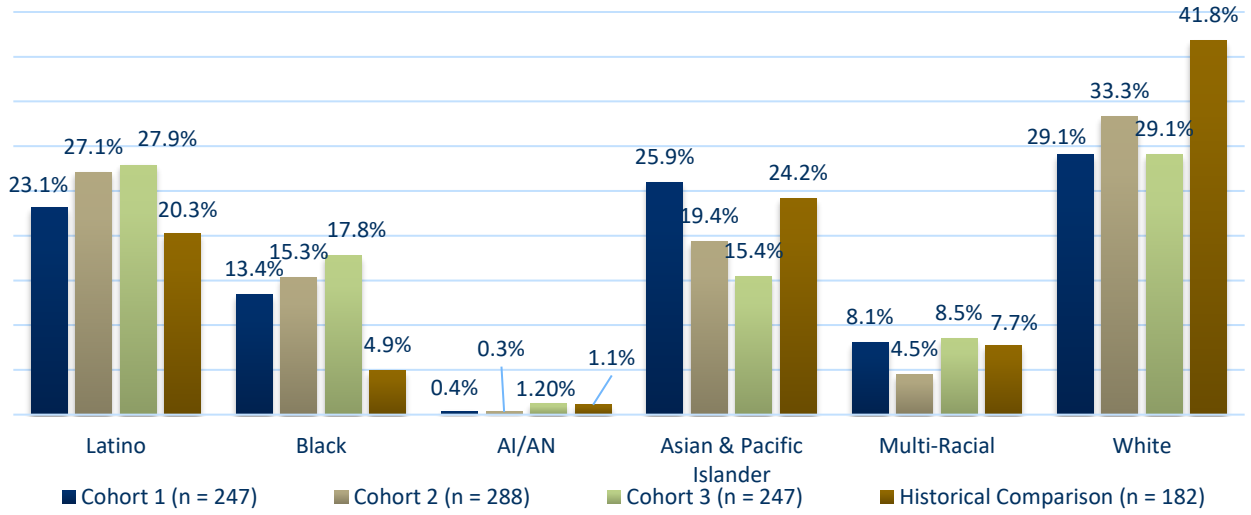


Figure 2 below provides a summary of the breakdown for students of color in the Treatment and historical Comparison Groups and shows a higher proportion of white students in the historical Comparison Group relative to the Treatment Cohorts.

Figure 2. Parkrose School District Race/Ethnicity



Findings

The evaluation findings from the SY 17-18 evaluation at Parkrose are presented below and organized by the seven factors identified as essential for schools to effectively transform into technology-rich teaching and learning environments.

Teaching Effectiveness

Districts support regular, inclusive, and shared professional development among teachers.

Similar to previous grant years, the professional development offered at Parkrose HS in SY 17-18 included both group and individualized sessions. The Director of Technology indicated that the only PD funded by the grant in SY 17-18 was the push-in model, wherein the support person was made available to teachers in their classrooms as needed. Teachers at Parkrose HS, however, described the professional development they received during Year 4 of the TechSmart grant (SY 17-18) as mainly consisting of optional group PD sessions which focused on integrating new applications or technological assets into the classroom. These opt-in sessions occurred during teacher-controlled PLC time and were not directly funded by the TechSmart grant. Teachers appreciated that the PD sessions were focused on tangible ways to integrate the technology into the classroom; "I find the PD model to be pretty effective, because it's very practical. I can watch a PD session and then explore the new skills for one day and then put them into action the next day. It's nice to have practical things not theoretical". Teachers indicated that they are happy with the opt-in PD model for group PD, but they wish there were more opportunities for individualized PD, perhaps indicating that the push-in model for individualized PD is not enough. The need for individualized PD seemed to be particularly relevant during Year 4 of the grant, when different teachers were at distinctly different points in their technology proficiency based on when they became involved in the grant or began work in the district. One teacher who has been involved with the grant since it began said,

> *A lot of the PD this year has been about what I consider basic to intermediate understanding of how to use technology in the classroom. If I were to attend the group PD sessions I would be looking for the newest things, those are the things I wouldn't be as familiar with.*

Other teachers interviewed who were new to the district felt that they did not receive as much PD as teachers who had been involved with the grant in years prior. While teachers who had already been involved in the grant for several years seemed generally satisfied with the sparser opt-in group PD model, newer teachers expressed a desire for more in-depth PD as they were just starting out. One solution to this might be to expand push-in or individualized PD. There were no teachers during the interviews who reported consistently taking advantage of individual PD, even though all teachers who responded to the survey reported participating in individual PD at some point (See Table 3).

In the interviews, some teachers reported that technology PD is being rolled out as a part of other department-specific PD sessions; "I do know that some of the PDs we do through the English department also have to do with how we can use technology purposefully in the classroom". Another teacher commented that technology PD is sometimes more useful when it is integrated into department-specific PD, facilitating it's cohesion it into school-wide instructional practices, rather than having technology use stand by itself as something to be integrated into the classroom in isolation of other curriculum.

A few teachers discussed how they led trainings for other teachers:

> *I haven't really accessed as much of it this year because I've been doing it so long than I've had the professional development. I've actually given professional development this year for Nearpod. There was a day when teachers could choose what they went to, and I actually presented on Nearpod with some people. A lot of it I've already been doing, so I hadn't needed the professional development as much as a person who might be new.*

Teachers seemed to enjoy presenting to other teachers, and generally seemed to benefit from receiving training from one another. Teachers enjoyed when others modeled new ways to integrate the technology into the classroom, because fellow teachers understood the ins and outs of using technology in real time with a classroom full of students. On the other hand, some teachers pointed out the importance of learning certain, more advanced, skills from technology professionals, such as the library assistant/iPad tech.

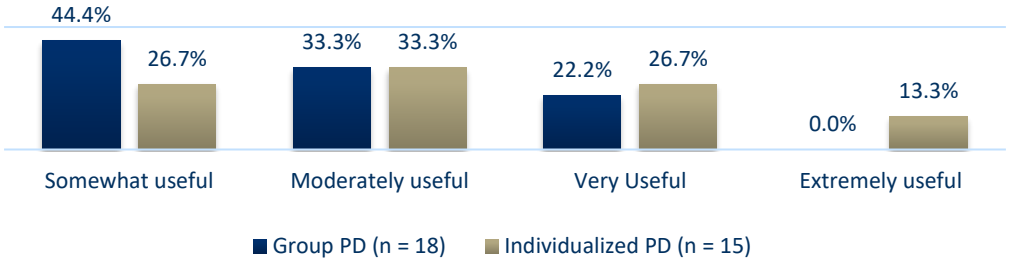
On the year-end survey, Parkrose HS teachers reported the amount of group and individual PD that they received over the past school year. Table 3 shows that all survey respondents received group PD, consistent with the survey results from SY 16-17. All survey respondents from SY 17-18 also received individual PD, an increase from the 61.9% who took advantage of it last year.

Table 3. Parkrose Teachers' Hours of PD (n = 22)

Hours of PD	Group PD	Individual PD
0 hours	18.2%	31.8%
1-8 hours	50.0%	59.1%
9–16 hours	9.1%	9.1%
17–32 hours	13.6%	0.0%
33+ hours	9.1%	0.0%

Similar to the SY 16-17 evaluation, teachers found individual PD to be more useful than group PD (see Figure 3). Forty percent (40.0%) of survey respondents rated individual PD as very or extremely useful, while only 22.2% of teachers rated group PD as very useful. Overall, survey respondents rated both kinds of PD to be less useful than they did in SY 16-17.

Figure 3. Parkrose End of Year Teacher Ratings of PD Usefulness



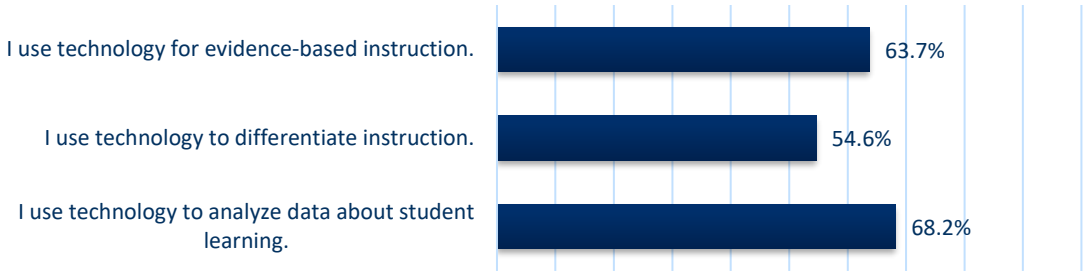
How is the professional development impacting teacher instruction?

Section Highlights:

This evaluation question includes the following desired outcomes: 1) PD has helped teachers increase the use of technology for evidence-based instructional practices, 2) PD has helped teachers use technology to analyze and use data about student learning, and 3) PD has helped teachers use technology to differentiate instruction. Between 50-70% of teachers who completed the survey are achieving these outcomes which is a slight decrease from SY 16-17, when at least 60.0% of teachers surveyed were achieving each of the desired outcomes. The self-reported technology skill level of teachers did not show much change from the previous school year. Similar to SY 16-17, teacher survey results showed that individualized PD was preferred over group PD; in addition, 100.0% of surveyed teachers took advantage of both group PD and individual PD at some point during SY 17-18, an improvement from SY 16-17.

On the year-end survey, teachers indicated how the PD had impacted three key areas within their classroom instruction: evidence-based instruction, differentiating instruction, and analyzing and using data about student learning. Figure 4 below shows the number of teachers indicating that they use technology a moderate amount or a great deal for each area of focus. By the end of the SY 17-18, 54.6% of teachers reported that they used technology a moderate amount or a great deal to differentiate instruction (a decrease from 71.4% from SY 16-17). Almost seventy percent (68.2%) of teachers in SY 17-18 reported using technology to analyze data about student learning (a decrease from 71.4% from SY 16-17).

Figure 4. Parkrose Instructional Technology Use
(% A Moderate Amount/A Great Deal; n = 22)



Teachers were asked to elaborate on the applications they had been using to differentiate instruction in their classrooms. The library assistant/iPad tech said, "I know that IXL is used in a lot of the classrooms. And that is a student-leveled program, so being able to independently say 'ok you all have this amount of time to work on this thing' but each student is working on something different and receiving support through that program. I think that's important".

Teachers reported their technology skill level on the year-end survey by rating themselves at one of the following five levels:

Level 1: I get someone else to do technology-based tasks for me.

Level 2: I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.

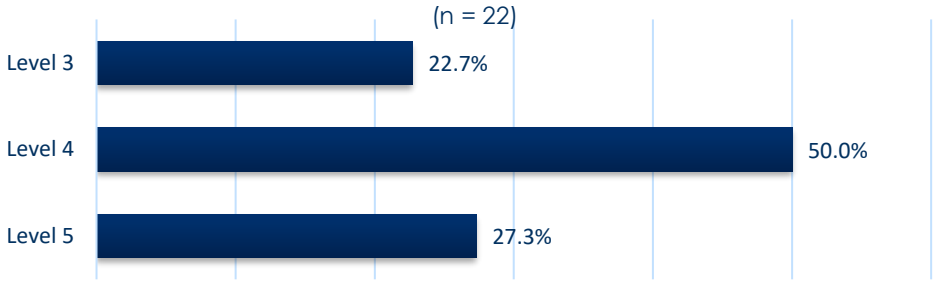
Level 3: I have enough skills to complete the management and communication tasks expected of me and occasionally will choose to use technology to accomplish something I choose.

Level 4: I use a variety of technology tools and I use them efficiently for all aspects of my job.

Level 5: I use technology efficiently, effectively, and in creative ways to accomplish my job.

As illustrated in Figure 5 below, by the end of SY 17-18, 77.3% of teachers who completed the survey rated themselves at either a Level 4 or 5 in terms of technology skill level, which is similar to last year's 76.2%.

Figure 5. Parkrose Teachers' Technology Skill Level



Along with gauging the extent to which the PD had impacted teachers' technology use and skill level this year, the year-end survey asked teachers to discuss how effective the PD model had been for them (see Table 4). Teachers made positive comments about the PD model, the support they are receiving from staff and other teachers, and the technology itself received through the TechSmart grant. Teachers also gave feedback regarding a lack of access to PD and students' difficulties in having consistent access to devices.

Table 4. Effectiveness of the PD Model at Parkrose High School

"The TechSmart grant's professional development has provided support for our technology needs whenever possible."
"The PD has been helpful in that it allows an individual to learn what she needs to learn and fill in the gaps of education in technology"

"I've been able to pinpoint where students are on math levels, apply interventions, and target goal areas. Our support staff is amazing and I always feel like I can call and get assistance."
"It has totally changed how I have been told to teach in the classroom and the expectations during walk-thru observations, formal observations, schoolwide mandates, and PLC work. My only suggestion is to not be pulled out of classes during the school day for professional development."
"When enough students had their iPads my instruction was changed. However, this year nobody brought iPads to class so I did not use them at all."
"I do not have access to class sets of technology - many students are opting out of the iPads and I am not too tech. savvy - so that is never my focus. I think if someone sat down and helped me figure out how to find a few spots to really incorporate it in, it would help."
"I haven't received any professional development relating to technology!"

What new instructional strategies are teachers reporting?

Section Highlights:

Survey and interview data indicate that some teachers are enthusiastically adopting new instructional strategies into the classroom using technology, particularly using iPads and Chromebooks and applications such as Google Suite and Nearpod, similar trends as were reported in the SY 16-17 evaluation. In terms of instruction, teachers most commonly reported using technology to support communication with students and planning and preparation. There are still significant barriers to the use of technology to support instruction, specifically; teachers noted the lack of consistency in students bringing functional devices to class through the BYOD program, continued issues with lost and broken iPads, and lack of student access to internet at home. These issues cause teachers to be less willing to integrate technology into the classroom because they do not feel like they can rely on students to be prepared to engage with it. One possible solution to this issue proposed by teachers was to increase access to class sets of iPads and Chromebooks. Although the evaluation indicates that technology use has increased since the beginning of the grant, there is not yet evidence that new instructional strategies have been consistently and efficiently implemented as a result.

Although only 50.0% of teachers (n = 22) indicated that their students have had adequate access to technology resources in their classrooms (e.g., iPads, or Chromebooks), they had many examples of the technology-based instructional supports that they are using. On the survey, teachers identified the technology supports they were using in their instruction and rated them on a scale of one to five (see Table 5).

Table 5. Parkrose HS New Technology Used for Instruction

Technology Supports	Effectiveness Rating
Technology Applications (Nearpod, Padlet, Quizlet Live, Edpuzzle, and Google Suite)	**4.20** (n = 5)
Edmodo	**4.00** (n = 2)
iMovie	**3.50** (n = 2)
Online Sites (Socrative, Desmos, and Kahoots)	**5.00** (n = 1)

Similar to the SY 16-17 evaluation, teachers most commonly reported Google applications and other apps as being most effective in supporting their instruction. One teacher explained,

> *I think the access to the applications is great. The students don't just have a backpack with a jumble of things. Especially with the Google Suite, they're able to sign in and see the same thing, especially if they have internet at home. They can see it in the library here. They can see it in the classroom. And have all of their work just there and feeling safe. There's less of a risk that they will lose their work. I think that relieves a lot of stress and gives a sense of security to the students.*

When asked what technology they used for instruction, some teachers pointed to how they use the new technology rather than identifying specific applications or physical technology assets. As show in Table 6, teachers most commonly reported using technology for research purposes, which they found to be highly effective. On the other hand, teachers also commonly reported using technology for feedback and revisions but found this to be significantly less effective.

Table 6. Parkrose How New Technology is Being Used for Instruction

Technology Supports	Effectiveness Rating
For research purposes	**4.71** (n = 7)
For feedback & revisions	**2.00** (n = 5)
For differentiation	**4.00** (n = 4)
For small groups & student collaboration	**3.25** (n = 4)
For hands-on activities	**3.33** (n = 3)
Formative assessments & gathering student data	**4.67** (n = 3)
For posting & organizing assignments online	**4.00** (n = 2)
To foster student independence	**3.50** (n = 2)
To engage students	**4.00** (n = 1)

Teachers responded to a series of statements regarding the integration of technology into their classroom as shown below in Figure 6. About half (45.5%) of teachers used technology to improve students' basic reading, writing and math computation skills as well as their problem-solving and critical thinking skills, down from 71.4% in SY 16-17. A slightly higher percentage (59.1%) of teachers said they seek out activities that promote increased problem-solving and critical thinking using classroom technology.

Figure 6. Parkrose Instructional Strategies
(% True of Me/Very True of Me; n = 22)

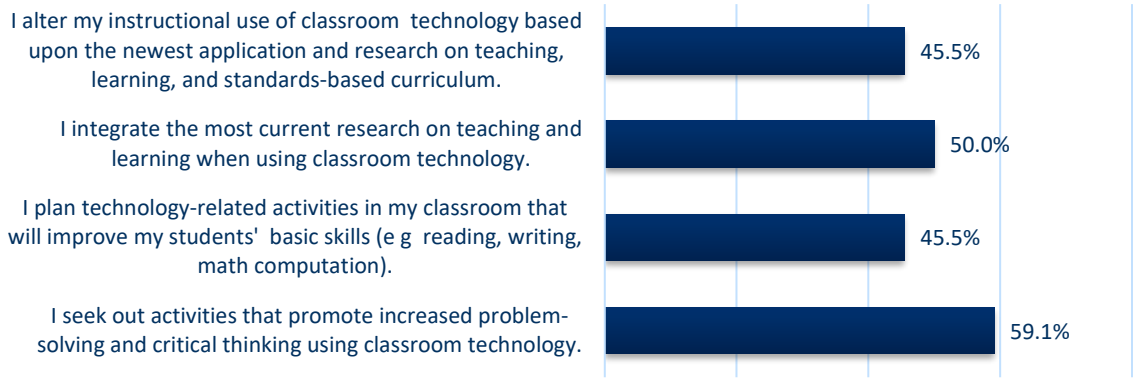


Table 7 below presents results from the rubric designed to rate the use of technology to support instruction. Aggregate teacher self-ratings for the rubric as well as the Parkrose Director of Technology's ratings of the teachers as a whole are presented. The element of the rubric with the highest self-rating for teachers was communicating with students followed by planning and preparation. Teacher self-ratings showed room for improvement in the areas of using technology to support organizing physical space, using questioning and discussion techniques, and demonstrating flexibility and responsiveness. Organizing physical space and using questioning and discussion techniques were flagged as areas for improvement in SY 16-17 as well. The Director of Technology rated teachers highest on the instructional elements of communicating with students and using assessment in instruction.

Table 7. Technology Used for Supporting Instructional Practices
(1 = Not at all, 2 = Very Little, 3 = Somewhat, 4 = To a Great Extent)

	Teacher Survey (n = 21 - 22)	Leadership Rubric (n = 1)
Planning and Preparation	3.55	3.00
Managing Classroom Procedures	3.33 (n = 21)	3.00
Organizing Physical Space	2.32	2.00
Communicating with Students	3.77	4.00
Using Questioning and Discussion Techniques	2.95	3.00
Engaging Students in Learning	3.40	3.00
Using Assessment in Instruction	3.14	4.00
Demonstrating Flexibility and Responsiveness	2.95	3.00

Due to issues surrounding students bringing iPads back and forth to school and home, the district has been moving towards Bring Your Own Device (BYOD) model. BYOD has students to come to class with their own personal internet-capable device and allows them to bypass issues surrounding iPad breakage and loss if they wish. iPads are still available to borrow but that program is not mandatory. The Project Lead indicated that "each year, as personal devices became more ubiquitous and as our iPads got older and less capable, we have had a greater number of students who have chosen to opt out of our provided devices in favor of their own". In interviews, teachers expressed mixed feelings surrounding the BYOD model. Various barriers to the model's success were listed, including difficulty navigating certain applications on small phone screens, students' lack of access to WiFi at their home, and the inability to

consistently rely on students to bring their personal devices to class. One teacher commented on the difficulties she has faced integrating technology into the classroom under the BYOD model;

> *I just don't feel like I can depend on the technology. It's a hit or miss whether or not a kid will have a device. Some students opt out of the iPads and then have their own device but not all technology works really well on phones. So when I've tried to integrate technology into my lessons it just doesn't work seamlessly. So I don't use it as much as I would like.*

Several teachers echoed the difficulties with planning a lesson fully integrating technology when it is never the case that each of their students has brought a functioning internet-capable device to class. For that reason, these teachers simply have not adopted new instructional methods using technology. Teachers expressed that while they would like to embrace technology in the classroom, when students don't have consistent access to universal devices, it feels impossible; "The vast majority of us teachers want to use technology, but the way it's set up right now we feel like we can't. So if we're not using technology it's not because we don't want to, it's because we don't feel like we can".

More so than the BYOD model, teachers discussed the value of a having a class set of iPads or Chromebooks in interviews. One teacher who fought to have access to a class set of iPads said,

> *It would be a barrier if I didn't have a class set of iPads. I worked really hard to get a set that I can have in my classroom. And I think everyone needs that. I use technology daily because I have access, whereas other teachers have to think about how they're going to do it. I can just let my imagination go and just think about what is best for the students. And I think that's unfair. Resources should never be a barrier.*

This teacher has access to iPads in her classroom every day, so she is more willing than other teachers to adopt new instructional strategies and fully engage with the new technology. Many teachers interviewed expressed preference for having a class set of Chromebooks instead of iPads, particularly for classes such as English where writing-heavy assignments are easier to do when the students can type on a physical keyboard. An intention to move away from iPads and towards Chromebooks was also iterated in the mid-year status report.

Teachers reported that having full class sets of iPads or Chromebooks better addresses the inequality their low-SES students face by allowing them equal access to technology at school. Further, these teachers felt expecting students to have access to their own devices and WiFi at home exacerbated the inequalities they already face. One teacher estimated that half of her students do not have access to the internet at home. This puts a large constraint on these students if they are expected to keep up with online work outside of school hours. Another teacher commented on this issue:

I have a lot of students without access to internet at home. The take home iPads work really well if the student has access to internet, but if they don't have access to internet at home then the device will not help them. Because they can't access the website, or do stuff online that can be put there for extra credit. For that reason alone I tend not assign anything that involves technology at home if I can help it. The major assignments we do in class because I want to make sure it's equitable for all students.

Class sets of iPads or Chromebooks were seen as more equitable by teachers because they allowed all students the same access to technology in the classroom. There was an overall sense that every classroom should have a class set of iPads or Chromebooks rather than expecting students to bring their own devices or carry iPads back and forth.

How are the new instructional strategies impacting student engagement?

Section Highlights:

The SY 17-18 evaluation does not provide evidence that student engagement has been positively impacted by the integration of technology into the classroom. Only one-fourth of students who completed the SY 17-18 student survey reported enjoying the use of technology in the classroom. Similar to the SY 16-17 evaluation, students provided reasons for their negative opinions about the technology, including that technology is a distraction and makes it harder for them to learn math.

While Parkrose HS teachers and leaders expressed a mix of opinions about technology use, including many positive and hopeful statements, the majority of students reported neutral or negative opinions with regard to using technology in their classwork. Students who completed the year-end survey answered a series of questions about how the use of technology has affected their classroom engagement. The number of students completing the survey this year was relatively low (43), particularly in comparison to SY 15-16 (503). As shown in Figure 7, only a quarter of students (25.6%) taking the survey in SY 17-18 reported that they enjoyed using technology, about the same as SY 16-17. The number of students who disliked using technology (34.9%) went up from last year's 26.5% and the number of students who felt neutral (39.5%) stayed fairly consistent with last year.

Figure 7. Parkrose Students' Feelings about Technology Use this Year
(n = 43)

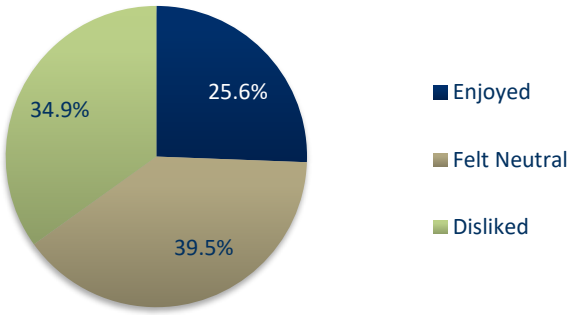
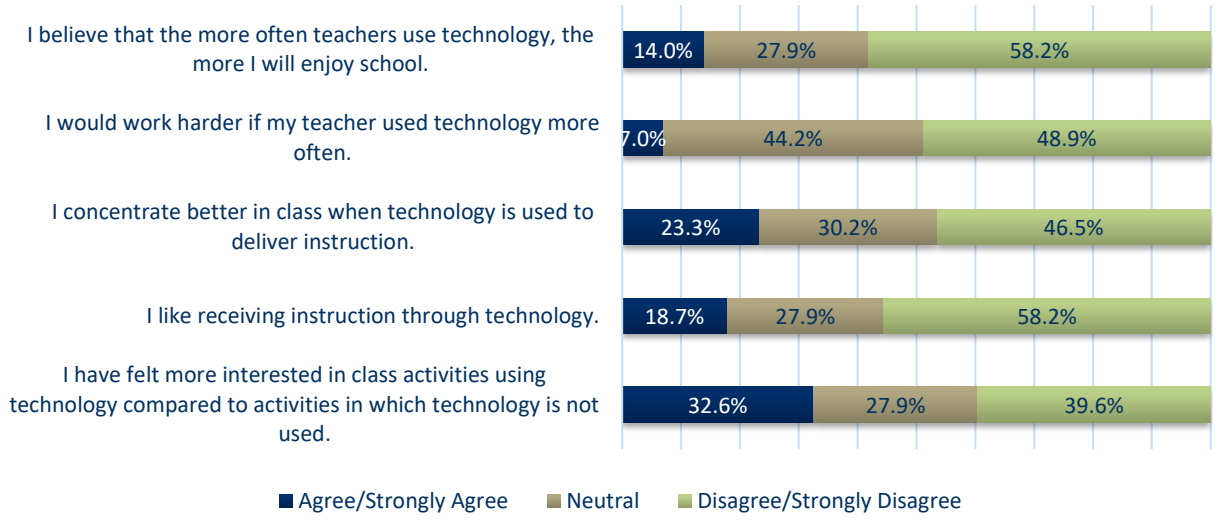


Figure 8 below provides a breakdown of student engagement related to the use of technology in the classroom. About twenty percent (18.7%) of students who took the survey like receiving instruction through technology, which is a decrease from last year's 30.9%. A third of students (32.6%) and said they are more interested in class activities using technology, which is consistent with SY 16-17. Similar to the SY 16-17 evaluation, these results do not provide strong evidence that the technology is being used to alter instruction in a way that affects student engagement; however, it's important to remember that the number of students responding to the survey is very low compared to the total student body.

Figure 8. Parkrose Student Engagement
(n= 43)



Students' comments about technology were mixed. Positive comments described how technology makes school easier and more enjoyable and improves the learning experience. Table 8 provides a sample of comments related to these themes. These themes are similar to primary themes provided during the SY 16-17 evaluation.

Table 8. Parkrose HS Students' Positive Opinions of Technology Integration

Theme	Sample Quotes
Technology improves the learning experience (n = 12)	• *"I like the way we incorporate technology and it helps me learn."* • *"I like the fact that we use computers in English and in Avid because we can use Google Docs and finish our work on Chromebooks and research things."* • *"Using technology is more convenient and relevant."*
Helpful for keeping up with assignments (n = 2)	• *"My teacher has an online website and it helped me and my peers grasp information we needed to understand again or catch up on missing work on our own."* • *"Google Classroom is great for keeping up with assignments and getting resources. It really helps when you've missed days and need to catch up or need to know what's going on in class."*

Theme	Sample Quotes
Technology is helpful for focusing (n = 1)	• *"I think it's good that teachers are incorporating more technology because it helps students focus and follow along. Also, it gets quiet in class if everyone is using technology."*

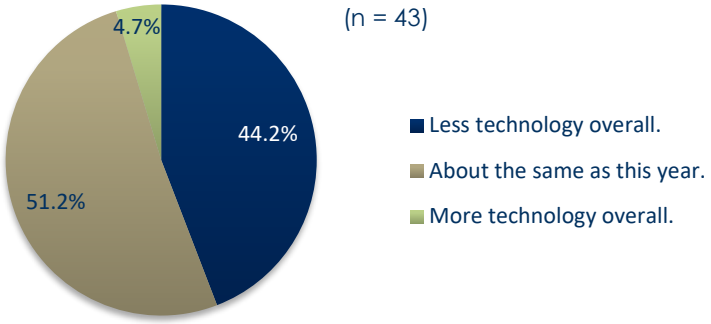
Students who shared a negative perception said that they did not enjoy technology, that technology specifically makes learning math more difficult, and that technology is a distraction. Table 9 provides a sample of comments related to these three themes.

Table 9. Parkrose HS Students' Negative Opinions of Technology Integration

Theme	Sample Quotes
Students do not enjoy technology (n = 16)	• *"I don't like technology in the classroom."* • *"I would prefer if teachers would not use technology as the primary platform for lessons, rather it should be used only as research resource."* • *"The technology ended up being a barrier more than anything."* • *"Teachers sometimes use technology to teach their lessons instead of them actually teaching."*
Technology makes learning math more difficult (n = 7)	• *"I don't really like using Discovery Education in math."* • *I don't like mixing math with technology because it made everything harder to learn."* • *"Using technology in math was not efficient."* • *I'd rather learn math from our teachers and not use Discovery Education, it made learning new material more difficult."*
Technology is a distraction (n = 2)	• *"Teachers allow tech. use during appropriate times for work purposes but they are usually not responsive to the abuse of this choice. One example of this is people always being on their phones and getting way behind or distracting others because of it."* • *"The iPads weren't designed for educational purposes which is why they are often used as a distraction."*

Although students reported that technology integration had a neutral or negative effect on their engagement, 51.2% of students wanted their teacher to use about the same amount of technology next year (Figure 9). Nearly half (44.2%) of students, however, indicated that they wanted less technology to be used next year, up significantly from last year's 29.9%.

Figure 9. Parkrose Students' Desire for Technology Use Next Year
(n = 43)



Are the new instructional strategies showing promise for improving academic outcomes?

Section Highlights:

The results from the analysis of student outcome data do not support the idea that new instructional practices are improving academic outcomes for Treatment Cohorts over and above the instruction received by the historical Comparison Group.

The success of the Parkrose HS TechSmart grant is measured in part by 9th grade credit attainment and high school graduation. To explore whether instructional practices are showing promise for improving students' credit attainment, PRE examined credit attainment for the Treatment and historical Comparison Groups. Students are considered "on track to graduate" if they earn six or more credits annually.

Table 10 shows that the historical Comparison Group had significantly higher average 9th grade credits than each of the treatment Cohorts ($F(3,904) = 49.50$, $p < .00$). Post-hoc comparisons using the Tukey HSD test indicated that the mean 9th grade credits for the Comparison Group ($M = 7.87$) were significantly higher than those for Cohort 1 ($M = 6.66$), Cohort 2 ($M = 5.72$), and Cohort 3 ($M = 6.05$). The Comparison Group also had significantly higher cumulative credit attainment in 10th grade than each of the treatment Cohorts ($F(2,597) = 16.29$, $p < .00$). Post-hoc comparisons using the Tukey HSD test indicated that the cumulative 10th grade credits for the Comparison Group ($M = 14.35$) were significantly higher than those for Cohort 1 ($M = 13.08$) and Cohort 2 ($M = 12.65$). Finally, the Comparison Group had significantly higher cumulative credit attainment in 11th grade than Cohort 1.

Table 10. Treatment and Historical Comparison Group Credit Attainment

Average Credits				
	Cohort 1	**Cohort 2**	**Cohort 3**	**Historical Comparison Group**
9th Grade	6.66 (n = 227)*	5.72 (n = 259)*	6.05 (n = 247)*	7.87 (n = 175)
10th Grade	13.08 (n = 212)*	12.65 (n = 216)*		14.35 (n = 172)
11th Grade	19.54 (n = 198)*			21.70 (n = 166)

*Indicates a significant difference between groups

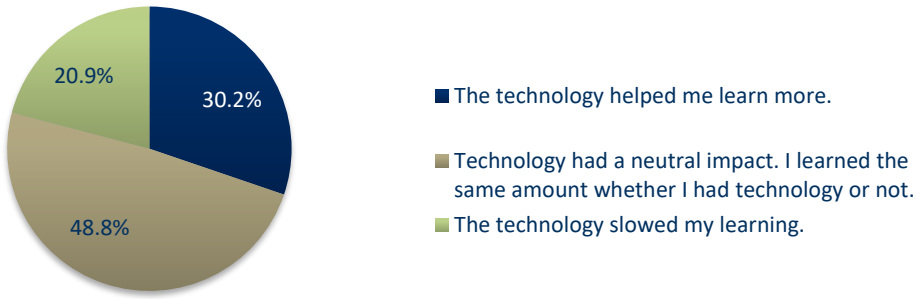
When examining the percentages of students on track to graduate in each of the Treatment Cohorts, the percentage was significantly higher for the Comparison Group then the Treatment Cohorts as shown in Table 11.

Table 11. Treatment and Historical Comparison Group % On Track

% on Track				
	Cohort 1	**Cohort 2**	**Cohort 3**	**Historical Comparison Group**
9th Grade	76.2%*	66.0%*	73.3%*	86.9%
10th Grade	75.0%*	75.9%*		86.0%
11th Grade	75.4%*			87.5%

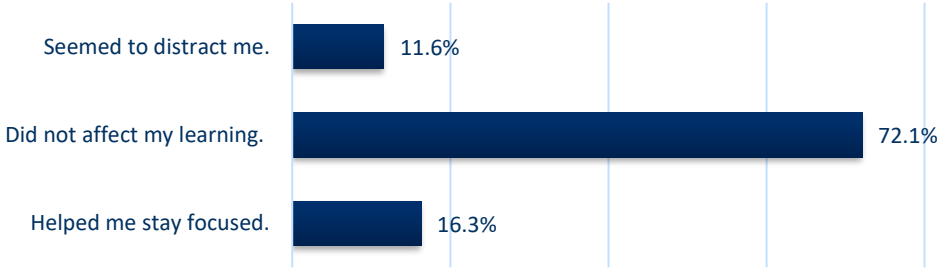
Students were asked a series of questions on the survey about how the use of technology in instruction affects their learning. About half (48.8%) of students who completed the survey indicated that they learned the same amount whether they had technology in their classes or not. Just under a third (30.2%) of students believed that the technology helped them to learn more (see Figure 10). This is an improvement from SY 16-17, when just over sixty percent of students felt that they learned the same amount whether they had technology or not.

Figure 10. Parkrose Students' Experience with Technology
(n = 43)



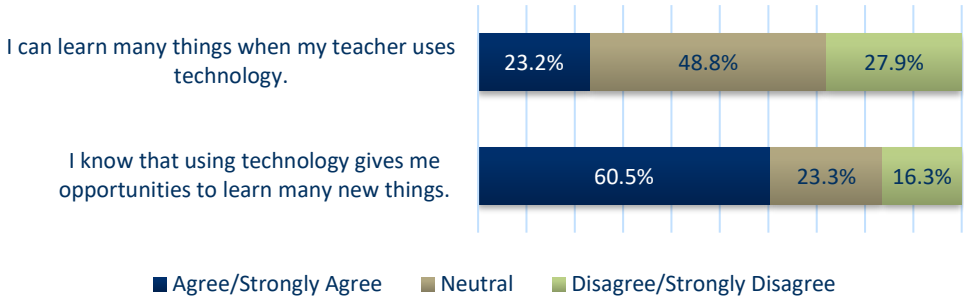
As shown in Figure 11, 72.1% of students reported that technology has not affected their learning, and 11.6% reported that the technology seemed to distract them, which is consistent with the responses reported above about technology slowing students' learning.

Figure 11. Parkrose Effects of Technology on Learning
(n = 43)



Over half of students indicated that technology provides opportunities to learn new things (60.5%), but only 23.2% reported that they can learn new information when their current teachers use technology (see Figure 12). These results are consistent with those from the SY 16-17 evaluation and suggest that there is still potential for improvement in how Parkrose HS teachers use technology to affect student learning.

Figure 12. Parkrose Students' Perceptions of Technology Use in Instruction
(n = 43)



When teachers were asked whether new practices were showing promise for improving student academic outcomes, they noted that students had greater comfort with using the iPads and emphasized that using technology helps students beyond high school.

Do instructional practices show promise for improving student academic outcomes with at-risk student subgroups (i.e., students of color, low SES, LEP, special education (or those with an IEP), and those not on track to meet academic standards)?

Section Highlights:

The results of the student achievement subgroup analyses do not show promise for improving student academic outcomes with at-risk subgroups, however, teachers did provide examples of how the technology is being used to differentiate instruction and providing access for at-risk subgroups.

In order to gain insight into whether instructional practices are showing promise for improving academic outcomes with at-risk student subgroups, credit attainment and percent on track to graduate were examined by subgroup for Treatment and Comparison Group students. Table 12 below presents these data for Cohort 1, Cohort 2, and Cohort 3 ninth grade students as well as the four at-risk subgroups for each cohort. After one year of implementation, the Cohort 1 students were showing lower credit attainment across all subgroups than the historical Comparison Group. An independent samples t-test revealed that this difference was significant for the LEP subgroup, t (30) = 2.46, p < .05, and the ethnic minority subgroup t (263) = -5.39, p <.01. Cohort 2 ninth grade students also showed lower credit attainment across subgroups than the historical Comparison Group. An independent samples t-test revealed that this difference was significant for the LEP subgroup, t (38) = 3.07, p <.01, the SPED subgroup, t (48) = 2.21, p <.05 and the ethnic minority subgroup t (278) = 8.33, p <.01. Finally, Cohort 3 ninth grade students showed lower 9th grade credit attainment across subgroups. This was significant for LEP students, t (41) = 2.74, p < .01 and the minority subgroup, t (277) = 8.00, p < .01.

Table 12. 9th Grade Credit Attainment for Treatment and Comparison and At-Risk Subgroups

	Cohort 1	Cohort 2	Cohort 3	Historical Comparison Group
All Students	6.66 (n = 227)	5.72 (n = 259)*	6.05 (n = 247)*	7.87 (n = 175)
LEP Students	5.41 (n = 14)*	4.88 (n = 22)*	5.42 (n = 25)*	7.39 (n = 18)
SPED	5.41 (n = 34)	5.05 (n = 32)*	6.09 (n = 28)	6.44 (n = 18)
Students of Color	6.66 (n = 161)*	5.73 (n = 176)*	6.09 (n = 175)*	7.85 (n = 104)

*Indicates a significant difference between groups

Consistent with average 9th grade credit attainment, Table 13 shows that the percentage of students who were on track to graduate in 9th grade was higher for the historical Comparison Group than each of the Treatment Cohorts for all subgroups.

Table 13. 9th Grade % On Track for Treatment and Comparison and At-Risk Subgroups

	Cohort 1	Cohort 2	Cohort 3	Historical Comparison Group
All Students	76.2%	66.0%	73.3%	86.9%
LEP Students	64.3%	45.5%	52.0%	77.8%
SPED	47.1%	56.3%	78.6%	66.7%
Students of Color	77.6%	66.5%	73.7%	85.6%

Similar to 9th grade credit attainment, after two years of implementation, the Cohort 1 and Cohort 2 students were showing lower 10th grade credit attainment across all subgroups than the historical Comparison Group. An independent samples t-test revealed that this difference was significant for the ethnic minority subgroup in Cohort 1 t (252) = 3.14, p <.01 and Cohort 2, t (249) = 3.83, p <.01.

Table 14. 10th Grade Credit Attainment for Treatment and Comparison and At-Risk Subgroups

	Cohort 1		Cohort 2		Historical Comparison Group	
	Average 10th Grade Credits	**% on Track**	**Average 10th Grade Credits**	**% on Track**	**Average 10th Grade Credits**	**% on Track**
All Students	13.07* (n = 212)	75.0%	12.65* (n = 216)	75.9%	14.35 (n = 172)	86.0%
LEP Students	11.15 (n = 13)	53.8%	11.41 (n = 18)	61.1%	13.19 (n = 18)	77.8%
SPED	10.48 (n = 31)	48.4%	11.91 (n = 27)	70.4%	12.15 (n = 17)	58.8%
Students of Color	14.26* (n = 102)	75.7%	12.76* (n = 149)	75.2%	13.07 (n = 152)	84.3% 75.7%

*Indicates a significant difference between groups

After three years of implementation, the Cohort 1 students continued to show lower 11th grade credit attainment across all subgroups than the historical Comparison Group. An independent samples t-test revealed that this difference was significant for LEP students, t (28) = 2.68, p <.05, and students of color, t (241) = 5.09, p < .001.

Table 15. 11th Grade Credit Attainment for Treatment and Comparison and At-Risk Subgroups

	Cohort 1		Historical Comparison Group	
	Average 11th Grade Credits	**% on Track**	**Average 11th Grade Credits**	**% on Track**
All Students	19.54 (n = 198)	75.4%	21.70 (n = 166)	87.5%*
LEP Students	16.02 (n = 13)	57.1%	22.00 (n = 17)*	77.8%
SPED	17.36 (n = 26)	59.3%	19.78 (n = 14)	71.4%
Students of Color	19.36 (n = 144)	75.9%	21.83 (n = 99)*	87.1%

Starting with SY 15-16, PRE began examining test scores for the ELPA21 assessment. Since ELPA21 is scored differently from the previous ELPA assessment, we are not be able to make comparisons to the historical Comparison Group. Table 16 below presents the ELPA21 results for Cohort 1 students in 10th and 11th grade. Note that only two students had ELPA21 assessment data for Cohort 1 in 11th grade.

Table 16. ELPA21 Results Cohort 1

Proficiency Determination	Cohort 1 10th Grade (n = 14)	Cohort 1 11th Grade (n = 2)
Emerging	21.4% (n = 3)	--
Progressing	78.6% (n = 11)	100.0% (n = 2)
Proficient	--	--

Table 17 below presents the ELPA21 results for Cohort 2 students in 9th and 10th grade. Of those 14 Cohort 2 students who tested in 9th and 10th grade, 50.0% of them remained at the same proficiency level and 42.9% of them moved to the next level. This shows progress for Cohort 2 at-risk students but it is difficult to link these results to the TechSmart initiative.

Table 17. ELPA21 Results Cohort 2

Proficiency Determination	Cohort 2 9th Grade (n = 22)	Cohort 2 10th Grade (n = 15)
Emerging	45.5% (n = 10)	26.7% (n = 4)
Progressing	54.5% (n = 12)	73.3% (n = 11)
Proficient	--	--

Teachers and leaders discussed whether incorporating more technology into their instruction has impacted academic outcomes for at-risk student subgroups this past school year. As mentioned previously, teachers

are using apps that differentiate instruction and are particularly helpful for ELL students, some of whom need to work at a slower pace and look up words frequently. Table 18 summarizes teacher comments from the survey regarding their use of technology-supported instruction with at-risk subgroups; teachers who took the survey reported using the technology to accommodate both ELL students and SPED students.

Table 18. Parkrose Teachers' Use of Technology Supported Instruction with At-Risk Subgroups

"I have specifically sought out technology for communication. Some of my students use AAC devices to communicate and it has been incredible to gain more knowledge of my students through their use of AAC."
"I have shown ELL/SPED students how they can translate the contents of a page or have it read out loud to them."
"I use IXL, which is an adaptive language program."
"Our math curriculum is online, so ELL students are able to translate pages using the 'translate page' provided in Chrome. Many students are finding more success when the math is relevant to them, so I do a lot of research for application problems that have a tie into their interests."
"In SPED class, students are able to work individually at their own personal level through using a computer-based curriculum."

The mid-year status report provided little insight on the grant's ability to close the achievement gap for historically underserved students, saying "We have not seen any kind of gap closing that I would be able to specifically attribute to this program". When interviewed, however, teachers provided more encouraging insight regarding the ability of technology to bring the district closer to closing the achievement gap. One teacher said,

> *More than anything else, what I feel the technology has given us is an increased level of access for all students. My middle class white kids have devices at home. My kids in poverty, no matter what color they are, don't necessarily. When we first started this, we definitely had kids who totally knew how to navigate a device, and then kids who had no clue, and that just isn't the case anymore. Some of that's because of the program, some of that's just because it's five years further in the world, but I think that it's really important.*

While providing student subgroups with access to technology is a step toward closing the achievement gap, it should be acknowledged that a common obstacle to utilizing the technology at Parkrose HS is that many students are unable pay for repairs or replacement iPads. So, while the grant is providing increased access, it can only do so to a certain extent. Even with the emerging BYOD model, lower-income students are at a disadvantage. Students who do not have anything other than a phone on which to use the applications have a harder time than students who have access to larger, more high-functioning personal

devices such as iPads or Chromebooks. In addition, even when students do have access to their own devices in their home, they are rendered useless if they do not have the ability to pay for internet where they live.

Digital Age Learning Culture

Districts embrace a cultural shift and view technology as positive.

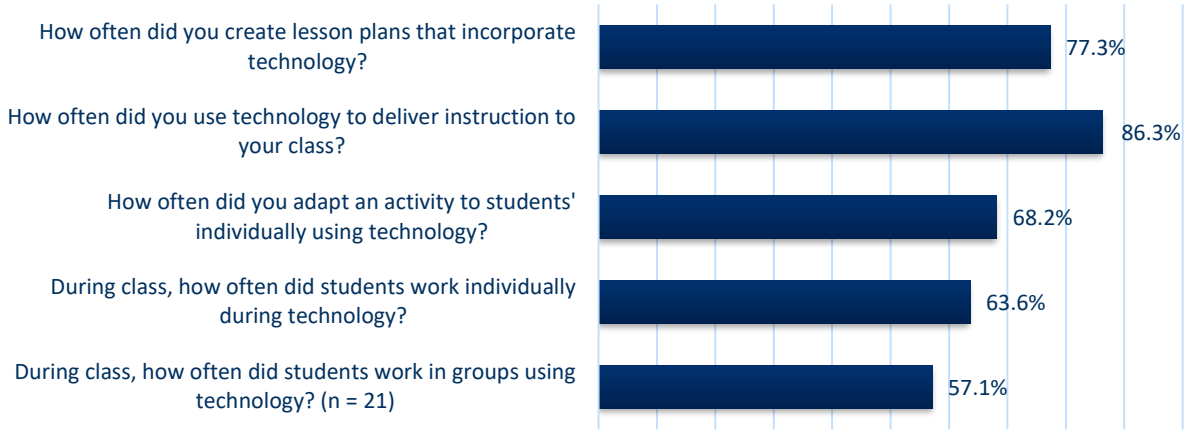
Has the use of technology to support instructional practices increased?

Section Highlights:

In SY 17-18, 86.3% of teachers reported using technology in their classroom and 51.1% of students reported an increase in technology use. These evaluation results provide some evidence that this outcome has increased after an additional year of implementation.

As reported in the previous section on teaching effectiveness, Parkrose HS teachers provided many examples of their use of technology to support instructional practices. Teachers consistently mentioned using Google Applications and many other apps such as Nearpod, Edmodo, StudentVue and IXL, to support their instruction. Descriptions of specific applications were generally positive, and 86.3% of teachers reported using technology to deliver instruction to their class. Almost seventy percent (68.2%) of teachers surveyed reported adapting activities for individual students' needs using technology. The data show that the use of technology to support instructional practices has increased.

Figure 13. Parkrose Frequency of Technology Integration
(% A Moderate Amount/A Great Deal; n = 21-22)



When students were asked whether the use of technology in the classroom had increased since the last school year, about half (51.1%) of students reported an increase in the use of technology, which is up from last year's 35.3%. Twenty-eight percent (27.9%) indicated that it had not increased and 20.9% were neutral.

Is the learning management system useful for identifying effective instructional practices?

Parkrose HS does not currently have one schoolwide learning management system. The mid-year status report indicated that the district uses Google Classroom as an organization system, saying "We don't have any interest in any more of an LMS than Google Classroom. We have a very robust gradebook that would allow teachers to interpret student success in many different ways, if they choose to use it that way".

Do teachers have increased access to and use of digital content and resources?

Section Highlights:

Although only 50.0% of teachers reported that their students had adequate access to technology resources in their classrooms, 81.8% of teachers reported that they use digital content and resources in their instruction. While that percentage has slightly decreased since the SY 16-17 evaluation, it still indicates that teachers are utilizing technology for new instructional strategies more than in Years 1 and 2 of the grant. Teachers are using similar digital resources as they were during SY 16-17 such as Google Suite and Edmodo.

The primary function of the TechSmart grant at Parkrose HS has been to enhance digital capacity, specifically through upgrading the school's wireless network and supporting the iPads.

An emphasis on the value of the technical support staff was echoed in the mid-year status report; "In this last year of our grant the only activity is the continued support of the iPad Support position at the high school. The grant pays for 6 hours a day of classified staff to distribute, trouble shoot, record keep, and deal with broken iPads. This staff manages all the fees and does outreach to students who need a way to way to scholarship the fees. All of these activities allow our iPad program at the high school to continue to be successful".

On the teacher survey, 50.0% of teachers reported that their students had adequate access to technology resources in their classrooms, leaving room for improvement. Additionally, 81.8% of teachers reported that they use digital content and resources in their instruction since receiving technology-related PD, which indicates decrease from last year. The digital resources that teachers highlighted on the survey were Google Suite, Edmodo, Vernier Lab Quest, and Nearpod. Table 19 provides examples of how teachers were using each of these resources.

Table 19. Parkrose HS Teachers' Use of Digital Content

Digital Content	Teachers' Application of the Technology
Google Suite (n = 6)	• *"We use conferencing and feedback via Google Docs."* • *"My 12th graders often create groups Google Slides that utilizes text and visuals to demonstrate their understanding of the topic."* • *"Sharing writing work to peers via Google Docs to have students peer edit using highlighting and comments."*
Other online resources (n = 4)	• *"We do close reading with markups using a variety of online resources."* • *"I have an online system for mathematics. I am able to use tech to help students skip what they know and learn what they don't know."*

Digital Content	Teachers' Application of the Technology
Edmodo (n = 1)	• *"I use Edmodo to communicate daily expectations to students, provide notes to students who are absent, answer questions, post assignments, and to post solutions to tough problems."*
Vernier Lab Quest (n = 1)	• *"We use Vernier Lab quests and sensors."*
Nearpod (n = 1)	• *"I deliver my lectures through Nearpod where I can do quizzes, have students draw something, or take a poll to check for understanding."*
Chromebooks (n = 1)	• *"We do collaborative writing tasks using Chromebook."*

On the year-end survey, students listed the technologies they wish their teachers would use in the classroom. Specifically, students expressed a desire for teachers to increase their use of Chromebooks, laptops and computer and presentations and videos. Students commented that Chromebooks or laptops and computers are easier for them to use than iPads because they are easier to use and some applications work better with a computer versus an iPad. Table 20 provides a sample of student quotes.

Table 20. Technology Students Wish Teachers Would Use

Theme	Sample Quotes
Chromebooks (n = 8)	• *"Chromebooks because they give me additional resources to be successful."* • *"I see that Chromebooks are much more useful in class than iPads. The activities don't change much except that it's easier to complete them with a functional computer like a Chromebook."* • *"I wish teachers would use Chromebooks because they're easier to use than phones or iPads."*
Laptops/Computers (n = 6)	• *"I like how teachers mainly use laptops."* • *"The computers are used well because they have a practical purpose, and also to help you type faster."*
No technology (n = 5)	• *"None."* • *"None, especially not Discovery Education, everyone falls behind using it."*
Presentations & Videos (n = 5)	• *"I'd like them to use the projector as usual because it shows instructions which I can follow."* • *"If teachers used movies for learning they'd be able to catch the students' attention more than speaking."*
iPads (n = 3)	• *"I wish teachers would use more iPads because it allows students to be interactive instead of always listening to lectures and taking notes."*
Phones (n = 2)	• *"I think using phones is just fine, and then we can use laptops for essays."*

Theme	Sample Quotes
Applications (Kahoot, Google Classroom) (n = 2)	• *"I liked using Kahoot."* • *"Google Classroom is great, especially when the teachers update it on days when there are slideshows in class."*

Is there evidence of district wide support for technology integration?

Section Highlights:

Survey and interview data from the SY 17-18 evaluation show evidence of administrator support for technology integration at Parkrose HS which is consistent from the previous year's evaluation. Similar to the SY 16-17 evaluation, less than half of teachers completing the survey reported a shared understanding among teachers with regard to the benefits of technology use. Teachers still need further training and support in order to feel confident in their ability to use the new technologies in their classroom.

The culture of support for technology integration at Parkrose HS continued to develop during SY 17-18. On the teacher survey, a majority of teachers (86.4%) indicated that Parkrose HS administrators are generally supportive of technology integration efforts which is consistent with their perceptions in SY 16-17. Over three-fourths (76.1%) of respondents agreed or strongly agreed that Parkrose HS teachers are continually learning and seeking new ideas, and forty percent (40.9%) of respondents agreed that the teachers share an understanding about how technology will be used to enhance learning (see Figure 14), both consistent with SY 16-17.

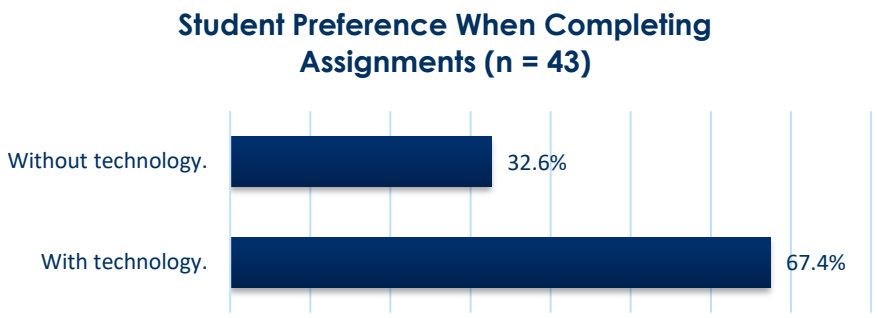
Figure 14. Parkrose Teacher Perceptions of a Culture of Support for Technology Integration
(% Agree/Strongly Agree; n = 22)

Are an increased number of students utilizing and engaging with new technology?

Section Highlights:

The SY 17-18 evaluation provides some evidence that an increased number of students are engaging with new technology. Last year, 55.2% of Parkrose HS students preferred using technology to complete their assignments and this year 67.4% would choose using technology over other means.

As previously discussed, Parkrose HS has an opportunity for improvement in terms of engaging students with technology. Last year, 55.2% of Parkrose HS students preferred using technology to complete their assignments and this year 67.4% would choose using technology over other means (see Figure 15).



When teachers were asked whether new practices were showing promise for improving student engagement, they reported that students enjoy working on the technology and therefore are more engaged in the classroom when they are allowed the opportunity to use it. Despite less than a third (30.2%) of students reporting that technology helped them learn in the classroom, most teachers reported noticing an increase in engagement when technology was used in the classroom. Teachers recognized that students simply enjoy doing assignments on iPads or Chromebooks more than they do with pen and paper. One teacher commented, "I feel like the kids just like it better. So it could be the same assignment, but because they get to be on a Chromebook they just like it more. So I definitely think it helps student engagement when they get the opportunity to use technology". Teachers also commented on the fact that in this day and age students need to be familiar with technology in order to be successful in higher education and in the workplace.

Further, one teacher also commented on the ways that integrating technology into the classroom actually helps to prevent students becoming distracted on phones with non-school related activities. Instead of having to nag students to put their devices away, this teacher has noticed that "a lot of kids will stop doing the non-school stuff because they're just on their device. They just need to be on their device. And Nearpod's nice because you can somewhat see who's out of Nearpod". Here, this teacher also references one way they use Nearpod to manage their classroom and promote digital citizenship.

Visible Leadership

District leadership is actively involved and working with key communities to accomplish change.

Are districts identifying effective instructional practices and disseminating information and results to other districts?

Situation Highlights:

It remains ambiguous the extent to which the district has made efforts to share information and lessons learned from its technology integration efforts with other districts. While district leadership indicated during interviews that they have been collaborating regularly and successfully with neighboring districts, the mid-year status report reflects a less optimistic state of collaboration.

It appears that the district has reduced efforts to collaborate across districts in SY 17-18 compared to SY 16-17. According to the mid-year report, sharing information about effective instructional practices among school districts implementing TechSmart grants has not supported Parkrose's implementation of practices across the district "except in terms of commiseration". The mid-year report continues, "Our districts and our grants are so different that other than the very broad topic of moving our schools forward in their technology use, there is not a whole lot specifically to share. That is not to say we do not use and learn a lot from each other but little of it is grant-related". That said, when interviewed, the Director of Technology and the School Improvement Director both indicated that the district is disseminating information to other districts to some extent. The School Improvement Director said, "Our partnerships with other districts have provided us with other great examples of implementation or tools that have been effective, and I think that we've been part of the conversation". In addition, the Director of Technology indicated, "We are lucky in East County because we meet as a group fairly often. So we talk about our grants. We talk about various things in technology we found that work or don't work for us. We regularly talk about all things technology, and that includes for each of us our grants". There seems to be some inconsistency among district leadership regarding the extent to which Parkrose is sharing its technology integration efforts and the value in doing so.

Do teachers feel increased support from district leaders regarding technology integration?

Section Highlights:

The SY 17-18 evaluation showed that 86.4% of teachers responding to the survey agree that administrators have been generally supportive of technology integration efforts. Similar to the SY 16-17 evaluation findings, teachers continued to comment on the support received from the iPad support position as evidence of support from district leaders.

Parkrose School District leaders have been providing support for technology integration at various levels. On the teacher survey, 86.4% of respondents indicated that administrators at Parkrose HS have been generally supportive of technology integration efforts. When describing the culture of support, as reported previously, Parkrose HS teachers really appreciated receiving assistance from the technology support

staff. Talking about the iPad technician in particular, one teacher simply said, “When I run into technical issues in the classroom or with new instructional techniques I refer to Elizabeth. When I have a problem that I can’t solve, I’m calling Elizabeth immediately”. Teachers and leadership expressed concern for the ability to keep Elizabeth on as an on-site iPad technician after the grant ends. She was cited as a key support by many teachers and leadership was unsure how to fill the gap Elizabeth will leave once she is no longer funded by the grant.

A principal who participated in an interview said about the support the district provides:

Our technology department is really supportive of leaders and principals and what we want to do. And I think one thing I've appreciated is that it hasn't necessarily been top down but more of a supportive approach. I really believe that technology shouldn't be approached as something different but rather as a part of what we’re already doing. The district has really supported that model and I think that's another reason we've seen a lot of success. When we're providing professional development around instructional strategies, we are modeling it. For example, if we're doing a PD on the Socratic Method, we're modeling how to do that using technology, rather than having a separate PD on just the technology.

The School Improvement director also commented on how the district is attempting to support technology integration in this way, saying “The district’s lens now is that technology, curriculum, and assessment are no longer separate categories”. Teachers and leadership alike commented on how the district is supporting technology integration by embedding it into the district’s overall goals and existing PD, rather than attempting to introduce technology in an isolated fashion.

Data Driven Improvement

Current, relevant and high quality data from multiple sources are used to improve schools, instruction, professional development, and other systems.

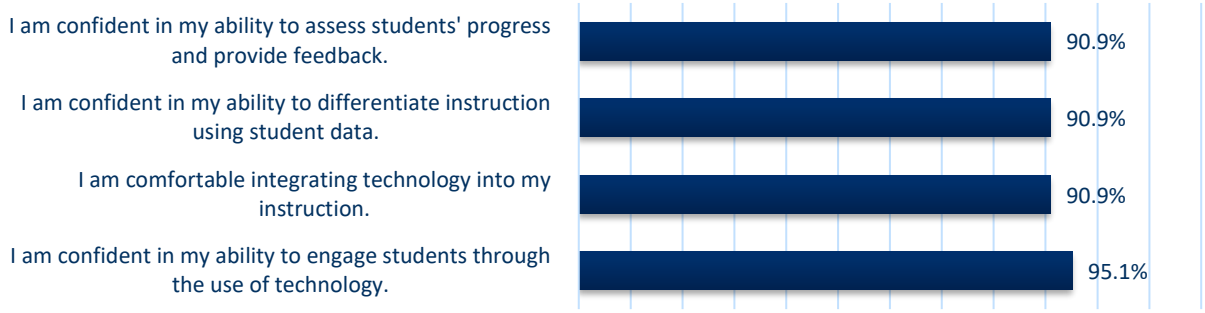
How are schools using data to improve instruction, professional development and student performance?

Section Highlights:

Parkrose HS is showing promise in the area of data driven improvement. Teachers expressed high levels of confidence in their ability to assess student progress and differentiate instruction using student data, similar to SY 16-17. In terms of using data to improve the professional development or for the purposes of the grant evaluation, the district again struggled with participation in the teacher and student surveys and could benefit from increased project evaluation efforts.

As highlighted in the previous section on teaching effectiveness, Parkrose HS teachers greatly increased their use of data-driven instructional strategies using technology. Figure 16 below shows that by the end of the year, 90.9% of teachers participating in the survey reported increasing their use of technology to differentiate instruction, almost identical to last year, and ninety-five (95.1%) are confident in their ability to engage students through the use of technology. Figure 16 suggests that most teachers are comfortable and confident using student data to inform their instruction. In addition to the data in Figure 16, 68.2% of teachers indicated that they used formative assessments a moderate amount or more often to identify effective instructional practices using technology.

Figure 16. Parkrose Data Driven Improvement
(% Agree/Strongly Agree; n = 22)



In interviews, teachers provided a wide range of answers when asked about how they use formative data to guide their instruction. While some felt very confident in their ability to use formative data to guide their instruction, others reported that they do not engage with this practice at all.

Funding & Budget

District's budget repurposes resources and district seeks outside funding to focus on promising practices and technology supports.

Have districts have identified at least one opportunity for repurposing resources to support technology integration?

Section Highlights:

The SY 17-18 evaluation provides evidence that Parkrose continues to reframe the way they think about resources to support technology integration. However, district leadership indicates that an overall lack of resources in the district has unfortunately limited what they are able to use to support technology integration.

The Director of Technology indicated that the district is "definitely continuing to use money, district money, and general fund money as opposed to grant money to move baseline work with technology forward". The School Improvement Director also commented on the district's ability to repurpose resources:

> *Sadly we have to repurpose resources slowly, because we don't have a ton of resources. But we have repurposed positions, particularly in the area of media and library in terms of providing more direct support. And we have vision and plans. We have a list of things we'd love to be able to do, and we've taken steps in that direction where there is more direct teacher and student support when it comes to everything, including the basics of troubleshooting technology.*

District leadership has made steps toward using non-grant funding to support technology integration, but they are not able to do so to the extent they would like to because of budget constraints.

Strategic Planning

District's strategic plan reflects shared commitment to improving outcomes for students.

Section Highlights:

The district strategic plan does reflect a shared commitment to fully integrate technology into the district strategic plan in an effort to improve outcomes for students.

Notably, the district has taken an intentional approach to fully integrate technology into its strategic plan rather than having it exist as an independent prong in the plan itself. The School Improvement Director outlined that intention as follows:

Part of our strategy when we are financing, as well as implementing, we're thinking about technology, curriculum, and assessment all together, and that's how we have structured our plan. That means that teaching and learning goals have technology integrated into them, versus having separate technology goals.

A principal reiterated this, saying "I feel like technology isn't its own separate goal but its incorporated into the rest of our goals. It's an expectation that we use technology. We work hard to make sure that technology doesn't feel like one more thing to add on, but that it's improving what we're already doing and acting as a resource".

Evaluation Insights at Parkrose High School

The SY 17-18 evaluation for the Parkrose HS TechSmart grant investment as compared to SY 16-17 did not reflect a great deal of progress between the two years. While some areas reflected growth, level of technology implementation basically remained constant. While many teachers expressed emracing the use of technology to support new instructional techniques, and certainly used more technology than before the grant, there was not a great deal of measurable growth noted since SY 16-17. Rather, technology implementation appeared to remain consistent. The SY 17-18 report also highlights areas that should continue to be targeted for improvement. Data collection at all levels (administrators, teachers, students) revealed both areas of progress and difficulty with schoolwide technology integration efforts.

- The SY 17-18 evaluation highlighted positive aspects of the TechSmart grant investment at Parkrose HS. Throughout all four years of the grant it has become evident that having an onsite iPad support technician at the high school is of key importance. This year the most important impact of the grant was the funding of this position. Teachers and school leadership expressed great appreciation not only for the iPad support technician but also for the friendly and competent IT staff. Teachers who completed the survey rate themselves highly in terms of their technology skill level and the frequency with which they use technology in the classroom, consistent SY 16-17. In addition, teachers are using a plethora of technological applications in their instruction that they rate as highly effective. In general, teachers were satisfied with the opt-in group PD model offered in SY 17-18 because it allowed them the flexibility to attend sessions when desired but did not require them to attend sessions that they felt might be redundant or unhelpful. The opt-in model made sense for the district during its fourth year of implementation due to the large variety of skill levels and excitement about technology possessed by different teachers. That said, teachers who were newer to the grant expressed a desire for more individualized PD.
- Along with a myriad of positive developments in SY 17-18, it continues to be apparent that technology integration is a process that needs some time to develop and progress. Some of the positive data within the evaluation were juxtaposed with data that suggested room for improvement. For example, while teachers reported feeling confident about their abilities to use technology in particular areas of instruction (such as tailoring instruction for individual students' needs), fewer than half agreed that they have a shared understanding of how technology is to be used to enhance learning. In addition, while teachers felt confident about their abilities to engage students with technology, students' self-reported engagement is low based on their lack of enjoyment and interest in using technology in their classwork. These juxtapositions reiterate the overarching theme from the SY 16-17 report that while progress has been made, more needs to be done towards successful technology integration in the district.
- This evaluation indicates that a significant barrier to technology integration in the district is student access to technology. Only half of teachers feel that students have adequate access to technology in their classroom. As reported last year, barriers to the one-to-one iPad model created difficulties for teachers attempting to adopt new instructional techniques using the technology. The district has moved toward a BYOD model to address the issue of lost and broken iPads. The hope is that by allowing students to bring their own device to class teachers will be able to more consistently rely on students to have a device and will be more willing to integrate technology into the curriculum. However, teachers reported that they still cannot rely on all students to have

functioning devices in the classroom and therefore they are still resistant to use it. When students bring phones to class it presents difficulties because not all apps function on the phones and they cannot use the phones to type anything of length. In addition, the BYOD model assumes that all students have access to appropriate devices that will function not only at school but also at home. This is not true for many of the low-income students in the district who do not have access to internet at home. Students identified barriers to using technology at Parkrose HS. These included iPads being cumbersome, distracting, and not as desirable to use as computers, and that they preferred traditional classroom activities such as lectures by teachers. Teachers reiterated that they would benefit greatly from class sets of iPads or, preferably, Chromebooks. This is a potential solution to both the problem of lack of access to technology in the classroom and student distaste for the iPads.

- Another theme that carried over from last year is that students' opinions about using technology in their classwork were largely neutral or negative. It is very important to point out the low response rate on the student survey during SY 17-18 of the grant and to keep this in mind when interpreting student survey data. Only about a quarter of students participating in the survey reported that they enjoyed using technology. Most students felt they learned about the same amount whether they used technology or not; however, just about half of students said they would like about the same amount of technology to be used next year as was used this year, and that they would prefer to complete an assignment using technology versus not using it. This indicates mixed opinions; while students' enjoyment of technology and their interest in using it is reportedly low, students do have some level of buy-in, albeit minimal, for using technology. Students most commonly felt they learned the most from lectures/presentations by the teacher, and they were most interested in reading, working alone, doing small group work, or watching films. Using an iPad was rated low in terms of being an activity that stimulated learning and captured their interest. This points to a need for teachers to work on increasing student enjoyment of technology and interest in classwork using technology, as they continue to work on making technology a more integrated and beneficial part of class.

Project Summary

Reynolds School District's (RSD) MHCRC TechSmart grant focuses on improving student achievement in 8th grade math, 9th grade credit attainment, and English learners' progress. RSD chose to focus on these outcomes because in the 2013–14 school year 44% of its students were English language learners, less than half of students completing their first year of high school were on track to graduate (earning six or more credits), and math was the course most frequently failed. RSD is using the TechSmart grant for middle and high school math classroom technology and related teacher professional development (PD).

District administrators implemented a staggered-rollout strategy where they will onboard a cohort of math teachers every school year for the first three years of the grant, so that by Year 4 (SY 18-19) the district has full implementation of technology-rich math curriculum across all middle schools and 9th grade students at the high school. In addition, RSD's grant helps fund technology for the Project Lead the Way curriculum, a STEM-based, nationwide education program being offered to 7th through 9th grade students as an elective course to increase student engagement in math and science.

RSD completed its third year of project implementation in School Year 17-18 (SY 17-18). Nine of the Cohort 1 teachers who began implementation in SY 15-16 continued during SY 17-18. Thirteen of the Cohort 2 teachers who began implementation in SY 16-17 continued implementation during SY 17-18. A third cohort of ten teachers began implementation in SY 17-18. This report breaks down reporting for Cohort 1 and Cohort 2 teachers where relevant, given the different levels of exposure to the technology and PD. Cohort 3 is included only where there is sufficient data, as noted below. Math teachers received teacher and student technology devices including Microsoft Surface Pros (teachers), short throw projectors, Dell Venues (students), and 3D printers. In addition to receiving the devices, the math teacher cohort participated in PD sessions in the summer prior to the school year and throughout the year that focused on using technology to support math education and English language development.

Methods

A general description of the methods included in the TechSmart evaluation are included in the introduction to the full report. Data collection efforts for the SY 17-18 evaluation in RSD are summarized below.

Teacher Survey

PRE designed a survey that was administered online to teachers twice during SY 17-18, in September of 2017 and April of 2018. The IT TOSA administered the surveys. Thirty-five teachers (11 Cohort 1, 16 Cohort 2, and 8 Cohort 3) completed the baseline survey; 18 teachers (8 Cohort 1, 8 Cohort 2, and 2 Cohort 3) completed the year-end survey. Because of a small response rate from Cohort 3 on the year-end survey, there is not sufficient survey data to include teachers from Cohort 3 in this report's quantitative graphs and tables; however, qualitative data from Cohort 3 teacher interviews and the write-in portion of the surveys is included in this report.

Teacher Interviews

PRE conducted phone interviews with five teachers involved in the TechSmart grant in Reynolds School District. Three of these teachers were part of Cohort 1 and in their third year of implementation, one was

part of Cohort 2 and in their second year of implementation, and one was in Cohort 3 and in their first year of implementation.

District Leader Interviews

PRE conducted interviews in spring 2018 with four leaders including the Director of Secondary Education, the Project Lead, the IT TOSA, the Reynolds High School Assistant principal, and the Reynolds Middle School Principal.

Student Surveys

Staff members administered the student survey online in May 2018. The survey was distributed to students who were participating in classes taught by one of the teachers in the TechSmart math cohorts, and 810 students completed it. Table 1 shows the grade levels of students who completed the survey.

Table 1. Reynolds Student Survey Responses

Grade	n	% of total responses
6th	296	36.5%
7th	270	33.3%
8th	126	15.6%
9th	35	4.3%
10th	67	8.3%
11th	10	1.2%
12th	6	0.7%

Leadership Rubric

The leadership rubric was completed by two principals and the IT TOSA in Reynolds School District.

Reynolds Walk Through Tool

RSD developed a district specific walk-through tool for the evaluation of their TechSmart grant and shared this data with PRE for inclusion in the SY 17-18 evaluation report. District administrators completed 10 observations for Cohort 1 teachers and 6 observations for Cohort 2 teachers. This is a significantly lower amount of observations complete din SY 16-17 (26 for Cohort 1 and 47 for Cohort 2). A copy of this tool can be found in Appendix G.

Student Achievement Data

In order to examine the impact of the TechSmart grant investment in Reynolds School District, comparative analyses were conducted using a historical Comparison Group. A concurrent comparison group was not created for Reynolds because over the course of the grant, students may move in and out of TechSmart teacher classrooms. The Treatment Cohorts are made up 6th grade student cohorts who had TechSmart math teachers during SY 15-16 (Cohort 1) and SY 16-17 (Cohort 2). The historical Comparison Group is all RSD 6th graders during the 2012-13 school year. The historical Comparison Group started in 2012-13 because the student information system at RSD changed this year and data are not available for the 2011-12 school year. Thus, the Comparison Group will overlap by one year with grant implementation. The table below presents the number of students in our Treatment and historical Comparison Groups by year. The results presented in this report compare two cohorts of 6th grade TechSmart students to all 6th grade students from the 2012-13 school year. Data were available for Cohort

1 students for their 6th, 7th, and 8th grade years. Data were available for Cohort 2 students for their 6th and 7th grade years.

Table 2. Treatment and Historical Comparison Group Sample Size

Cohort 1		Cohort 2		Historical Comparison Group	
Year	**N**	**Year**	**N**	**Year**	**N**
2015-16 (6th)	163	2016-17 (6th)	628	2012-13 (6th)	754
2016-17 (7th)	149	2017-18 (7th)	552	2013-14 (7th)	754
2017-18 (8th)	125	2018-10 (8th)	N/A	2014-15 (8th)	666

Figure 1 below presents the at-risk indicators for the Treatment and historical Comparison Groups of students at RSD. Overall, there were a higher percentage of Cohort 1 and Cohort 2 students identified as students of color relative to the historical Comparison Group. There were fewer LEP and SPED students in Cohort 1 and Cohort 2 compared to the historical Comparison Group.

Figure 1. Reynolds School District At-Risk Indicators

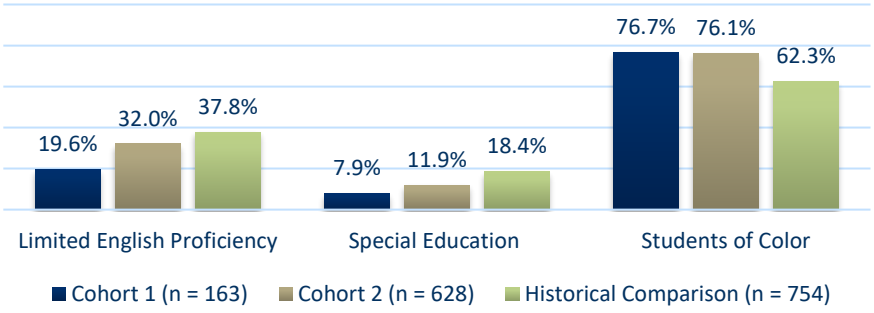
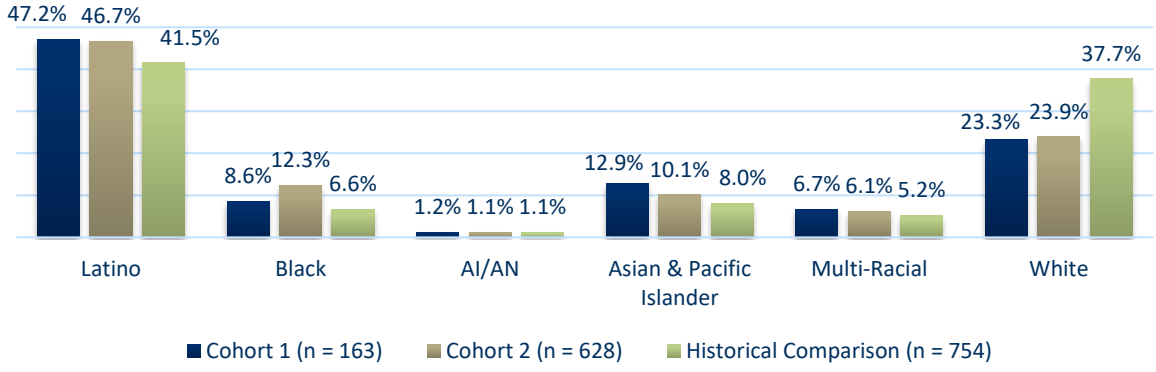


Figure 2 below provides a summary of the breakdown of student race/ethnicity in the Treatment and historical Comparison Groups and shows a higher proportion of white students in the historical Comparison Group relative to the Treatment Cohorts.

Figure 2. Reynolds School District Race/Ethnicity



Findings

The evaluation findings from the SY 17-18 evaluation at Reynolds School District are presented below and organized by the seven factors identified as essential for schools to effectively transform into technology-rich teaching and learning environments.

Teaching Effectiveness

Districts support regular, inclusive and shared professional development among teachers.

The TechSmart professional development (PD) activities had several different components during the third year of implementation as highlighted in the mid-year status report. In SY 16-17, Reynolds had to cut their IT TOSA from full-time to half-time. In SY 17-18, however, Reynolds restored their full-time IT TOSA, enabling him to dedicate his attention to supporting Cohort 3 teachers along with cohorts 1 and 2. Despite sparse survey data from Cohort 3 teachers, the mid-year report indicates that the integration of Cohort 3 into the TechSmart grant has been more successful than anticipated, and Cohort 3 teachers appear to be using the technology as frequently as Cohort 1 and 2. The mid-year report offers that Cohort 3 teacher engagement is higher than anticipated both because cohorts 1 and 2 have already problem-solved many of the issues initially faced by new teachers, and because the enthusiasm of cohorts 1 and 2 has encouraged Cohort 3 teachers to utilize the technology fully.

Lab cycles are described as a cornerstone of teacher PD for RSD's TechSmart project, as outlined in the mid-year status report. The 11 new teachers in Cohort 3 participated in a lab cycle launch and orientation in August 2017 with the IT TOSA. Notably, some Cohort 3 teachers had attended lab cycles before they officially began participation in the grant, allowing them to advance their lab cycle more rapidly than teachers for whom the process was brand-new. All three cohorts participated in one full lab cycle in November 2017, and two additional lab cycles were scheduled for February and April 2018. Aiding in the lab cycles is a district PD administrator who provides support specifically in lab cycle work for English language development. As indicated in the mid-year status report, teachers are helping to facilitate these lab cycles. A key component of lab cycles is the classroom observation portion, wherein teachers lead instruction to a group of students who are not their own, as outlined in the mid-year status report. This allows the observing teachers to watch the students and collect "data on type, frequency, and depth of student dialogue about math. After the student observation, teachers reconvene to compare their analyses and co-plan lessons that leverage the areas of student strengths and fill gaps in the student math-based dialogues". In this way, the lab cycles help teachers build the skills necessary to use real-time data to differentiate learning in the classroom. The mid-year status report points out: "through practice and repetition, teachers are better calibrating their observations which in turn, better inform the reflections on the lessons as well as address instructional gaps for student talk and learning". Teachers across all three cohorts shared their positive impressions of the lab cycles during their interviews. One Cohort 1 teacher commented "It's been a really awesome year. As far as engagement and excitement, it's pretty cool to see all the teachers coming together and working together on something. It's pretty awesome to watch. The lab cycles have been great for us, so it's been a really effective use of our time. I think this year more than any other everybody's a part of it. It has a lot of meaning behind it for everybody". Teachers also

collaborated across grade levels and buildings through monthly late start meetings, led both by the IT TOSA and by participating teachers.

Individual PD sessions in addition to lab cycles and late starts were offered by the IT TOSA as described in the mid-year status report. The IT TOSA attempted to push-in to every teacher's class weekly, and is at each building at least one day per week. These one-on-one meetings were driven by teacher needs. Teachers can request individualized support through an online calendaring system or by reaching out directly to the IT TOSA via email, text, and phone call. Some teachers reported a preference for individualized PD because they were able to learn things more tailored to their own individual needs. One Cohort 2 teacher explained:

> *The group PD we get from our IT TOSA is really general and sporadic. And so what has been more helpful is just asking him what we specifically need as individuals. The way our PD is, cohort one, two, and three are all together for our monthly meetings. And I know Gary shows us a lot of different resources that we can use, but sometimes I still need to know the foundational stuff, like what's the best way to roll out technology. Those kinds of things that a lot teachers, including myself, are still like trying to tweak. Very basic foundational stuff would be super useful.*

Many teachers emphasized that they had to take initiative in order to take full advantage of individualized PD from their IT TOSA. Most teachers saw the IT TOSA as being readily available, particularly now that his position has been restored to full-time; however, some teachers felt that they had to take the responsibility to initiate individual PD.

Several teachers described how they have received PD from other teachers. Specifically, several of the Cohort 3 teachers commented on how the Cohort 1 and Cohort 2 teachers have been a source of mentoring support for the technology integration, which is how the grant was designed. One Cohort 1 teacher said "I do a fair amount of coaching with the technology, since this is my third year with it. I know quite a bit about the ins and outs of everything. So I hope to help other teachers understand what they can do". It was consistently reported that the onboarding of Cohort 2 and Cohort 3 teachers was more successful than originally anticipated. An administrator commented,

> *At this stage now, as we are three years in, one change that I think we predicted where actually the reverse has transpired was as we recruited the first cohort of teachers, we believed that they were going to be ready and willing. And we anticipated the second cohort was going to be apprehensive, but agreeable. And then we anticipated the cohort three teachers were going to be more resistant and unwilling. Instead, after the first year where those early adopters worked through the challenges and demonstrated patience and perseverance, cohorts two and three are coming along because they are seeing that their colleagues, as well as the*

students of their colleagues, are increasing their engagement and attendance, and willingness to do something differently and better.

Table 3 and Table 4 summarize the amount of group and individual PD that teachers in each cohort received by the end of the school year. The year-end survey data show that all of the teachers in cohorts 1 and 2 reported receiving at least nine hours of group PD.

Table 3. Reynolds School District Hours of Group PD

Hours of Group PD	Cohort 1 (n = 8) End of Year Survey	Cohort 2 (n = 8) End of Year Survey
0 hours	0.0%	0.0%
1-8 hours	25.0%	0.0%
9-16 hours	12.5%	37.5%
17-32 hours	25.0%	50.0%
33+ hours	37.5%	12.5%

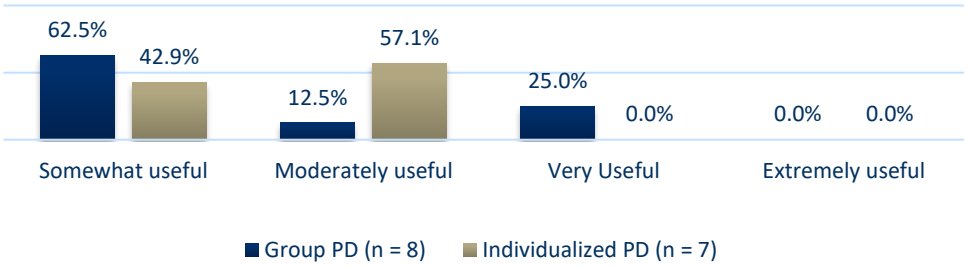
Table 4 shows that half of Cohort 2 teachers and 75.0% of Cohort 1 teachers received 1-8 hours of individualized PD. A quarter of Cohort 2 teachers received between 9-16 hours of individual PD.

Table 4. Reynolds School District Hours of Individualized PD

Hours of Individualized PD	Cohort 1 (n = 8) End of Year Survey	Cohort 2 (n = 8) End of Year Survey
0 hours	12.5%	25.0%
1-8 hours	75.0%	50.0%
9-16 hours	12.5%	25.0%
17-32 hours	0.0%	0.0%
33+ hours	0.0%	0.0%

Teachers rated the usefulness of the group and individual PD at RSD, as illustrated by Figures 3 and 4. A hundred percent (100%) of Cohort 1 teachers found individualized PD to be moderately or somewhat useful. Twenty-five percent of Cohort 1 teachers found group PD to be very useful.

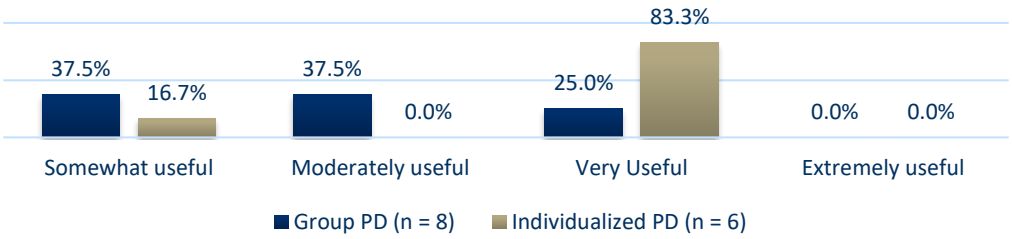
Figure 3. Reynolds School District End of Year Teacher Ratings of PD Usefulness - Cohort 1



Cohort 2 teachers rated the individualized PD notably higher than Cohort 1 teachers with 83.3% reporting it was very useful. This is likely related to the fact that a higher percentage of Cohort 2 teachers were

utilizing the individual PD. A higher percentage of Cohort 2 teachers, rated group PD as moderately or very useful (62.5%).

Figure 4. Reynolds School District End of Year Teacher Ratings of PD Usefulness - Cohort 2



How is the professional development impacting teacher instruction?

Section Highlights:

This evaluation question includes the following outcomes: 1) PD has helped teachers increase the use of technology for evidence-based instructional practices, 2) PD has helped teachers use technology to analyze and use data about student learning, and 3) PD has helped teachers use technology to differentiate instruction. Almost two-thirds of Cohort 1 teachers are using technology to support these aspects of instruction which is slightly lower than indicated by responses from the Cohort 1 post-survey during the SY 16-17 evaluation. This may be due to the fact that Cohort 1 teachers were receiving less direct PD and helping more to support PD efforts in SY 17-18. There was also a drop from SY 16-17 to SY 17-18 of 83.3% to 75.0% in the percentage of Cohort 1 teachers who rated their technology skill level at a 4 or 5 which is not expected after three years of implementation. The percentage of Cohort 2 teachers who reported that the PD has impacted these elements of their instruction decreased over the course of 17-18 and 75% rated technology skill level at a level 4 or 5. Increased survey responses would allow PRE to more reliably assess this change for both Cohort 1 and Cohort 2.

The teacher survey asked how effective the PD model has been in impacting teacher instruction. While some Cohort 1 teachers had a positive opinion of the PD model, others were not completely satisfied (see Table 5).

Table 5. Effectiveness of the PD Model at Reynolds - Cohort 1

"It has been moderately successful. I am interested in looking for ways to facilitate my students' use of technology outside of the classroom."
"It has been great."
"I have jumped on board and have made significant changes in my instruction. I would like more time to work with other staff members willing and wanting to work toward technology use in the classroom."
"Quite helpful, I did notes on it and found that to be helpful."
"The professional development has been poor."
"Not that effective."

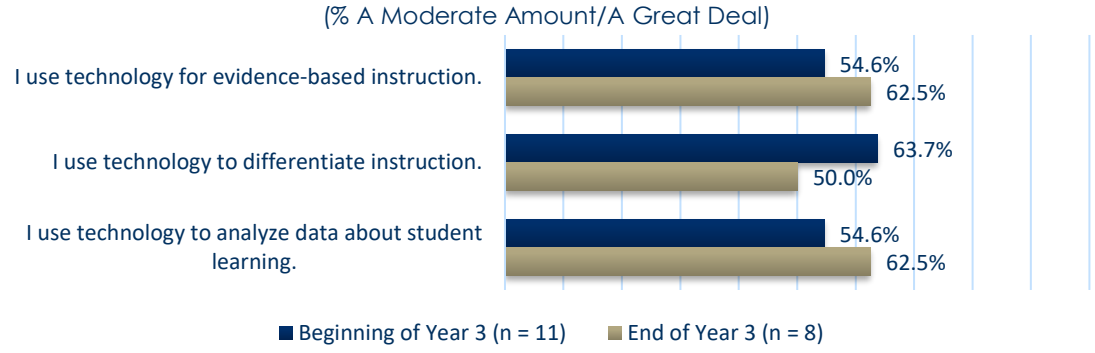
Cohort 2 teachers appeared more satisfied with the PD model, particularly in its ability to connect them to other teachers and provide them with new ideas, as shown in the sample of quotes included in Table 6 below.

Table 6. Effectiveness of the PD Model at Reynolds - Cohort 2

"It has been very helpful in showing me new ways of doing things and introducing me to application and websites that I would have never known about."
"When I meet with other teachers we share useful apps and ways of integrating more technology into our lessons."
"It has been consistently useful, as new programs come online and are introduced by the Tech TOSA I have been able to implement several ideas that I would not have found otherwise."
"It was effective to some extent, but providing specific ideas, based on teacher suggestions for technology based resources, while providing time to practice is most helpful to me."
"The professional development is way too much time out of the classroom each year. Being outside of the classroom 3.5 days each year is detrimental to the students' learning and continuity."

The survey asked teachers to describe the extent to which the PD increased their use of technology for evidence-based instruction, differentiating instruction, and analyzing and using data about student learning. The results are presented below for Cohort 1 and Cohort 2 in Figure 5 and Figure 6, respectively. Figure 5 shows that almost two-thirds of Cohort 1 teachers are using technology to support evidence-based instruction and to analyze data about student learning, up from just over half of teachers doing so at the beginning of SY 17-18. However, the year-end survey indicates that there was a 13.7% decrease in teachers who used technology to differentiate instruction either a moderate amount or a great deal. In general, teachers reported using technology slightly less by the end of SY 17-18 compared to the end of SY 16-17.

Figure 5. Reynolds School District Instructional Technology Use - Cohort 1

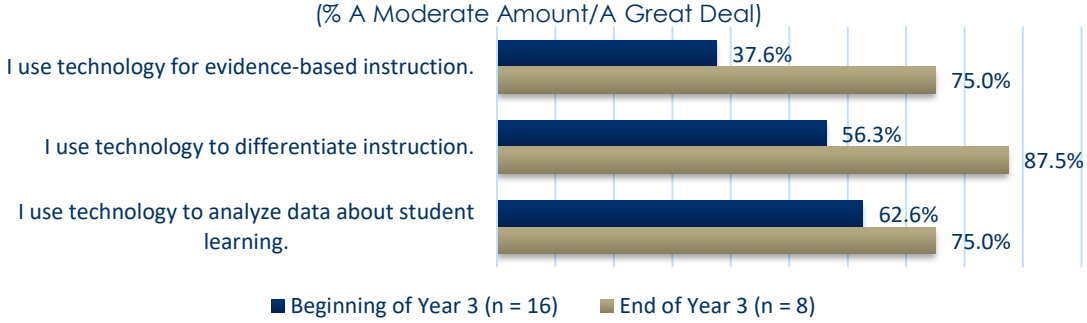


Cohort 2 teachers showed large percentage point gains over the course of their second year of implementation. By the end of SY 17-18, seventy-five percent (75%) of Cohort 2 teachers were using

technology to support evidence-based instruction and to analyze data about student learning, and 87.5% were using technology to differentiate instruction, as seen in Figure 6 below.

Figure 6. Reynolds School District Instructional Technology Use - Cohort 2

(% A Moderate Amount/A Great Deal)



Teachers reported their technology skill level on the beginning-of-year and end-of-year surveys by rating themselves at one of the following five levels:

Level 1: I get someone else to do technology-based tasks for me.

Level 2: I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.

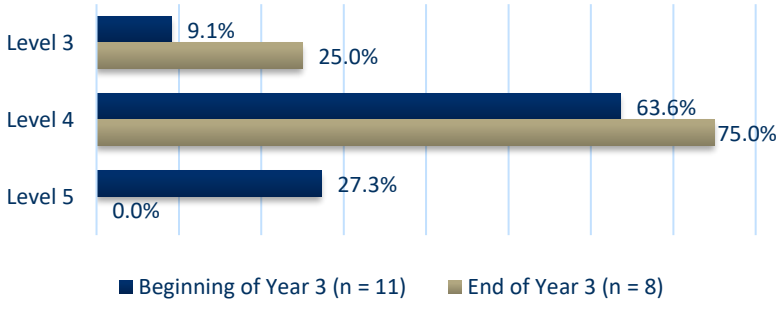
Level 3: I have enough skills to complete the management and communication tasks expected of me and occasionally will choose to use technology to accomplish something I choose.

Level 4: I use a variety of technology tools and I use them efficiently for all aspects of my job.

Level 5: I use technology efficiently, effectively, and in creative ways to accomplish my job.

As illustrated in Figure 7, by the end of their third year of implementation, 75.0% of Cohort 1 teachers rated themselves at a Level 4, while no teachers rated themselves at a Level 5. This was a decrease from SY 16-17 where 83.3% of Cohort 1 teachers rated themselves at a Level 4 or 5.

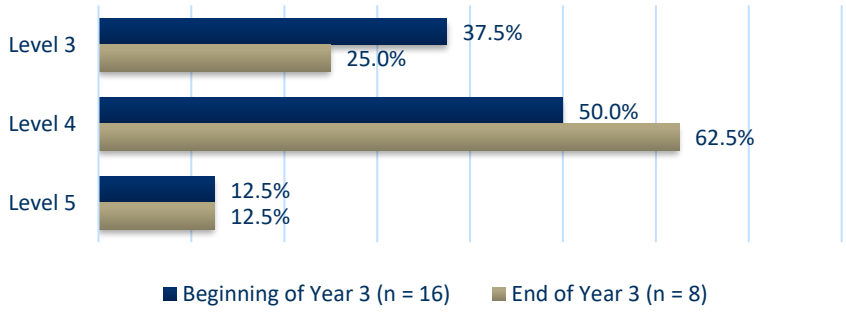
Figure 7. Reynolds School District Teachers' Technology Skill Level - Cohort 1



Cohort 2 teachers' skill levels appear to have increased throughout SY 17-18. By the end of their first year of implementation, 75.0% of Cohort 2 teachers rated their technology skill at a level 4 or 5 and no teachers rated their skill at a level 1 or level 2 (see Figure 8). When interpreting this graph note that the

amount of teachers responding to this survey item decreased by half from the beginning to end of the year.

Figure 8. Reynolds School District Teachers' Technology Skill Level - Cohort 2



What new instructional strategies are teachers reporting?

Section Highlights:

After three years of implementation, teachers are reporting the use of several devices and applications to support instruction and most commonly report using technology to support classroom planning and preparation and to engage students. Evaluation results also show that instructional strategies are emerging at RSD. The most common instructional strategy noted by both Cohort 1 and Cohort 2 teachers is the use of technology to differentiate instruction. Instructional supports identified by teachers in SY 17-18 showed less of a trend towards instructional strategies than we saw in the SY 16-17 evaluation. Specifically, Cohort 2 teachers commented on the use of tools like OneNote and Schoology to communicate with students and given immediate feedback.

Math teachers were asked to provide examples of instructional strategies that they believed had been effective in their classroom instruction and rate the strategies on a scale of one to five, with five being the most effective. The ways in which Cohort 1 teachers are using technology to support instruction are shown in Table 7 below. Cohort 1 teachers most commonly reported using technology to differentiate instruction and utilizing the Kahoot application.

Table 7. How New Technology is Being Used for Instruction – Cohort 1

Instructional Supports	Effectiveness Rating End of Year
Differentiating Instruction	**3.75** (n = 4)
Kahoot	**4.00** (n = 2)
Using Technology Tools Effectively	**3.50** (n = 2)
Keeping Software and Hardware up to Date	**1.00** (n = 2)
Formative Assessments	**5.00** (n = 1)
Helping Students Communicate Understanding	**4.00** (n = 1)
XtraMath to Teach Basic Skills	**3.00** (n = 1)
Hands-on Activities	**3.00** (n = 1)
Access to a Secure Browser for Testing	**1.00** (n = 1)

Cohort 2 teachers most commonly reported method of utilizing technology for instruction was Schoology, followed by using it for group practice and group activities. See Table 8 below for instructional supports most commonly reported by Cohort 2 and their effectiveness ratings on the year-end survey.

Table 8. How New Technology is Being Used for Instruction – Cohort 2

Instructional Supports	Effectiveness Rating End of Year
Schoology	**4.00** (n = 3)
Group Practice	**4.00** (n = 2)
Group Activities	**4.50** (n = 2)
Differentiating Instruction	**4.00** (n = 1)
Research	**5.00** (n = 1)
OneNote	**4.00** (n = 1)
Khan Academy	**4.00** (n = 1)
Kahoot to Create Quizzes	**3.00** (n = 1)
Providing Immediate Feedback	**5.00** (n = 1)
Allowing Students to Revise Work	**5.00** (n = 1)

Teachers were asked to self-assess their use of technology to support instruction using a rubric on the year-end survey. Relevant leaders (principals and the IT TOSA) were asked to complete the same rubric "thinking about their TechSmart teachers as a whole" following their leadership interview in the spring. The leadership rubric was completed by two principals and one IT TOSA in RSD.

Table 9 presents results from the rubric designed to rate the use of technology to support instruction. Aggregate teacher self-ratings for the rubric as well as the aggregate ratings from three RSD leaders who provided ratings thinking about "TechSmart teachers as a whole" are presented below. Cohort 1 and Cohort 2 teachers rated themselves highest in the areas of using technology to support engaging students in learning, demonstrating flexibility and responsiveness, and using technology to support planning and preparation. The principals and IT TOSA rated teachers highest in using technology for planning and preparation, communicating with students, engaging students in learning, and using assessment in instruction.

Table 9. Technology Used for Supporting Instructional Practices

(1 = Not At All, 2 = Very Little, 3 = Somewhat, 4 = To a Great Extent)

	Teacher Survey: Cohort 1 (n = 8)	Teacher Survey: Cohort 2 (n = 8)	Leadership Rubric Survey (n = 3)
Planning and Preparation	3.13	3.75	4.00
Managing Classroom Procedures	2.50	3.00	3.67
Organizing Physical Space	2.13	2.75	3.67
Communicating with Students	2.38	3.13	4.00
Using Questioning and Discussion Techniques	2.50	2.88	3.00
Engaging Students in Learning	3.13	3.75	4.00
Using Assessment in Instruction	2.88	3.38	4.00
Demonstrating Flexibility and Responsiveness	3.00	3.13	3.67

In the rubric, principals provided specific examples of how teachers are using technology to support new instructional practices in these areas. For example, one principal explained,

> *Many of our teachers have used technology to create a flipped classroom in which the students review lessons and instruction at home as a part of homework and preparation for the next day. Teachers are then using class time to engage with students about their learning and early observations. This allows teachers and students to dive deeper into content.*

Similarly to last year, leadership also commented on how teachers have used technology to support instruction for at-risk subgroups (i.e., students of color, ELL, SPED, and low SES) in these areas of instruction. The director of secondary education explained,

> *Students interact with each other and have opportunities to model and share their ideas. And that helps support language development. It gives practice and opportunities for our ELL students in the classroom to practice the technical language of math. It gives them an opportunity to hear information from the teacher and to learn and gather information from other students. And it gives them the opportunity and the confidence to practice the language*

In our interviews, teachers shared the ways they are integrating new instructional strategies into their classroom using technology. While some teachers reported using technology mainly as a means of substitution for more traditional instructional strategies, other teachers had used technology to completely change the way their classroom looks and functions. For example, one Cohort 1 teacher described their blended classroom, explaining that instead of lecturing in class, the students watch recorded lessons on Schoology on their own time, and use class time to collaborate with each other and work one-on-one or in groups with their teacher. Another Cohort 1 teacher said the following when asked how their classroom instruction looks different now compared to before the grant:

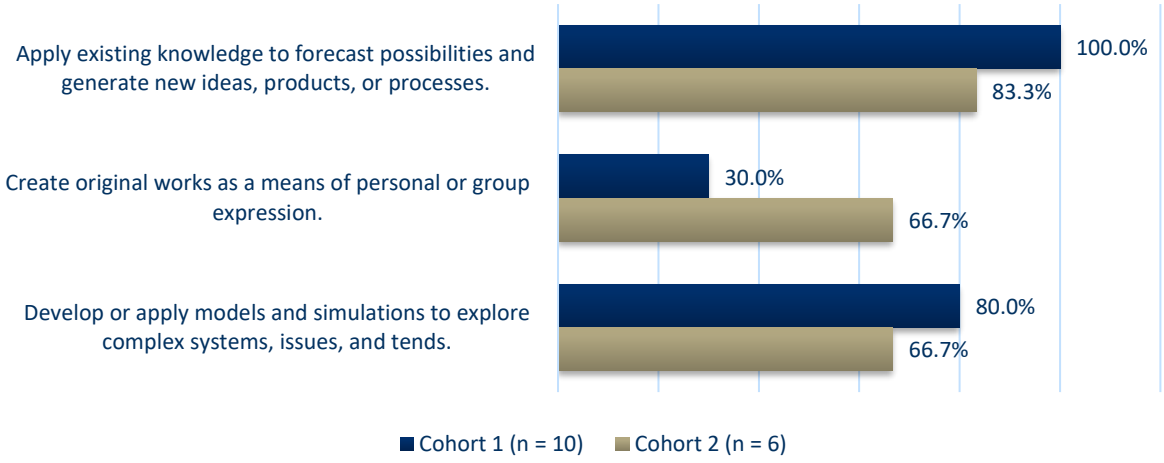
> *It's different in the sense that the students have access to different tools, and there's different ways that the students can be engaged with the tech, so the way I interact with them is a little different now, just because of what they're using, and it sort of frees me up to circulate around and check in with them sometimes. Or keep in touch with them on a digital platform.*

Reynolds Walk-through Data

Content from the RSD walk-through tool that is relevant to this evaluation is presented below by cohort. Observers were asked to mark all that apply when conducting the observation and if none of the items were observed during a classroom visit, they marked "not observed".

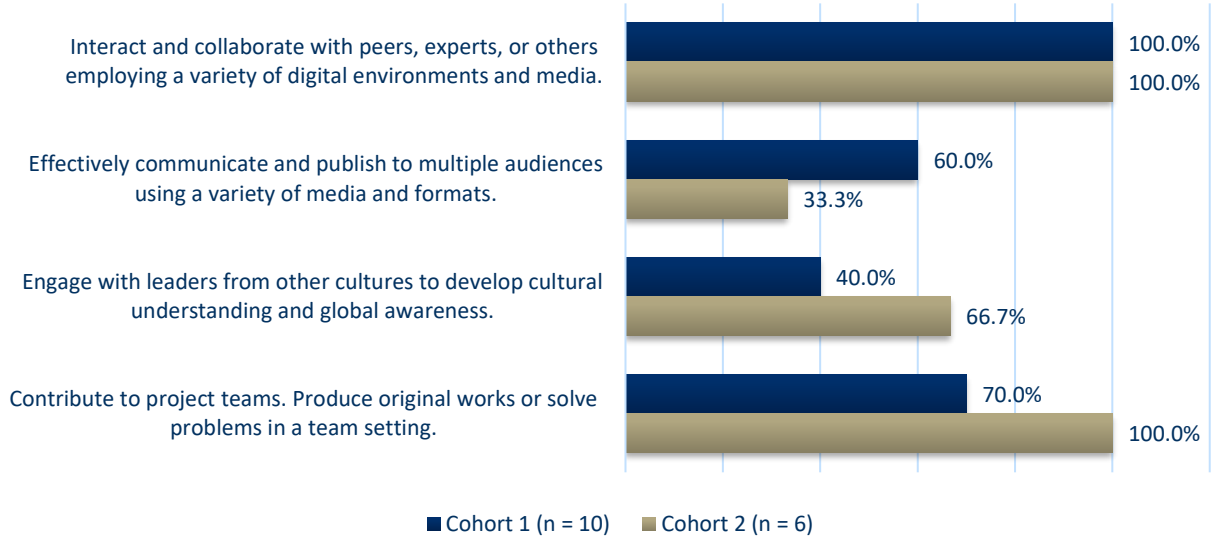
Observers were first asked to report whether there was evidence of educational technology use within the classrooms and 100% reported 'yes' for both Cohort 1 (n = 10) and Cohort 2 (n = 6). All of Cohort 1 classrooms and Cohort 2 classrooms had students interacting and collaborating with peers, experts, or others employing a variety of digital environments and media (100.0%) Observers also recorded whether they saw students select and apply digital tools to gather, evaluate, validate, and use information. Observers reported that in 100.0% of Cohort 1 and Cohort 2 classrooms students evaluate and select information sources and digital tools based on the appropriateness to specific tasks. Finally, observers noted whether students appeared to understand ethical issues related to digital technology. In 90% of Cohort 1 classroom observations and 100.0% of Cohort 2 classrooms, there was evidence of advocating and practicing safe, legal, and responsible use of information and digital technology. Figures 9-14 below provide a detailed summary of observation data by cohort.

Figure 9. Students Demonstrate Creative Thinking and Problem Solving Skills in Mathematics to Innovative Products and Processes Using (Digital) Technology



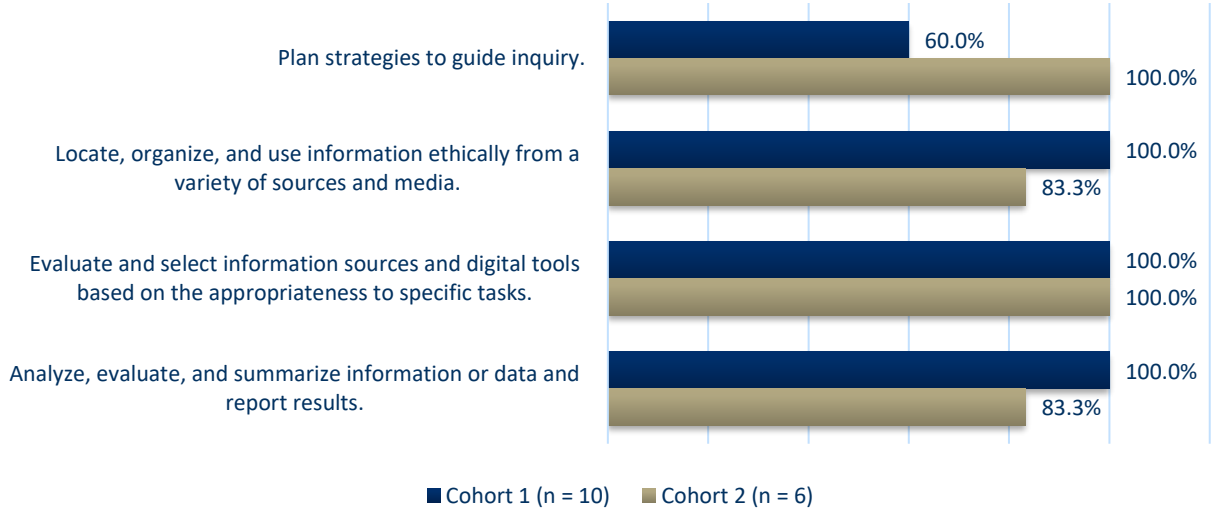
*Observers were asked to check all that apply

Figure 10. Students use Digital Media and Environments to Communicate and Work Collaboratively, Across the Global Community, to Support Individual Learning and Contribute to the Learning of Others



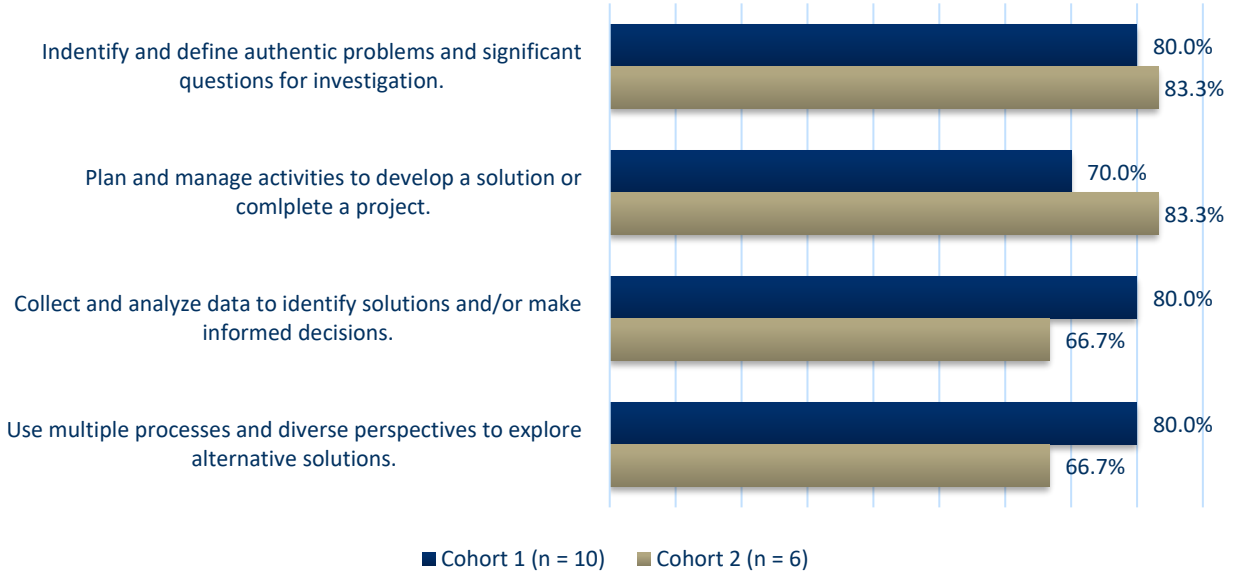
*Observers were asked to check all that apply

Figure 11. Students Select and Apply Digital Tools to Gather, Evaluate, Validate, and Use Information



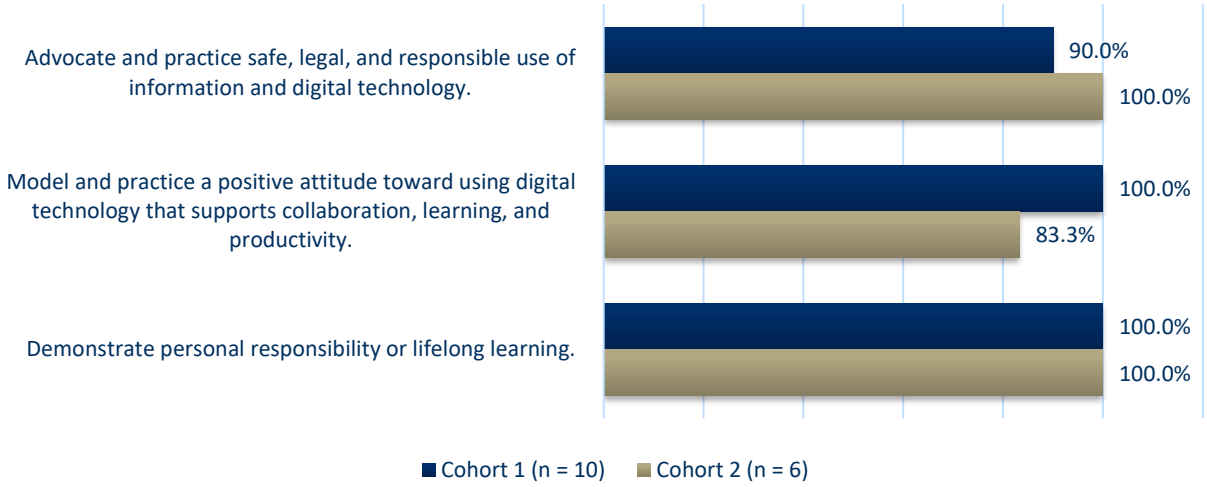
*Observers were asked to check all that apply

Figure 12. Students Use Critical Thinking Skills to Plan and Conduct Research, Manage Projects, Solve Problems, and Make Informed Decisions Using Appropriate Digital Tools and Resources



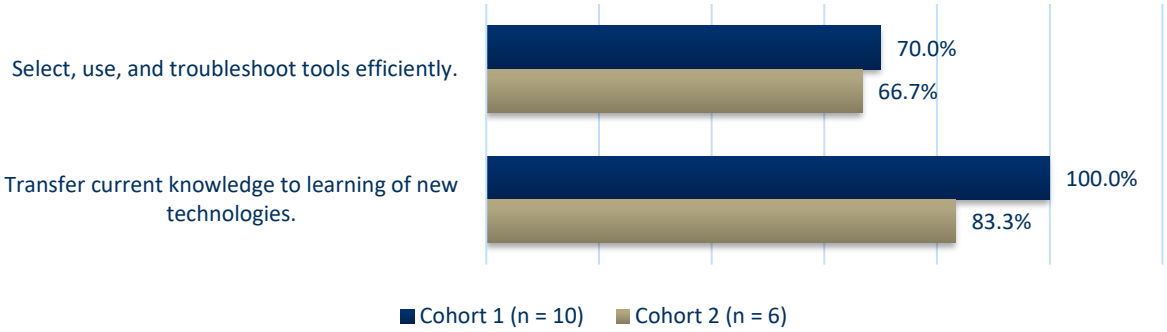
*Observers were asked to check all that apply

Figure 13. Students Understand Issues Related to Digital Technology and Practice Legal, Ethical, and Responsible Behavior



*Observers were asked to check all that apply

Figure 14. Students Utilize Technology Concepts and Tools to Learn



*Observers were asked to check all that apply

In terms of the teachers' instruction, observers reported that 100.0% of Cohort 1 and Cohort 2 teachers are providing feedback and communicating with students digitally. Similarly, 100.0% of Cohort 1 and Cohort 2 teachers have students engaging in content through technology.

Observers recorded specific digital tools being used in the classroom by students. In both cohorts, the tool most commonly noted was student computers, followed by the projector and Schoology (See Table 10). Student of Cohort 1 teachers also showed evidence of using online video lessons (70.0%), OneDrive (70.0%), Online/Digital Collaboration (70.0%) and survey/polling apps and websites (60.0%). Beyond student computers, the projector, and Schoology students of Cohort 2 teachers were most commonly observed using OneDrive (83.3%) and online/digital collaboration (66.7%).

Table 10. There is Evidence that the Following is Used in the Classroom by Students

Digital Tool	Cohort 1 Observations (n = 10)	Cohort 2 Observations (n = 6)
Projector	100.0%	83.3%
Student Computers (Dell Venue Pro 10)	100.0%	100.0%
Schoology	90.0%	83.3%
Mobile Devices	30.0%	33.3%
OneNote	40.0%	33.3%
Student Use of Active Stylus	50.0%	50.0%
Online Video Lessons (Khan Academy, Discovery Ed, Teachertube, etc.)	70.0%	50.0%
OneDrive (Cloud Storage)	70.0%	83.3%
Online/Digital Collaboration	70.0%	66.7%
Survey/Polling Apps and Websites (Socrative, etc.)	60.0%	33.3%
Word	10.0%	33.3%
Other (Weebly, myhrw.com, Desmos)	0.0%	0.0%
Excel	0.0%	0.0%

Mirroring the SY 16-17 year-end status report, the SY 17-18 mid-year status report described in detail how the district is continuously working to overcome the barrier of student access to technology.

Teachers continue to brainstorm possible solutions for students who do not have access to a computer at home. These potential solutions are listed below:

- Ask students if they have a phone or tablet that can get on Wi-Fi (knowing that the majority of our students do). The technology that we have chosen to use in the district is platform agnostic, so that any device capable of accessing the internet is able to support school work.
- Remind students that they can go to the public library. Many have expressed they take their younger siblings to the local library a few times a week after school, as it is a safe place for them to play.
- Ask students if they have a room at their apartments with computers they can use. Many low-income apartments in the area do have this, students just don't make the connection that this is a solution without a reminder.
- Ask students if they ever borrow Wi-Fi from their neighbors on their phone, or an old phone that doesn't have data service, or a tablet.

Additionally, the IT Coordinator has formed a relationship with a local non-profit (Free Geek), working together with them to obtain computers for students to have in their homes.

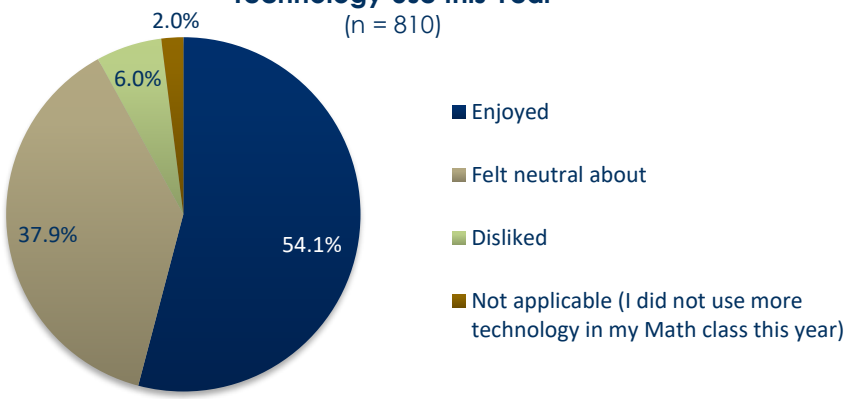
How are the new instructional strategies impacting student engagement?

Section Highlights:

Results from the SY 17-18 evaluation provide evidence that the technology supported instruction is positively impacting student engagement. Student survey results showed that 88 students commented that technology supported instruction is fun or interesting and 103 students commented that it has been helpful for learning.

On the survey, students rated the effect of technology on their classroom engagement. Figure 15 illustrates over half of students (54.1%) enjoyed using more technology in their math class in SY 17-18 which is fairly consistent with the SY 16-17 evaluation (57.3%).

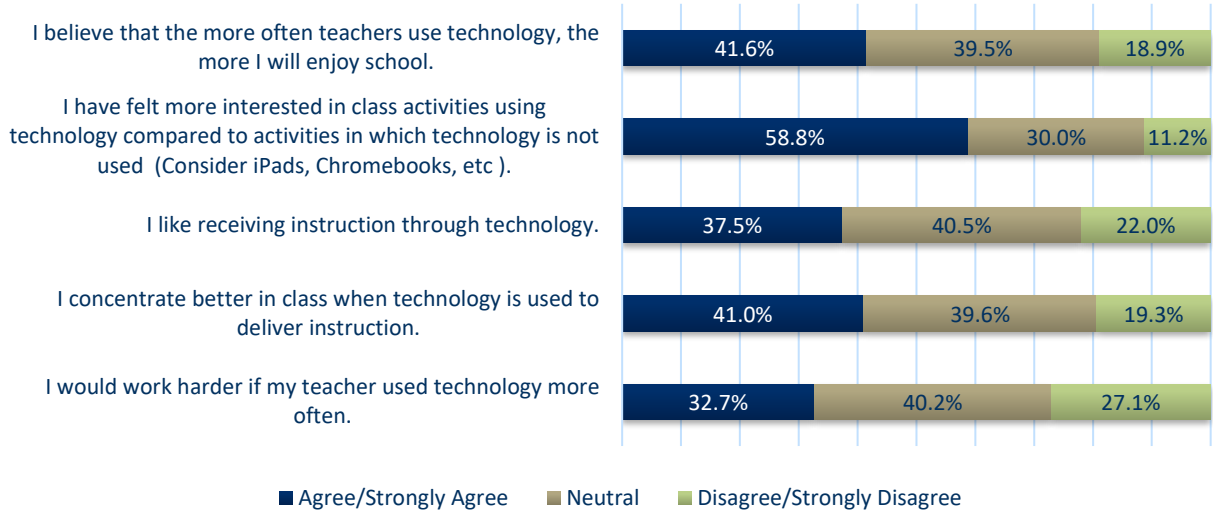
Figure 15. Reynolds School District Students' Feelings about Technology Use this Year
(n = 810)



For the most part, students were either positive or neutral about the impact of technology on their enjoyment and interest in classroom activities, as shown in Figure 16. Similar to the student responses

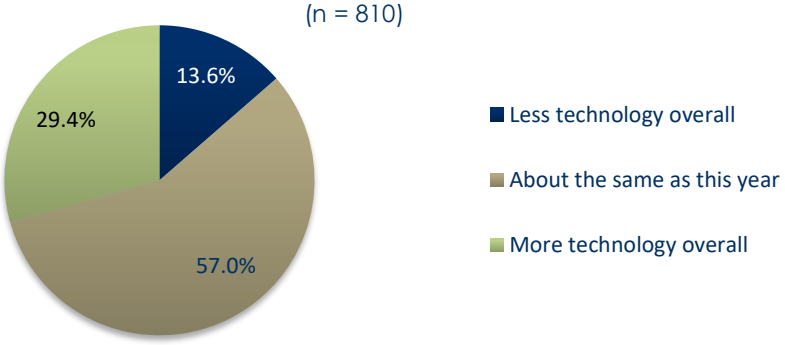
from the SY 16-17 survey, a little less than half of survey respondents reported that the more technology was used, the more they enjoyed school (41.6%), and 58.8% indicated that they have felt more interested in class activities using technology.

Figure 16. Reynolds School District Student Engagement
(n = 810)



More than half of students (57.0%) indicated they would like to see the same amount of technology use in the classroom in the coming year, which provides evidence of student satisfaction with the technology integration in math classes (see Figure 17). Nearly a third of students (29.4%) reported that they would like to see more technology use in the coming year.

Figure 17. Reynolds School District Students' Desire for Technology Use Next Year
(n = 810)



Students described whether their opinions had changed with regard to teachers incorporating more technology into their lessons. Students' opinions were primarily positive, and their comments described how they perceive technology as more enjoyable and interesting. Many students (n=103) reported that technology helps them learn and retain information. Additionally, students reported that they find the technology to be fun and enjoyable, that it helps them focus, that it helps them in research and organization, and that it is convenient and efficient. Table 11 provides a sample of comments related to these five themes.

Table 11. Reynolds Students' Positive Opinions of Technology Integration

Theme	Sample Quotes
Technology is helpful for learning and retention (n = 103)	• *"Technology helped me a lot through the school year and helped me grow a lot."* • *"Technology helps me learn more about math and then I don't have to be getting stuck on my problems."* • *"Computers can help me not forget my math formulas."*
Fun/enjoyable (n = 88)	• *"Technology makes some activities more fun."* • *"Technology like Prodigy, Kahoot, Moby Max, etc. feels like I'm playing a game more than learning, even if I'm doing both."* • *"Using technology made me enjoy the school year."*
Helpful for focusing (n = 30)	• *"When I use technology things become clearer."* • *"When I use laptops it helps me because I listen to music and I can do work and not get distracted by other things."* • *"Technology helps me stay focused in class."*
Helpful for research and organization (n = 17)	• *"Technology helps me in case I need to look for facts in a project."* • *"Computers help to research things related to the subject."* • *"Technology helps me because I don't have to worry about losing work."* • *"It's easier because you can do your work at home if you don't finish it, and you don't have the chance of losing your work."*
More convenient and efficient (n = 60)	• *"On computers you can easily study and find practice problems to work on."* • *"A computer is very easy to use and we already know how to* • *"When I write an assessment using technology it helps me type faster and get it done quickly."* • *"I feel like technology saves time and is efficient."*

Several students expressed negative opinions regarding the technology integration. Specifically, out of students who expressed negative opinions, the majority of them (n = 48) reported preferring previous modes of instruction over technology (i.e., using paper and pencil to take notes and complete assignments). Additional themes included technology inhibiting learning, causing distractions, and being difficult to use. Table 12 provides a sample of comments related to these four themes.

Table 12. Reynolds Student's Negative Opinions of Technology Integration

Theme	Sample Quotes
Prefer previous mode of instruction (n = 48)	• *"I dislike tech based assignment."* • *"I dislike how we have to do homework on the computers, I liked it better when we used paper."* • *"I wish we used less of it because I can usually get work done better on paper."*

Theme	Sample Quotes
Inhibits learning (n = 28)	• *"This year I have lost all focus on my math and I can't seem to learn as much as before."* • *"I have come to dislike it more as it has made my progress in math a whole lot slower. I feel that if a teacher was teaching me the math subject I would be learning more than teaching myself."* • *"Since I have a processing issue, it's better for the teacher to explain things face to face instead of having instructions on the computer."*
Distraction (n = 19)	• *"Technology is distracting and it gives me a headache."* • *"It's terrible, somehow I can't concentrate well."* • *"It distracts a lot of students, usually they aren't on the right website. So, I really don't enjoy it."*
Difficult time using (n = 12)	• *"It takes a long time to search and it slows me down."* • *"Technology is not always consistent and it can tend not to work a lot of times."* • *"Our whole grade is based on technology and it's hard because not everyone has access to computers to do work at home."*

In interviews, teachers described how the majority of their students appear more engaged since the introduction of technology into the classroom. For the most part, teachers reported that using technology comes naturally to their students, which gives them an increased sense of competency in the classroom. Additionally, students generally enjoy using technology, which increases engagement. The IT TOSA said, "I've had probably five teachers confide in me that using the technology has kind of reenergized their teaching. Before they were just doing the same old things. And the teachers said that they feel like this has given them a way to reconnect with students, and that it's reenergized their work".

The RSD leadership echoed the impact of the technology on student engagement. One principal pointed to the way in which technology has enhanced student engagement, and the way that teachers have been able to use the technology as an asset, rather than a barrier to classroom management. The principal noted:

> *We're very purposeful in how we establish how we talk to our students about using technology. As an administrator, I can walk into a classroom right now where they're using the one-to-one provided student device, but they're also using their smartphones. We don't discourage the use of smartphones because a lot of our students are using those smartphones at home and accessing the same software. Not one of the students when I walk into a classroom is texting, using social media, or not engaged in the assignment and that's a really cool thing to see because it's an added resource just like a pen, pencil, or textbook.*

Are the new instructional strategies showing promise for improving academic outcomes?

Section Highlights:

The SY 17-18 evaluation provides evidence that the new instructional strategies are showing promise for improving academic outcomes. Cohort 1 and Cohort 2 TechSmart students had significantly higher math credit attainment in 7th grade and significantly higher cumulative math credits than the historical Comparison Group. It is important to make note of the fact that Cohort 1 TechSmart students had significantly lower math credit attainment in 8th grade than the historical Comparison Group which is not a promising finding and should be explored further in future evaluation efforts.

The Reynolds TechSmart grant focuses on improving student achievement in Math (as measured by 8th grade math state assessment and math credit attainment), 9th grade credit attainment, and English learners' progress. To explore whether instructional practices are showing promise for improving students' credit attainment, PRE examined math and overall credit attainment for the Treatment and historical Comparison Groups. Sixth grade credit attainment data were not available for the historical Comparison Group due to a change in the student information system at the end of the 2011-12 school year.

Math Credit Attainment

Although 6th grade credit data were not available for the historical Comparison Group, Table 13 shows that Cohort 1 TechSmart students had significantly higher math credit attainment in 7th grade, t (901) = 9.27, p <.01 than the historical Comparison Group, and also had significantly higher cumulative math credits by the end of 7th grade, t (901) = 11.91, p <.01.

In 8th grade, Cohort 1 TechSmart students had significantly higher cumulative math credit attainment by 8th grade than the historical Comparison Group, t (789) = -2.78, p <.01 but had a significantly lower credit attainment in their 8th grade year.

Similar to Cohort 1, Table 13 shows that that Cohort 2 TechSmart students had significantly higher math credit attainment in 7th grade, t (1304) = -18.00, p < .001 than the historical Comparison Group, and had significantly higher cumulative math credits by the end of 7th grade, t (1304) = -16.31, p < .01. This provides evidence that the new instructional strategies are showing promise for improving academic outcomes for both TechSmart Cohorts.

Table 13. Math Credit Attainment

Math Credits						
	Cohort 1		**Cohort 2**		**Historical Comparison Group**	
	Attained	**Cumulative**	**Attained**	**Cumulative**	**Attained**	**Cumulative**
6th Grade	1.07 (n = 163)	1.07 (n = 163)	.78 (n = 628)	.78 (n = 628)	N/A	N/A
7th Grade	.92* (n = 149)	1.98* (n = 149)	.97* (n = 552)	2.03* (n = 552)	.56 (n = 754)	1.47 (n = 754)
8th Grade	.69	3.02*	--	--	.95*	2.75

	(n = 125)	(n = 125)			(n = 666)	(n = 666)

* Indicates a significant difference

Overall Credit Attainment

Similar to math credit attainment, Table 14 shows that Cohort 1 TechSmart students earned a significantly higher number of overall credits than the historical Comparison Group in 7th grade, t (901) = 8.76, p <.01. Cohort 1 also had higher 8th grade credit attainment and higher cumulative credits by 8th grade than the historical Comparison Group but these differences were not significant.

Cohort 2 TechSmart students earned a significantly higher number of overall credits than the historical Comparison Group in 7th grade, t (1304) = -27.54, p <.001. Cohort 2 TechSmart students also had significantly higher overall cumulative credits in 7th grade than the historical Comparison Group, t (1304) = -15.82, p < .001.

Table 14. Overall Credit Attainment

Overall Credits						
	Cohort 1		**Cohort 2**		**Historical Comparison Group**	
	Attained	**Cumulative**	**Attained**	**Cumulative**	**Attained**	**Cumulative**
6th Grade	5.58 (n = 132**)	5.58 (n = 132)	4.66 (n = 628)	4.66 (n = 628)	N/A	N/A
7th Grade	5.30* (n = 149)	10.85 (n = 149)	7.03* (n = 552)	13.35* (n = 552)	4.12 (n = 754)	10.39 (n = 754)
8th Grade	6.72 (n = 125)	19.58 (n = 125)	--	--	6.69 (n = 666)	19.34 (n = 666)

*Indicates a significant difference

**Overall credit data were missing for 31 Cohort 1 students in 6th grade

In addition to the student achievement data presented above, subjective data regarding the impact of technology on learning gathered from the student survey is presented below. The majority of students reported that technology had a neutral or positive impact on their learning. Almost half of students reported that technology had a neutral impact on their learning (48.6%), while 42.3% reported that technology helped them learn more; this fairly consistent with the 46.3% in the SY 16-17 evaluation. Nine percent of students reported that technology slowed their learning, which was slightly higher than the 6.9% in SY 16-17.

Figure 18. Reynolds School District Effects of Technology on Learning
(n = 810)

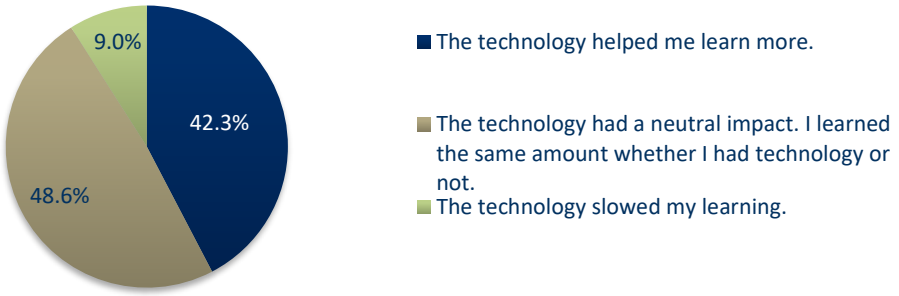
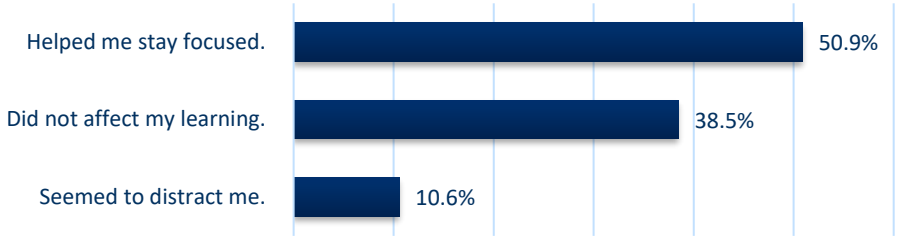


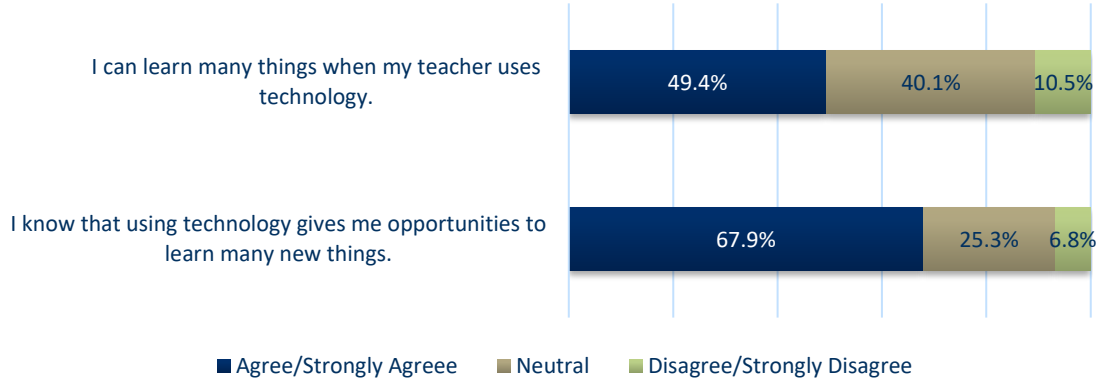
Figure 19 displays student responses regarding their experience with new technology in the classroom in Year 3 of the grant, and shows that 50.9% of students believed that technology positively affected their learning by helping them stay focused. Just over 10% of students reported that the technology seemed to distract them (10.6%).

Figure 19. Reynolds School District Impact of Technology on Classroom Focus
(n = 810)



Slightly less than half the students reported that they can learn many things when their teachers use technology (49.3%). Additionally, 67.9% of students reported knowing that using technology provides opportunities to learn new things. These responses were similar to the SY 16-17 evaluation.

Figure 20. Reynolds School District Students' Perceptions of Technology Use in Instruction
(n = 810)



Teachers who were interviewed commented on the promise for improving student academic outcomes through the use of technology supported instruction. The majority of teachers noted that it is hard to pinpoint the specific reason for student growth, and it is too early to tell based on test scores if student academic outcomes are improving. However, most teachers seemed to believe based on anecdotal evidence that their students are performing better. That said, one principal said the following:

> *Right now it's generally anecdotal. Our failure rates in math have seen a massive decline, especially with freshmen, who are a targeted portion of the grant. Now with that said, are we still happy with where our percentage of that right now? No. Can I directly tie that back to the math tech grant? Yes. I can tie that back because we can see that with specific teachers, we can look at where they introduce strategies talking about the lab cycles, talking about when they implemented certain strategies, you can see that change.*

Do instructional practices show promise for improving student academic outcomes with at-risk student subgroups (i.e., students of color, low SES, LEP, special education (or those with an IEP), and those not on track to meet academic standards)?

Section Highlights:

The results of the subgroup analysis are promising and provide preliminary evidence that instructional practices are improving academic outcomes for at-risk student subgroups. After three years of implementation, several at-risk subgroups within Cohort 1 were showing significantly higher cumulative math credits in 8th grade relative to the historical Comparison Group, including students of color and LEP students. However, Cohort 1 students had lower math credit attainment during their 8th grade year than the historical Comparison Group which may require additional investigation. After two years of implementation, several at-risk subgroups within Cohort 2 were showing significantly higher current and cumulative math credits in 7th grade relative to the historical Comparison Group, including students of color, SPED students and LEP students. Teachers also provided several contextual examples of how technology supported instruction is showing promise for improving student academic outcomes for at-risk subgroups, particularly for English Language Learners.

In order to gain insight into whether instructional practices are showing promise for improving academic outcomes with at-risk student subgroups, math credit attainment was examined by subgroup for treatment and Comparison Group students.

7th Grade Math Credit Attainment

Table 15 below presents 7th grade math credit attainment data for Cohort 1, Cohort 2, and the historical Cohort as well as the four at-risk subgroups for each cohort. For average math credits attained during 7th grade, after two years of implementation, Cohort 1 and Cohort 2 students were showing higher math credit attainment across all subgroups relative to the historical Comparison Group.

For Cohort 1, an independent samples t-test revealed that this difference was significant for the LEP (ELL) subgroup, t (315) = 11.32, p <.01, and students of color t (583) = 11.01, p <.01. For Cohort 2, an independent samples t-test revealed that this difference was significant for the LEP (ELL) subgroup, t

(465) = -11.90, p <.001, the SPED student subgroup, t (204) = -4.29, p < .001, and students of color t (894) = -14.92, p <.001.

Table 15. 7th Grade Average Math Credit Attainment for Treatment and Comparison At-Risk Subgroups

Average Math Credits Attained			
	Cohort 1	**Cohort 2**	**Historical Comparison Group**
All Students	.92* (n = 149)	.97* (n = 552)	.56 (n = 754)
LEP Students	1.24* (n = 32)	1.01* (n = 182)	.54 (n = 285)
SPED	.63 (n = 12)	.83* (n = 67)	.52 (n = 139)
Students of Color	.95* (n = 115)	.97* (n = 426)	.55 (n = 470)

7th Grade Cumulative Math Credit Attainment

Table 16 presents 7th grade cumulative math credit attainment data for Cohort 1, Cohort 2, and the historical Cohort as well as the four at-risk subgroups for each cohort. For cumulative math credits attained during 7th grade, after two years of implementation, Cohort 1 and Cohort 2 students were showing higher math credit attainment across all subgroups relative to the historical Comparison Group.

For Cohort 1, an independent samples t-test revealed that this difference was significant for the LEP subgroup, t (315) = 9.50, p <.01 and students of color, t (583) = 7.73, p <.01. For Cohort 2, an independent samples t-test revealed that this difference was significant for the LEP (ELL) subgroup, t (465) = -12.63, p <.001, the SPED student subgroup, t (204) = -6.19, p < .001, and students of color t (894) = -12.82, p <.001. These results are promising and provide evidence that instructional practices are improving academic outcomes with at-risk student subgroups.

Table 16. 7th Grade Cumulative Math Credit Attainment for Treatment and Comparison At-Risk Subgroups

Average Cumulative Math Credits			
	Cohort 1	**Cohort 2**	**Historical Comparison Group**
All Students	1.98* (n = 149)	2.03* (n = 552)	1.47 (n = 754)
LEP Students	2.52* (n = 32)	2.24* (n = 182)	1.49 (n = 285)
SPED	1.40 (n = 12)	2.03* (n = 67)	1.31 (n = 139)
Students of Color	1.98* (n = 149)	2.03* (n = 426)	1.50 (n = 470)

*Indicates a significant difference

8th Grade Math Credit Attainment and Cumulative Math Credit Attainment

Table 17 presents 8th grade math credit attainment data for Cohort 1 and the historical Cohort as well as the four at-risk subgroups for each cohort. For average math credits attained during 8th grade, after three years of implementation, Cohort 1 students were showing lower math credit attainment across all subgroups relative to the historical Comparison Group. This finding that the historical group is outperforming the Cohort 1 students for 8th grade credit attinment is consistent with the full Cohort analysis. Cohort 1 showed significantly higher cumulative math credits earned for LEP students, t (317) = -3.73, p <.001 and students of color, t (511) = -2.01, p <.001.

Table 17. Cohort 1 8th Grade Math Credit Attainment for Treatment and Comparison At-Risk Subgroups

	Cohort 1		Historical Comparison Group	
	Average Math Credits Attained	**Average Cumulative Math Credits**	**Average Math Credits Attained**	**Average Cumulative Math Credits**
All Students	.69 (n = 125)	3.02* (n = 125)	.95* (n = 666)	2.75(n = 666)
LEP Students	.70 (n = 29)	3.59* (n = 29)	.99* (n = 256)	2.81 (n = 256)
SPED	.61 (n = 9)	2.31 (n = 9)	.80 (n = 122)	2.38 (n = 122)
Students of Color	.68 (n = 96)	3.04* (n = 96)	.97* (n = 417)	2.81 (n = 417)

ELPA Assessment

Table 18 below presents the ELPA21 results for Cohort 1 students in 6th and 7th grade. The scores presented in Table 18 show that 92.3% of Cohort 1 students who completed the ELPA21 assessment in 7th grade scored at the "Progressing" proficiency status. Of those who completed the assessment in both 6th and 7th grade (n = 26), 92.3% remained at the "Progressing" proficiency level and 7.7% moved up to the "Proficient" status. The majority of Cohort 2 students also scored at the "Progressing" proficiency status on ELPA 21. The number of students who completed the ELPA assessment was much higher for Cohort 2.

Table 18. ELPA21 Results (SY 15-16)

Proficiency Determination	Cohort 1 6th Grade (n = 34)	Cohort 1 7th Grade (n = 26)	Cohort 2 6th Grade (n = 183)
Emerging	--	--	6.0% (n= 11)
Progressing	82.4% (n = 28)	92.3% (n = 24)	83.1% (n = 152)
Proficient	17.6% (n = 6)	7.7% (n = 2)	10.9% (n = 20)

In addition to the promising student achievement outcomes, several teachers provided examples of how technology supported instruction is showing promise for improving student academic outcomes for at-risk subgroups. One teacher said,

> *I feel like students who struggle in my class no longer have the mentality of, "I'm already behind; now I'm going to give up". And that's because, with the technology, they actually have that opportunity to make things up as they go. So no matter what happens – they lose their home, they're gone for a week – they can come back in and pick right up where they left off. And with my help they can get back up to speed a little bit quicker than they might have been able to otherwise. So there's never a door shut for them. They don't get that immediate barrier if they start falling behind somehow.*

Additional teacher comments related to technology supported instruction for at-risk subgroups are included in Table 19 below. Teachers commented on how they are using programs such as Khan Academy or MobyMax and posting content online so that students can engage with it at their own pace.

Table 19. Teachers' Use of Technology Supported Instruction with At-Risk Subgroups - Cohorts 1 & 2

"Differentiated learning opportunities." (Cohort 1)
"I have been able to target the specific gaps in an individual student's learning and provide instruction to meet that student's needs." (Cohort 1)
"Students can watch instructional videos at their convenience and do so with subtitles on." (Cohort 1)
"By creating online assessments for students via Schoology, I have been able to direct students in need to lessons and activities on Khan Academy and other web-based resources." (Cohort 2)
"I have been using Khan Academy for differentiated math practice to help students fix gaps in previous years' math knowledge. Most of my 7th grades (especially ELL students) came to me many grades behind in math." (Cohort 2)
"Multi-level texts are more easily accessible online. Students can choose the appropriate level for themselves (from given choices), without other students being able to see their selection. This lowers affective filters, so that students are more likely to engage."(Cohort 2)
"Through online curricular options (MobyMax, Khan Academy, etc.,) students are able to identify specific weaknesses and pursue a trajectory that allows that allows them to gain specific strengths in those areas. This is especially helpful for at-risk subgroups, since the targeting is grade and concept specific…there is much less wasted effort and time." (Cohort 2)

In interviews, teachers and school leadership pointed to the ways technology is being used to support at-risk subgroups. Several teachers commented on how technology is able to level the playing field for historically underserved students. More specifically, teachers indicated that students' ability to use their smart phones to access class material at home has allowed them to access coursework even in the absence of a computer in their home. This kind of mobile anytime access is seen as an improvement to a system where students only had limited access to course work outside of class because material was not accessible online. According to one Cohort 1 teacher, "I have one kid in particular who doesn't have the ability to do work at home. He helps take care of the family, or of his younger siblings or something. And he was able to get some work done on the bus on the way home rather than at his house, because he did it through his phone. So, rather than having to wait until he got home to pull out a worksheet he was able to get something done on the bus."

All of the district leaders commented on the fact that teachers can differentiate instruction for at-risk subgroups using the technology. Both the high school and a middle school principal commented on the use of technology to engage English Language Learners in particular. The mid-year status report indicates that the steady rise in Schoology use also specifically targets English Language Learner success, as it differentiates the modes of access to content and enhances student-to-student and teacher-to-student communication. In interviews, teachers highlighted the importance of the resources technology provides to English Language Learners. One Cohort 2 teacher said,

I know that for our English Language Learners, being able to re-access instructional videos outside of class is huge. Because sometimes things are explained too quickly in class, or the pacing is too fast. So they can go home and then with parent support they can watch a video, pause it, replay little clips, and see visual examples in videos. And they can send me messages and I can type back to them, "You need to start watching at eight minutes and ten seconds, that is where they start explaining this part." And so that's been great.

Is the rate of student growth in one or more AHR outcomes greatest for at-risk student subgroups (i.e., students of color, low SES, LEP, special education (or those with an IEP), and those not on track to meet academic standards).

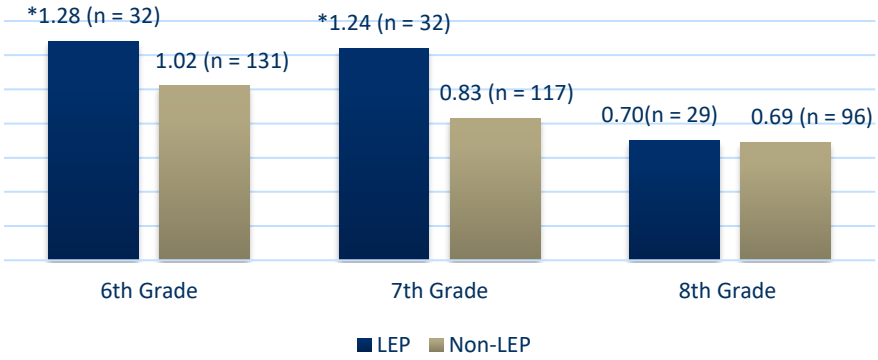
Section Highlights:

Upon examining math credit attainment within Cohort 1, there is promising evidence that the rate of 6th and 7th grade math credit attainment is significantly greater for LEP students than non LEP students, both for Cohort 1 and Cohort 2. The Cohort 1 8th grade math credit attainment dipped for all students in SY 17-18 and this does not appear to differ by student subgroup.

PRE examined math credit attainment data to assess how student progress may differ for at-risk subgroups as compared to non-at-risk subgroups within Cohort 1 and Cohort 2. Results are presented below for Cohort 1 students at 6th, 7th, and 8th grade and for Cohort 2 at 6th and 7th grade.

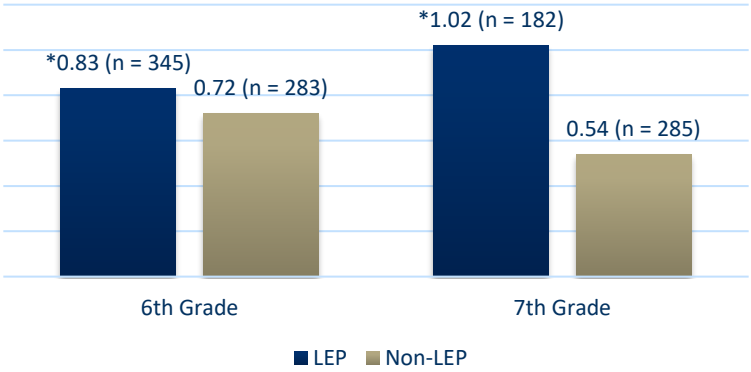
As shown in Figure 21 below, LEP TechSmart students earned significantly more Math credits in 6th, grade (t (161) = 2.95, p <.05) and 7th grade (t (147) = 4.93, p <.01), than non-LEP TechSmart students. The general trend for Cohort 1 has shown a decrease in Math credit attainment in 8th grade. The graph below shows this trend to be true for both LEP and non LEP students.

Figure 21. Cohort 1 Math Credit Attainment for LEP Subgroup



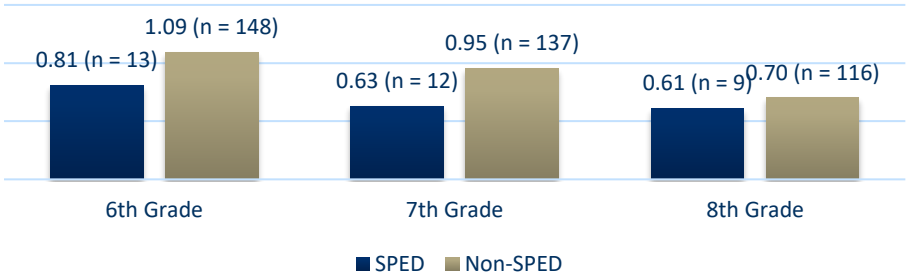
As shown in Figure 22 below, Cohort 2 LEP TechSmart students earned significantly more Math credits in 6th, (t (626) = -4.85, p <.01) and 7th grade, t (465) = -11.90, p <.001, than non-LEP students. This provides compelling evidence of closing the achievement gap for LEP students.

Figure 22. Cohort 2 Math Credit Attainment for LEP Subgroup



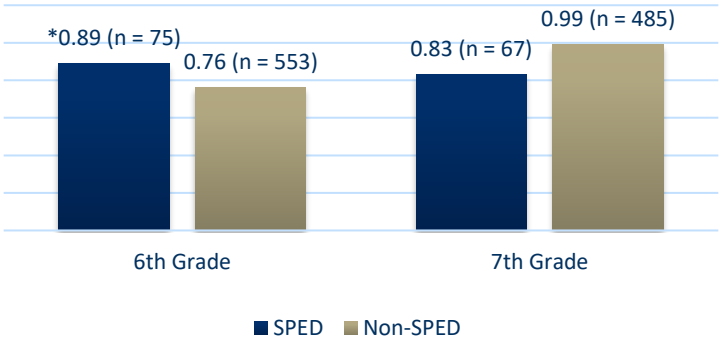
Figures 23 and 24 show math credit attainment for Cohort 1 and Cohort 2 SPED TechSmart students and non-SPED TechSmart students. In 6th, 7th and 8th grade, non-SPED students earned a higher number of math credits on average but these differences were not significant.

Figure 23. Cohort 1 Math Credit Attainment for SPED Subgroup



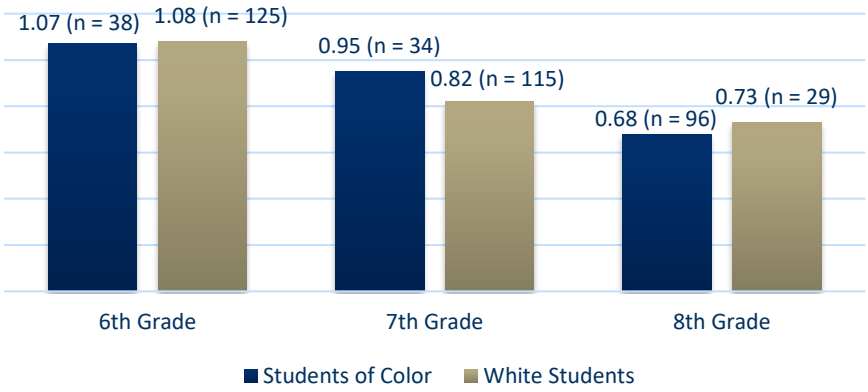
For Cohort 2, SPED TechSmart students earned significantly more Math credits in 6th, grade (t (626) = 3.81, p <.01) than non-SPED TechSmart students but this was not the case for Cohort 2 in 7th grade.

Figure 24. Cohort 2 Math Credit Attainment for SPED Subgroup



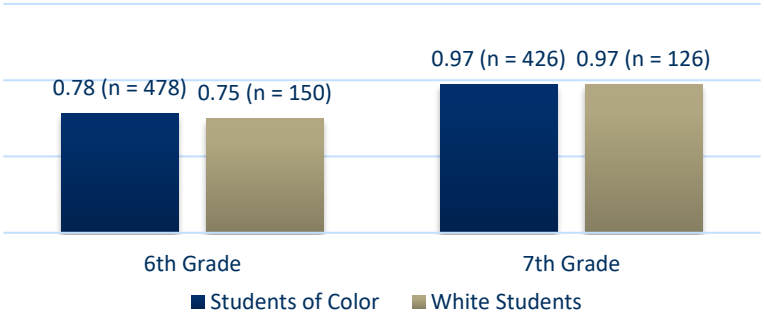
Figures 25 shows math credit attainment for Cohort 1 TechSmart students of color and all other students in 6th 7th and 8th grade. There were no significant differences between these two groups in any year.

Figure 25. Cohort 1 Math Credit Attainment for Students of Color



Similar to Cohort 1, there were no significiant differences between Cohort 2 TechSmart students of color and all other students in 6th and 7th grade math credit attainment.

Figure 26. Cohort 2 Math Credit Attainment for Students of Color



Digital Age Learning Culture

Districts embrace a cultural shift and view technology as positive.

Has the use of technology to support instructional practices increased?

Section Highlights:

Teacher survey results provide evidence that the use of technology to support instruction increased from beginning to end of SY 17-18 for Cohort 2. The frequency of technology integration among Cohort 1 teachers, however, is slightly lower than in the SY 16-17 evaluation across all survey items.

Figure 27 illustrates the frequency of technology integration at the beginning and end of the school year for Cohort 1 teachers. The frequency at which teachers created lesson plans that incorporate technology showed a notable decrease, from 72.8% to 37.5%. In contrast, the frequency with which teachers reported adapting an activity to individual students more than doubled in SY 17-18, going from 30.0% to 62.5%. The frequency of technology integration among Cohort 1 teachers at the end of SY 17-18 is slightly lower than in the SY 16-17 evaluation across all items.

Figure 27. Reynolds School Distruct Frequency of Technology Integration - Cohort 1

(% A Moderate Amount/A Great Deal)

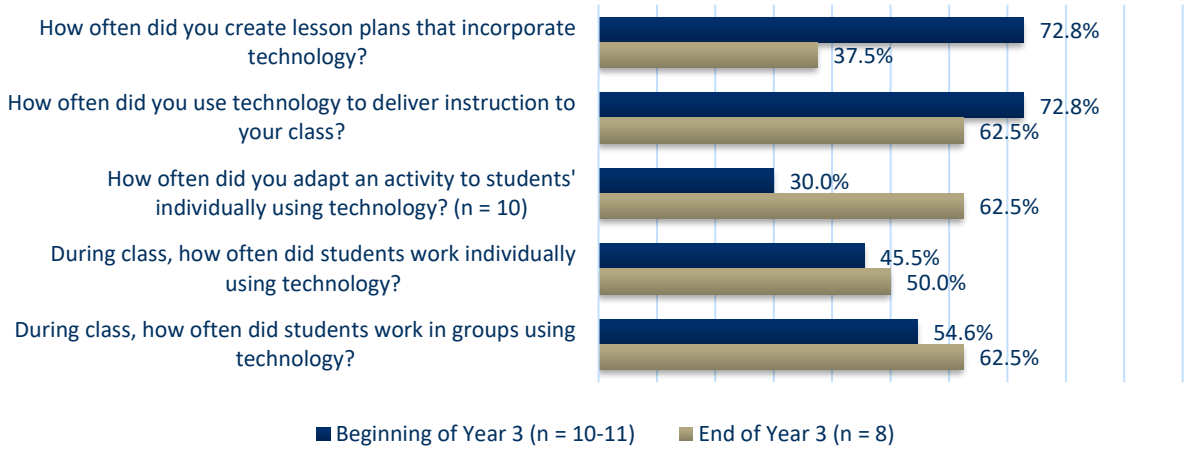
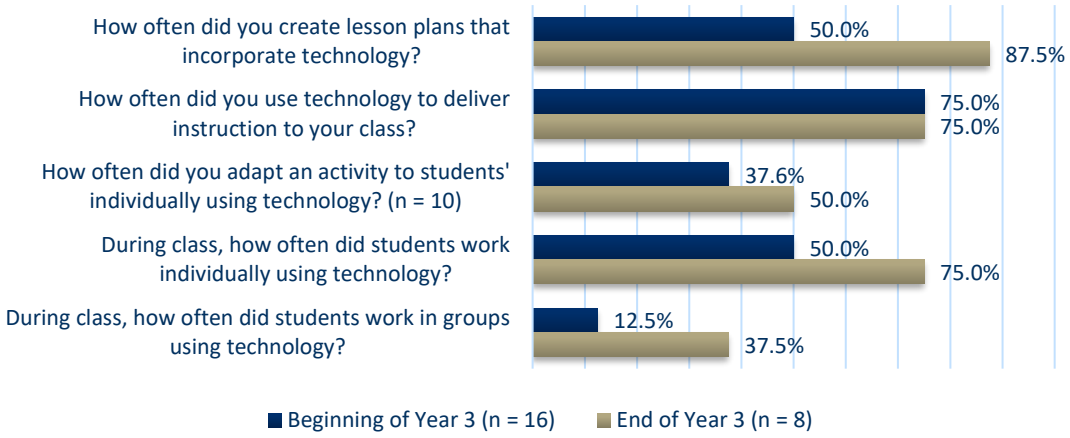


Figure 28 presents the frequency of technology integration for Cohort 2 teachers, and shows that this group of teachers consistently increased or maintained their use of technology over the course of the year. By the end of their second year of implementation, 87.5% of Cohort 2 teachers were creating lesson plans that incorporate technology.

Figure 28. Reynolds School District Frequency of Technology Integration - Cohort 2
(% A Moderate Amount/A Great Deal)



The mid-year status report indicates that "the push continues for teachers to incorporate digital student portfolios to consolidate the student assessments into a cloud-based storage". The portfolios are intended to consolidate areas of student proficiency and inform teachers on which components of the standards students need further instruction or practice. The mid-year report also described growing use of 3D printers in classrooms. Teachers are giving students the opportunity to complete "smART projects" as an alternative to a traditional written project in math class. These "smART projects" involve students developing a proposal for a project, getting it approved by their teacher, and executing their idea using a CAD design program connected to 3D printers. Many of the projects' final products can be used in the classroom, such as an HDMI switch and a stylus holder. The mid-year report indicates that "students are pleased to design and create projects that are used or displayed in their math classroom".

Is the learning management system useful for identifying effective instructional practices (more efficient, easier, data driven)?

Section Highlights:

Evaluation results show that the Schoology learning management system adopted by RSD has been useful for increasing student access to classroom resources and communicating with students. Obstacles regarding administering online assessments via the learning management system and avoiding student misconduct have been identified and have begun to be addressed.

As reported in the SY 15-16 and SY 16-17 evaluation reports, before the implementation of the grant, RSD piloted a free, limited version of Schoology and adopted it districtwide starting in SY 15-16. According to the mid-year report, "along with OneNote and Office365, the district use of Schoology as the learning management system remains a core tool for use by teachers and students alike. The volume of Schoology spiked to its greatest staff and student usage for any reporting period for this grant to date". The mid-year report indicates that the learning management system is being used by the school counselor, who has recognized the high levels of student engagement within Schoology. In response, he is

establishing a non-credit class in Schoology through which all 400 of the students on his caseload can access resources, articles, events, and opportunities for developmentally-appropriate socio-emotional supports.

The mid-year report identified one obstacle to further integration of technology into learning. Teachers are working to compile a question bank in order to establish consistent adherence to common core state standards on assessments across grade levels. The intention is for students to access the assessments online through the learning management system; however, teachers have identified a need for a lock-down browser in order to implement these standardized assessments. A lock-down browser would address student conduct concerns by preventing students from accessing other websites or applications once they had begun the online assessment. The mid-year report indicates that "during this reporting period we have identified and selected a lock-down browser and are in the process of contracting with the provider to service all schools in the TechSmart initiative".

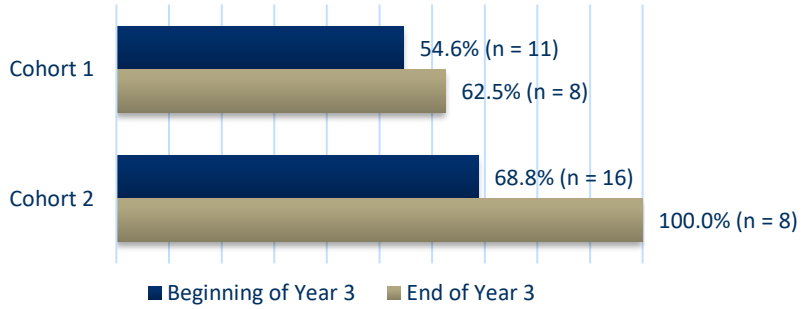
Do teachers have increased access to and use of digital content and resources?

Section Highlights:

This report provides evidence that, generally, teachers have increased access to digital content and resources. Cohort 2 teachers appear to be utilizing digital content and resources more than Cohort 1 teachers. More than 62.5% of Cohort 1 teachers had used digital content and resources in their instruction by the end of SY 17-18, which is nearly 20% less than their rate of use at the end of their second year of implementation. One hundred percent of Cohort 2 teachers, however, reported they use digital content and resources "a moderate amount" or "a great deal" by the end of SY 17-18. Teachers gave several examples of digital content being used including Khan Academy, Kahoot, and Schoology. Students overwhelmingly wanted there to be more use of laptops in the classroom.

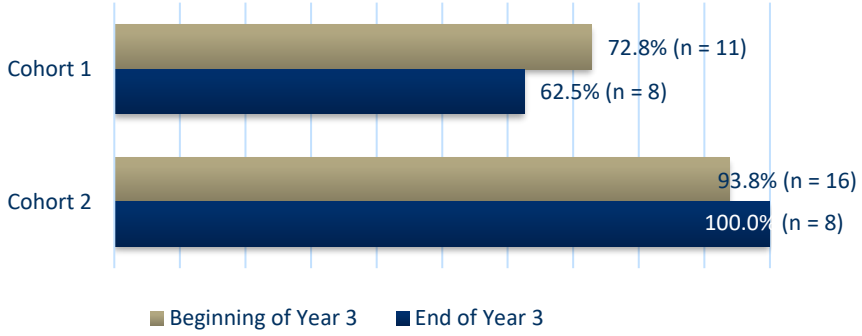
Math teachers reported an increase in access to and use of digital content and resources in their instruction. By the end of the SY 17-18, 62.5% of Cohort 1 teachers had used digital content and resources in their instruction, which is about 20.0% less that their rate of use at the end of their second year of implementation (83.3%). Cohort 2 teachers showed a more than 30.0% percentage point increase from the beginning to end of SY 17-18 with 100.0% of teachers reporting they use digital content and resources "a moderate amount" to "a great deal" of the time in their classrooms (See Figure 29). The numbers are consistent with the trend that Cohort 1 is reporting slightly lower levels of integration overall.

Figure 29. Reynolds School District Use of Digital Content and Resources
(% A Moderate Amount/A Great Deal)



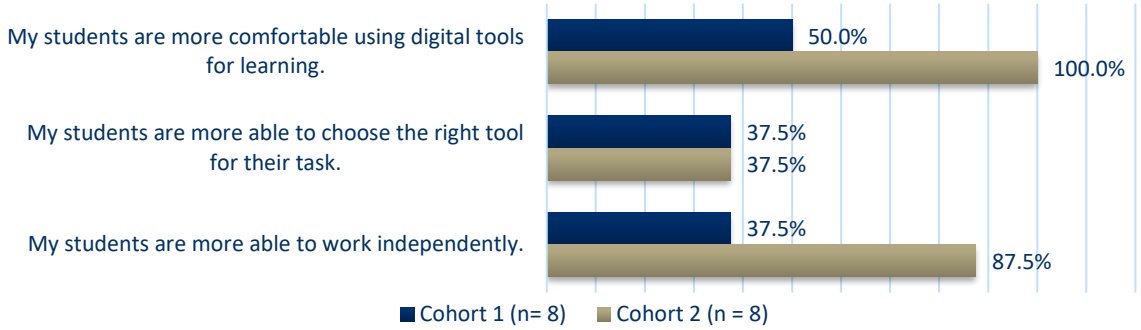
In terms of access to technology resources, Figure 30 shows that by the end of the year, 62.5% of Cohort 1 and 100.0 % of Cohort 2 teachers reported that students have adequate access to these resources in their classrooms. Notably, this percentage decreased for Cohort 1 teachers but increased for Cohort 2 teachers throughout SY 17-18.

Figure 30. Reynolds School District Students Have Adequate Access to Technology Resources in my Classroom
(% True of me/Very True of me)



Finally, teachers were asked to rate a series of statements comparing their current students to those during their previous year of teaching. As shown in Figure 31 below, 50.0% of Cohort 1 and 100% of Cohort 2 teachers indicated their current students are more comfortable using digital tools for learning. This is a decrease from SY 16-17 for Cohort 1 and an increase from SY 16-17 for Cohort 2. For Cohort 1 teachers, we may not expect to see differences in students from the previous year since they have been implementing for three years.

Figure 31. Reynolds School District Year-End Student Technology
(% Agree/Strongly Agree)



Teachers provided examples of digital content and resources that they have access to because of the TechSmart grant. Teachers highlighted their use of Desmos, Quizlet, and other online resources (see Table 20).

Table 20. Reynolds School District Teachers' Use of Digital Content – Cohorts 1 & 2

Digital Content	Teachers' Application of the Technology
Other online resources (n = 7)	• *"We use Venues to define math words on a regular basis."* • *"Quizlet live to practice concepts and get students talking about the content. As well as Phe T and other online stimulation activities."* • *"We use Desmos to investigate new mathematical ideas."* • *"We use xtramath to work on basic computational skills."*
Blended classroom strategy (n = 3)	• *"I often alternate between concept introduction through direct teaching, and then through computer aided instruction. This allows for differentiation and strength-to-strength alternatives, which students appreciate."*
Khan Academy (n = 2)	• *"I use Khan Academy to provide students with assignments that meet them at their individual level."*
Schoology (n = 2)	• *"I provide electronic versions of our PowerPoints (sometimes in video form) and class notes through Schoology, which many students have used during homework or review time. They have come up to me to say how helpful it was to have the instruction in class followed by unlimited access outside of class."*
Kahoot (n = 2)	• *"We use Kahoot to foster greater engagement and to review."*

Students had the opportunity to provide suggestions for devices that they wish their teachers would use. There was a strong desire from the students (n = 142) continue the use of laptops over tablets. Students also expressed an interest in iPads as well as a desire to use their phones to access apps and complete assignments (see Table 21).

Table 21. Technology Students Wish Teachers Would Use

Theme	Sample Quotes
Laptops/Computers (n = 142)	• *"The computers are nice. More virtual assignments on the computer will reduce the problem of losing a worksheet, which will save paper, which will save trees."* • *"I wish we used more computers, they are very easy and we already know how to use them."* • *"On computers you can submit a test and find out what you get right then and there, and it also tells you what you did wrong. That is useful."*
Tablets/iPads (n = 34)	• *"I think a tablet is more convenient and it lets the teacher draw or do the lesson for the class."* • *"I would like to use iPads to do our math sheets."* • *"I wish teachers would use iPads that way we would be able to bring them home and work on anything that needs to get done."*
Applications and Websites (n = 28)	• *"Kahoot was not only fun, but it made me feel the urge to get the right answer and the motivation I need in order to get first place."* • *"MobyMax can help us practice skills."* • *"Kids can search in Schoology student view to see what they are missing or what they need."* • *I think Khan Academy could be better implemented in classrooms. The videos and quizzes are helpful and you can go at your own pace."*
Phones (n = 27)	• *"I wish we were allowed to use our phones because it would be easier, more fun, and more efficient."* • *"The school should let us use our phones so we can access stuff easier and take notes in class with it."* • *"I wish we could use our phones because they are smaller and most people know how to use them better and faster than laptops."*
Chromebooks (n = 2)	• *"I wish the teachers would use Chromebooks more to do math that includes competition."* • *"I think Chromebooks would help me because they load a lot faster."*

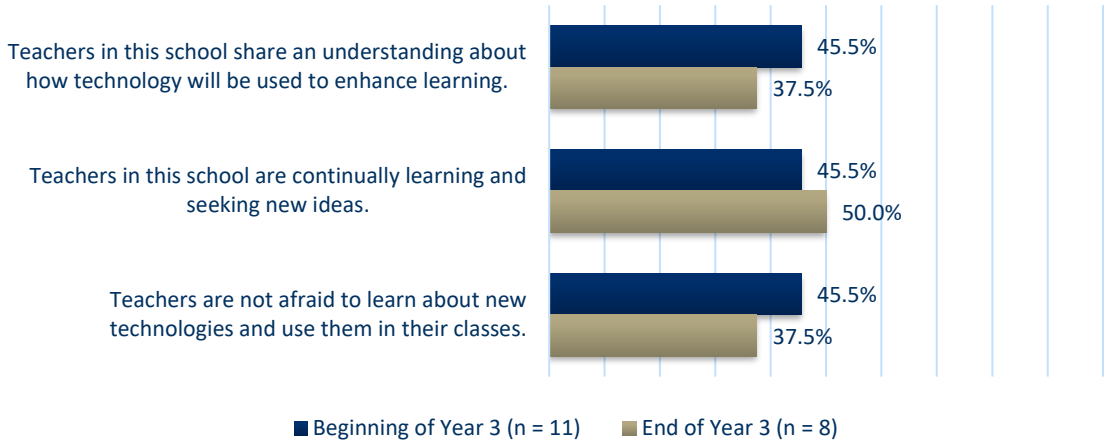
Is there evidence of district wide support for technology integration?

Section Highlights:

There is not yet evidence of districtwide support for technology integration at RSD. Consistent with the evaluation results from SY 16-17, the majority of Cohort 1 teachers completing the survey do not believe that teachers in their schools share an understanding for how technology will be used to enhance learning. Low perceptions of support may be linked to lower levels of technology integration among Cohort 1 teachers.

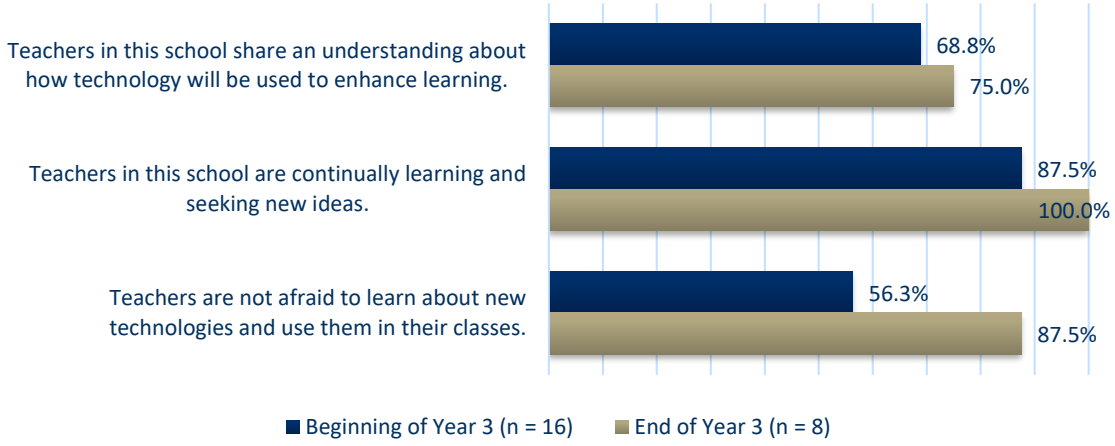
Consistent with the evaluation results from SY 16-17, fewer than half of Cohort 1 teachers had strong perceptions of a culture of support for technology integration at Reynolds (Figure 32).

Figure 32. Reynolds School District Teacher Perceptions of a Culture of Support for Technology Integration - Cohort 1
(% Agree/Strongly Agree)



Much like during SY 16-17, Cohort 2 teachers reported notably higher perceptions of a culture of support for technology integration than Cohort 1 teachers as shown in Figure 33 below. These differences in the perceptions of support may be linked to the lower levels of integration reported by Cohort 1 teachers in SY 17-18.

Figure 33. Reynolds School District Teacher Perceptions of a Culture of Support for Technology Integration - Cohort 2
(% Agree/Strongly Agree)



According to their mid-year status report, "participating teachers are settling into the second full year of Go! Math implementation. As they evaluate its usefulness, they are paying special attention to the use of formative assessments and their usefulness to engage student math talk".

Despite the results of the quantitative data, teachers and leadership interviewed were relatively positive about the presence of a digital age learning culture at Reynolds. One Cohort 1 teacher commented on the way almost every teacher is on board with the shift toward using technology for new instructional strategies now that they are in the third year of their grant:

It's pretty awesome to see. From a couple of years ago when I was one of the few lone rangers kind of figuring it out as I went, to now where a lot more people are comfortable with it. It's kind of built over the past few years. I think that Cohort 3 teachers have seen enough of what's possible that they're a little bit more comfortable with the entire shifting of what they're potentially going to be doing as a teacher. And so I think that when they see those types of successes and those struggles that we go and learn from that, they just find themselves to be a lot more comfortable even just trying new things. And they know that they've got support behind them when they want to try something and they're not exactly sure how.

That said, teachers did indicate that some of their fellow teachers are slower to jump on board with the technology than others; one Cohort 1 teacher described their feelings about these teachers, "It feels like to me, 'Why aren't you guys jumping in a little bit quicker?', but I think everybody is doing it more and more. Not as much as I would like to see, but more and more".

Teachers also expressed that they felt increased district support for technology integration this year with the reinstatement of a full-time IT TOSA. Additionally, even though teachers noted that they were held more responsible for leading their own PD this year (mainly during the lab cycles), they expressed positive feelings about this due to its ability to foster community and develop teacher leaders.

Do parents have an increased understanding and utilization of districts' technology assets?

Section Highlights:

There is some evidence that parents are receiving opportunities to increase their understanding of the districts' technology assets. Parents are being engaged through parent conferences, open houses, and enhanced communication from teachers and access to student information via Schoology.

Some teachers provided examples of how they are utilizing the technology to engage with parents. Most parents indicated that their primary means of communication with parents is via email, which hasn't changed since before the grant. Despite this, teachers also described how parents can access Schoology to keep up to date on what their student is doing in class or catch up on what was missed when he/she was absent.

Parents are exposed to the technology their children are using during parent conferences and open house. Several teachers indicated that their students were excited to share their use of technology in the classroom with their teachers. For example, one Cohort 1 teacher described such an instance:

One kid went home and was explaining to his parents how we used Excel. We used our data from a science lab that we did, had Excel create graphs for us, and then we submitted our graphs and talked about what we could see on the graphs when we analyze the data. His mom was like, "Wow, I can't do that. I don't know how to do

that." He was pretty proud that he had a skill that he could now use in future classes, and maybe later in life.

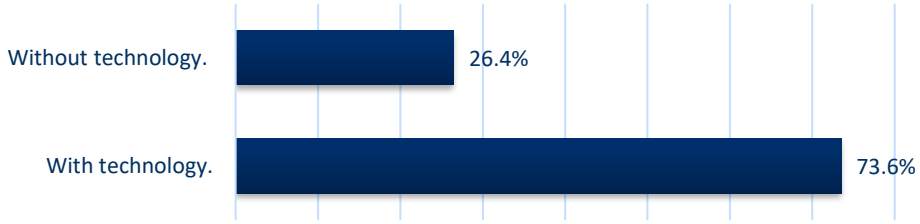
Are an increased number of students utilizing and engaging with new technology?

Section Highlights:

Consistent with the SY 15-16 and SY 16-17 evaluation, about three-quarters of students would prefer to complete an assignment with technology.

As mentioned in previous sections, student engagement has increased because of the new technology. Figure 34 shows that nearly three quarters of the students would prefer to complete an assignment with technology rather than without, reinforcing the finding that students are interested in and engaging with classroom activities that involve the new technology. This is consistent with the student response from the SY 15-16 and SY 16-17 evaluation.

Figure 34. Reynolds School District Student Assignment Completion Preference
(n = 810)



Visible Leadership

District leadership is actively involved and working with key communities to accomplish change.

Are districts identifying effective instructional practices and disseminating information and results to other districts?

Section Highlights:

The SY 17-18 evaluation showed that RSD has disseminated best practices to other East County school districts in efforts to work towards community-wide change and share best practices to technology integration across districts.

Principals and other district leaders indicated that they have been collaborating with other East County TechSmart Districts (i.e. Gresham Barlow, Centennial, and Data Douglas) to share the way they are integrating grant-funded technology into the classroom. All leaders indicated that this has allowed them to share their own successes with these other districts, but also has helped Reynolds to improve their own implementation and practice. One principal also indicated that they have been sharing what they are doing to neighboring districts who are not a part of the TechSmart grant but who are interested in similar opportunities. Leadership indicated that teachers get a lot of satisfaction from being able to showcase their successes. Finally, the IT TOSA from Reynolds has joined together with other TechSmart coaches to form the "East County Technology Consortium." One goal of this group is to create a website that teachers can access to inquire or learn about technology strategies in order to create "on demand" training.

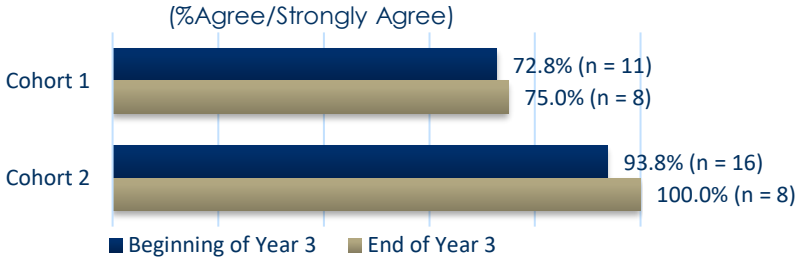
Do teachers feel increased support from district leaders regarding technology integration?

Section Highlights:

By the end of SY 17-18, 75.0% of Cohort 1 and 100.0% of Cohort 2 teachers indicated that administrators were generally supportive of technology integration efforts. While this percentage remained consistent for Cohort 2 since SY 16-17, it is lower for Cohort 1. The reinstatement of the IT TOSA as a full-time employee was experienced as positive by teachers. Consistent with the SY 15-16 and SY 16-17 evaluations, those teachers interviewed commented on the value of support received from other teachers.

By the end of Year 2 of implementation, 100% of Cohort 1 and Cohort 2 teachers agreed that administrators support technology integration efforts. By the end of Year 3 of implementation, however, only 75.0% of Cohort 1 and 100.0% of Cohort 2 agreed that administrators support technology efforts (see Figure 35). This is consistent with the trend in Cohort 1 teachers reporting lower levels of integration.

Figure 35. Perception of Administrators' Support of Technology Integration



When asked about the kinds of support they have received from the district, the majority of teachers pointed to the group and professional development they receive from their IT TOSA. This theme appeared stronger in SY 17-18 than SY 16-17, perhaps because of the district's ability to reinstate the IT TOSA as a full-time employee. One Cohort 2 teacher described: "This year our IT TOSA's position moved from a half-time to full-time, which is really awesome. Because, for our individual needs, he needed to be accessible. And his being on campus was super beneficial because he was available to us anytime."

Consistent with the SY 15-16 and SY 16-17 evaluation findings, teachers at RSD commented on how they have supported one another, as highlighted in the mid-year report: "The teachers value the importance and availability of the IT TOSA as a professional peer to guide their learning. In lieu of, we are impressed with the willingness of the teachers to step up and convene the collaboration across their cohorts and grade levels". Many of the teachers described the ways they are supporting each other and receiving support from other teachers.

Data Driven Improvement

Current, relevant, and high quality data from multiple sources are used to improve schools, instruction, professional development, and other systems.

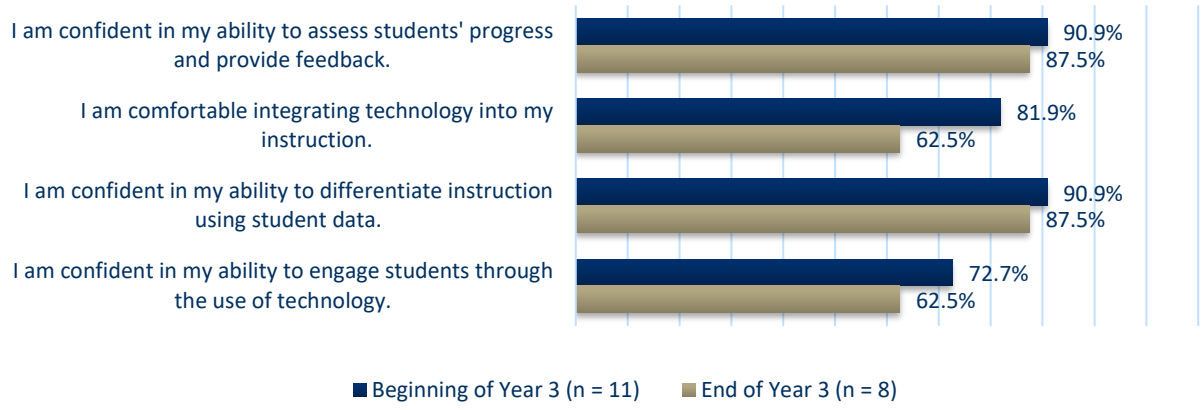
How are schools using data to improve instruction, professional development, and student performance?

Section Highlights:

The data indicates that Cohort 1 teachers' confidence in their ability to use data to drive their instruction decreased somewhat throughout SY 17-18. Consistent with the trend in survey data, it appears that Cohort 2 teacher use of formative data to guide their instruction increased throughout SY 17-18. By the end of SY 17-18, 100.0% of teachers were confident in their ability to assess students' progress and provide feedback, integrating technology into their instruction, and their ability to engage students though the use of technology.

As highlighted in the previous section on teaching effectiveness, math teachers have been increasing their use of data-driven instructional strategies. Figure 36 shows Cohort 1 teachers decreased in their comfort integrating technology into their instruction, going from 81.9% agreeing or strongly agreeing with the statement at the beginning of the year to just 62.5% at the end of the year.

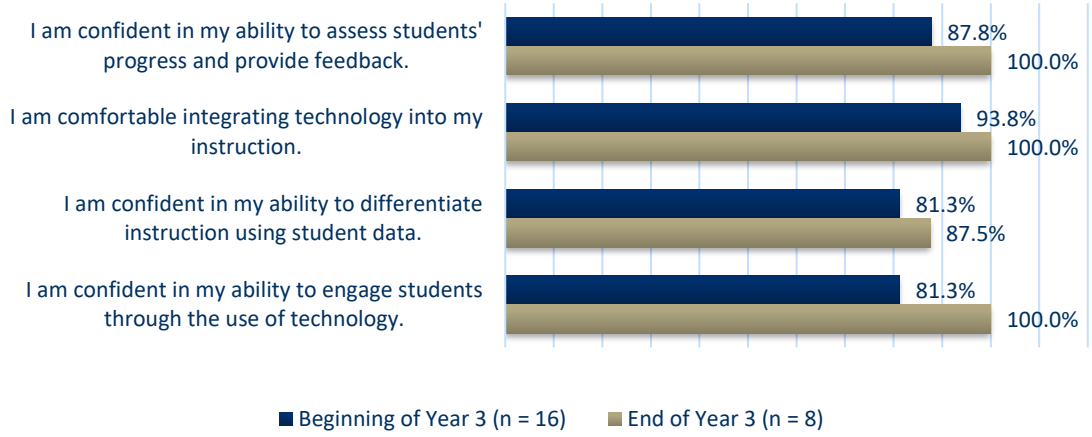
Figure 36. Reynolds School District Data Driven Improvement - Cohort 1
(% Agree/Strongly Agree)



An additional survey question asked teachers to report the extent to which they are using formative assessments. Results showed that at the beginning of SY 17-18, 81.9% (n = 11) of Cohort 1 teachers indicated they use formative assessments at a "moderate amount" to a "great deal" to identify instructional practices, which actually increased by the end of the year to 87.5% (n = 8) reported this level of use. At the beginning of SY 17-18, 56.3% of Cohort 2 teachers (n = 16) indicated they use formative assessments a "moderate amount" to a "great deal" to identify instructional practices which increased to 87.5% (n = 8) by the end of their second year of implementation.

Figure 37 shows that by the end of their second year of implementation, 100% of Cohort 2 teachers felt confident in their ability to assess students' progress and provide feedback, in their ability to differentiate instruction using student data, and in their ability to engage students through the use of technology consistent with findings from SY 16-17. Cohort 2 teachers were slightly less confident in their ability to differentiate instruction using student data, with only 87.5% of teachers agreeing or strongly agreeing with that statement at the end of the year.

Figure 37. Reynolds School District Data Driven Improvement - Cohort 2 (% Agree/Strongly Agree)



In interviews, teachers generally indicated that they did not use a lot of formative data in the classroom, but that when they did, it was almost always via Schoology assessments or the STAR test. As with SY 16-17, the mid-year status report indicates that teachers are using formative assessments from Schoology to differentiate instruction, particularly for English Language Learners.

Funding & Budget

District's budget repurposes resources and seeks outside funding to focus on promising practices and technology supports.

Have districts identified at least one opportunity for repurposing resources to support technology integration?

Section Highlights:

The SY 17-18 evaluation provides evidence that RSD continues to reframe the way they think about resources to support technology integration. Administrators prioritized reinstating the IT TOSA as a full-time employee, recognizing the IT TOSA as a key support for teachers.

Administrators provided examples of how resources have been repurposed to support technology integration. Several administrators indicated that they were able to use district funds to ensure the reinstatement of the IT TOSA as a full-time employee. As mentioned above, this was experienced by teachers as a positive change from SY 16-17. The Director of Secondary Education said:

> *I think we've seen the importance of the IT TOSA position and even though this year we started out with the position at half time, thankfully because of the MHCRC we were able to move that position to full time. And I think we definitely see a need for that position. And we've made sure that even in times of cuts we've been able to try to protect that position to help with staff and the use of technology.*

Additionally, the district is moving technology into non-math classrooms and providing PD for non-math teachers, as mentioned above. One TechSmart leader mentioned the way the IT department is interfacing with the curriculum and instruction department to "collaborate and align resources to help support what's taking place".

Strategic Planning

District strategic plan reflects shared commitment to improving outcomes for students.

Does the district's strategic plan reflect shared commitment to improving outcomes for students?

Section Highlights:

SY 17-18 evaluation results point to RSD's steady commitment to improving outcomes for students and recognizes student access to technology as an important piece of this. RSD administrators described the way the district's strategic plan lines up with the goals of the TechSmart grant, and how they are leveraging MHCRC funds in order to advance thoughtful technology implementation in their district.

District leaders discussed how the work regarding technology supported instruction aligns directly with the district's strategic plan. One administrator described the district's goal of "a world yet to be imagined" and sub goals related to integrating technology in the classroom and getting technology into the hands of every student in the district. One administrator described the way the district aims to implement technology:

> *With how we've implemented the technology I think it's been highly considered what our implementation will look like moving forward in the future. Asking what we want the devices to do for our students and tying that to the curriculum or our outcomes that we want to see for students. We are shifting the way in which we look at technology. It's more than just putting devices in students' hands, it's now about how do we want that student to interact with device, how do we get the student and the teacher to interact with those devices, and how does it play into the outcomes we want to see for students.*

One administrator commented on how the TechSmart grant is allowing the district to move closer to accomplishing the goals in their emergent strategic plan, saying "The MHCRC grant for us has been the opportunity to have purposeful conversations about classroom instruction, specific learning strategies that then we can use technology to supplement that and to make sure we are closing that achievement gap".

Engaged Communities & Partners

Parents, stakeholders, community groups and others are actively and systemically involved in helping students develop, learn, and achieve.

Do district leaders demonstrate increased communication with and among outside stakeholders regarding technology integration?

Section Highlights:

As reported by one administrator, RSD leaders are discussing TechSmart with their community as it relates to attempts by the district to close the student achievement gap.

One TechSmart leader said that although they have not specifically worked with stakeholders regarding technology integration so far, they did mention ways in which they are sharing the successes of the TechSmart grant with the community, particularly as it relates to its role in closing the achievement gap:

I would say that we commonly cite the TechSmart initiative as being a current success story when we are communicating to our community and telling our story. In particular, the grant is used as an example of some of the progress that we have been recently making in an effort towards being more equitable in our instructional practice.

Evaluation Insights

The SY 17-18 evaluation at RSD produced the following insights:

- Student achievement data were examined for RSD students in the SY 17-18 evaluation and revealed promising findings. Results showed that by 7th grade the TechSmart Treatment Cohorts 1 and 2 had earned on average a significantly higher number of math credits and overall credits when compared to a historical Comparison Group. Subgroup analyses were conducted and Cohort 1 and 2 students were showing higher math credit attainment across all subgroups than the historical Comparison Group. This difference was significant in 7th grade math credit attainment and cumulative math credit attainment by 7th grade for LEP students and students of color in Cohort 1. This difference was also significant for all three subgroups for 7th grade math credit attainment and cumulative math credit attainment by 7th grade for Cohort 2.

- Although math credit attainment looked promising for Cohort 1 and Cohort 2 math credit attainment in 6th and 7th grade, the 8th grade credit attainment for Cohort 1 was significantly lower than for the Comparison Group. This was consistent when examining data by subgroups which shows that subgroup did not impact this dip in credit attainment.

- Teachers had mixed opinions about the PD model. The majority of both Cohort 1 and Cohort 2 teachers participated in at least one hour of PD. Cohort 2 teachers found individualized PD to be more useful than group PD, while Cohort 1 teachers found the opposite. This may be because Cohort 2 teachers had more one-on-one contact with the IT TOSA, given that they were on boarded to the grant more recently

.

- Results from the student survey showed that students are becoming more engaged through the use of technology to support math instruction at RSD. Similar to the student responses from the SY 16-17 evaluation, nearly half of survey respondents reported that the more technology was used, the more they enjoyed school (41.6%), and 58.8% indicated that they have felt more interested in class activities using technology. These percentages have remained relatively consistent from last year's evaluation. Open-ended responses to the student survey indicated that the majority of those who responded (n = 48) preferred previous modes of instruction (such as pen and paper), indicating that there is still work to be done in terms of student buy-in to the technology use.

- Overall, Cohort 1 teachers are reporting less technology integration than Cohort 2 teachers and also decreased levels of integration from SY 16-17. They also reported lower perceived support from administrators and their perceptions regarding a culture of support around technology were lower than Cohort 2. These survey findings are consistent throughout the report and bring up a question regarding whether Cohort 1 teachers need additional support in their use of technology to support instruction.

- Consistent with previous years of evaluation, the small sample sizes for the end of year survey make it difficult to compare the beginning and end-of-year survey responses, as the results of the end of year survey may have been deflated. A discussion about the timing of the year-end of year survey is necessary.

Project Summary

Gresham-Barlow School District (GBSD) began implementation of its MHCRC TechSmart grant during the 2016-17 school year (SY 16-17) with kindergarten through third grade classes at North Gresham Grade School and Kelly Creek Elementary School. The grant focuses on the literacy achievement gap, specifically for students of color, English Language Development (ELD) students, students with disabilities, and students living in poverty. GBSD is providing a full-time, on-site coaching from an Instructional Technology Coach (ITC) at each school, coupled with other PD opportunities and classroom technology supports over four school years. GBSD intends to use these pilot schools' learnings and evaluation to build a well-vetted plan, systems, and resources to scale successful literacy instructional strategies and practices district-wide. GBSD's progress during SY 17-18 is presented below in terms of the seven essential factors for effective transformation to a technology-rich teaching and learning environment.

Methods

A general description of the methods included in the TechSmart evaluation is included in the introduction to the full report. Data collection efforts for SY 17-18 in Gresham-Barlow School District are summarized below.

Teacher Survey

PRE designed a survey that was administered online to teachers in August of 2017 and April of 2018. Twenty-nine teachers completed the beginning of year survey and twenty-one teachers completed the year-end survey.

Teacher Interviews

PRE conducted phone interviews with three teachers from Kelly Creek Elementary School and three teachers from North Gresham Elementary School.

District Leader Interviews

PRE conducted phone interviews in spring 2018 with four district leaders: the Director of Teaching and Learning, the North Gresham Principal and ITC, and the Kelly Creek ITC.

Leadership Rubric

The leadership rubric was completed by The North Gresham Principal and ITC and the Kelly Creek ITC.

Student Achievement Data

The impact of the TechSmart grant investment at GBSD is being examined through a quasi-experimental comparison group design which uses a concurrent Comparison Group of students. For this concurrent cohort analysis, the Treatment Cohort includes students who were kindergarteners in SY 16-17 (Cohort 1) at Kelly Creek and North Gresham during Year 1 of the TechSmart funding, and the concurrent Comparison Group was created from the SY 16-17 kindergarteners at Highland and Powell Valley. These two comparison schools were chosen to be the most well-match to Kelly Creek and North Gresham in terms of student composition and achievement. As data become available, we will add Treatment Cohorts and continue to compare to the SY 16-17 concurrent Comparison Cohort. For SY 17-18, outcomes include ELPA and DIBELS scores for Cohort 1 and the Comparison Cohort.

DIBELS assessment data are collected for the purpose of informing teachers where their students stand with their odds of achieving certain literacy outcomes. According to researchers from the University of Oregon, reviewing these outcomes is an important step in the Outcomes Driven Model of early literacy problem solving.[1] This model uses assessments like DIBELS as part of a feedback loop that operates within each classroom each year, serving as a tool for teachers to reevaluate their lesson plans and strategies. For this reason, the assessment is not intended to compare students from year to year. While examining students' DIBELS scores next to those of the Comparison Cohort gives a general picture of where students stand in their early literacy skills, these outcomes cannot establish a causal relationship between technology integration and literacy outcomes.

One of the longer-term outcomes of the TechSmart Initiative is to reduce the achievement gap by improving academic outcomes for LEP learners, Special Education students, and students of color. These are referred to as "student subgroups." The TechSmart Initiative Logic Model uses "Common Criteria" for identifying promising and effective instructional strategies and practices. The criteria include, among others:

- Promote progress for all student subgroups in achieving outcomes. (Promising)
- Indicate promise as a means of closing the achievement gap. (Promising)
- Correlate with measurable improvement for a student cohort in an AHR academic outcome area. (Effective)
- Be validated in multiple settings and with additional student cohorts. (Effective)
- Indicate evidence of reducing the achievement gap among student subgroups. (Effective)

In order to assess progress toward reducing the achievement gap, student outcomes for each subgroup will be examined over time for Treatment and Comparison Cohorts. Figure 1 shows the student subgroups for the Treatment and concurrent Comparison Cohorts for SY 16-17 kindergarteners. Table 1 below details the number of students in the Treatment Cohort and the Comparison Group by year.

Table 1. Treatment and Historical Comparison Group Sample Size

Cohort 1		Comparison Group	
Year	**N**	**Year**	**N**
2016-17 (K)	170	**2016-17 (K)**	166
2017-18 (1st)	155	**2017-18 (1st)**	144

Figure 1 below presents each cohort broken down by at-risk subgroup. Students were categorized into subgroups based on their subgroup affiliation in kindergarten. As shown in Figure 1, there were a slightly higher percentages of at-risk students in the Comparison Group.

[1] Good, R. H., Kaminski, R. A., Smith, S., Simmons, D., Kame'enui, E., & Wallin, J. (In press). Reviewing outcomes: Using DIBELS to evaluate a school's core curriculum and system of additional intervention in kindergarten. In S. R. Vaughn & K. L. Briggs (Eds.), Reading in the classroom: Systems for observing teaching and learning. Baltimore: Paul H. Brookes.

Figure 1. GBSD At-Risk Subgroups

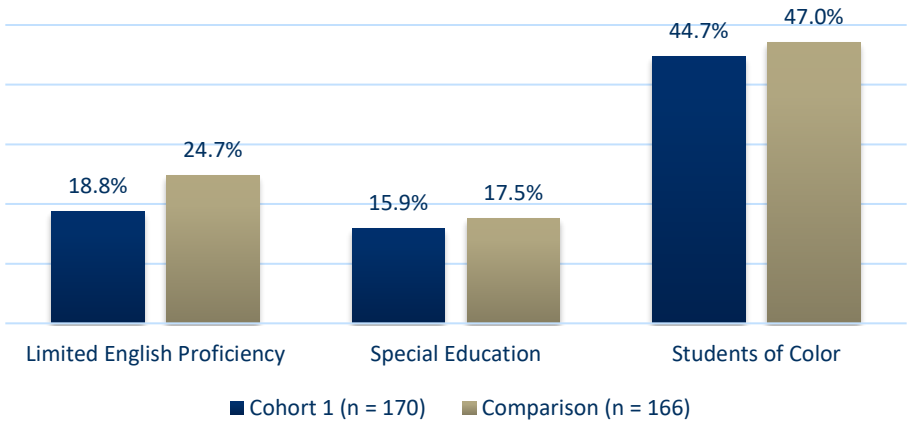
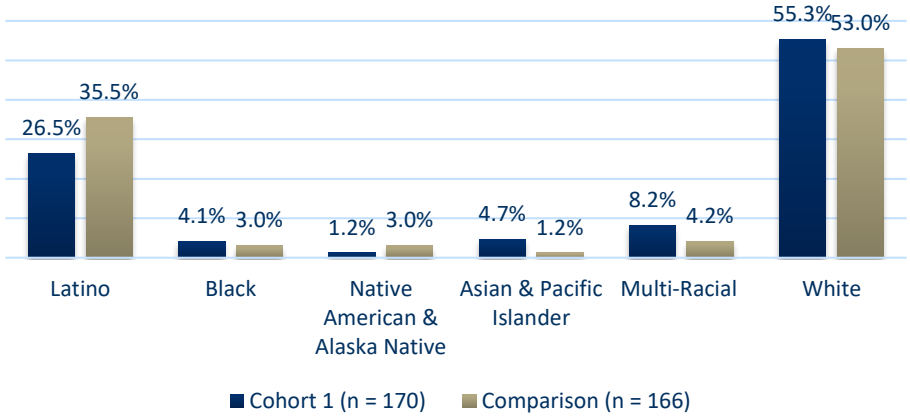


Figure 2 presents the race ethnicity of each cohort based on the data recorded for each student in kindergarten. Cohort 1 and the Comparison Cohort are showing similar percentages in each category of race and ethnicity with the exception of the Latino subgroup. The Comparison Cohort has 9% more Latino students.

Figure 2. GBSD Race/Ethnicity



Findings

The findings from the SY 17-18 evaluation at GBSD are presented below and organized by the seven factors identified as essential for schools to effectively transform into technology-rich teaching and learning environments.

Teaching Effectiveness

Districts support regular, inclusive and shared professional development among teachers.

Teachers and leaders interviewed as part of GBSD's SY 17-18 evaluation described the PD provided through the TechSmart grant as a mix of small group and individualized PD opportunities. One principal emphasized the importance of the differentiation their PD model allows: "The key to all of it has really been differentiated PD. We haven't done a lot of PD with the whole staff all together all getting the same information. It has been more about 'Where is this team or individual at and what are their next steps?'"

Small group PD occurred in various forms including on-site team trainings, ITC classroom modeling, and Tech Walks. Individualized PD took the form of a full-time, onsite ITC at each school who offered a significant amount of support for technology integration throughout the year. Teachers emphasized the importance of having an ITC that was onsite and always willing to provide support. Teachers made positive comments about how their ITCs were available when they wanted to delve deeper into their technology instruction and to provide one-on-one instruction upon request. Teachers specifically noted that without their ITC they would not have been able to make progress towards improving student academic outcomes due to the overwhelming nature of using the technology to support instruction. On the year-end status report, the Director of Teaching and Learning noted that between January and June, over 140 informal professional learning opportunities took place in GBSD. These included co-planning, co-teaching, and ITC modeling in classrooms. Professional learning sessions focused on various applications including: Screencastify, Journeys, SeeSaw, Kidblog, Green Screen videos, and Google Classroom.

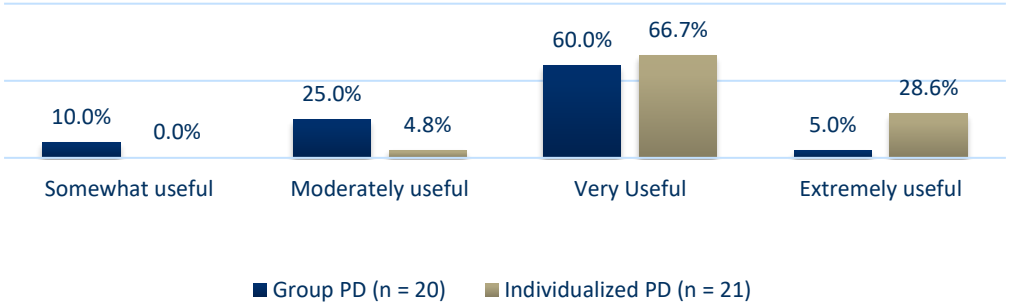
Table 2 summarizes the amount of group and individual PD that teachers received by the end of SY 17-18. The year-end survey data shows that teachers actually spent more time in group PD than in individual PD, despite rating the individualized PD as more useful. Eighty percent (80.0%) of teachers reported receiving at least nine hours of group PD while 57.1% reported receiving less than nine hours of individualized PD.

Table 2. GBSD Hours of PD

Hours of PD	Group PD (n = 20)	Individual PD (n = 21)
0 hours	0.0%	0.0%
1-8 hours	20.0%	57.1%
9–16 hours	50.0%	23.8%
17–32 hours	25.0%	19.0%
33+ hours	5.0%	0.0%

When asked to rate the usefulness of the group PD versus the individualized PD, the majority of teachers rated both forms of PD as very useful, with only slightly more teachers rating individualized PD as very useful compared to group PD (see Figure 3). In addition, 28.6% of teachers rated the individualized PD as extremely useful.

Figure 3. GBSD End of Year Teacher Ratings of PD Usefulness



How is the professional development impacting teacher instruction?

Section Highlights:

Professional development has contributed to an overall increase in technology use from SY 16-17 to SY 17-18 as more teachers are using technology to support instruction. This evaluation question includes the following outcomes: 1) PD has helped teachers increase the use of technology for evidence-based instructional practices, 2) PD has helped teachers use technology to differentiate instruction, and 3) PD has helped teachers use technology to analyze and use data about student learning. Teacher survey data shows that all three outcomes improved from SY 16-17 to SY 17-18. Interviews support this trend with all teachers reporting increased use and the importance of PD. The survey data shows that teachers' technology skill levels have improved substantially since last year.

As described in the methods section, PRE interviewed both teachers and leaders to assess the impact of the PD activities on teachers' instruction. In their interview, the Director of Teaching and Learning noted that there has been a noticeable improvement in SY 17-18 in how teachers are using technology in the classroom and one principal emphasized the growing confidence seen in their teachers as a result of the support and resources provided by the TechSmart grant:

> *A year ago many of our teachers were kind of scared of technology, either scared kids were going to break it, or not take care of it, or their own fear in how to support students with using it. And then that confidence grew and staff were becoming much more comfortable and confident with it. This year we have just totally taken off. I see a lot more innovation with teachers. I see a lot more true integration in terms of how assignments are provided to students and opportunities students have to respond through technology.*

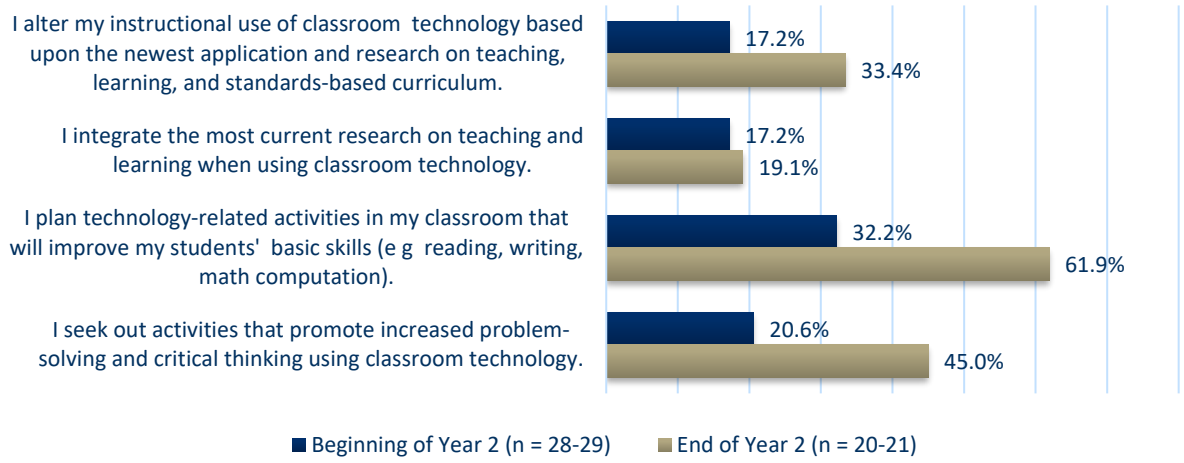
The survey asked teachers how effective the PD model has been in impacting their instruction. The majority of teachers had positive opinions of the PD model including the coaching provided by the grant. While most teachers had positive opinions of the PD resources, one teacher reported barriers regarding district support and access to technology resources (see Table 3).

Table 3. Effectiveness of the PD Model at GBSD

"Having a technology coach has been extremely valuable in helping me change my instruction."
"It has changed the way I teach on a daily basis."
"I would not have been able to integrate technology to the degree I have over the past two years without the grant and the coaching received."
"It was very effective. The ability to provide my students with one to one devices has greatly changed my instruction. I found that I was able to better engage students and vary the delivering of my instruction based on the needs of my students."
"It has been fantastic getting to learn about all of the resources out there and being able to pick the ones that fit with my teaching style. Since we have one-to-one technology, It also pushed me to be using it more effectively."
"The technology materials and having a technology coach have been very effective. However, we have found it difficult to implement many of our ideas due to restrictions from the district, as well as having a Smart Board that is does not function reliably."

Figure 4 shows that by the end of the second year of implementation, there were notable increases in the percentage of teachers who indicated that they plan technology-related activities to improve students' basic skills, seek out activities using technology, and alter instructional use of classroom technology based upon the newest applications and research. It is important to note that percentage of teachers responding "true of me" or "very true of me" to these technology integration items has consistently increased since the beginning of SY 16-17.

Figure 4. GBSD Instructional Strategies
(% True of Me/Very True of Me)

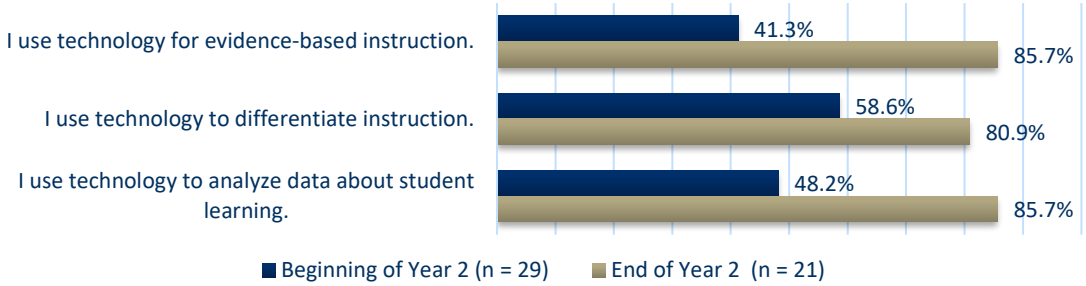


During interviews, teachers commented on their use of technology to support new instructional techniques. All teachers reported that they are integrating more technology as a result of the grant and most teachers reported using technology daily to support instruction. While all teachers discussed how implementing technology in their classrooms has enhanced their teaching, they also acknowledge that the implementation would not have been as effective without support from their ITC. One teacher explained:

> *The PD has been highly effective. I can't imagine not having a coach or the opportunities to see some of this in action and practice with it myself before presenting it to my students. Without those things it would be overwhelming and not effective as a strategy for my students.*

On the beginning and year-end surveys, teachers rated the extent to which they are using technology for evidence-based instruction, to differentiate instruction, and to analyze data about student learning. Figure 5 shows that by the end of SY 17-18, there was a noteworthy increase in the percentage of teachers that reported using technology to support each of these instructional practices. Teachers' reported rates of technology use for evidence based instruction and to differentiate instruction have increased from SY 16-17 to SY 17-18. Teachers reported substantial gains in the amount of time they use technology for evidence-based instruction and to analyze data about student learning over the course of SY 17-18.

Figure 5. GBSD Instructional Technology Use
(% A Moderate Amount/A Great Deal)



In interviews, teachers frequently commented on the use of technology to differentiate their teaching and individualize students' learning in ways that had previously been difficult and nearly impossible with large classes. One teacher explained how this has impacted her first-grade classroom:

I can individualize more than I was able to before, especially in first grade. They need you to help them a lot, and using the technology, I'm able to have them work on their own and I can work more with groups of kids. They're still able to work and be productive, and they're still learning using technology, and I don't have to be with them all at the exact same moment.

Teachers reported their technology skill level on the beginning and year-end surveys by rating themselves at one of the following five levels:

Level 1: I get someone else to do technology-based tasks for me.

Level 2: I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.

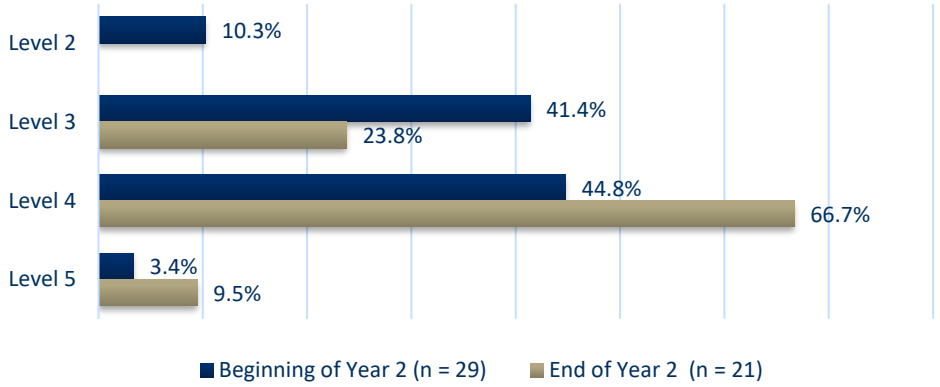
Level 3: I have enough skills to complete the management and communication tasks expected of me and occasionally will choose to use technology to accomplish something I choose.

Level 4: I use a variety of technology tools, and I use them efficiently for all aspects of my job.

Level 5: I use technology efficiently, effectively, and in creative ways to accomplish my job.

As illustrated in Figure 6, there was an increase in teachers' self-reported technology skill level during SY 17-18 with a large percentage of teachers moving from a Level 3 to a Level 4. By spring 2018, 100.0% of teachers rated themselves as Level 3 and above. With 48% of teachers rating themselves at a Level 3 in the SY 16-17 evaluation, technology skill development can be seen as an area of significant growth during this school year.

Figure 6. GBSD Teachers' Technology Skill Level



One teacher noted that although the frequency is varied across teachers, everyone is using technology to some degree: "Some people are using lots and lots of technology whereas other people are just kind of sticking their toe in the water. Everyone that I know of uses technology, it just varies how much." A district ITC echoed this during their interview, stating:

> *We still have folks who are in the replacement mode. They're doing things that could be done with paper and pencil but they're now doing it on a drive. But this year, we've really seen more teachers doing things that you couldn't do without technology.*

What new instructional strategies are teachers reporting?

Section Highlights:

After two years of implementation, teachers are reporting the use of several devices and applications to support instruction and most commonly report using technology to support classroom planning and preparation and to engage students in learning. Evaluation results also show that instructional strategies are emerging at GBSD. The most common instructional strategies noted by teachers are the use of technology to differentiate instruction and for small group instruction.

Table 4 presents results from the rubric designed to rate the use of technology to support instruction. Aggregate teacher self-ratings for the rubric as well as the aggregate ratings from one principal and two ITCs thinking about "TechSmart teachers as a whole" are presented below. The element of the rubric with the highest rating by teachers was "using technology to engage students in learning" and "using technology to support planning and preparation" for teachers. The leaders reported higher ratings for teachers as a whole on every item of the rubric than teachers reported for themselves. Leaders agreed that engaging students in learning and planning and preparation were the aspects of instruction where teachers were most often using technology to support instruction. These two items received the highest ratings by both teachers and leaders in the SY 16-17 evaluation as well.

Table 4. Technology Used for Supporting Instructional Practices
(1 = Not at all, 2 = Very Little, 3 = Somewhat, 4 = To a Great Extent)

	Teacher Survey	Leadership Rubric Survey (n = 3)
Planning and Preparation	**3.45** (n = 20)	**3.67**
Managing Classroom Procedures	**3.15** (n = 20)	**3.00**
Organizing Physical Space	**2.78** (n = 18)	**3.00**
Communicating with Students	**2.90** (n = 20)	**3.00**
Using Questioning and Discussion Techniques	**2.80** (n = 20)	**3.33**
Engaging Students in Learning	**3.65** (n = 20)	**4.00**
Using Assessment in Instruction	**3.20** (n = 20)	**3.33**
Demonstrating Flexibility and Responsiveness	**3.37** (n = 19)	**3.00**

The rubric also asked teachers and leaders to "Provide examples of how teachers used technology to support instruction for at-risk sub-groups (students of color, English Language Learners (ELL), SPED, low SES) in the areas defined above." The English Language Development program implemented in GBSD is referred to as ELL and will be referred to as such throughout this report. ITCs who completed the rubric provided examples of how the technology has supported instruction with ELL students. One ITC shared "students are able to practice speaking and listening by recording themselves on the Chromebook. They are able to check their progress by listening to their recordings and scoring them on a rubric." Another ITC also mentioned the use of voice recording and voice to text tools with ELL students as well as, "using digital programs that allow for visual expression such as Book Creator and Seesaw." Overall, both ITCs expressed positive opinions regarding the use of technology to support students from at-risk sub-groups as highlighted in an interview:

> *Overall, our students in each subgroup are utilizing technology for rich and targeted learning, specifically in English Language Acquisition. This is helping to decrease the knowledge and access gaps that exist between our subgroups and students coming from more privileged backgrounds.*

Leaders who completed the rubric also provided examples of how technology is being used to support new instructional practices and several highlighted the practice of differentiating instruction. One principal wrote, "Various apps and resources are used to differentiate and provide instruction to students. I would say there is less of this with the youngest students, but they are still doing a lot with tech." An ITC mentioned how teachers have used applications and resources to gather assessment data to allow for better differentiation for students. The ITC explained, "Several teachers are using results from programs like Kahoot and Quizlet to inform their small group instruction to address specific student needs." According to the mid-year status support, teachers have had success differentiating instruction when using SeeSaw in their classroom.

The year-end survey asked teachers to provide up to three examples of instructional strategies that have been particularly effective in their classrooms and to rate them on a scale of one to five. Some teachers

responded to this question by listing the technology supports that they were using to alter instruction. The most common tools reported are listed in Table 5 along with the average effectiveness rating.

Table 5. New Technology Being Used for Instruction

Technology Supports	Year-end Effectiveness Rating
Google Slides and Slideshow Presentations	**3.67** (n = 3)
SeeSaw	**4.00** (n = 2)
iPads and Devices to Record Oral Language	**4.00** (n = 2)
Book Creator	**4.00** (n = 1)
SMART Boards	**3.00** (n = 1)

During interviews, teachers and leaders gave examples of technology supports and how they are using them in their classes or schools. Seesaw, SMART Boards, Chromebooks, Kahoot!, Google Classroom, and digital libraries were mentioned by teachers and leaders as a commonly and successfully used technology supports. One teacher mentioned using multiple technology supports regularly to support different learning styles and to differentiate for leveled lessons:

I will have the students use apps like Seesaw to model their learning in a different way where they can explain with words, writing, or drawing, so it supports many different learners. I also use the apps Storyline Online and Epic! books to differentiate reading levels and build curricular sets that are based on what we are doing in class. In math we use i-Ready to support differentiation and targeted instruction for student learning.

Aside from teachers listing the technology supports being used during the school year, teachers also provided examples of how the new technology is being used to support instruction on the year-end survey. Table 6 shows that the most common ways in which teachers report using the new technology to support instruction are differentiating instruction, for small group instruction, and for hands-on activities. Differentiating instruction through technology is emerging as a promising instructional strategy as 47.6% of teachers provided this as an example.

Table 6. How New Technology is Being Used for Instruction

Technology Supports	Year-end Effectiveness Rating
Differentiating Instruction	**4.60** (n = 10)
For small group instruction	**4.00** (n = 8)
For hands-on activities	**3.67** (n = 6)
For whole group lessons	**2.67** (n = 3)
For research and writing	**4.00** (n = 3)
For independent work	**4.00** (n = 2)
For formative assessment	**5.00** (n = 1)
For yoga and mindfulness	**5.00** (n = 1)
For social skills instruction	**5.00** (n = 1)
To enhance instruction	**5.00** (n = 1)

Technology Supports	Year-end Effectiveness Rating
For self-regulation	**4.00** (n = 1)
For projects	**5.00** (n = 1)
For vocab instruction	**5.00** (n = 1)
For skills practice	**3.00** (n = 1)
To increase engagement	**5.00** (n = 1)

How are the new instructional strategies impacting student engagement?

Section Highlights:

Results from the SY 17-18 evaluation provide evidence that the technology supported instruction is positively impacting student engagement. Teachers reported that technology increases student engagement because it is relevant to them, allows them to work at their own level, and allows them to take pride in their work due to the presence of an authentic audience. Teacher survey data shows that students' comfort and capabilities with technology have increased from SY 16-17 to SY 17-18.

During interviews, teachers and leaders were asked how technology integration has impacted student engagement and a few common themes emerged. Teachers and leaders explained that technology is relatable to students. It is something they are using frequently and understand well which leads to increased engagement. One teacher explained, "iPads are so second nature that most of the kids that come into kindergarten already knowing how to use them. They know how fun they are to use so they're motivated by that." Another teacher shared a similar observation:

> *Technology is huge for this age group. These kids have always had technology in their lives and so it's normal for them to have this as a way to learn. Whenever we're able to take what we're learning in class and apply it to an app, they're very engaged, and they get very excited.*

Another theme that emerged in the interviews and is consistent throughout this evaluation was increased student engagement as a result of teachers having the ability to differentiate using technology. Teachers and leaders emphasized that students are much more engaged when their work is individualized and meets them at their own level. Finally, teachers who were interviewed emphasized that technology gives students the ability to present their work in new and creative ways. Teachers explained that the ability to create something unique and then to share it with an audience fosters engagement and encourages students to take pride in their work. One teacher explained how she has seen this in her classroom while using Seesaw:

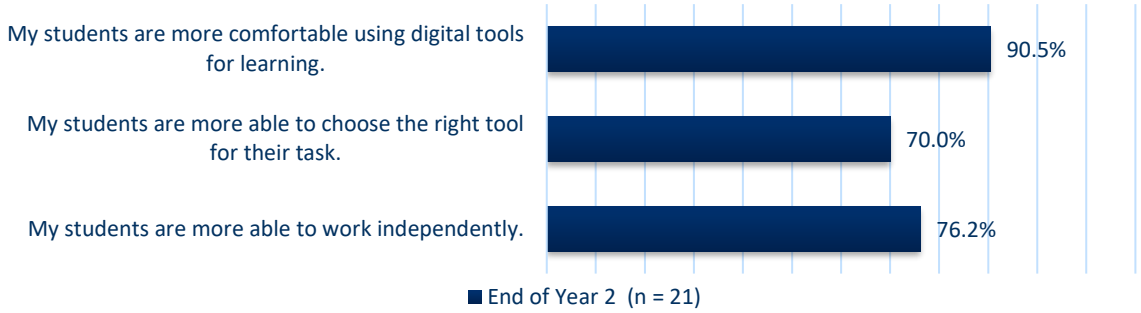
> *Kids are able to have an authentic audience for their work so they're more engaged in the process of creation for whatever the task is. Knowing that their classmates will be looking at it, and their teacher can see it, and their mom can get on and look at it. The creation of an authentic audience has really been powerful.*

The mid-year status report provided additional information regarding the way in which the new instructional strategies are impacting student engagement. The report re-emphasized the points made above stating the importance of an authentic audience, technology as second nature, student choice and learning variety. Not only are students more engaged and enthusiastic about their learning, but the quality and quantity of their work has improved as well. The report also mentions improvements since the first year of the grant:

> *Their ability to collaborate online through viewing, reflecting, and commenting on each other's work is very empowering for our students. They are visibly more competent and confident in using their Chromebooks and iPads this year than they were last year when we first began implementing the grant.*

On the year-end survey, teachers rated students' comfort with using digital tools for learning, ability to choose the right tool for their task, and ability to work independently as it compares to the previous school year. Over 90% of teachers were in agreement that their students are more comfortable this year with using digital tools than their students in SY 16-17, and over half of the respondents reported being in agreement with the other two items regarding their students' technology use (See Figure 7).

Figure 7. GBSD Year-End Student Technology
(% Agree/Strongly Agree)



The year-end status report provided several examples of how technology has impacted student engagement. In particular, the Director of Teaching and Learning reported that students are engaging with technology via digital collaboration, production and publication tools. The report emphasized the importance of authentic audiences in engaging students in new ways. According to the year-end status report, students are using tools like Google Classroom, SeeSaw, and GreenScreen. Some students have been using digital architectural design tools and coding software to program robots. The Director of Teaching and Learning explains the importance of these new tools as they relate to student engagement:

> *Rather than just capturing their learning on a sheet of paper that is only seen by their teacher and maybe a few classmates, they now have a variety of tools they can use to generate content that expresses their ideas in ways that can instantly be shared with people around the globe.*

Are the new instructional strategies showing promise for improving academic outcomes?

Section Highlights:

Analysis of DIBELS data showed that the percentage of Cohort 1 students performing at benchmark in the spring of kindergarten was considerably higher than the Comparison Cohort. Although the percentage of Cohort 1 students at benchmark declined in 1st grade, it remained higher than the Comparison Cohort in 1st grade. Though this data does not point to technology positively impacting student outcomes at this time, more student achievement data is needed to more accurately assess these trends. Anecdotally, teachers and leaders from GBSD report seeing growth in their students. Students have become more engaged and shown more critical thinking skills when given the opportunity to express their thoughts in new ways using technology. Students have a better attitude towards learning and show more motivation when allowed to use technology.

During the leadership interviews, one principal expressed that the priority of the leadership is that students are showing personal growth rather than increased assessment scores. The principal explains, "For us it's about growth, and our students are showing growth. We feel like kids are engaging with content in a different way and we don't know why we wouldn't see that benefit in test scores at some point." Other leaders and teachers have seen students' growth as well. Specifically, teachers reported that technology gives their students the ability to express and explain their thoughts in a variety of ways, not just using conventional writing. ITC's and teachers have seen this result in deeper thinking and critical thinking abilities in students. One ITC shared how she has seen this impact even the most disadvantaged students:

When you give students who struggle an opportunity to explain their thinking in words versus writing that automatically is increasing what they're learning and absorbing. That in itself has been a huge improvement in student learning.

According to the interview results, students have shown better attitudes towards learning when technology is involved and have become more motivated by the opportunity to receive immediate feedback as well as to track their own growth. The ITCs reported an increase in student literacy and improvements in student outcomes using leveled math. The Director of Teaching and Learning explains how the change in students' attitudes towards learning has impacted their literacy skills, "The more kids practice, the more their skills grow. And so, if they're more authentically engaged because of the format and they're doing more frequent and higher quality practice, we know that [the quality and quantity of writing] is going to increase."

Student Achievement Data

As described in the methods section of this report, at this point in the evaluation PRE can present data for one Treatment Cohort and a Comparison Cohort. Table 7 below presents the data we have available at this time for each group.

Table 7. GBSD Student Achievement Data

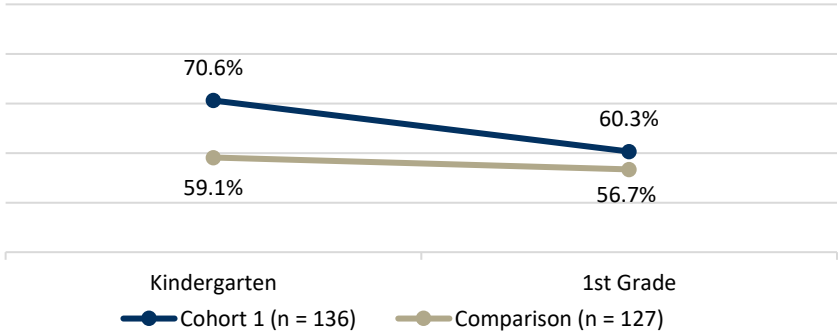
	Kindergarten	1st Grade
GBSD Cohort 1 (Kindergarten in SY 16-17)	DIBELS ELPA	DIBELS ELPA
Comparison Cohort (Kindergarten in SY 16-17)	DIBELS ELPA	DIBELS ELPA

DIBELS

In SY 16-17, Gresham Barlow School District used the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment for K-3 students. DIBELS are a set of procedures and measures for assessing the acquisition of early literacy skills from kindergarten through sixth grade. DIBELS data were available from the district through SY 17-18 and these results are presented in Figure 8 for Cohort 1 and the Comparison Cohort.

For Cohort 1 students, DIBELS results showed that the percentage of students meeting benchmark decreased from 70.6% in spring of kindergarten to 60.3% in the spring of 1st grade. The percentage of Comparison Cohort students at benchmark showed little change from kindergarten to 1st grade, decreasing slightly but not as dramatically as for Cohort 1. Though Cohort 1 students showed a 10% decrease between time points, they still maintained higher percentages of students at benchmark than the Comparison Cohort in both years.

Figure 8. Percentage of Students at Benchmark in the Spring on DIBELS Assessment



Instructional practices show promise for improving student academic outcomes with at-risk student subgroups (i.e., students of color, low SES, LEP, special education (or those with an Individualized Education Plan), and those not on track to meet academic standards).

Section Highlights:

Similar to the full group analysis of DIBELS data, the subgroup analyses showed that the percentage of Cohort 1 students performing at benchmark decreased from kindergarten to 1st grade. The DIBELS results are not particularly meaningful with only two years of data. Eighty-four percent (84.4%) of Cohort 1 students scored at "Progressing" or above for the ELPA21 assessment compared to 67.5% of the Comparison Cohort. Teachers have provided various examples of how they have used technology to

support at-risk students in their classrooms. Teachers and leaders report that technology has been used to support students with special needs, language learners, and economically disadvantaged students. Teachers and leaders anticipate improved academic outcomes with at-risk students as a result of the technology implementation because of the differentiation it allows as well as its ability to level the playing field for all learners.

As mentioned throughout this report, the TechSmart grant focuses on the literacy achievement gap, specifically for students of color, English Language Development (ELD) students, students with disabilities, and students living in poverty. Teachers and leaders provided multiple examples of how using technology to support new instructional practices is showing promise for improving academic outcomes with at-risk subgroups. On the survey, teachers were asked how they have supported the instruction of students belonging to at-risk subgroups using new technology. Table 8 includes quotes from some of these teachers' responses.

Table 8. GBSD Teachers' Use of Technology Supported Instruction with At-Risk Subgroups

"I use iPads to help ELL students record and reflect on language samples. Epic books also lends itself to a wide variety of reading materials that reflect my students."
"Since my students have access to one-to-one devices, all students are able to learn typing skills and simple computer skills. This is extremely helpful when students are coming from a variety of backgrounds. It supports all learners and helps to close the achievement gap so that all learners have access to the same technology and supports."
"We have one to one Chromebooks which gives all students an equal chance to use technology who might not otherwise have that chance. I choose stories that have a wide variety of students of color as lead characters and also biographies of People of Color as examples of positive role models."
"All of the students I work with have a disability. It has been phenomenal seeing how independent students are using technology in their classrooms in order to access general education curriculum."
"Seesaw provides an entry point for all students. It includes a variety of ways in which students can share their thinking."
"With ELL students who are dual identified, they can use a feature to speak into the mic what they want to say and it types for them."

Leaders who participated in the interviews were asked whether the instructional practices show promise for improving student academic outcomes with at-risk student subgroups, and those not on track to meet academic standards. In addition to the examples that have been provided thus far in the report, teachers and leaders discussed how technology has made learning more accessible for the ELL and SPED students . One ITC explains that equity in general has been a priority in the district during the grant implementation process.

ELL has been a huge focus with this tech grant. As far as students of color, one of our focuses as a school district has been equity, so we look at tech with that equity lens.

Our students have been using Seesaw to present who they are, and using technology in a way that they're comfortable has been something I've been working on with teachers.

One way in which technology impacts the learning of their at-risk students is by leveling the playing field and creating equity among students. During their interviews, teachers and leaders discussed how the one-to-one technology provided by the grant has started to eliminate some of the disadvantages caused by unequal access to technology. One teacher explained,

So many of our students don't have access to the same amount of technology at home. Their parents might have a smart phone but they don't get to use it very much, or a couple of them might have tablets or a computer they can use, but it's not an even playing field. Having a one-to-one makes a huge difference for these kids because they all have access to the technology.

By having access to technology students are given access to a new abundance of resources. One teacher explained that she did not have the resources to fill her library with books that are representative of all of her students, however, using her Chromebooks she can access an online library full of books that represent all students in her classroom. Another teacher shared the impact of this new access to resources: "Our data is showing that in math and literacy, kids are achieving higher than they have been. I would like to think that it's partly because of this grant that they are having the chance to access the educational tools that they might not have had before."

In addition to a broader range of available resources, teachers and leaders stressed the importance of allowing students to learn and share what they've learned using a variety of mediums. A few teachers and coaches shared about the gains they have seen with language learning students (ELL) using voice recording technology. One teacher shared what this looks like in her school; "They can listen to stories as well as read. For writing, they can speak into their devices to share what they're learning. It really makes a big difference to everyone to have an equal opportunity to do the learning." One ITC explained that in addition to voice recording exercises, applications such as Book Creator and Seesaw have been used to support language learners. Using technology in this way has led to increased verbal abilities, confidence, and comprehension, says one ITC.

Students with special needs have also experienced personal gains by taking advantage of technology in this way. One ITC explained that she has seen increased motivation in autistic students when they use technology for their assignments. She has seen students with special needs begin to enjoy their learning where they hadn't before by using visuals and narration to explain their learning. Another teacher explained that she has also seen improvement in her students with special needs by using Seesaw to break down the lessons into more easily digestible and interactive pieces:

I have a student in my class who is highly impacted with autism and he will fight doing any sort of writing and he also fights doing reading, but he loves to use the computer. He loves to use technology so he will do assignments on the computer and

we can chunk it up into smaller sections for him. He's doing the same thing, but modeling it in a different way.

One GBSD principal explained that the technology integration combined with the district's focus on equity has had a positive impact on her staff as well. This principal has seen an increase in communication and collaboration among specialists as well as between teachers and specialists. This principal stated that this increased communication has resulted in consistency in practice which in turn has benefited the school's students.

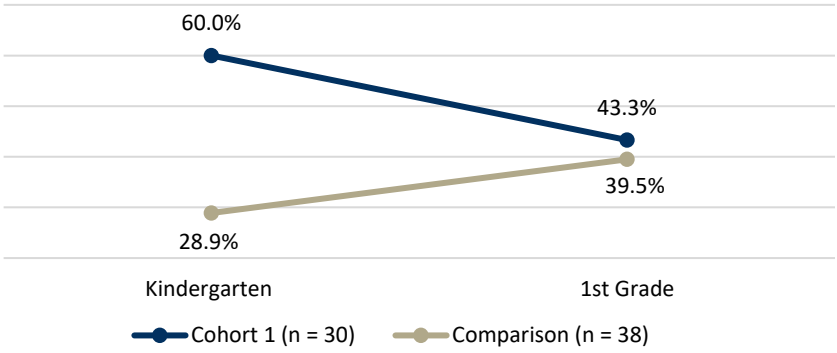
Student Achievement Data

DIBELS

In order to examine whether instructional practices show promise for improving student academic outcomes with at-risk subgroups, DIBELS scores were examined for at-risk subgroups within Cohort 1 and the Comparison Cohort and these results are presented below.

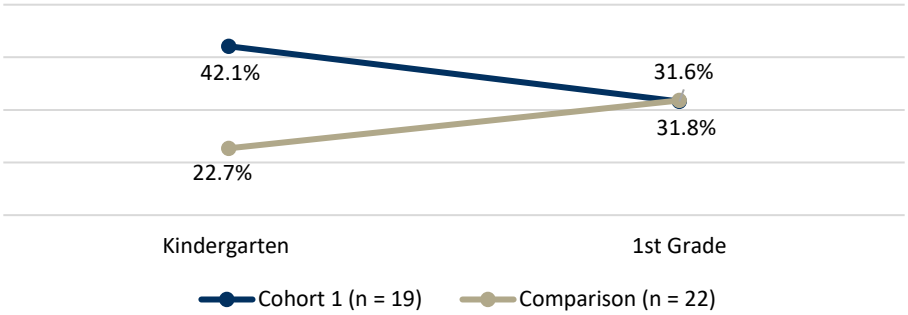
Figure 9 presents the percentage of LEP students who performed at benchmark on the DIBELS assessments at each time point. The results for Cohort 1 LEP students are consistent with the trend seen for the Cohort 1 full group analysis presented above. Cohort 1 LEP students were outperforming the Comparison Cohort in both kindergarten and 1st grade but showed a decline from kindergarten (60.0%) to 1st grade (43.3%).

Figure 9. Percentage of Treatment and Comparison LEP Students at Benchmark in Spring on DIBELS



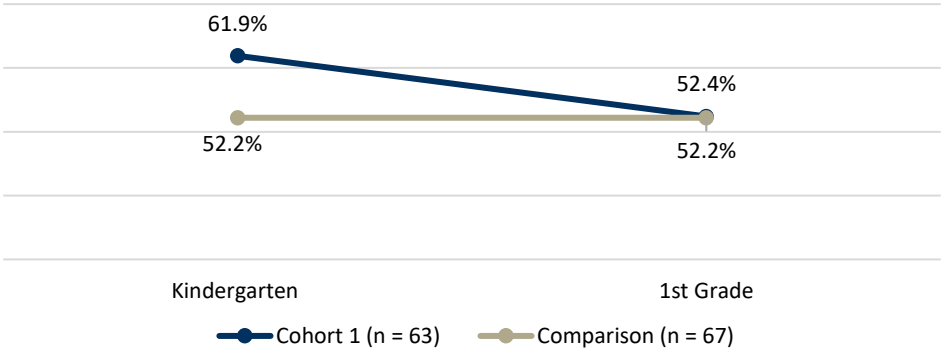
Cohort 1 SPED students showed a similar trend to LEP students as the percentage of SPED students performing at benchmark decreased from kindergarten to 1st grade. The Comparison Cohort SPED subgroup showed an increased percentage of students at benchmark by 1st grade. The same percentage of SPED students were performing at benchmark for Cohort 1 and the Comparison Cohort by 1st grade (see Figure 10).

Figure 10. Percentage of Treatment and Comparison SPED Students at Benchmark in Spring on DIBELS



Similar to the other subgroups, the percentage of Cohort 1 minority students performing at benchmark declined from kindergarten (61.9%) to 1st grade (53.4%). Comparison Cohort minority students showed minimal change between kindergarten and 1st grade (see Figure 11).

Figure 11. Percentage of Treatment and Comparison Minority Students at Benchmark in Spring on DIBELS



ELPA Assessment

Table 9 below presents the ELPA21 results for Cohort 1 and Comparison Cohort students in kindergarten. The scores presented in Table 9 show that 81.3% of Cohort 1 students who completed the ELPA21 assessment in kindergarten scored at the "Progressing" proficiency status compared to 67.5% of Comparison Cohort students. Though a chi-square test of independence showed that this difference was not significant, this is still a promising finding for Cohort 1 students in kindergarten.

Table 9. ELPA21 Results for Kindergarten (SY 16-17)

Proficiency Determination	Cohort 1 (n = 32)	Comparison Cohort (n = 40)
Emerging	15.6% (5)	32.5% (13)
Progressing	81.3% (26)	67.5% (27)
Proficient	3.1% (1)	--

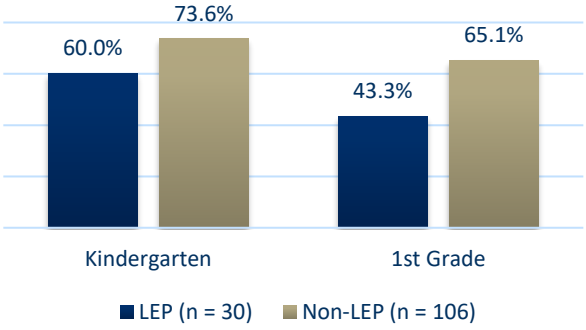
Is the rate of student growth in one or more AHR outcome greatest for at-risk student subgroups ((i.e., students of color, low SES, LEP, special education (or those with an IEP), and those not on track to meet academic standards).

Section Highlights:

At this point in time it does not appear that the rate of student growth on the DIBELS assessment is greater for the at-risk subgroups. DIBELS data for at-risk subgroups verses non-at-risk subgroups showed that the non-at-risk subgroups tend to outperform their at-risk counterparts. This is true for all three subgroups presented below.

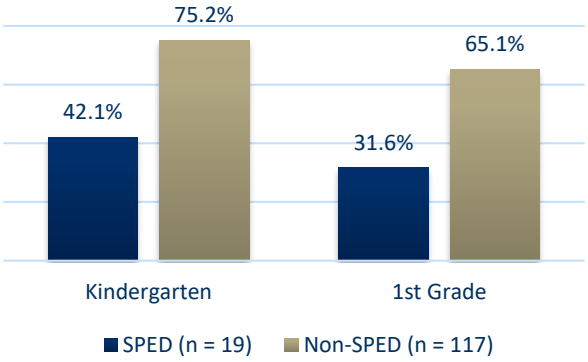
PRE examined DIBELS data to assess how student progress may differ for at-risk subgroups as compared to non-at-risk subgroups within the Cohort 1 schools. Figure 12 presents the percentage of Cohort 1 LEP and non-LEP students performing at benchmark on the DIBELS assessments in kindergarten and 1st grade. Within Cohort 1, non-LEP students outperformed LEP students at both time points.

Figure 12. Cohort 1 LEP vs. Non-LEP DIBELS Spring Benchmark



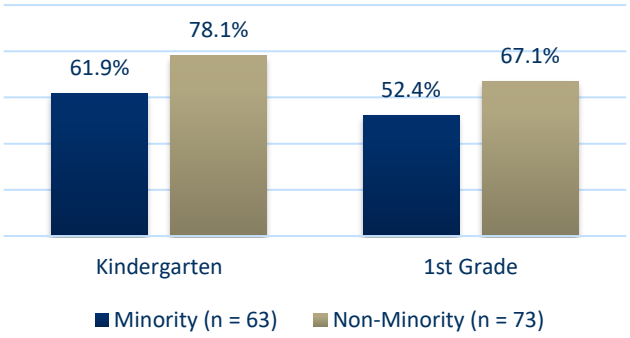
The trend for Cohort 1 SPED students and non-SPED students is consistent with the trend shown for LEP and non-LEP students shown above. There were a higher percentage of non-SPED students at benchmark in kindergarten and 1st grade than SPED students (see Figure 13).

Figure 13. Cohort 1 SPED vs. Non-SPED DIBELS Spring Benchmark



Cohort 1 minority verses non-minority DIBELS scores follow the same trend as the other subgroups presented above. Non-minority students outperformed minority students at both time points (see Figure 14).

Figure 14. Cohort 1 Minority vs. Non-Minority DIBELS Spring Benchmark



Digital Age Learning Culture

District embraces a cultural shift and views technology as positive.

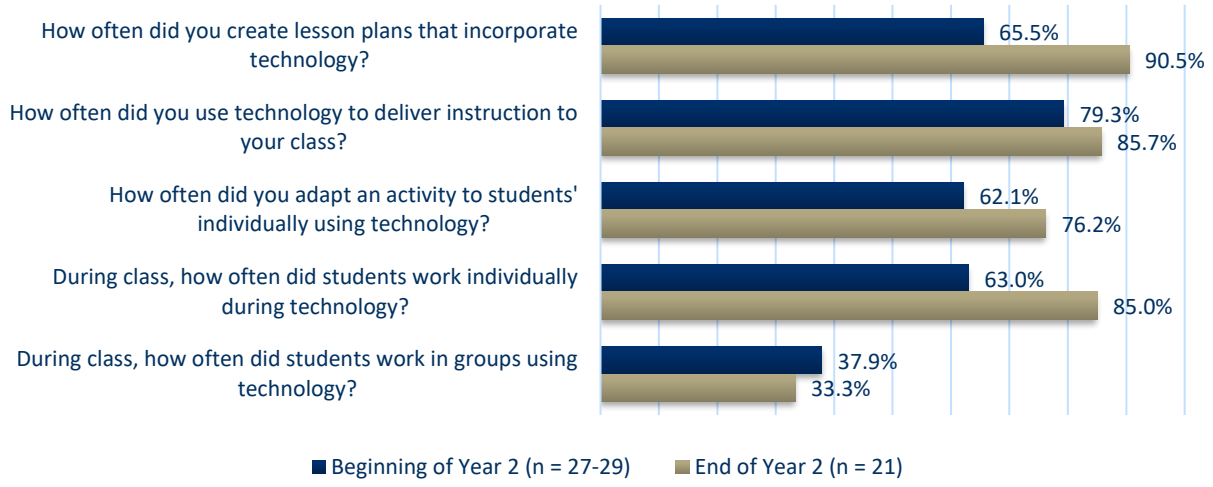
Has the use of technology to support instructional practices increased?

Section Highlights:

Teacher survey results provide evidence that the use of technology to support instruction increased from beginning to end of SY 17-18. The only area in which this was not the case was regarding technology use in group work which decreased from the beginning of SY 17-18 to the end. Frequency of technology integration increased substantially from SY 16-17 to SY 17-18.

By the end of SY 17-18, the frequency at which teachers were integrating technology into their classroom increased in all areas with the exception of using technology to work in groups which was less than 10% in SY 16-17 (see Figure 15). These rates have risen consistently from SY 16-17, increasing substantially in all areas by at least 20 percentage points. For example, at the end of SY 16-17, 20% of teachers reported that they create lesson plans that incorporate technology. This has risen to 90% by the end of SY 17-18.

Figure 15. GBSD Frequency of Technology Integration
(% A Moderate Amount/A Great Deal)



Is the learning management system useful for identifying effective instructional practices (more efficient, easier, data-driven)?

Although a formal LMS (learning management system) is not yet in place, GBSD has created a technology steering committee to review and conduct a LMS pilot. In the meantime, the district is using Google Classroom. According to the year-end status report leadership is still working towards establishing a formal LMS.

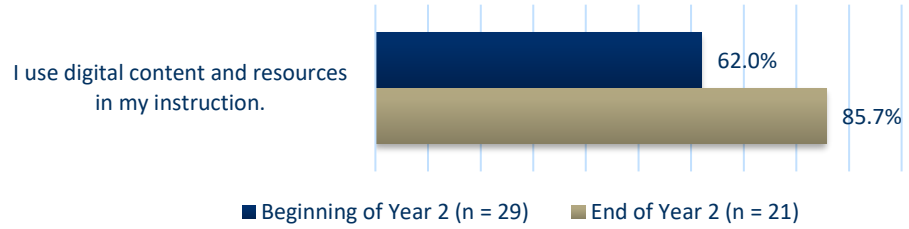
Do teachers have increased access to and use of digital content and resources?

Section Highlights:

From the beginning to the end of SY 17-18 teachers reported an increase in both the use of digital content in their classrooms as well as in students' access to technology in their classroom. Teachers provided many examples of online resources used in their classrooms including Kahoot and Seesaw. Teachers also reported examples of technology resources used in their classrooms such as Smart Boards and slideshow presentations.

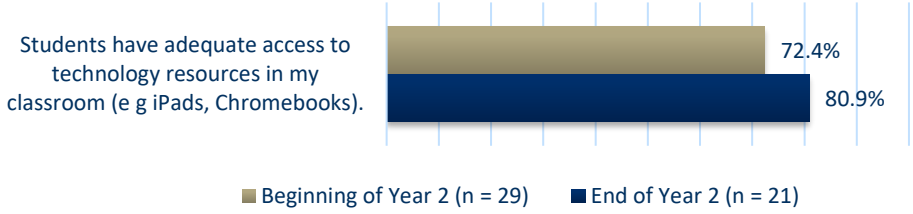
As emphasized in previous sections of this report, the TechSmart grant funding has provided teachers with increased access to a variety of digital content and resources that they have been using to enhance their instruction. Teachers reported a 23 percentage point increase in the use of digital content and resources from the beginning of the year to the end of the year (see Figure 16).

Figure 16. GBSD Use of Digital Content and Resources
(% A Moderate Amount/A Great Deal)



At the beginning of SY 17-18, 72.4% of teachers reported that students had adequate access to technology resources in their classroom. At the end of the school year, 80.9% of teachers reported students had adequate access to technology resources (Figure 17).

Figure 17. GBSD Students Have Adequate Access to Technology Resources in my Classroom
(% True of me/Very True of me)



Examples of the most commonly mentioned digital content and resources include various online applications such as Seesaw, Book Creator, Google Classroom, and Kahoot. Teachers also reported the importance of using various technology resources for differentiation. Slideshow presentations and Smart Boards were also commonly used by teachers. Table 10 provides additional examples of how various teachers use each of these resources.

Table 10. GBSD Teachers' Use of Digital Content

Digital Content	Teachers' Application of the Technology
Other online resources (n = 5)	• *"We use Seesaw and Book Creator to integrate tech with language."* • *"We use Google Classroom assignments and Kahoot quizzes."* • *"We use Read Live, Nearpod, and iReady."* • *"We use Readworks."*
Various Tech for Differentiation (n = 4)	• *"Differentiated instruction using technology."* • *"Differentiated instruction to support all students learning. Students are able to listen to a text at grade level, above grade level or on grade level. Students are then able to respond to said text."*
Slideshow Presentations (n = 3)	• *"Create slides to share a topic students have researched, then give oral presentations using slide show."* • *"Creating slides to demonstrate knowledge."*
SeeSaw (n = 3)	• *"My students use Seesaw to make and record scientific observations."* • *"I assign work on iPad apps such as on SeeSaw"*
Smart Board (n = 2)	• *"I use the interactive board to run small group intervention when teaching math/place value. I use an interactive place value 'game.'"* • *"I create interactive lessons on the Smart Board."*

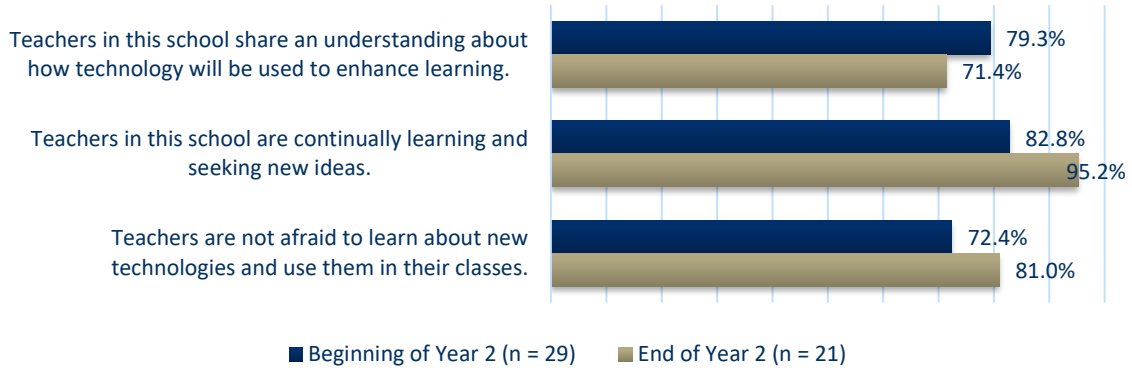
Is there evidence of districtwide support for technology integration?

Section Highlights:

According to teacher surveys and interviews, the culture of technology support in GBSD is strong. Teachers report feeling supported by each other as well as by their ITCs.

Teachers reported a strong technology culture in GBSD. Figure 18 shows the change in teachers' perceptions of a culture of support for technology integration over the course of the year. The number of teachers who reported a shared understanding about how technology will be used to enhance learning decreased by eight percentage points. However, the number of teachers who reported continuous learning and confidence in integrating new technology increased over the course of SY 17-18 (see Figure 18).

Figure 18. GBSD Teacher Perceptions of a Culture of Support for Technology Integration
(% Agree/Strongly Agree)



The culture in GBSD was described by teachers and leaders as very supportive. Those interviewed explained a growing eagerness and excitement spreading among the teachers in the district. ITCs recognized this during planning times as teacher sharing has increased. Teachers in the GBSD have opportunities to participate in the Professional Growth Academy in which they have the opportunity to teach their peers. The most effective provision of support provided to teachers was the ITCs, according to those interviewed. For this reason, one leader approached the district to ensure that both ITCs would remain full-time. This leader described the influence of the coaching:

> *There's a buzz and a positivity out there about it. People are seeing a certain potential. Building that value and having all of those teachers say 'We couldn't have done this without coaching. I can't imagine what we would have done without someone in our building helping us.' That really has been good for me making a case for it.*

From a district level, those interviewed reported district wide meetings and PD surrounding topics such as digital citizenship, online safety, and new math curriculum. The district also provided teachers with In-service days and Teacher Work Wednesdays.

Do parents have an increased understanding and utilization of districts' technology assets?

Section Highlights:

Teachers report that the new technology has increased parent involvement and communication. Teachers report that many apps used in their classroom allow for parent participation, including chat functions with

translation capabilities. Funding cuts at Kelly Creek negatively impacted the school's ability to engage parents through Family Nights.

Teachers who participated in interviews indicated that parents' understanding and utilization of the technology assets has increased in year two. According to those interviewed, GBSD has worked with families to enhance instructional practices and to further support students. During their interviews, teachers and ITC's explained how many of the different classroom management systems they have in place include a function that allows for parent participation. Teachers use Seesaw, Google Classroom, and ClassDojo to keep parents informed about their students, what they're learning, whether or not they are on track, and to share the work that their students are creating. Teachers and coaches reported that parents appreciate the ability to check in on their students and to communicate directly with teachers. One teacher reported that ClassDojo allows her to easily translate messages from English to Spanish and back, so that she can communicate directly with students' parents who she would not have otherwise been able to communicate with. One GBSD principal reported receiving support from their school's PVC club in the form of donated accessories such as headphones.

Unfortunately, in SY 17-18 Kelly Creek was not able to fund Family Nights as they did in SY 16-17 due to cuts in their Title I funding but North Gresham was able to host two more Family Nights this school year. The Family Nights were focused on Innovation and Technology integration. According to the SY 17-18 status reports, an average of 200 parent/guardian participants attended these North Gresham Family Nights.

Visible Leadership

District leadership is actively involved and working with key communities to accomplish change.

Are districts identifying effective instructional practices and disseminating information and results to other districts?

Section Highlights:

The SY 17-18 evaluation showed that GBSD has disseminated best practices to other school districts in efforts to work towards community-wide change. The ITCs are hosting Tech Walks for other districts, are members of the Oregon Tech Cadre, and helped to form the East County Technology Consortium with Reynolds, David Douglas, and Centennial school districts.

GBSD is sharing results both internally within the district and also with other districts. The mid-year and year-end status reports noted sharing updates about the grant's activities and progress within the district. The mid-year status report explained that the district's ITCs are actively involved in the instructional technology community and regularly attended events locally and nationally. They also reported actively sharing on social media including twitter regarding technology use in the classroom.

During their interviews, teachers and leaders discussed some examples of cross-district collaboration. The ITCs discussed collaborative Tech Walks that have been done with other districts as well as plans for a one-day tech summer camp in which they can teach other districts about technology implementation. ITCs mentioned they are part of the Oregon Tech Cadre and attend as well as present at various technology conferences.

In the year-end status report the Director of Teaching and Learning emphasized the important role of the ITC's in sharing and disseminating learnings. She emphasized that the ITCs have provided professional learning for every teacher in the district, beyond the two pilot schools. The ITCs provide digital citizenship and safety trainings to all teachers during in-service days and have taken teachers from GBSD and Reynolds districts to Tech Walks. ITC's from GBSD have partnered with coaches from Reynolds, David Douglas, and Centennial school districts to form the East County Technology Consortium with the goal of creating a website for teachers to access on demand technology training videos. The teachers have also played a vital role in expanding the grant's impact by teaching each other through the district's Professional Growth Academy program and presenting at the Innovation Teacher Summer Camp.

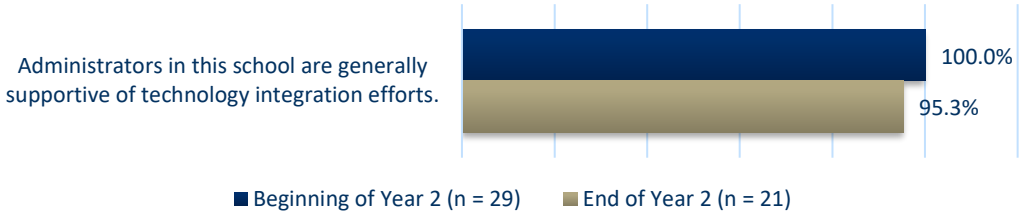
Do teachers feel increased support from district leaders regarding technology integration?

Section Highlights:

By the end of SY 17-18 teachers' perceptions of administrations support for technology had decreased from 100.0% to 95.3%. Though teachers' responses indicated that they feel less supported by administration, ITC's indicated in interviews that they feel extremely supported in their positions.

As presented below, 100% of teachers felt that administrators in their school were generally supportive of technology integration efforts in the beginning of SY 17-18. This was slightly lower on the year-end survey.

Figure 19. Perception of Administrators' Support of Technology Integration
(%Agree/Strongly Agree)



Aside from the areas mentioned previously in this report, teachers and ITCs mentioned that they felt supported by administrators in other ways as well. The administration was described in these interviews as "extremely supportive". According to those interviewed, district's technology steering committee is another example of how the administration shows continued support for the grant, as well as the continued funding for full-time ITCs. The superintendent was also mentioned during interviews as being extremely supportive of technology integration and innovation. One ITC expressed their perception of administrators' support of technology integration and of their work:

> *As far as district leadership, I've felt increasingly supported in this role, and I know with our new superintendent, she's really big on tech integration and innovation, and moving forward. Yeah, there's some good things that we having going in places.*

Data-Driven Improvement

Current, relevant, and high quality data from multiple sources are used to improve schools, instruction, professional development, and other systems.

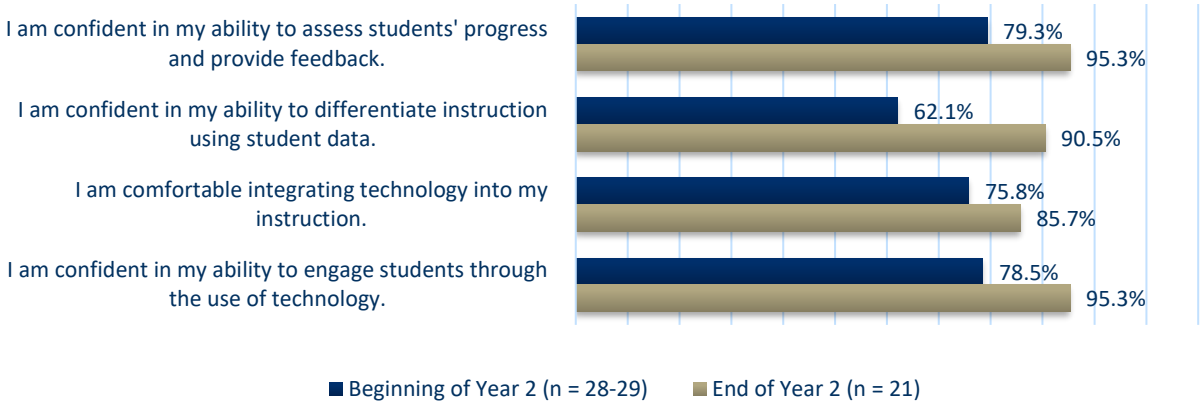
How are schools using data to improve instruction, professional development, and student performance?

Section Highlights:

Teachers in GBSD report an increased use of data-driven instructional strategies over the course of SY 17-18. Teachers also reported increased levels of comfort and confidence in various areas of technology integration.

As highlighted in the previous section on teaching effectiveness, teachers have been increasing their use of data-driven instructional strategies. Figure 20 displays more information regarding data-driven improvement including teachers' increased levels of comfort and confidence using data.

Figure 20. GBSD Data Driven Improvement
(% Agree/Strongly Agree)



As shown in Figure 20, there was an increase in teachers' confidence and comfort levels for each item. Teachers' confidence in their ability to differentiate instruction using student data showed the greatest increase of almost thirty percentage points. Teachers' confidence in their ability to assess students' progress and provide feedback, and to engage students through the use of technology increased by thirteen to fourteen percentage points from the beginning of the year to the end.

Funding & Budget

District's budget repurposes resources and seeks outside funding to focus on promising practices and technology supports.

Have districts identified at least one opportunity for repurposing resources to support technology integration?

Section Highlights:

While there are not many examples of GBSD repurposing resources to support technology integration, teachers and leaders explained that the district is expanding the grant's impact by funding coaches full time and devices for fourth and fifth grade classes.

Leadership interviews provided examples of how the district is working toward repurposing resources to support technology integration. One district leader explained how funds have been repurposed in order to keep both of their full-time ITCs, though the grant funding only pays for one. She commented, "You put your money where your priorities are, so the fact that we're funding a full-time person based on the work coming out of this grant I think says a lot about that piece." One ITC mentioned this as well, "They're kind of repurposing us, they're making us more district wide but still able to be half-time at our schools. The district will be paying for the half the grant isn't." Another coach also mentioned that they had been able to repurpose a group of iPads left behind by previous staff and created a system so that they could be checked out.

A GBSD principal explained that though the grant funds only the K-3 implementation the district's vision is of a K-8 impact. The principal explained, "the district has funded one-to-one and the instructional devices for fourth and fifth grade" a year ago to work towards this goal. Another district leader shared, "We're really trying to maximize that little, tiny bit of money we were able to carve out to kind of have a K-8 impact across the district."

Strategic Planning

District strategic plan reflects shared commitment to improving outcomes for students.

How does technology integration fit into the district's strategic plan?

Section Highlights:

According to teacher and leader interviews, technology has become a crucial part of their district's strategic plan, specifically integrated into each of their seven strategic themes. Aside from the strategic plan, the district has recently hired a new, "tech-forward" superintendent and implemented a new technology innovation steering committee.

All of the teachers and leaders who were interviewed discussed the importance of the district's seven "Strategic Themes". The GBSD's strategic plan, as it is written on their website, is to be a dynamic plan based on the needs of students and organized around these themes; Teaching and Learning, Growth and Achievement for All, Equitable Outcomes, College and Career Readiness, Early Learning, Class Size and Learning Environments, Community Partnership, and Community Investment. One coach explained that, in order to maintain consistent integration, the district has written technology integration commitment statements to go along which each of the strategic themes. To support technology integration, and to make sure the implementation remains in line with the district's vision, the district has also created a technology innovation steering committee.

In addition to the new committee, those interviewed also discussed the district's new superintendent. Teachers and leaders described her as "tech-forward" and focused on making sure that students are "future ready" by making technology integration a district priority. One leader explained that moving forward the district will be implementing new hybrid and full technology curriculums as well as building their two new schools around technology integration.

Evaluation Insights at Gresham-Barlow School District

The SY 17-18 evaluation at GBSD produced the following insights:

- Student achievement data show promising results for Cohort 1 students in GBSD. Analysis of DIBELS data showed that the percentage of Cohort 1 students performing at benchmark in the spring of kindergarten was considerably higher than the Comparison Cohort. Although the percentage of Cohort 1 students at benchmark declined in 1st grade, it remained higher than the Comparison Cohort is 1st grade. Similar to the full group analysis of DIBELS data, the subgroup analyses showed that the percentage of Cohort 1 students performing at benchmark decreased from kindergarten to 1st grade but remained the same or higher than the Comparison Cohort.

- Similar to last year's evaluation, teachers and leaders continue to emphasize the importance of ITCs in technology integration. The coaching provided by ITCs has impacted teachers' success in integrating technology so greatly that the district has repurposed funds in order to maintain the full-time positions of both ITCs. Teachers specifically noted that without their ITC they would have been overwhelmed by the grant and would not have been able to make progress towards improving student academic outcomes. It was noted that between January and June over 140 informal PD sessions were provided by ITCs and the majority of teachers rated the PD as very useful.

- Teachers and administrators have noted the continued increase of technology use in classrooms. Teachers self-reported rates of integrating technology in instructional strategies and rates of technology use in the classroom have increased from SY 16-17 to the beginning of SY 17-18 and increased again substantially from the beginning of SY 17-18 to the end. Another area of substantial growth was in teachers' self-reported technology skill level. In SY 17-18 a large percentage of teachers moved from a Level 3 to a Level 4, with 100.0% of teachers rating themselves as Level 3 and above by Spring 2018.

- In the SY 16-17 evaluation teachers and ITCs expressed a desire to focus more on using technology to differentiate instruction in the future years of the grant. In SY 17-18 differentiation is emerging as a promising instructional strategy. In spring 2018, eighty percent (80.9%) of teachers surveyed reported using technology to differentiate instruction. This shows continued growth from SY 16-17. On the year-end survey, 47.6% of teachers gave differentiating instruction as an example of how they are using technology in their classroom and rated this practice as a 4.60 for effectiveness.

- In the SY 16-17 evaluation, teachers identified several technology tools that could potentially impact subgroup students and expressed a desire for more PD focused on subgroup students. In this year's evaluation, there is evidence that teachers received that PD. In SY 17-18 teachers provided a greater variety of examples of technology used to support at-risk students in their classrooms. Teachers explained that technology allows them to differentiate instruction and level the playing field for all students in ways they never could before.

- As presented in the SY 17-18 evaluation, there is strong evidence that sustaining and expanding the grant are priorities at both the school and district levels. GBSD is sustaining the components implemented by the grant by repurposing funds to maintain two full-time ITC's and expanding the impact of the grant by purchasing devices for fourth and fifth grade classes. Technology has become a

crucial part of their district's strategic plan, specifically integrated into each of their seven strategic themes. The district has also recently hired a new, "tech-forward" superintendent and implemented a new technology innovation steering committee.

Project Summary

Portland Public School District (PPS) is highly invested in improving literacy outcomes and closing the achievement gap for underserved students. During school year 2016-17 (SY 16-17), PPS launched the K-5 Equity-Based Balanced Literacy (EBBL) framework adoption. This approach to literacy emphasizes teachers as decision makers, the utilization of students' cultural and linguistic assets, word work and meaning-based instruction, and materials as instructional resources to create caring classrooms where students develop literate identities as readers and writers. The TechSmart grant project has provided the district the resources to implement and evaluate blended learning models of instruction to support the adoption of the EBBL framework. PPS has three goals for the implementation of the TechSmart grant and an intention to achieve these goals by 2020. The goals are: (1) 3rd grade students in PPS pilot classrooms will demonstrate grade-level proficiency in reading and the achievement gap between typical and underserved students will be eliminated, (2) PPS will understand and implement instructional strategies and practices that leverage technology to provide culturally and linguistically relevant personalized learning, (3) PPS will validate and disseminate effective instructional strategies and practices that use technology. Implementation began in SY 16-17 within kindergarten through 3rd grade classrooms in five schools: Vernon, Sitton, Grout, Lewis, and Bridger. The district had their second year of implementation in school year 2017-18 (SY 17-18), expanding the list of TechSmart schools by five to include: Atkinson, Bridlemile, Peninsula, Rigler, and Stevenson. By the end of the grant, 20 schools across the district will receive professional development (PD) and pilot the technology infrastructure provided by the funding. PPS's progress after two years of implementation is presented below in terms of seven essential factors for effective transformation to a technology-rich teaching and learning environment.

Methods

A general description of the methods included in the TechSmart evaluation are included in the introduction to the full report. Data collection efforts for the SY 17-18 evaluation in PPS are summarized below.

Teacher Survey

The district administers a teacher technology survey at two time points during the school year as part of its internal TechSmart project evaluation (beginning and end of year). PRE worked with internal staff to add questions to these planned teacher surveys at the end of the year and received access to the resulting data. For Cohort 1, 50 teachers involved in the project completed the beginning of year survey, and 42 teachers completed the year-end survey. For Cohort 2, 77 teachers completed the beginning of year survey, and 39 teachers completed the year-end survey.

Teacher Interviews

PRE conducted interviews with seven teachers involved in the TechSmart grant in Portland Public School District. Interviews were conducted with 1-3 teachers from the following five TechSmart schools: Bridlemile, Grout, Lewis, Peninsula, and Stephenson.

District Leader Interviews

In spring 2018 PRE interviewed nine district leaders from Portland Public School District including: principals from Lewis, Vernon, Atkinson, and Stephenson; coaches from Grout, Sitton, Rigler, and Bridemile, and a Project Planning Team Member.

Leadership Rubric

The leadership rubric was completed by two principals and three technology coaches.

Student Achievement Data

In order to examine the impact of the TechSmart grant investment in Portland Public School District, comparative analyses were conducted using a concurrent Comparison Group. During the first year of the EBBL adoption, ten schools adopted the new literacy curriculum. Five of these schools were TechSmart schools who had access to the new technology or Professional Development (Cohort 1) and five of the schools adopted the new curriculum without technology. Students who were in Kindergarten at non-TechSmart schools during the first year of the EBBL adoption (SY 16-17) make up the Comparison Group and students who were in Kindergarten at TechSmart schools during SY 16-17 make up Treatment Cohort 1. For SY 17-18, outcomes include ELPA and DIBELS scores for Cohort 1 and the Comparison Group.

DIBELS assessment data are collected for the purpose of informing teachers where their students stand with their odds of achieving certain literacy outcomes. According to researchers from the University of Oregon, reviewing these outcomes is an important step in the Outcomes Driven Model of early literacy problem solving[1]. This model uses assessments like DIBELS as part of a feedback loop that operates within each classroom each year, serving as a tool for teachers to reevaluate their lesson plans and strategies. For this reason, the assessment is not designed to compare student achievement across grade levels and should be used as a descriptive tool rather than an evaluative tool. Due to the fact that DIBELS is the only assessment given to students prior to 3rd grade, we include these results in this report for descriptive purposes but warn about giving too much weight to the findings across grade levels.

The table below presents the number of students in our Treatment and concurrent Comparison groups for SY 16-17 and SY 17-18. The results presented in this report compare the first cohort of Kindergarten TechSmart students to Comparison Group students from the 2016-17 school year. Data were available for Treatment and Comparison students for their Kindergarten and 1st grade years.

Table 1. Treatment and Concurrent Comparison Group Sample Size

	Cohort 1	Comparison Group
Year	N	N
2016-17 (K)	342	278
2017-18 (1st)	313	252

[1] Good, R. H., Kaminski, R. A., Smith, S., Simmons, D., Kame'enui, E., & Wallin, J. (In press). Reviewing outcomes: Using DIBELS to evaluate a school's core curriculum and system of additional intervention in kindergarten. In S. R. Vaughn & K. L. Briggs (Eds.), Reading in the classroom: Systems for observing teaching and learning. Baltimore: Paul H. Brookes.

Figure 1 below presents the at-risk indicators for Cohort 1 and Comparison group students at PPS. Overall, there were a higher percentage of Cohort 1 students identified as students of color and LEP student relative to the Comparison Group.

Figure 1. PPS At-Risk Indicators for Cohort 1 and Comparison Group Students

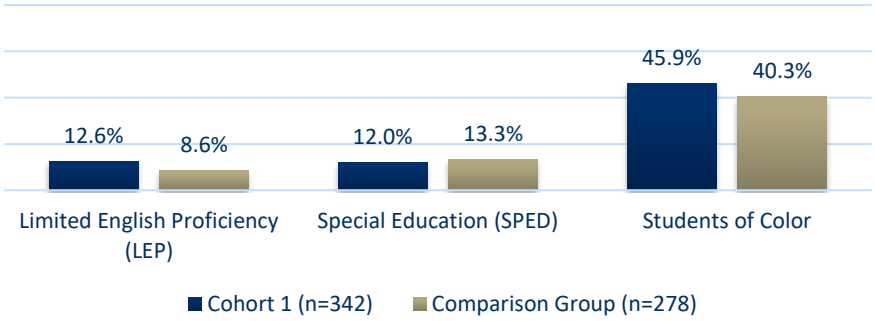
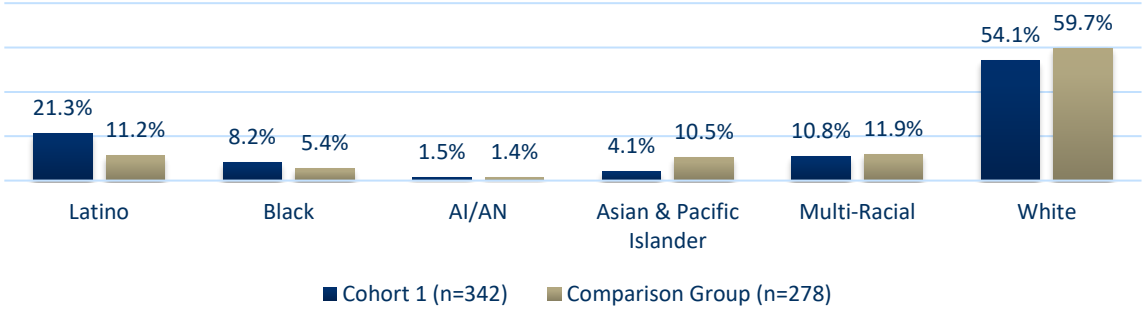


Figure 2 below provides a summary of the breakdown of student race/ethnicity in Cohort 1 and the Comparison Group and shows a higher proportion of white students in the Comparison Group relative to Cohort 1.

Figure 2. Portland Public Schools District Race/Ethnicity for Cohort 1 and Comparison Group Students



Findings

The evaluation findings from the SY 17-18 evaluation in Portland Public School District are presented below and organized by the seven factors identified as essential for schools to effectively transform into technology-rich teaching and learning environments.

Teaching Effectiveness

Districts support regular, inclusive and shared professional development among teachers.

PPS offered a combination of PD opportunities to TechSmart schools throughout the second year of implementation. The year-end status report noted that professional development activities in SY 17-18

have focused on the following key areas to support educators' ability to implement effective instructional strategies and practices:

- How to best use the devices to support a variety of learning modes
- How to use Lexia, myON, and Hapara
- Device management in a workshop model
- How digital tools and programs support Equity Based Balanced Literacy (EBBL)
- How to engage students using multiple types of texts including video, websites

The year-end status report also detailed the PD opportunities offered to teachers, coaches, and administrators during SY 17-18. Cohort 2 TechSmart teachers participated in a summer on-boarding workshop in summer of 2017. The workshop focused on a wide array of topics including racial equity, device management, classroom practices, myON use, Lexia use, technology use in dual language classrooms, and family engagement. Teachers were provided with a classroom lesson demonstration and were allowed to guide their own learning during the second day of the workshop, when participants were polled to gather topics for further/deeper learning.

In addition to the summer training, embedded PD was offered throughout SY 17-18 for both Cohort 1 and Cohort 2 teachers. The embedded PD consisted of Professional Learning Communities (PLCs); principal- or school leadership-led activities; on-on-one conferencing with coaches; modeling and push-in PD from coaches; and co-planning among teachers, coaches, and admin. In addition, all five Cohort 3 schools participated in an introductory session during Spring 2018 where they got an overview of the project. Two Cohort 3 schools participated in an extra session where they were introduced to Seesaw, a tool which is being emphasized for all cohorts during SY 18-19. Cohort 3 teachers began implementation of the grant in fall 2018 and are not included in this report.

The onsite technology coaches also participated in PD efforts including weekly virtual meetings; monthly surveys on coach self-reported activities and effectiveness; monthly half day coach PLCs; monthly Lexia check-ins; and co-planning among teachers, coaches, and admin. In addition, there were two coach-specific sessions during the 2017 summer on-boarding workshop including a training on using Canvas LMS for building-based embedded PD.

Table 1 shows that by the end of SY 17-18 more teachers reported having spent time in individual PD than in group PD. This aligns with the year-end report which indicates that, apart from the summer workshop, the majority of district-supported PD occurred in the form of technology coaches pushing in to the classroom.

Table 1. PPS Teachers' Hours of PD during SY 17-18

Hours of PD	Cohort 1		Cohort 2	
	Group PD (n = 42)	Individual PD (n = 41)	Group PD (n = 39)	Individual PD (n = 38)
0 hours	7.1%	22.0%	--	13.2%
1-8 hours	71.4%	63.4%	43.6%	60.5%
9–16 hours	14.3%	12.2%	20.5%	15.8%
17–32 hours	4.8%	2.4%	23.1%	5.3%
33+ hours	2.4%	--	12.8%	5.3%

The beginning and year-end surveys asked teachers to rate the usefulness of the group and individualized PD (see Figures 3 through 6). Ratings of group PD usefulness were mixed for both cohorts as shown in Figures 3 and 4 below.

Figure 3. PPS Teachers' Ratings of Group PD Usefulness - Cohort 1

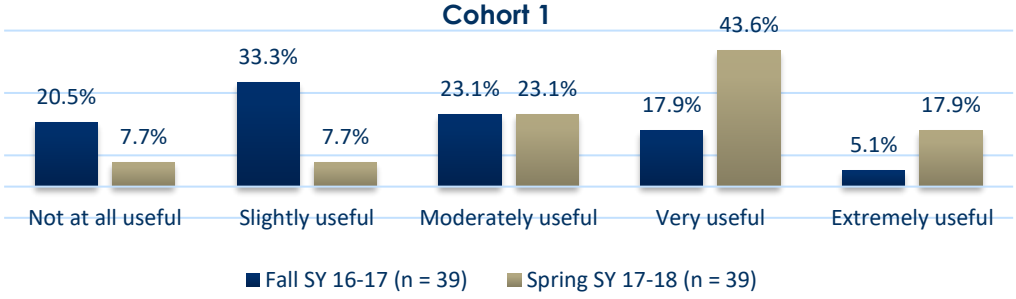
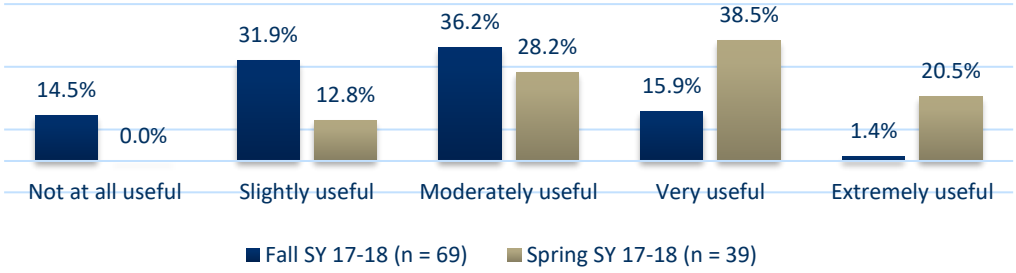


Figure 4. PPS Teachers' Ratings of Group PD Usefulness - Cohort 2



On the year-end survey 65.4% of Cohort 1 (Figure 5) and 57.3% of Cohort 2 (Figure 6) teachers rated individualized PD as very or extremely useful, slightly higher than the percent of teachers who did so in SY 16-17 (60.0%).

Figure 5. PPS Teachers' Ratings of Individualized PD Usefulness - Cohort 1

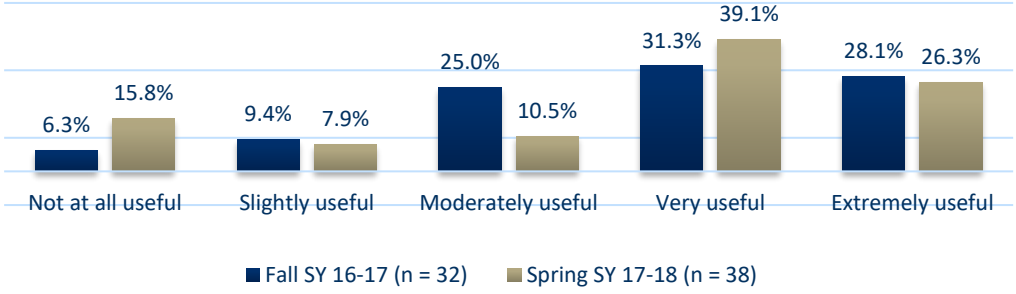
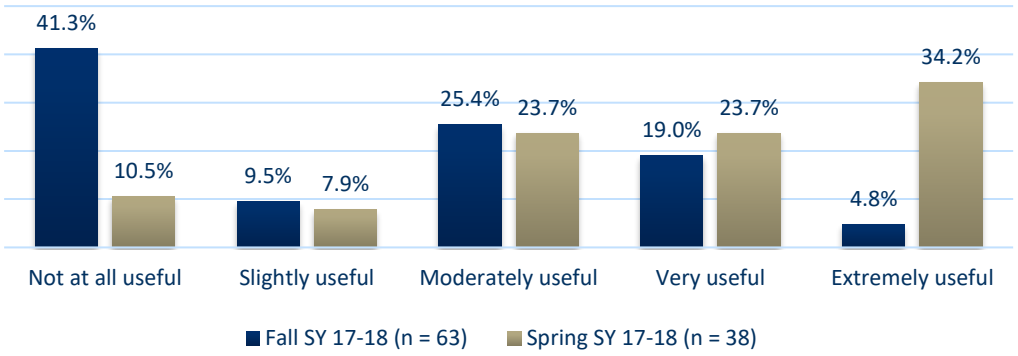


Figure 6. PPS Teachers' Ratings of Idividualized PD Usefulness - Cohort 2



Overall, teachers interviewed found that the PD they received was useful. Several teachers desired more of the same, showing that the current PD model works fairly well but that more funding may need to be directed toward PD in order to expand the opportunities currently available, particularly in regards to group PD. Some Cohort 1 teachers commented that they felt as if there was less group PD offered in SY 17-18 compared to SY 16-17. These teachers often attributed the decrease in group PD offerings to the tumultuous changes in leadership which have occurred in the district since the beginning of the grant. Teachers expressed that while the summer workshop was a good starting point for PD, they would have appreciated more embedded group PD throughout the year so that they could receive guidance on using their Chromebooks or the various apps after they had a chance to work with the technology.

When asked about PD in interviews, teachers reported receiving strong support from their onsite technology coaches. The technology coaches were generally seen as a stronger avenue of support than the group PD sessions. This follows from the quantitative data presented in Figures 3-6, which demonstrate that a larger number of teachers in each cohort found individual PD to be extremely useful than group PD. One Cohort 1 teacher said,

> *My coach is always able to drop what she's doing and come down to the room and help us, whereas the trainings feel kind of general and I don't know exactly what they're talking about. Half the time during the trainings, my Chromebook doesn't coincide with whatever they're doing on their Chromebook, or it won't work and then it's sort of frustrating. It has been invaluable having the coach be a part of the grant. I can't imagine if we had only just gotten the Chromebooks with no one onsite to help us with them.*

Teachers also described engaging in co-planning and peer teaching with each other. One Cohort 2 teacher described the way "teachers definitely collaborate and get together and kind of show each other some things". Teachers enjoyed these collaborations where they were able to share and receive knowledge from their coworkers.

How is the professional development impacting teacher instruction?

Section Highlights:

This evaluation question includes the following outcomes: 1) PD has helped teachers increase the use of technology for evidence-based instructional practices, 2) PD has helped teachers use technology to analyze and use data about student learning, and 3) PD has helped teachers use technology to differentiate instruction. Teachers found individualized PD to be particularly useful in SY 17-18, however, as in SY 16-17, teachers desired more embedded group PD. By the end of SY 17-18, the majority of teachers were self-reporting at a Level 3 or above. This indicates positive growth toward increased technology skill level among teachers in both cohorts.

The year-end survey asked teachers to discuss how effective the PD model has been in impacting their instruction. Teachers offered a variety of positive comments regarding the effectiveness of the PD model, including expanding teacher ability to differentiate, the technology coaches as assets, and increased use of technology (see Tables 2 and 3).

Table 2. Effectiveness of the PD Model at PPS – Cohort 1

I benefited from the after-school tech Smart classes that have occurred 3 to 4 times this school year. It has given me more confidence to share new technology with my second graders.
I use technology 100% more than I did before we had the grant.
The professional development has been great; very helpful having a TechSmart coach in the building. I think the 3rd year with our Chromebooks will be the year that my instruction really changes and increases use of technology in creative ways because I won't also be learning a new reading/writing curriculum at the same time
Our TechSmart Coach has been invaluable.
It has been extremely helpful in allowing me to differentiate instruction.
I love Lexia during reading groups as it offers differentiation and myON is also great
Our technology coach did a great job of slowly rolling out how Lexia worked and how to access data to help with instruction. Since we have Kindergarten, she just recently helped set up other things they could access. She was a great asset!

Cohorts 1 and 2 both had very similar comments regarding the effectiveness of the PD model, although Cohort 2 had more positive comments regarding the group PD compared to Cohort 1 who mostly focused on the benefits of having the coach.

Table 3. Effectiveness of the PD Model at PPS-Cohort 2

The use of technology has completely changed my instruction for the better. I am using Seesaw to capture, organize and share student learning. Through Seesaw, I am able to differentiate instruction and use assignments as formative assessments.
I think it has been very effective and look forward to continuing to learn and grow our practice next year.

My coach was great! She came in and co taught lessons with me and got the kids excited. She helped me feel comfortable with integrating new things in the classroom. It was a great success. ALL schools should have access to technology.
So far, our technology instructor has seen what needs we have in the building and tried to set up staff development to help staff. He is very knowledgeable and helpful.
The TechSmart professional development model has been helpful in terms of opening conversations and encouraging discourse between teachers and our literacy coach as well as our technology teacher. I do not have any suggestions for improvements at this time.

PRE interviewed teachers and leaders (principals and coaches) to assess the impact of the PD on teachers' instruction. Both teachers and leaders noted an increased use of technology as a result of PD activities. One teacher relayed the following when asked about how effective the PD model has been in helping them change their instruction with the support of the technology:

> *Very effective. It gives me the support I need to dive into something that I might not be as familiar with as existing curriculum or existing tools that I use. So, it helps support me in the time I need it to. It makes it easier for me to dive in and support the kids in what they're doing.*

The beginning and year-end surveys asked teachers to rate the extent to which they are using technology to support new methods of instruction in their classrooms according to the SAMR model.
The **S**ubstitution **A**ugmentation **M**odification **R**edefinition (SAMR) model offers a method of seeing how computer technology might impact teaching and learning. It also shows a progression that adopters of educational technology often follow as they progress through teaching and learning with technology. Unlike in SY 16-17, when the data indicated that by year-end, there were only a slight positive changes in the number of teachers reporting their technology integration according to the SAMR model, Figure 7 below shows that Cohort 1 teacher ratings on three out of the four items increased by at least 15 percentage points at the end of SY 17-18 compared to the beginning of SY 16-17. Figure 8 shows that Cohort 2 experienced even more positive changes regarding technology integration in SY 17-18, with all four items increasing by at least 20 percentage points from beginning of year to end.

Figure 7. PPS Technology Integration According to SAMR Model - Cohort 1
(% At Least Once per Week or More)

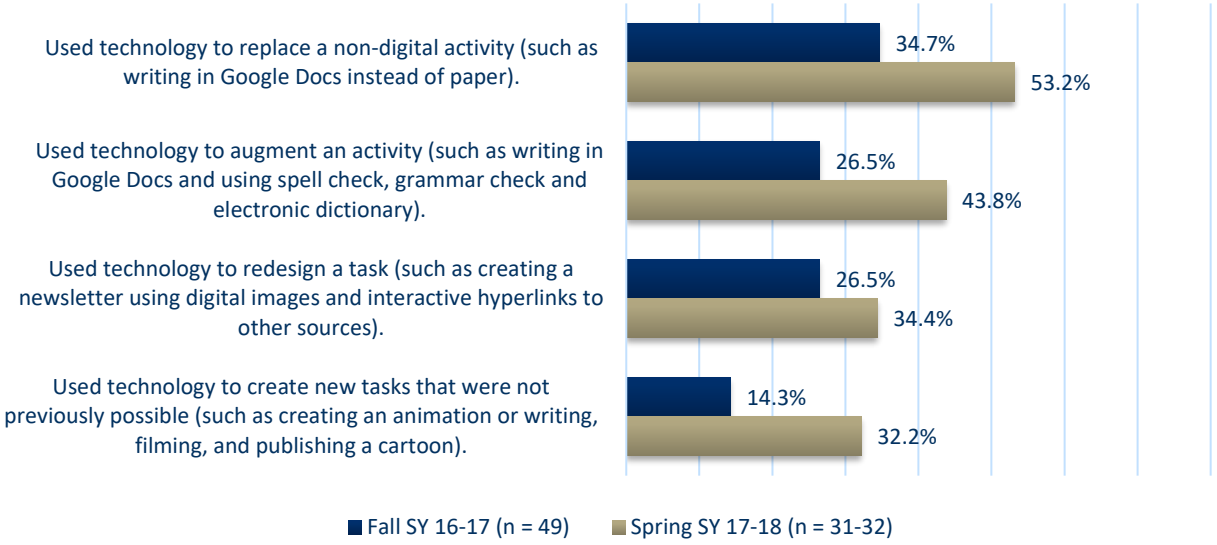
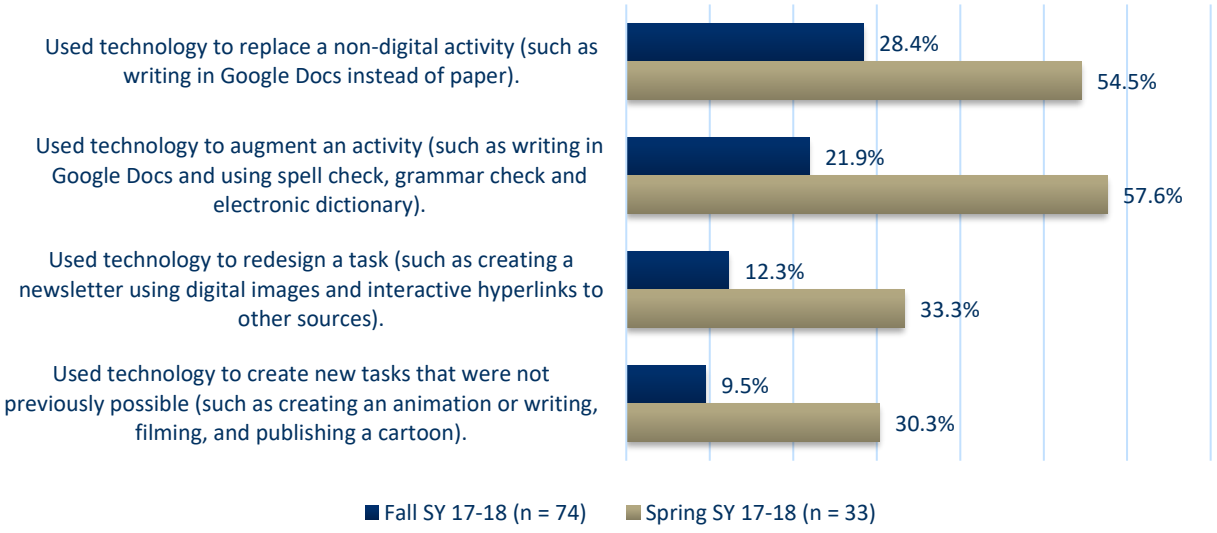


Figure 8. PPS Technology Integration According to SAMR Model - Cohort 2
(% At Least Once per Week or More)



As iterated above, teachers emphasized the significant role of the technology coach and the individual PD they can provide. One Cohort 2 teacher described the way the technology coach helped them to integrate Google Slides into the classroom, allowing this teacher to use technology to create new tasks that were not previously possible:

Just last week our technology coach came in and asked if there was something we specifically wanted help with. She asked if we knew how to use Google Slides and I said "No, that would be great!". So yesterday and today, she came into the classroom and taught us how to use Google Slides. The kids ate it up. Now we can use that skill when we do our biography presentations in a month. That was a huge plus. It was necessary for us.

Additionally, on the year-end survey teachers could provide suggestions for improving the PD model. Tables 4 and 5 list teachers' suggestions which centered on wanting additional support from the onsite technology coach and additional group PD sessions. Cohort 1 teachers highlighted a desire for expanded PD opportunities, to be able to learn new ways of integrating technology into the classroom and to learn how to use applications beyond myON and Lexia. Cohort 2 teachers focused more on wanting more time for basic PD, as they have not had as much time to learn the basics of integrating technology.

Table 4. Teachers' Suggestions for Improving the PD Model – Cohort 1

I have not been able to attend all of the afterschool training sessions due to obligations including IEP meetings. If there were webinars or sessions during the day that I could use to access our tech smart coach and/or trainings she has prepare.
Yes, I would like more support in finding other ways besides workshop and group rotations to use technology.
TechSmart grant needs to go beyond just supporting/providing Lexia and myON. I felt like these were the only two tools that were provided any amount of support. Also, the TechSmart person was used for so many other things beyond supporting teachers - such as maintaining computers or having to monitor mandated testing on computers. While out tech smart coordinator made herself available upon requests, she was very busy with many other tasks and TechSmart/tech integration seemed to take a backseat to many other responsibilities.
I'd love to have written instructions on how to do things that he brought into our classroom so that I could read teach and be more independent and we teaching what he teaches on his once a week visits to our class.

Table 5. Teachers' Suggestions for Improving the PD Model-Cohort 2

More time in grade level specific planning and implementation
We need more time for everything. Individual coaching, planning, data interpretation, lesson design, and practice.
The instruction we have received has been great. I think differentiated instruction for grade level teams would be helpful.
Well, I would have said very effective before taking this survey. Now, I realize that I still have a VERY LONG way to go. My only suggestion would be 1 on 1 devices.

I think that students would greatly benefit from a 1:1 Chromebook ratio.
I did not benefit much from TechSmart's PD, but rather from asking other team members questions.
As a Teacher Librarian I have not felt included in the grant's professional development model or have found it outside the scope of what I do in my position. I would be interested to see what a "specialists" only differentiated training would look like for staff who do not work within the confines of a traditional homeroom.
Continuing to show how teachers implement these different pieces in their classroom would be helpful.

Figures 9 and 10 present a series of survey items related to technology integration and show that by the end of the second year of implementation, the percentage of teachers responding "true of me" or "very true of me" had increased across all four items for both cohorts. Most notably, the number of teachers who reported that they plan technology-related activities in their classroom to improve their students' basic skills increased by 26 percentage points for Cohort 1 and more than 30 percentage points for Cohort 2. This item also saw the most improvement in SY 16-17 for Cohort 1 (by 35 percentage points). Cohort 1 teachers do not appear to be any further along in their technology integration efforts than Cohort 2 despite having an additional year of training and access to the devices.

Figure 9. PPS District Teaching Instruction - Cohort 1
(% True of Me/Very True of Me)

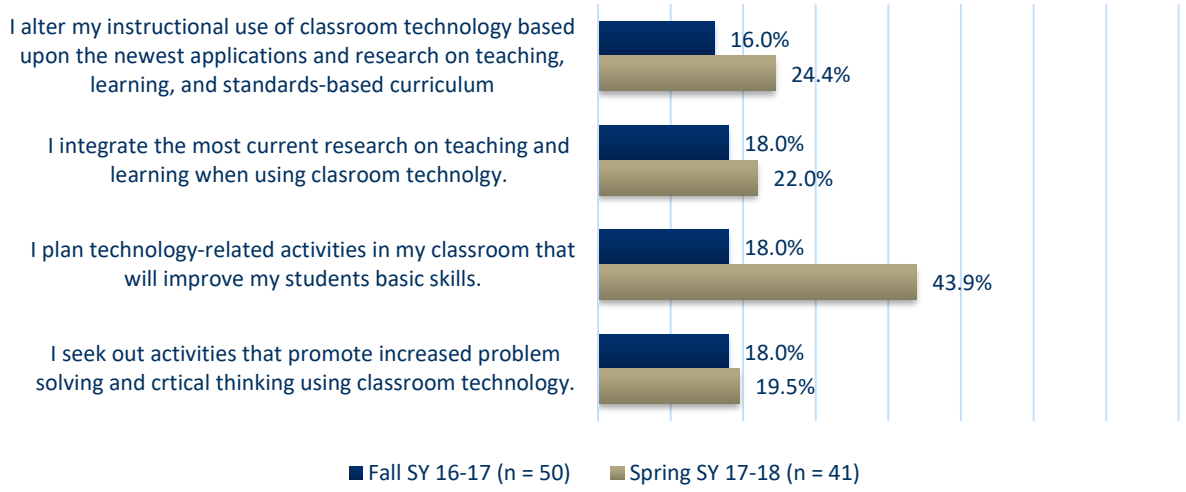
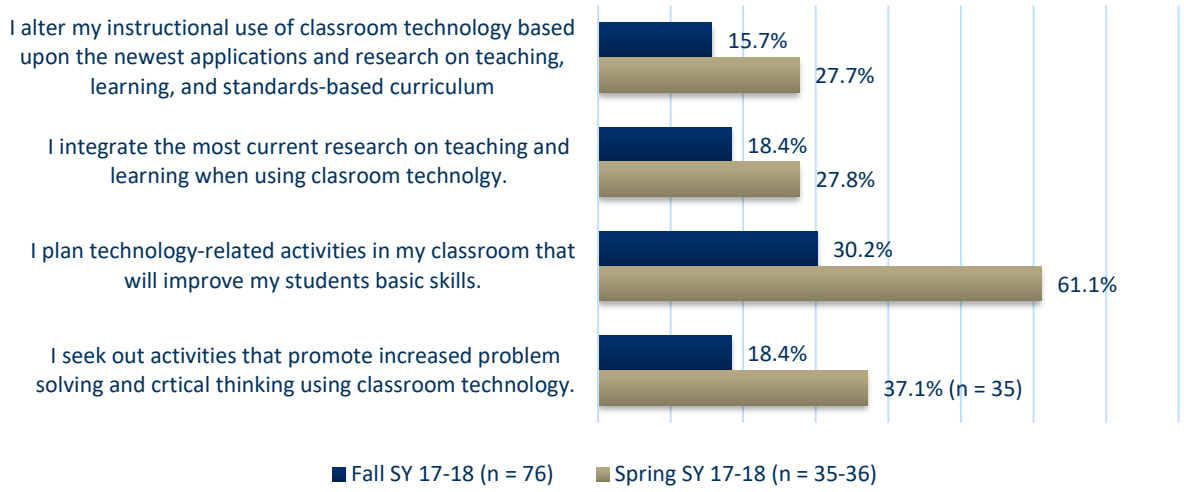


Figure 10. PPS District Teaching Instructional Strategies - Cohort 2
(% True of Me/Very True of Me)



Teachers rated their technology skill level on the beginning and year-end surveys according to the following five levels:

Level 1: I get someone else to do technology-based tasks for me.

Level 2: I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.

Level 3: I have enough skills to complete the management and communication tasks expected of me and occasionally will choose to use technology to accomplish something I choose.

Level 4: I use a variety of technology tools and I use them efficiently for all aspects of my job.

Level 5: I use technology efficiently, effectively, and in creative ways to accomplish my job.

As shown in Figure 11, a change occurred in Cohort 1 teacher technology skill level during their two years of implementation. By the end of SY 17-18 55.7% of Cohort 1 teachers completing the survey rated themselves at Level 4 or 5 and no teachers rated themselves at Level 1 or 2.

Figure 11. PPS Teacher Technology Skill Levels - Cohort 1

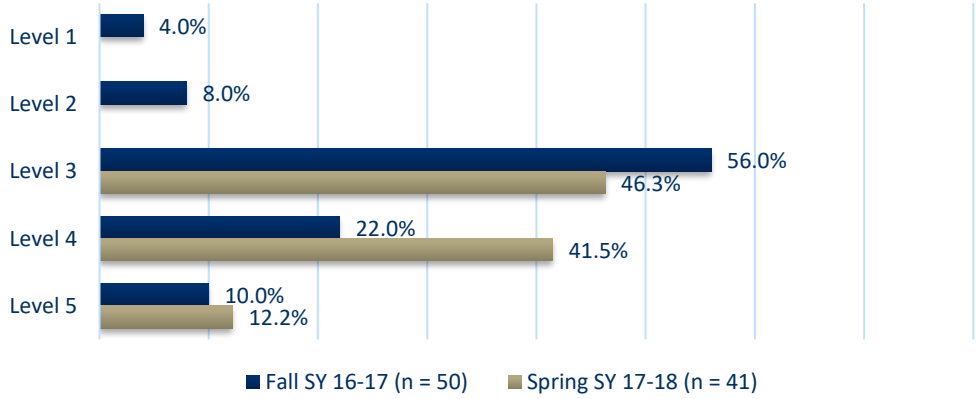
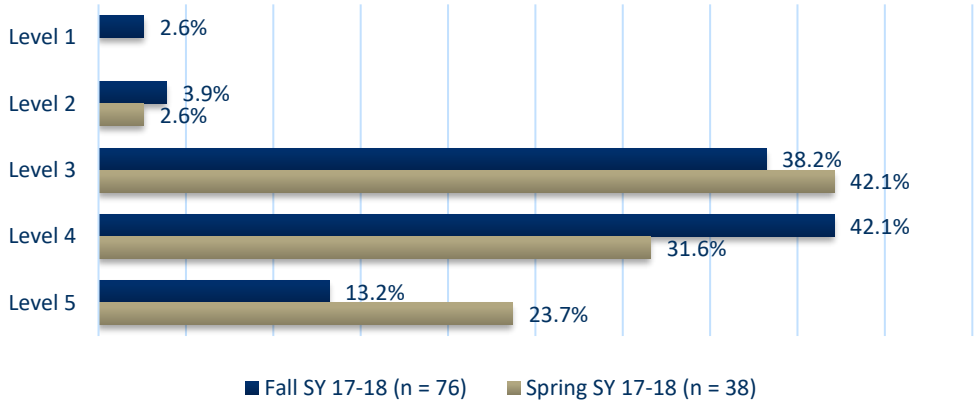


Figure 12 shows something for similar for Cohort 2; although by the end of SY 17-18 2.6% of teachers continued to rate themselves at a Level 2, no teachers rated themselves at a Level 1 and 55.3% rated themselves at Level 4 or 5.

Figure 12. PPS Teacher Technology Skill Levels - Cohort 2



What new instructional strategies are teachers reporting?

Section Highlights:

Some teachers are enthusiastically adopting new instructional strategies into the classroom using technology, particularly using iPads and Chromebooks and applications such as Google Suite and Nearpod, similar trends as were reported in the SY 16-17 evaluation. In terms of instruction, teachers reported most commonly using technology successfully to engage students in learning and planning and preparation. Teachers were particularly successful in using Lexia to differentiate student learning, including among historically underserved students.

The primary instructional changes have taken place through the use of Lexia and myON, the applications used with the Chromebooks to support EBBL. Teachers and coaches both reported on how helpful the TechSmart grant was in supporting the new literacy adoption, and how together the two initiatives are allowing teachers to implement new instructional strategies. One coach explained:

> *My teachers are really happy that we have the technology along with the adoption. It really makes them feel more comfortable, because they know that kids are getting differentiation and they feel more comfortable doing the workshop. I do think that having the technology has helped our teachers with the adoption.*

Lexia Reading Core5 supports educators in providing differentiated literacy instruction for students of all abilities in grades pre-K–5. Lexia's program provides explicit, systematic, personalized learning in the six areas of reading instruction, targeting skill gaps as they emerge, and providing teachers with the data and student-specific resources they need for individual or small-group instruction. myON is a personalized literacy environment that incorporates: 1) A state-of-the art learning platform, 2) Enhanced digital reading content, 3) Daily news articles written for students, 4) The Lexile® Framework for Reading, 5) Cutting-edge literacy tool, 6) Embedded metrics to monitor activity and growth. During interviews teachers

identified Lexia as an especially important support, mainly because it allows them to differentiate. Teachers reported more challenges with successfully integrating myON into the classroom.

When asked on the survey whether Lexia and myON were used during the school year, 100.0% of Cohort 1 and 86.5% of Cohort 2 teachers reported using Lexia while 62.0% of Cohort 1 and 77.0% of Cohort 2 teachers reported using myON. Teachers who reported using either of these applications were asked to rate their agreement with a series of items relating to the benefits of the new instructional tools as shown in Table 6 below. Teachers were asked to rate the items on a Likert scale ranging from 1 = strongly disagree to 7 = strongly agree. Teachers from both cohorts rated Lexia higher than myON on all items with the exception of the interface being culturally relevant, which Cohort 1 rated slightly lower for Lexia than for myON. Both tools received high ratings on their alignment with Common Core State Standards and having a student-friendly interface.

Table 6. Teacher Ratings of Lexia and myON

	Cohort 1 (n = 26-28)		Cohort 2 (n = 26-29)	
	Lexia	myON	Lexia	myON
The program is aligned with Common Core State Standards.	5.93	5.35	6.17	5.00
Use of The program supported student growth and advanced equity work (closing achievement/opportunity gaps).	5.50	5.19	5.90	5.00
The program integrates with current core curriculum or provides a compatible progression from current content to new content.	5.86	4.96	5.76	5.07
The program interface is student-friendly.	6.18	5.46	6.32	5.15
The program interface is culturally relevant.	5.36	5.62	5.14	5.11
The program supports personalized and proficiency based learning for all students.	5.75	5.08	6.04	5.19
The program cultivates digital literacy and digital citizenship.	5.46	5.31	5.64	5.15
Differentiated supports are evident in the program for Emerging Bilingual, Special Ed, and TAG students.	5.29	4.85	5.46	4.85
In the program, students are supported in independent practice to meet or exceed grade level standards with scaffolds and a gradual release model.	5.96	4.96	5.89	4.67
The program generates teacher friendly whole class and individual student data.	5.44	4.42	5.56	4.67
The program facilitates teacher planning and implementation of instruction and interventions.	5.52	4.35	5.56	4.52
The program is supported by facilitated and/or self-directed PD that is teacher-friendly.	5.07	4.46	5.37	4.59
The program assessments elicit direct, observable evidence of the degree to which a student can independently demonstrate the grade level standard.	5.44	4.24	5.74	4.58
The program assesses student proficiency using methods that are unbiased and accessible to all students.	5.37	4.48	5.85	4.65
The program uses varied modes of assessment (e.g., selected, constructed, extended response items, self-assessments, and performance tasks) to provide teachers with a range of formative and summative data to inform instruction.	5.46	4.28	5.59	4.46

Teachers provided examples of the integration of Lexia into their classroom; teachers were particularly impressed with how Lexia is able to support historically underserved children in the classroom. One teacher described how they use Lexia in their classroom:

> *What I love about Lexia is that it differentiates the children and it meets them where they are. With most of the phonics programs that we've used, we're all learning the same still each week, and we're all doing it whether we need it or not. I have one student that is extremely dyslexic. So for her phonics makes very little sense. She tested at a Pre-K level. It's been really successful for students like her. It catches the holes that kids have, which I like, and the kids like it. They're motivated by it. They enjoy the games and they enjoy the learning.*

While many teachers did report using myON regularly in the classroom, some teachers did not find it to be as useful as Lexia (as reflected in Table 7). A main barrier that teachers encountered when trying to use myON was the text selection. They found that students took too long searching through the stories, and that the stories offered did not always align with what the teacher would like for them to be reading. Additionally, several teachers noted that, unlike Lexia or other applications such as Newsela, myON was too passive of an experience for children, and did not allow them the tactile experience of pointing to words in a physical text.

Table 7 below presents the aggregate ratings for the teacher self-assessment rubric and the aggregate leadership ratings for the two principals and the two technology coaches who completed the leadership rubric "thinking about TechSmart teachers as a whole". The element of the rubric with the highest rating for both cohorts was "planning and preparation", followed by "engaging students in learning". Leaders provided a rating of 2.67 or 3.00 for all items, notably lower than the ratings leaders assigned teachers in SY 16-17. For instance, in SY 16-17 the four leaders who completed the leadership rubric rated teachers at a 4.00 for "demonstrating flexibility and responsiveness"; in SY 17-18 this rating decreased to 3.00.

Table 7. Technology Used for Supporting Instructional Practices

	Cohort 1 (n = 31-32)	Cohort 2 (n = 30-32)	Leadership Rubric Survey (n = 3)
Planning and Preparation	3.22	3.22	3.00
Managing Classroom Procedures	2.94	3.00	2.67
Organizing Physical Space	2.52	2.87	3.00
Communicating with Students	2.75	3.17	2.67
Using Questioning and Discussion Techniques	2.53	2.87	3.00
Engaging Students in Learning	3.16	3.37	3.00
Using Assessment in Instruction	3.03	3.00	3.00
Demonstrating Flexibility and Responsiveness	2.84	3.13	3.00

Additionally, leaders commented on how teachers are using technology to support new instructional practices. One coach described how they have supported teachers in using the technology to differentiate for historically underserved children in their classes:

> *One group I have worked with closely this year is a group of 3rd graders with dyslexia. Having the Chromebooks in the classroom has opened up a huge array of new options for meeting their needs and it has been great to be able to work with them to find and design supports for their reading and writing. We have them using headphones with mics so that they can write in Google Docs with Voice Typing and I have created a set of graphic organizers in Google Docs that parallels the paper graphic organizers their teacher uses in class. This allows them to both use Voice Typing and cut and paste to fill in the organizer without having to write by hand the way that their peers are doing. We have had so much success with the text-to-speech option with this group of 3rd graders that we are planning to start using it to support all our struggling writers in our K-1 classrooms next year.*

How are the new instructional strategies impacting student engagement?

Section Highlights:

The SY 17-18 evaluation provides evidence that student engagement has been positively impacted by the integration of technology into the classroom. Similar to the SY 16-17 evaluation, teachers indicated that students enjoyed learning more when there was technology in the classroom. Student engagement seems to have been impacted especially positively for struggling students.

Teachers and leaders (principals and coaches) described how technology is positively impacting student engagement. Overall, teachers and leaders found that students were more engaged with technology in the classroom. Students seem to be particularly benefitting from the differentiation made possible by Lexia: "I think that Lexia has been extremely useful, because especially in kindergarten, children come at a huge range of abilities and backgrounds. This sort of levels that out because it meets them right where they are, and Lexia never gets frustrated". Additionally, although teachers had mixed feelings about the utility of myON, in general, students enjoyed getting to work with it because of the flexibility it allows in choosing what they want to read. One teacher expressed, "my students enjoy Lexia, but I think they enjoy myON even more. Their love of reading has really increased. And they're very engaged. I think there's just a lot of student engagement".

Figures 13 and 14 present a series of items relating to students' technology use after one or two years of implementation. Teachers were asked to rate students' comfort with using digital tools for learning, their ability to choose the right tool for their task, and whether students are able to work independently. Over 96.0% of Cohort 1 teachers and over 80.0% of Cohort 2 teachers at the end of SY 17-18 agreed that their students are more comfortable using digital tools for learning and are able to work more independently.

Figure 13. PPS Year-End Student Technology Use - Cohort 1
(%Somewhat Agree/Strongly Agree)

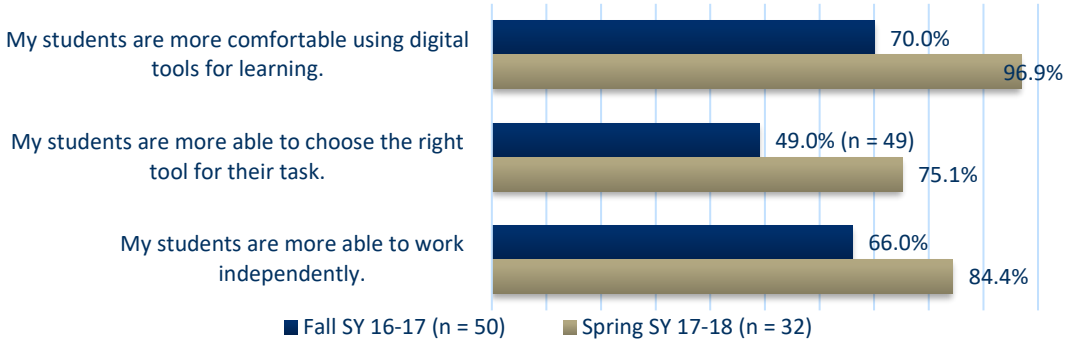
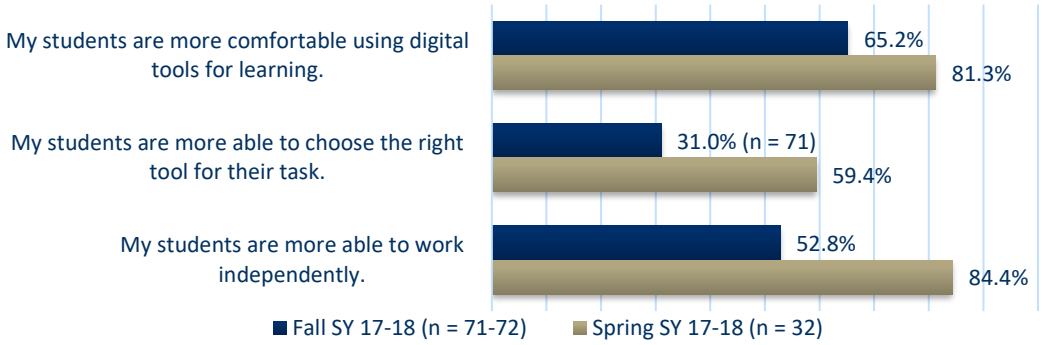


Figure 14. PPS Year-End Student Technology Use - Cohort 2
(% Somewhat Agree/Strongly Agree)



One of the technology coaches discussed how students at their school are benefitting from the integration of technology into the classroom, and how it has increased engagement particularly among less motivated students:

The students really like using technology, so it's definitely engaging for them. Even some of our less motivated students are motivated to be able to use the computers. I think that it is engaging students and I also think that the more they learn what they can do on the computers as they get into the older grades, these are skills that they're going to need in the workforce too. They're learning that technology doesn't have to be a separate thing, but it can be integrated into their learning.

The year-end status report details how the new technology has fostered student engagement. Specifically, it highlights student slideshow projects and the use of buddy classroom in which younger and older students pair up to co-create digital media. Both of these activities were reported as successful and engaging for students.

Are the new instructional strategies showing promise for improving academic outcomes?

Section Highlights:

When interviewed, many teachers felt like the technology was helping their students to improve outcomes. However, teachers also felt unsure about whether these outcomes were direct results of the grant and felt that it was too early to accurately determine the effects of the grant on student outcomes, particularly considering the impact of EBBL. Student achievement data indicates that there were fewer Cohort 1 students performing at benchmark on DIBELS assessments than Comparison Group students.

Teachers and leaders were asked whether the new instructional practices were showing promise for improving academic outcomes. Almost everyone interviewed shared anecdotal evidence that students were achieving successful outcomes due at least in part to the technology. However, many teachers expressed that it is hard to tell if it is the technology is what has led to these successful outcomes, or if the technology is simply occurring alongside the student successes. Additionally, because PPS is only in the second year of adoption, some teachers (particularly Cohort 2 teachers who have only participated in the grant for one year) felt as if it was too early to attribute positive student outcomes directly to the grant funding. One teacher explains, "I don't know if I can really speak to whether or not I've seen an increase in the academic achievement based on the use of technology. It's hard to tell. We're doing a lot of other things besides just using technology".

In addition, teachers and leaders who have not necessarily seen promise for improving student academic outcomes point to the co-occurrence of EBBL alongside the TechSmart grant. Although technology funded by the grant has aided teachers in implementing the new literacy curriculum, as detailed above, it also has perhaps muddled some of the positive effects of the technology. Like with any new curriculum adoption, EBBL has challenged teachers and students and the district has only been implementing since SY 16-17. One coach emphasized that, due to all of the moving parts involved with implementing both TechSmart and EBBL, more time is needed to truly understand how the technology is impacting student outcomes. When asked if they have seen promise for improving student outcomes they said the following:

> *You know, I'm not sure yet. I think that we have so many kids that struggle with certain things within their learning that as this Lexia initiative comes through, I'm not sure if that improves. I feel like it can, and the more that we do, it will. But we've also been grappling with the literacy adoption. It has been fairly overwhelming for a lot of the teachers. I think the technology may have prevented any sliding that could have happened while teachers are getting comfortable with the literacy adoption. But I feel like we need another year to really see changes.*

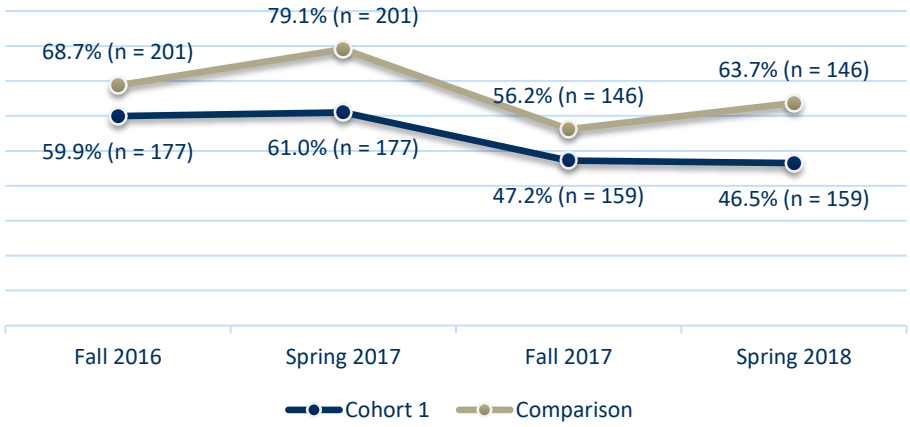
The year-end status report indicates "six out of ten schools saw modest increases in the percent of students meeting core on the Fall DIBELS assessment; one Cohort 1 school saw a significant drop that may be due to an increase in untested students". It is not yet totally clear whether there is promise for improving student outcomes as a result of the grant.

Student Achievement Data

DIBELS

PPS uses the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment for K-3 students. DIBELS are a set of procedures and measures for assessing the acquisition of early literacy skills from Kindergarten through sixth grade. DIBELS assessment data were examined for Cohort 1 students and Comparison Group students in the fall and spring of SY 16-17 and SY 17-18. Figure 15 presents the percentage of students who were at benchmark (Core) on the DIBELS assessments at each of these four time points. The percentage of students performing at benchmark increased for all students in spring of 2017 but then decreased in SY 17-18. Overall, there were a higher percentage of Comparison Group students performing at benchmark at all four time points.

Figure 15. Percentage of Students at BenchMark on the DIBELS Assessment



Instructional practices show promise for improving student academic outcomes with at-risk student subgroups (i.e., students of color, low SES, LEP, special education (or those with an IEP), and those not on track to meet academic standards).

Section Highlights:

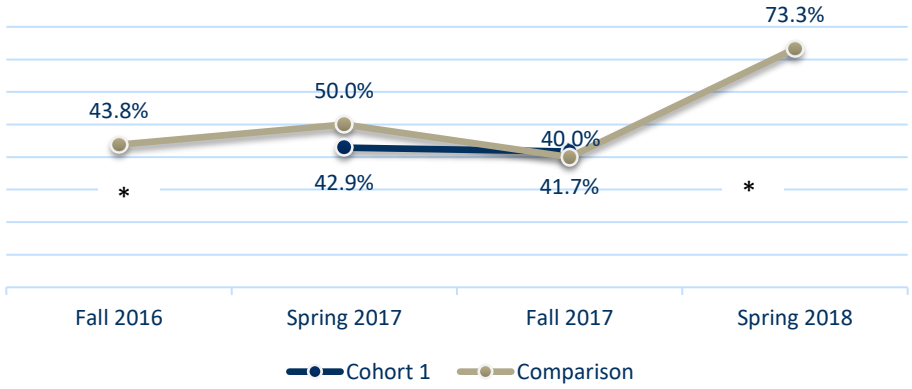
Teachers provided ample examples of how the technology is being used to differentiate instruction and providing access for at-risk subgroups. Teachers are using Lexia to help differentiate for historically underserved students, using myON to increase student engagement and text choice for historically underserved students, and reducing the gap in technology access for these students by allowing them access in the classroom to what they may not have access to in the home. Student achievement data indicates that across the targeted subgroups, Cohort 1 students performed worse on the DIBELS assessments than Comparison group students but slightly better on the ELPA assessment.

Student Achievement Data

In order to examine whether instructional practices show promise for improving student academic outcomes with at-risk subgroups, DIBELS scores were examined for at-risk subgroups within Cohort 1 and the Comparison Group and these results are presented below. Figure 16 presents the percentage of LEP students who performed at benchmark on the DIBELS assessments at each of the four time points.

Due to the fact that there were only 43 LEP students in the Cohort 1 and 24 LEP students in the Comparison group, the sample sizes for students at each performance level are small and not able to be reported. The percentage of Cohort 1 and Comparison Group LEP students performing at benchmark was similar at the spring and fall 2017 time points.

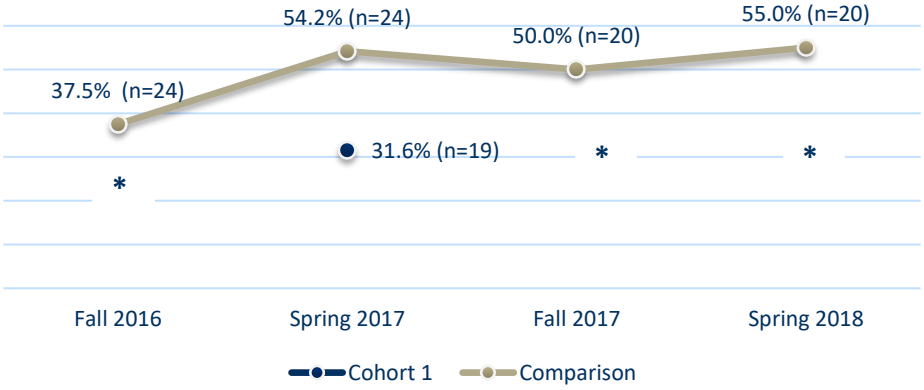
Figure 16. DIBELS composite growth for Cohort 1 vs. Comparison Group LEP students



* Less than 6 students performed at the benchmark proficiency level at this time point

Figure 17 presents the percentage of SPED students who tested at benchmark on the DIBELS assessments in the fall and spring of SY 16-17 and SY 17-18. Again, due to a small number of SPED students in Cohort 1 (n = 41) and the Comparison Group (n = 37), the number of students performing at each performance level were small and only able to be reported in Spring 2017 for Cohort 1 (See Figure 17).

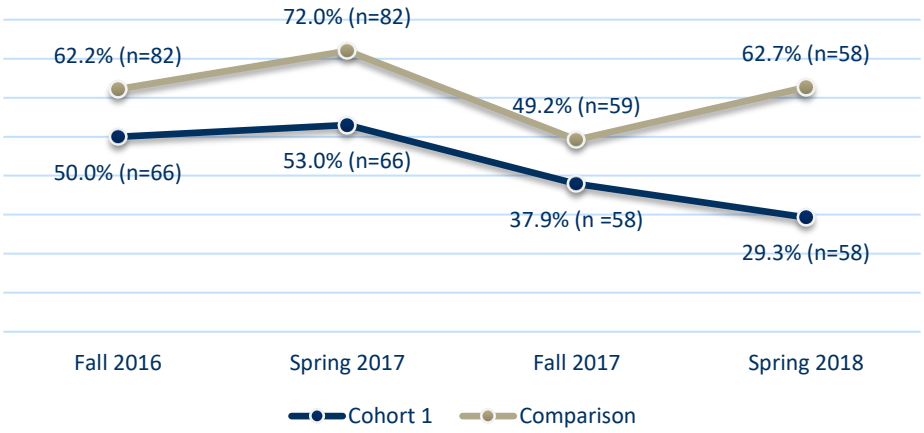
Figure 17. DIBELS composite growth for Cohort 1 vs. Comparison Group SPED students



* Less than 6 students performed at the benchmark proficiency level at this time point

Figure 18 presents the percentage of students of color who were at benchmark on the DIBELS assessments across all four time points. A higher percentage of Comparison Group students performed at benchmark across all time points.

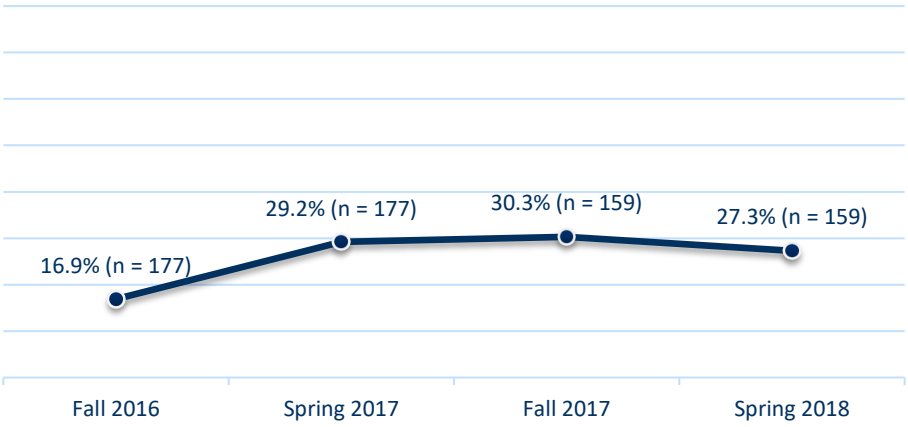
Figure 18. DIBELS composite growth for Cohort 1 vs. Comparison Group Students of Color



IDEL

IDEL is a formative assessment series designed to measure the basic early literacy skills of children learning to read in Spanish. The IDEL measure, like DIBELS, is a screening tool that includes instructional recommendations and benchmark goals. There were only IDEL data for Cohort 1 schools in SY 16-17 and SY 17-18. No IDEL data were provided for Comparison Group schools. Figure 19 presents the percent of Cohort 1 students scoring at benchmark on the IDEL assessment across four time points. The data shows that the percentage of students scoring at benchmark initially improved in SY 16-17 and then hit a plateau and decreased slightly in SY 17-18.

Figure 19. Percentage of Cohort 1 students at Benchmark on the IDEL Assessment



ELPA Assessment

Table 8 below presents the ELPA21 results for Cohort 1 and Comparison Group students in Kindergarten. The scores presented in Table 8 show that 73.7% of Cohort 1 students who completed the ELPA21 assessment in Kindergarten scored at the "Progressing" proficiency status compared to 68.2% of

Comparison Group students. A chi-square test of independence showed that this difference was not significant.

Table 8. ELPA21 Results (SY 16-17)

Proficiency Determination	Cohort 1 (n = 34)	Comparison Group (n = 22)
Emerging	26.3%	31.8%
Progressing	73.7%	68.2%
Proficient	--	--

In addition to the student achievement data presented above, teachers and leaders provided multiple examples of how using technology to support new instructional practices is showing promise for improving academic outcomes with at-risk subgroups. As mentioned above, Lexia has proven to be a great asset to historically underserved students because of the way it facilitates differentiation. In addition, the higher level of engagement that myON encourages has proven advantageous to historically underserved students. One principal said, "the technology has helped enhance the level of accessibility of materials for students in addition to having leveled practice. But it also has helped with the ability to do read-out-loud and similar activities by accessing high interest text through myON. That's something that's increased and it definitely is a benefit for kiddos of color in particular". Lexia and myON were also both cited by teachers and leaders as particularly useful for LEP students. LEP can have texts read aloud to them through myON, which increases their engagement and word recognition. In addition, Lexia allows LEP students to work at their own pace without having to compare their language skills to the more advanced language skills of the native English speakers in their classrooms.

Further, some teachers and leaders indicated that the access to technology at school which the grant guarantees provides an opportunity for low SES children to engage with technology that they may not have at home:

> *One thing that having access to technology does is that if there is an opportunity gap in kids' homes in terms of technology access or internet access, they are all getting universal access at school. That's huge in terms of the technology divide that could otherwise exist.*

On the teacher survey, many teachers provided examples of how they use technology supported instruction with at-risk subgroups. Select quotes from these responses are highlighted below in Tables 8 and 9. Teachers across both cohorts commented on the use of myON, Lexia, Chromebooks, and Audio/Visual supports when supporting at-risk subgroups in the classroom. Cohort 1 teachers also mentioned individualized instruction while Cohort 2 teachers mentioned leveled reading.

Table 8. PPS Teachers' Use of Technology Supported Instruction with At-Risk Subgroups – Cohort 1

myON	• *myON Projects for Hispanic heritage month and black history month.* • *myON for my below grade level students.*
Lexia	• *Using Lexia to improve reading levels.* • *Lexia provides the support for kids on grade level but it is NOT effective on students not at benchmark as they need more one on one instruction and support.*
Chromebooks	• *I use the Chromebooks on a daily basis to support my ESL and special needs students* • *Independent work time on Chromebooks empowers students to take their learning into their own hands. They are motivated to do well by seeing their progress (going up levels).*
Audio &Visual Supports	• *These students have the choice of using voice recording for writing also using the translator from English to Spanish.* • *I utilize the district-provided Unique Learning Systems curriculum, which has online and print components, as a replacement curriculum for students who benefit from graphics-supported text to access educational materials.* • *Decoding manipulation of sounds, visuals for patterns, response for students with physical disabilities, reading for students with reading disabilities* • *Listening to reading.* • *The QTEL science themed lessons that I have taught with some of my ESL groups have well-developed google slideshows that definitely help support my instruction and student interaction. Tasks, sentence frames, and models are all right there*
Individualized Instruction	• *When my student of color could not move forward, I used a "splitter" to sit, listen and help her to be able to understand the directions and tasks, I was also able to meet with her individually when others were on Lexia to help her in various areas.* • *I have used technology to provide multiple modes of instruction. The individualized reading and math practice at a student´s level addresses specific needs of at-risk students.*

Table 9. PPS Teachers' Use of Technology Supported Instruction with At-Risk Subgroups – Cohort 2

Lexia/CORE5	• *Students receive differentiated phonics instruction through Core5.* • *I used lexia a great deal for extra support.* • *Daily Core 5 work for my SPED and low SES students.* • *At risk readers have a wider selection of books at their level as well as Core 5/Lexia support for word work.* • *Lexia for intensive reading group.* • *They have been able to receive additional phonics instruction through Lexia.*
Audio/Visual Supports	• *I used speech to text a lot so non-writers could still be engaged.* • *To access content via digital text that is read aloud for SPED and ELL.* • *The kids in this group LOVED having access to computers to hear books read to them this year in my classroom.* • *The apps provide students with online books that appeal to student interest and has tools like text to speech, highlighting and taking notes that can be used for differentiating instruction.* • *Providing visuals in lessons and sentence frames on the overhead and allowing students to record their voices.* • *Students can use voice recordings on Seesaw to explain their thinking. Activities (assignments) have been modified to meet the needs of my ELL, SPED and TAG students. I am embedding a lot of photos and videos in my Nearpod lessons.*
myON	• *They proceed to myON or other apps that work on reading or phonic skills.* • *Mainly having them work at their own level on myON.*
Leveled Reading	• *Students are allowed to choose books of interest that match their reading level through Tumble Books.* • *The technology has allowed every student, no matter their reading level, to access books that interest them and excite them.* • *At risk readers have a wider selection of books at their level.* • *Kids were able to read books at their level and find books online for research.*
Chromebooks	• *A heightened degree of active engagement, because, to my students, the Chromebooks and our classroom iPad are very desirable and fun to use.* • *Every day, students start their literacy time on the Chromebooks.*

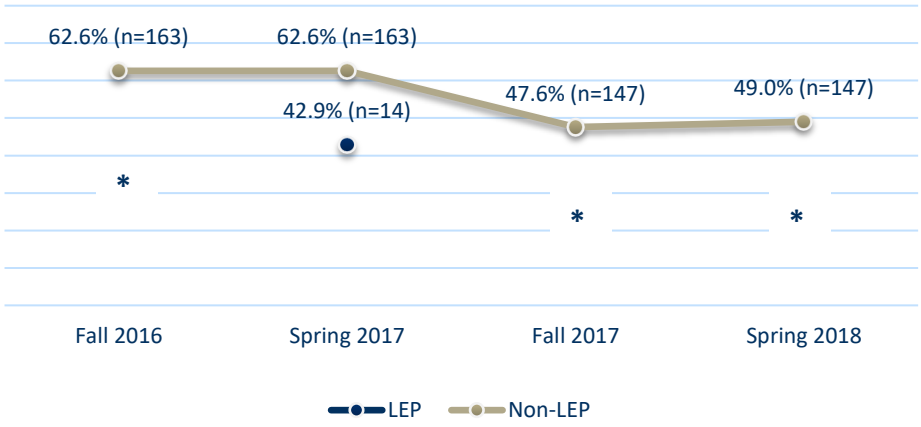
Is the rate of student growth in one or more AHR outcomes greatest for at-risk student subgroups (i.e., students of color, low SES, LEP, special education (or those with an IEP), and those not on track to meet academic standards).

Section Highlights:

In general, the student achievement data do not provide evidence that the rate of student growth is greater for at-risk student subgroups. It will be more meaningful to examine these differences for a standardized assessment such as the Smarter Balanced Assessment as the sample sizes for students completing the assessment will likely be larger. In addition, more time with the new literacy curriculum and the technology supported instruction is needed to see evidence of closing the achievement gap.

PRE examined DIBELS data to assess how student progress may differ for at-risk subgroups as compared to non-at-risk subgroups within the Cohort 1 schools. Figure 20 presents the percentage of Cohort 1 LEP and non-LEP students performing at benchmark (Core) on the DIBELS assessments across four time points. Within Cohort 1, a higher percentage of non-LEP students scored at benchmark in spring 2017, however, the samples sizes were not large enough to graph the other three time points.

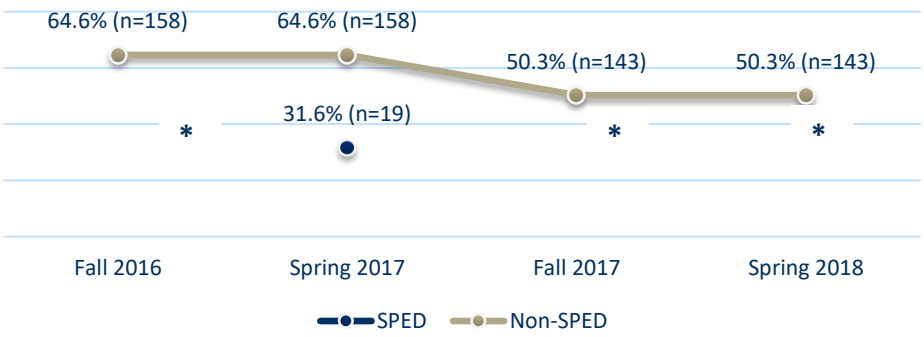
Figure 20. DIBELS Composite Growth for LEP vs. Non-LEP TechSmart Students



* Less than 6 students performed at the benchmark proficiency level at this time point

Figure 21 presents the percentage of SPED and non-SPED Cohort 1 students at benchmark across the four time periods. A higher percentage of non-SPED students tested at benchmark in spring 2017, however, there were not enough data from SPED students to include those percentages in the graph for the other three time points.

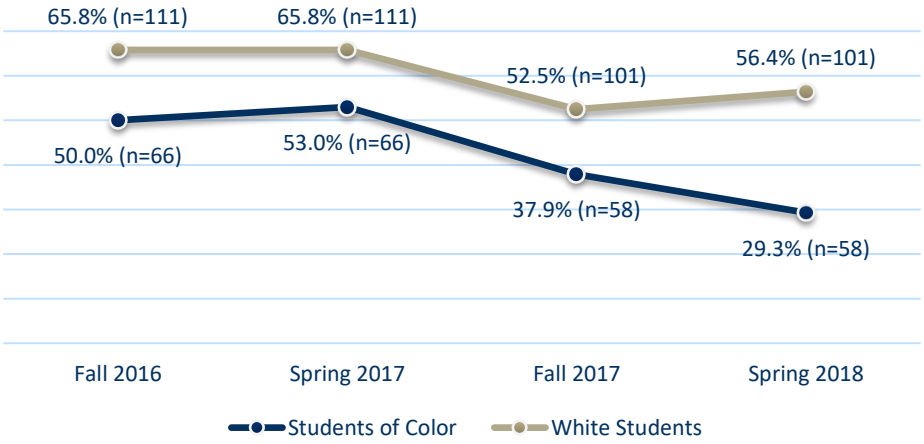
Figure 21. DIBELS Composite Growth for SPED vs. Non-SPED TechSmart Students



* Less than 6 students performed at the benchmark proficiency level at this time point

Figure 22 presents the percentage of Cohort 1 students performing at benchmark for students of color and white students. A higher percentage of white Cohort 1 students scored at benchmark across all four time points. Additionally, while both groups experienced a drop in test scores between the end of SY 16-17 and the beginning of SY 17-18, the students of color group continued to drop between fall 2017 and spring 2018, while the white students group improved their test scores slightly.

Figure 21. DIBELS Composite Growth for Students of Color vs. White TechSmart Students



Digital Age Learning Culture

Districts embrace a cultural shift and view technology as positive.

Has the use of technology to support instructional practices increased?

Section Highlights:

In SY 17-18, 62.5% of Cohort 1 teachers and 75.0% of Cohort 2 teachers reported using technology in their classroom. These evaluation results provide some evidence that this outcome has increased after an additional year of implementation. These results were an improvement form the SY 16-17 evaluation.

As reported in the previous section on teaching effectiveness, teachers provided many examples of how they have increased their use of technology to support instructional practices. Additionally, as addressed in the section on PD, teachers have begun using one another to advance their technology skills and to learn from one another the most beneficial ways to integrate technology into the classroom. This points to a school culture which is fostering increased use of technology to support instructional practices.

Figures 23 and 24 present self-reported frequency of technology integration for teachers at the beginning and end of the second year of implementation. These items show promising growth compared to SY 16-17, when there was significant room for improvement on these items. For example, in SY 16-17 the number of teachers who used technology to deliver instruction to their class had dropped slightly by the end of the year. In SY 17-18, however, the percent of teachers participating in each activity a moderate amount or a great deal increased by at least 15 percentage points across all items for both Cohort 1 and Cohort 2. In terms of frequency of technology integration, Cohort 1 and Cohort 2 appear to be in the same place.

Figure 23. Frequency of Technology Integration Among PPS Teachers - Cohort 1

(% A Moderate Amount/A Great Deal)

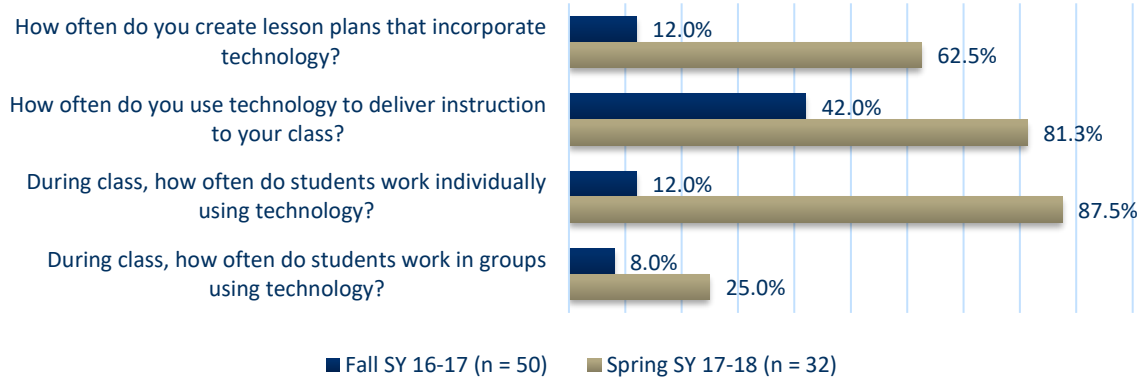
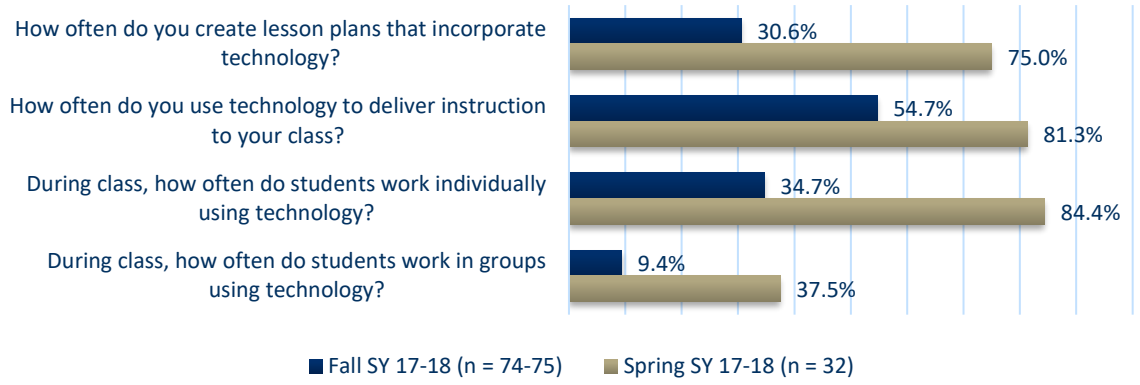


Figure 24. Frequency of Technology Integration Among PPS Teachers - Cohort 2
(% A Moderate Amount/A Great Deal)



Is the learning management system useful for identifying effective instructional practices (more efficient, easier, data driven)?

The year-end status report outlines the use of Canvas Learning Management System (LMS), indicating that "for K-12 buildings Canvas has an expanding role in PD". In SY 18-19 the district plans to implement TechSmart Labs, "a process for identifying, validating, and disseminating effective use of technology for literacy instruction". TechSmart Labs will be housed in Pepper, a LMS recently implemented by the district. Additionally, in SY 18-19 the district will begin to use Seesaw in TechSmart classrooms, which will allow students to keep online portfolios of their work and will "act as a venue for sharing ideas and practices within and across schools".

Do teachers have increased access to and use of digital content and resources?

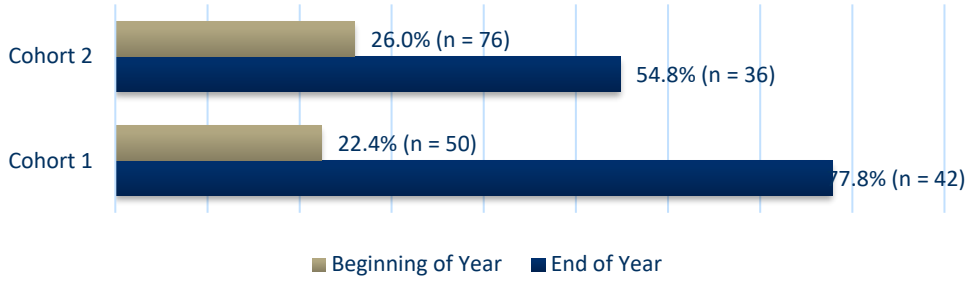
Section Highlights:

By the end of SY 17-18 54.8% of Cohort 1 and 77.8% of Cohort 2 teachers indicated that students had adequate access to technology in the classroom. Additionally, the adoption of Clever badges in all classroom greatly increased student access to digital content and resources.

The TechSmart grant funding has provided teachers with increased access to a variety of digital content and resources that they have been using to enhance their instruction. On the teacher survey, teachers were asked whether students have adequate access to technology resources. Figure 25 shows that by the end of the year, the number of teachers reporting adequate student access to technology resources improved by 55.4 percentage points for Cohort 1 and 28.8 percentage points for Cohort 2.

The year-end status report indicates that, due to the success in TechSmart schools, the district is in the process of providing all Title 1 schools with Chromebooks, myON, and Lexia through Title 1 funds. In addition, in SY 17-18 "Clever badges were instituted district-wide at the K-5 level, increasing access to technology for every K-5 student".

Figure 25. Teacher Reports on Students' Access to Tecnology (% True of me/Very true of me)



Throughout the interviews teachers reacted overwhelmingly positive to the Clever badges, expressing the ease with which students can now access technology in the classroom. The Clever badges have made substantial progress in reducing barriers to access to technology in the classroom for younger students in particular. Instead of spending time problem-solving issues related to logging in, students are now able to spend more time engaging in the literacy programs.

In terms of the digital content and resources being used by PPS, teachers provided additional comments on the use of Lexia, Google, myON, Seesaw and Chromebooks. Table 10 below presents sample quotes regarding the application of these technologies.

Table 10. PPS Teachers' Use of Technology – Cohort 1

Technology	Teachers' Application of Technology
Lexia	*This year I have used my Lexia to inform instructional planning. For example, I have students working 1:1 with paraeducators on Lexia Skillbuilders in order to increase success when working on Lexia in their general education classes.*
Google	*I do small group learning on Google classroom with practice for phonics, sight words, and vocabulary building.*
myON	*I use myON to enhance literacy groups.*
Seesaw	*Students use See-Saw to post their work and comment on each other's' work.*

Table 12. PPS Teachers' Use of Technology – Cohort 2

Lexia	*I use Lexia to support students at the level needed. I use the data from Lexia to crosscheck other assessments I use to make sure I have an accurate knowledge of my students' skills.*
Google Applications	*Students complete a writing assignment on Google Classroom and then upload their writing to their Seesaw journal and record themselves reading it.*
MyOn	*I use myON, Epic, and iPads in my classroom during literacy block and math time to enrich and support the learning of all the students in my classroom.*
Chromebooks	*I have a center for iPads and Chromebooks for students to use to enhance their reading/language skills. I also have students compose written final drafts on the Chromebooks.*

Is there evidence of district-wide support for technology integration?

Section Highlights:

Overall, survey and interview data from the SY 17-18 evaluation show evidence of growth in the perceived culture of support for technology integration at PPS. Cohort 2 teachers had more positive perceptions of support than Cohort 1.

In Figure 26 below Cohort 1 teachers report that the culture of support for technology integration has grown stronger since the beginning of SY 16-17. The percent of teachers who agreed with each of the three items, however, was lower for two of the items at the end of SY 17-18 compared to the end of SY 16-17. For example, by the end of SY 16-17, eighty-six percent (86.4%) of teachers surveyed agreed that teachers in their school are continually learning and seeking new ideas. By the end of SY 17-18, only 64.3% of teachers agreed with this statement. In addition, by the end of SY 16-17 almost eighty percent (78.4%) of teachers agreed that teachers at their school were not afraid to learn and use new technologies. By the end of SY 17-18, this percentage was down to 64.3%. The teachers who agreed that teachers in their school share an understanding about how technology will be used to enhance learning, however, increased, going from 75.7% at the end of SY 16-17 to 81.3% at the end of SY 17-18. Overall, teacher perceptions of a culture of support for technology integration has grown since the beginning of SY 16-17, although growth since end of SY 16-17 is inconsistent.

Figure 26. PPS Teacher Perceptions of a Culture of Support for Technology Integration - Cohort 1
(% Agree/Strongly Agree)

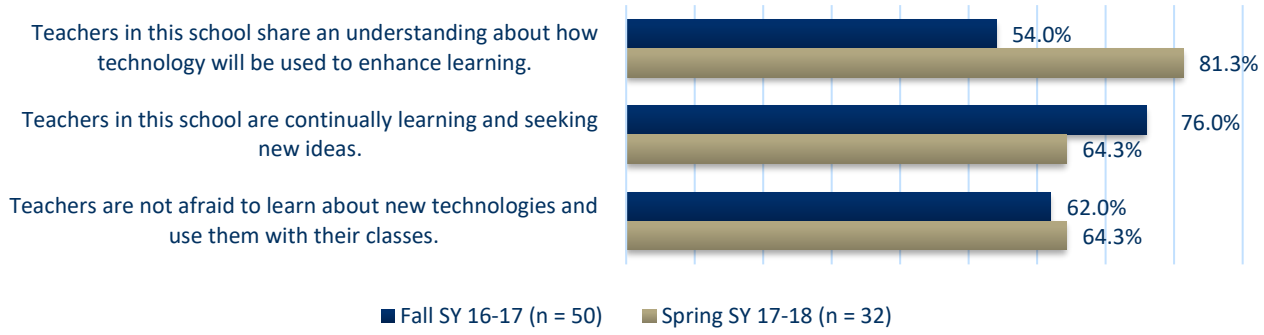
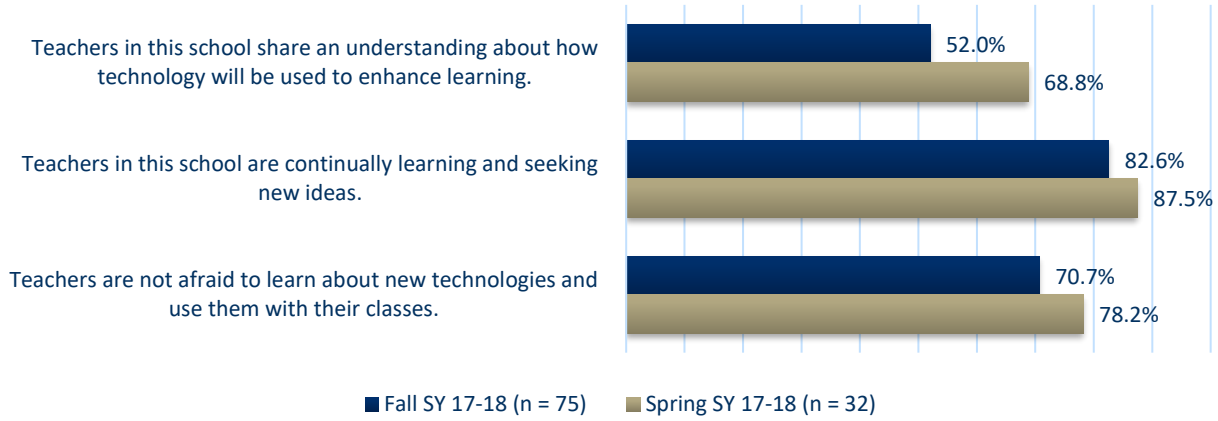


Figure 27 shows that Cohort 2 teachers had more positive perceptions of their school's culture of support for technology integration at the end of SY 17-18 compared to at the beginning and compared to Cohort 1 teachers. Teacher perceptions improved throughout the school year across all three items. Almost ninety percent (87.5%) agree that teachers in their school are continually learning and seeking new ideas and 78.2% of teachers are not afraid to learn about new technologies and use them with their classes.

Figure 27. PPS Teacher Perceptions of a Culture of Support for Technology Integration - Cohort 2
(% Agree/Strongly Agree)



Do parents have an increased understanding and utilization of districts' technology assets?

The year-end status report provided descriptions about various methods for parent engagement including communication with parents regarding the Ready4K, which is a text messaging tool used to engage family members in early literacy adoption. Messages sent via text are offered in both English and Spanish. Communication with parents also consisted of regularly shared instructions for accessing myON and Lexia at home. In addition, some schools in the district provide a technology space for families who may not have ample technology access in their homes.

Visible Leadership

District leadership is actively involved and working with key communities to accomplish change.

Are districts identifying effective instructional practices and disseminating information and results to other districts?

Section Highlights:

It remains ambiguous the extent to which the district has made efforts to share information and lessons learned from their technology integration efforts with other districts. While coaches attended a technology conference that allowed them to network with other districts, and there's been some informal sharing outside of that, nothing formal is in place.

PPS administrators have shared learnings internally with schools in the district and externally to other districts. For example, one coach talked about the opportunity the TechSmart coaches from Portland had to attend the Integrated Conference:

> *That was an amazing experience. Meeting and hearing from people who are actually using different programs and giving us real examples from classrooms of how they're using it, ideas about scheduling time that we can share with staff, since I feel like that's the biggest obstacle.*

The Integrated Conference gave PPS teachers the opportunity to interface with people from other districts and both share how PPS is integrating technology into the classroom and also learn from others about how they may be doing things differently. Other than that isolated event, however, district leadership did not have many examples of disseminating information and result to other districts when interviewed. There was no formal method set up for sharing this kind of information, however, one principal indicated that there have been some informal learning walks within the district across different buildings. However, there appears to be room to grow in terms of cross-district collaboration.

Do teachers feel increased support from district leaders regarding technology integration?

Section Highlights:

The SY 17-18 evaluation showed that teachers feel generally supported by district leaders, however, as in SY 16-17, they felt that the TechSmart initiative was at times less supported than it should have been due to the coincidence of the EBBL implementation and shifting leadership.

As noted in previous sections, teachers feel the district is supporting them in large part by providing the technology coaches. Several teachers also mentioned feeling particularly supported by their building principals. One teacher said,

Our principal is very supportive. I was actually part of the group that helped write the grant from this school. And from the very beginning he's been supportive of, one, finding out and going after the grant. And then all of the professional development around that, and incorporating it into curriculum, and supporting our technology staff person in rolling new things and working with us.

In discussing support received from the district, teachers made some positive remarks and identified some areas for improvement. Teachers were thankful for the district for setting up the Clever badge. They felt that in doing so the district had efficiently responded to teacher concerns about issues surrounding log ins. Additionally, like in SY 16-17, teachers felt that a main support received through the district were the on-site technology coaches. One principal noted, "each school gets a half time TechSmart coach and so that's been a valuable resource for teachers because it's a colleague and a peer that they're learning from. It's not directly always coming from the administrator". The biggest critique that teachers had of the district in terms of support received had to do with mixed messages and information overload, particularly in reference to the co-occurrence of the EBBL adoption and the TechSmart grant implementation. One teacher explained as follows:

I really think the worst thing was rolling out the new literacy adoption and TechSmart right at the same time, because the technology is so valuable, and I don't feel like we got the time to focus on it because there was such a huge push to adopt this literacy program, which is really complicated and has multiple pieces to it.

Although the majority of teachers and leaders found that the applications funded by TechSmart assisted with the literacy adoption, the tumult surrounding the EBBL adoption and the in-flux nature of PPS leadership caused some teachers to feel as if the TechSmart implementation was not supported fully.

Data-Driven Improvement

Current, relevant and high quality data from multiple sources are used to improve schools, instruction, professional development, and other systems.

How are schools using data to improve instruction, professional development, and student performance?

Section Highlights:

Teachers consistently expressed positive experiences using data from Lexia to differentiate their teaching. Some teachers also reported positive experience using data from myON to guide their classroom instruction.

Data collected through both interviews and surveys indicate that teachers are increasing their use of data-driven instructional strategies. Figures 28 and 29 show that teacher use of data-driven instructional strategies has remained consistent among both cohorts, with some growth reflected for Cohort 1 teachers in particular. Most notably, 67.6% of Cohort 1 teachers reported that they were comfortable using technology to differentiate instruction at the end of SY 17-18 compared to only 30.0% at the beginning of SY 16-17.

Figure 28. PPS Data Driven Improvement - Cohort 1
(% True of Me/Very True of Me)

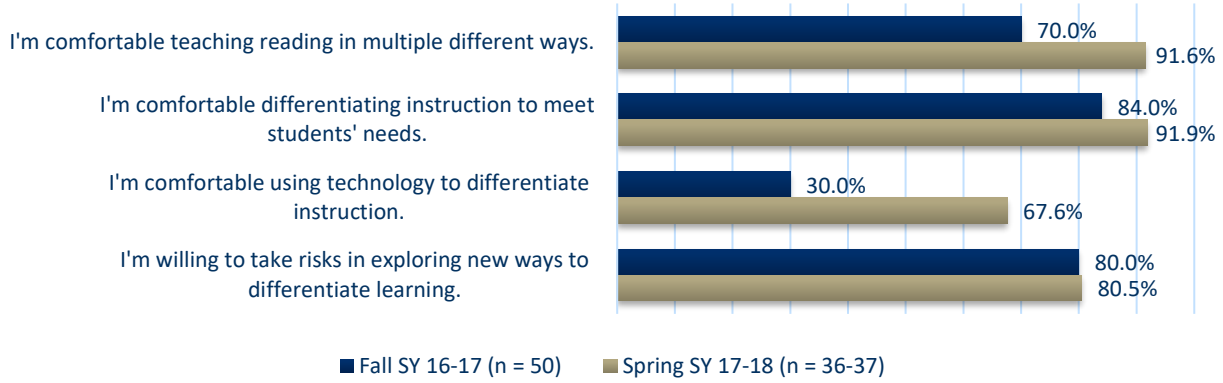
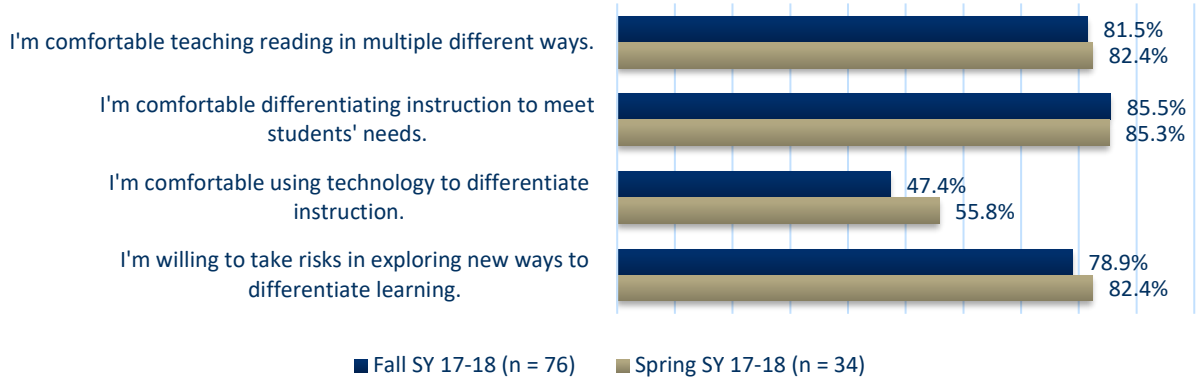


Figure 29. PPS Data Driven Improvement - Cohort 2
(% True of Me/Very True of Me)



Teachers most commonly reported using Lexia when engaging with data. Teachers find Lexia useful when tracking individual students' progress and use it as a guide for differentiating their teaching. One teacher detailed,

> *Every morning I look at my Lexia report, and any students that need reinforcement on a certain lesson, I'll pull them to the back table and I'll do a quick mini lesson with them. That's been huge, and then it kind of has helped me pull strategy groups, as well, and see those holes*

Teachers also sometimes engaged with myON data in order to drive their instruction; one teacher noted "in terms of comprehension in particular, I might notice through the data that somebody is missing a particular concept or that they are reading only science books. And so, it helps me engage the students in other areas as well, because I can learn more about them, which always helps overall in terms of their achievement".

The year-end status report indicates that "Lexia data continues to be the most prevalent way that teachers are engaging with data. Lexia captures student level use, shows which students are struggling, and identifies students for supplemental lessons that can be printed and provided to students".

Funding & Budget

District's budget repurposes resources and seeks outside funding to focus on promising practices and technology supports.

Have districts have identified at least one opportunity for repurposing resources to support technology integration?

Section Highlights:

The SY 17-18 evaluation provides evidence that PPS continues to find creative ways to support technology integration, including directing Title 1 funds to purchase Chromebooks, Lexia, and myON and using district funds to support technology use for fourth and fifth grade classrooms in addition to K-3.

As mentioned above in the section regarding digital content and resources, in SY 17-18 the district used Title 1 funds to purchase Chromebooks, Lexia, and myON for Title 1 schools. That allowed them to direct funds not associated with the TechSmart grant into supporting further technology integration in the district. Additionally, the district has used non-grant funds to support one-to-one devices through fifth grade at some schools (since the grant is only for K-3 classrooms). Extending support beyond third grade applied to coaches in some buildings too, as this coach describes:

When we got the grant my administrator chose to take some of her Title funds and also make sure that fourth and fifth had access to Chromebooks. And so I not only support K-3, I actually do support my four/five teachers. So all of our kids have access to myOn. It's been really nice just to see that it's not a K-3 within our building; my admin has really pushed that we're supporting all of our kids K-5.

Evaluation Insights at Portland Public School District

The SY 17-18 evaluation for the Portland Public School District produced the following insights:

- With regard to the culture of support within the district for technology integration, several points can be made. Teachers and administrators emphasized that the support received from the technology coaches is effective and that the coaches are integral to the technology integration. However, teachers also expressed some ambiguity related to support received from the district. This ambiguity stemmed from feeling overwhelmed with the implementation of EBBL along with TechSmart in addition to the shifting leadership which made it more difficult to access consistent and reliable support.

- Teachers consistently emphasized the need for additional PD for using their Chromebooks and for using myON. While teachers reported using both Lexia and myON, teachers were noticeably more comfortable and confident working with Lexia over myON. In addition, teachers felt like the group PD sessions on Chromebooks during the summer workshop were not sufficient in order for them to successfully integrate the Chromebooks into their classrooms. They explained that it would be helpful for them receive additional training after they had the chance to use and begin exploring the features of the Chromebooks.

- Overall, there remains progress to be made in terms of introducing the technology in conjunction with the adoption of the Equity Based Balanced Literacy Framework. The EBBL adoption is a big change and adding the technology has been overwhelming for many teachers. This is why the majority of teachers are still using technology to substitute or augment traditional instruction rather than for modification or redefinition. Once teachers are able to grasp the EBBL framework, they will be more likely to begin adopting new instructional strategies as a result of the technology. Efforts have been made by the district to address this with Cohort 2 as they are adopting only the reading or writing portion of the EBBL framework during the first year of implementation. This allows for teachers to be less overwhelmed with the EBBL adoption and the technology integration.

- Student achievement data indicates that there were fewer Cohort 1 students performing at benchmark on the DIBELS assessments than the Comparison Group students. This holds true across the targeted subgroups (LEP students, SPED students, and students of color). Overall, more time with the new literacy curriculum and the technology supported instruction is needed to see evidence of closing the achievement gap for Cohort 1 students.

Appendix A. Evaluation Planning Tool

The following planning tool includes the TechSmart Initiative logic model, evaluation plan, and timeline. The logic model and evaluation plan have been designed to align with the MHCRC Framework for Successful Technology Implementation as described below. Pacific Research and Evaluation will work with MHCRC and each district to create a district specific program evaluation plan utilizing the tools in this document. The goal of utilizing this model is to provide consistency in the evaluation of projects across the TechSmart Initiative.

MHCRC Framework for Successful Technology Implementation: The framework includes seven factors that have been identified as essential to effective transformations to technology rich teaching and learning environments. As you can see, the components do not stand in isolation from each other; many components are linked and substantially overlap.

- Teaching Effectiveness: District supports regular, inclusive and shared professional development among teachers.
- Digital Age Learning Culture: District embraces cultural shift and views technology as positive.
- Visible Leadership: District leadership actively involved and working with key communities to accomplish change.
- Data Driven Improvement: Current, relevant and high quality data from multiple sources are used to improve schools, instruction, professional development and other systems.
- Funding & Budget: District's budget repurposes resources and seeks outside funding to focus on promising practices and technology supports.
- Strategic Planning: District strategic plan reflects shared commitment to improving outcomes for students.
- Engaged Communities & Partners: Parents, stakeholders, community groups and others are actively and systemically involved in helping students develop, learn and achieve.

GOAL 1: School districts funded by MHCRC grant investments will understand and implement effective instructional strategies and practices that use technology to foster improvement in academic outcomes for all students.

GOAL 2: The MHCRC and school districts will validate and disseminate effective instructional strategies and practices that use technology to foster improvement in academic outcomes for all students.

ACTIVITIES	OUTPUTS	SHORT TERM OUTCOMES – Y1-2 (TEACHING OUTCOMES)	INTERMEDIATE OUTCOMES – Y3-5 (STUDENT OUTCOMES)	LONG TERM OUTCOMES --Y6+
What are the key elements of the districts' project plans?	*What are the direct results of our activities?*	*What changes do we expect to occur within the short term?*	*What changes do we want to occur within the scope of the project?*	*What changes do we hope will occur over time?*
Teaching Effectiveness • Districts create a systemic PD plan, which includes technological, content and pedagogical knowledge. • Districts offer relationship based PD that includes the following components: a) Using technology effectively, b) implementing evidence-based instructional strategies. • Teacher PD familiarize teachers with the MHCRC Common Criteria*. • Districts provide technology support on-site for teachers. • MHCRC and districts identify and evaluate effective instructional practices using the Common Criteria*.	• Number of teachers who participate in PD annually. • Number and type of shared learning opportunities for teachers and administrators. • Number and type of project-related district learning cohorts (horizontal and vertical). • Number of students in student cohorts. • Number of cohort students representing targeted student subgroups (i.e., ethnic minorities, low SES, ELL's and SWD's).	• PD has helped teachers increase the use of technology for evidence-based instructional practices. • PD has helped teachers use technology to analyze and use data about student learning. • PD has helped teachers use technology to differentiate instruction. • The use of technology has increased teachers' ability to engage students and improve teaching of Common Core standards. • Instructional practices show promise for improving student academic outcomes.	• Student achievement has increased in one or more AHR outcome, as measured by student growth over time. • The rate of student growth in one or more AHR outcome is greatest for at-risk student subgroups (i.e., ethnic minorities, low SES, ELL's, SWD's, and those not on track to meet academic standards). • There is a positive correlation between teacher implementation of instructional practices and student AHR academic outcomes. • The positive correlation between teacher implementation of instructional practices and	• Instructional practices are transferable to varied classrooms or academic settings. • Longitudinal data show sustained and/or ongoing progress in relevant AHR outcomes.

			improvement in AHR academic outcomes has been replicated in multiple academic settings.	
<u>Digital Age Learning Culture</u> • Districts conduct an assessment of physical technology assets and how assets are being used. • Districts use a learning management system to provide data about student achievement. • Districts use learning management systems to identify and validate effective practices. • Districts have a system to provide digital content and resources across a district. • Districts provide trainings for parents to understand technology integration.	• Number of technology assets being used. • Number of teachers and administrators using the learning management system. • Number of parent trainings offered. • Number and percentage of parents attending training.	• The use of technology to support instructional practices has increased. • The learning management system is useful for identifying effective instructional practices (more efficient, easier, data driven). • Teachers have increased access to and use of digital content and resources. • There is district wide support for technology integration/innovation. • Parents increase understanding and utilization of districts' technology assets.	• An increased number of students are utilizing and engaging with new technology.	• Technology integration is seen as a shared responsibility among teachers, district leaders, and parents.
<u>Visible Leadership</u> • Districts participate in cross-project networking to share effective instructional practices.		• Each district identifies one or more effective instructional practices and disseminates information and results to other districts.		• Districts actively exchange data and information about effective instructional practices, so that those practices can be

• Leaders provide clear communication about the district's vision for instructional technology.		• Teachers feel increased support from district leaders regarding technology integration.		implemented and validated in new settings.
<u>Data Driven Improvement</u> • Districts use formative assessments for studying the effectiveness of instructional practices. • Teacher PD includes techniques to use student learning data and differentiate instruction. • Districts evaluate projects in relationship to their project-specific logic models and continuously adjust project activities based on evaluation data.	• Percentage of teachers using formative assessments.	• Teachers increase their use of formative assessments to identify effective instructional practices. • Teachers have increased ability to assess students' progress and provide feedback. • Teachers have increased ability to differentiate instruction using student data.	• Differentiated instruction improves student learning outcomes.	
<u>Funding and Budget</u> • Districts allocate adequate funding for technology transitions. • Districts seek funding for sustaining technology integration.	• Number and percentage of students with access to technology.	• Districts have identified at least one opportunity for repurposing resources to support technology integration.	• Student learning outcomes provide evidence to support continued funding in order to sustain technology integration.	• District resources sustain and enhance technology based instructional practices.
<u>Strategic Planning</u> • Districts' strategic plans prominently include technology as well as		• Diverse stakeholders are involved in developing the technology components of strategic plans.	• Evaluation data inform active strategic planning over time.	

mechanisms for scaling programs. • Districts identify long range plans to fund technology and PD supports.				
<u>Engaged Communities & Partners</u> • District leaders maintain effective communication with outside stakeholders regarding technology integration. • Districts create structures to support communication among stakeholders (e.g. website, community meetings).		• District leaders demonstrate increased communication with and among outside stakeholders regarding technology integration.		

Appendix B. Teacher Survey

MHCRC TechSmart Teacher Survey

Introduction

You are receiving this survey because you have participated in technology-related professional development or training as part of your school's TechSmart grant funded by the Mt. Hood Cable Regulatory Commission (MHCRC). MHCRC has partnered with an external evaluation company, Pacific Research and Evaluation, to conduct an evaluation of these grants and to learn about the effective instructional teaching practices that have emerged. A key element of this evaluation is to hear directly from teachers.

This survey will ask about your experience with technology-related professional development, new ways you have incorporated technology into your instruction, and other questions related to technology use. Your responses to this survey will go directly to Pacific Research and Evaluation and will only be shared with your school in aggregate form. We appreciate you taking 15 minutes to complete this survey.

This survey will ask you to report your PEID. We are asking for your PEID so Pacific Research and Evaluation can address research questions requiring analyses of how teachers implementation of instructional practices influences student outcomes. This information will in no way be used for purposes of teacher evaluation and will only be seen by these external researchers.

If you have questions about this survey, please contact Kristi Manseth at Pacific Research and Evaluation (Kristi@pacific-research.org).

Clicking on the "Next" below indicates that you understand that you do not have to answer any question(s) you choose not to answer. In addition, you understand that your identity will not be revealed in any way except to the researchers at Pacific Research and Evaluation involved in the TechSmart project, and that the results will not be reported in a way that will reveal individual participants.

Background Questions

1. **Please indicate your ID**
2. **What grade level(s) do you currently teach? (Mark all that apply)**
   - *Response options for this item will be tailored to the targeted grades for each project*

3. **How many years have you taught at the K-12 level?**
   - 0-2 years; 3-5 years; 6-10 years; 11-20 years; 21-30+ years
4. **What is your school?**

Professional Development Dose (Post Only)

5. Indicate the number of hours spent in technology-related group professional development (PD) over the past school year. (0 hours; 1-8 hours; 9-16 hours; 17-32 hours; 33 hours or more)
    - Please rate the extent to which this group PD was useful for integrating technology into your classroom (1 = Not at all useful; 5 = Extremely Useful)
6. Indicate the number of hours spent in technology-related professional development (PD) in the form of individualized training/coaching over the past school year. (0 hours; 1-8 hours; 9-16 hours; 17-32 hours; 33 hours or more)
    - Please rate the extent to which this individualized PD was useful for integrating technology into your classroom (1 = Not at all useful; 5 = Extremely Useful)
7. How effective has your TechSmart grant's professional development model been in terms of helping you change your instruction? Do you have suggestions for improvement?

Technology Skill Level

8. **Choose the statement that best describes the level of your technology skills. Please choose *only one* of the following:**
    - I get someone else to do technology-based tasks for me. (1)
    - I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job. (2)
    - I have enough skills to complete the management and communication tasks expected of me and occasionally will choose to use technology to accomplish something I choose. (3)
    - I use a variety of technology tools and I use them efficiently for all aspects of my job. (4)
    - I use technology efficiently, effectively and in creative ways to accomplish my job. (5)

Technology Integration (• 1 – Very untrue of me • 2 – Untrue of me • 3 – Somewhat untrue of me • 4 – Neutral • 5 – Somewhat true of me • 6 – True of me • 7 – Very true of me)

Rate the extent to which the following statements are true or untrue of you.

9. I alter my instructional use of classroom technology based upon the newest applications and research on teaching, learning, and standards-based curriculum.
10. I integrate the most current research on teaching and learning when using the classroom technology.
11. I plan technology-related activities in my classroom that will improve my students' basic skills (e.g., reading, writing, math computation).
12. I seek out activities that promote increased problem-solving and critical thinking using classroom technology
13. Students have adequate access to technology resources in my classroom (e.g., iPads, Chromebooks)

Teacher Support (Innovative Culture): (1 = Strongly Disagree; 5 = Strongly Agree)
Please indicate the extent of your agreement with each of the following statements. 5-point agreement scale

14. Teachers in this school share an understanding about how technology will be used to enhance learning.
15. Teachers in this school are continually learning and seeking new ideas.

16. Teachers are not afraid to learn about new technologies and use them with their classes
17. Administrators in this school are generally supportive of technology integration efforts.

Frequency of Technology Use: (1 – Never, 2 – Rarely, 3 – Occasionally, 4 – A moderate amount, 5 – A great deal)

Please answer the following questions looking back at the **2016-17** school year.

18. How often did you create lesson plans that incorporate technology?
19. How often did you use technology to deliver instruction to your class?
20. How often did you adapt an activity to students' individual needs using technology?
21. During class, how often did students work individually using technology?
22. During class, how often did students work in groups using technology?

Logic Model Outcomes

Please rate your agreement on the following items (1 = Strongly Disagree; 5 = Strongly Agree)

23. I am confident in my ability to assess students' progress and provide feedback
24. I am comfortable integrating technology into my instruction
25. I am confident in my ability to differentiate instruction using student data
26. I am confident in my ability to engage students through the use of technology
27. I have identified effective instructional practices that use technology (Post Only)
    - Please provide an example of an instructional practice utilized in your classroom. (Post Only)

Please how frequently you do each of the following (1 – Never, 2 – Rarely, 3 – Occasionally, 4 – A moderate amount, 5 – A great deal)

28. I use technology for evidence-based instruction
29. I use technology to differentiate instruction
30. I use formative assessments to identify effective instructional practices
31. I use technology to analyze data about student learning
32. I use digital content and resources in my instruction

33. **Please list and rate the effectiveness of new technology related instructional practices that you have integrated into your classroom this year. (List up to three practices) (POST Only)**

_____	**1**	**2**	**3**	**4**	**5**
_____	**1**	**2**	**3**	**4**	**5**
_____	**1**	**2**	**3**	**4**	**5**

Please rate how much you agree or disagree with the following statements about your current students in comparison with your students in the 2015-16 school year. (POST Only)

34. My students are more comfortable using digital tools for learning.
35. My students are more able to choose the right tool for their task.
36. My students are more able to work independently.

Please rate the extent to which technology supports the following aspects of your instruction. (1 – Not at all, 2 –Very little, 3 – Somewhat, 4 – To a great extent) **(POST Only)**

37. **Planning and Preparation** (including knowledge of content and pedagogy, knowledge of students, setting instructional outcomes, knowledge of and access to resources, designing coherent instruction, and designing student assessments)
38. **Managing Classroom Procedures** (including instructional groups, transitions, materials and supplies, non-instructional duties, and efficient classroom procedures)
39. **Organizing Physical Space** (including safety and accessibility, and arrangement of furniture and resources)
40. **Communication with Students** (including expectations for learning, directions and procedures, explanations of content, and use of oral and written language)
41. **Using Questioning and Discussion Techniques** (including quality of questions, discussion techniques, and student participation)
42. **Engaging Students in Learning** (including activities and assignments, student groups, instructional materials and resources, and structure and pacing)
43. **Using Assessments in Instruction** (including assessment criteria, monitoring of student learning, feedback to students, and student self-assessment and monitoring)
44. **Demonstrating Flexibility and Responsiveness** (including lesson adjustment, response to students, and persistence)

45. **Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES) in the areas defined above. (POST Only)**

Appendix C. Teacher Interview Questions

TechSmart Teacher Interview Question 2017 (Y2)

My name is _____. I am a research consultant with Pacific Research and Evaluation. We have asked you to attend this PD because you have participated in professional development or training as part of your school's TechSmart grant funded by the Mt. Hood Cable Regulatory Commission (MHCRC). MHCRC has partnered with our organization to conduct an evaluation of these grants and to learn about the effective instructional teaching practices that have emerged. A key element of this evaluation is to hear directly from teachers so we greatly appreciate your time today.

1. Can you start by telling us a little about the professional development you have received as part of the TechSmart grant this year or last?
    a. Technology focus? Instruction?
    b. Formal vs Informal?
2. How effective is this PD model in terms of helping you change your instruction?
    a. Suggestions for improvement?
3. How are you using technology to support new instructional techniques?
    a. Can you give examples of technology related instructional strategies that have been particularly effective in your classroom?
    b. Have any strategies been less effective?
4. Have you experienced any barriers to integrating technology into your classroom instruction?
5. How has your use of technology supported instruction impacted student engagement?
6. A focus of the TechSmart grants is closing the achievement gap. How has the use of technology supported instruction impacted learning for students of color, English Language Learners, those with an IEP, etc.
7. Have you adopted any new practices that show promise for improving student academic outcomes?
    a. How do you know it is improving? Real time data, etc.?
8. What type of support have you received at the district level for using technology to support instructional change?
    a. Is there a culture of support around technology in your school?
9. Do you have any other comments about your PD experience or technology integration?

Appendix D. District Leader Interview Protocol

TechSmart Leadership Interview Questions

1. What are the primary ways that you have seen the TechSmart grant funding impact your district?

2. How do you think the grant funding has impacted teachers' instructional strategies?
    a. Have you seen or heard about new instructional strategies being implemented?
    b. Do you think these instructional practices show promise for improving student academic outcomes?
    c. A focus of the TechSmart grants is closing the achievement gap. How has the use of technology supported instruction impacted learning for students of color, English Language Learners, those with an IEP, etc.

3. How is the district leadership providing support for technology integration/innovation?

4. Have you shared with other districts' what you are doing with your TechSmart grant?
    a. If yes, what type of information have you shared?
    b. If not, do you have plans to share successes with other schools/districts?

5. Has your district or school(s) repurposed resources to support technology integration in classroom learning over the past school year? For example, has the district or a school changed a current staff position role, shifted budget expenditures, changed PD schedules or types in order to support technology integration?

6. How does technology fit into your districts' strategic plan?
    a. Who has been involved in developing these components?

7. In the districts' work to enhance instructional practices through technology integration, have you worked with any stakeholders outside of your district? (community members/parents)
    a. Has this collaboration/communication increased with the grant?

8. Do you have any other comments about the TechSmart grant and the impact within your district?

FOR Principals and coaches only: We do have one additional request for principals and coaches for our evaluation. We have worked with the MHCRC to create a rubric designed to provide feedback on all techsmart teachers as a whole in terms of what kind of instructional changes you have noticed. Rating teachers as a group eliminates confidentiality issues and concerns that teachers are feeling directly evaluated as part of this program evaluation. We have this rubric available through an online link that we will send to you upon completion of this interview. It should only take 5 minutes to complete and we'd like your feedback within the next week. Does this sound okay?

Appendix E. Student Survey

TechSmart Initiative Student Survey

This survey will ask you some questions about the technology that has been used in your classes this year. Please answer the questions below honestly and to the best of your ability. Your responses will not affect your grade in class and will not be shared with your teacher. Thank you for your participation!

(Note: When the survey uses the word "technology," it refers to the use of computers, iPads, etc.)

1. What grade are you in?
- 9th
- 10h
- 11th
- 12th

2. Rate the following items from Strongly Disagree to Strongly Agree
- The use of technology in my classes has increased since last school year.
- I have felt more interested in class activities using technology compared to activities in which technology is not used. (Consider iPads, etc.)
- I like receiving instruction through technology.
- I concentrate better in class when technology is used to deliver instruction.
- I would work harder if my teacher used technology more often.
- I know that using technology gives me opportunities to learn many new things.
- I can learn many things when my teacher uses technology.
- I believe that the more often teachers use technology, the more I will enjoy school.

3. The use of technology in my class this year…
- Helped me stay focused.
- Did not affect my learning.
- Seemed to distract me.

4. When it comes to your learning, which of the following generally describes your experience with new technology tried in class this school year.
- The technology helped me learn more.
- Technology had a neutral impact; I learned the same amount whether I had technology or not.
- The technology slowed my learning.

5. Of the activities listed below, which TWO kept your INTEREST most in class in the last year? (Mark 2 choices)
- Lecture/presentation by teacher

- Large group work
- Small group work
- Reading/working by yourself
- Completing worksheets, posters, study guides, textbooks, questions, etc.
- Using apps (on iPads, Chromebooks, etc.)
- Using computers (typing, researching, creating presentation)
- Watching movies/films

6. Of the activities listed below, which TWO do you feel you LEARNED the most from in class in the last year? (Mark 2 choices)
- Lecture/presentation by teacher
- Large group work
- Small group work
- Reading/working by yourself
- Completing worksheets, posters, study guides, textbooks, questions, etc.
- Using apps (on iPads, Chromebooks, etc.)
- Using computers (typing, researching, creating presentation)
- Watching movies/films

7. I generally _____ using more technology in my classes this school year.
- Enjoyed
- Felt neutral about
- Disliked

8. After using more technology in my classes lately, I hope my teachers next year use…
- Less technology overall
- About the same amount as this year
- More technology overall

9. If you were given the choice to complete the same assignment with or without the use of technology, which would you generally choose?
- With technology
- Without technology

10. I generally _____ learning in class when technology is incorporated.
- Enjoy
- Feel neutral about
- Dislike

11. What technology do you wish your teachers would use? How would this help you to learn or make school more meaningful for you?

12. After trying some new technologies in my classes in the last year, how, if at all, have your opinions changed about teachers incorporating more technology into lessons? Explain.

Appendix F. Leadership Rubric

Pacific Research and Evaluation is contracted by the Mt. Hood Cable Regulatory Commission (MHCRC) to conduct an evaluation of the TechSmart Initiative and to learn about the effective instructional teaching practices that have emerged. A key element of this evaluation is to learn how teachers are utilizing technology to support their instruction.

You have been asked to complete this rubric to help provide some feedback on how teachers are utilizing technology to support their instruction. In order to ensure teacher anonymity, this form will ask you to rate all teachers in your district's TechSmart grant as a whole. This form is **not** in any way meant to be evaluative of TechSmart teachers and results will only be used learn about promising instructional practices that have emerged from the TechSmart Initiative.

This form should take approximately 10 minutes to complete. Your responses to this form will go directly to Pacific Research and Evaluation and will only be reported in aggregate form. If you have questions about this survey, please contact Kristi Manseth at Pacific Research and Evaluation (Kristi@pacific-research.org).

Clicking on the "Next" below indicates that you understand that you do not have to answer any question(s) you choose not to answer. In addition, you understand that your identity and the identities of individual teachers will not be revealed in any way except to the researchers at Pacific Research and Evaluation involved in the TechSmart project, and that the results will not be reported in a way that will reveal individual participants.

1. Please select your school district.
    a. David Douglas School District
    b. Gresham-Barlow School District
    c. Parkrose School District
    d. Portland Public Schools
    e. Reynolds School District
2. What is your role within the school district? (This question is optional)
    a. Principal
    b. Coach (TOSA, technology coach, ect.)
    c. Other _____
3. Please Indicate which cohort of TechSmart teachers you are completing this rubric for: (This question was only displayed to leaders from Reynolds School District)
    a. Cohort 1
    b. Cohort 2

Thinking about all your TechSmart teachers as a whole, to what extent do they use technology to support the following… (1 – Not at all, 2 –Very little, 3 – Somewhat, 4 – To a great extent)

1. **Planning and Preparation** (Includes knowledge of content and pedagogy, knowledge of students, setting instructional outcomes, knowledge of and access to resources, designing coherent instruction, and designing student assessments)

2. **Managing Classroom Procedures** (Includes instructional groups, transitions, materials and supplies, non instructional duties, and efficient classroom procedures)

3. **Organizing Physical Space** (Includes safety and accessibility, and arrangement of furniture and resources)

4. **Communicating with Students** (Includes expectations for learning, directions and procedures, explanations of content, use of oral and written language)

5. **Using Questioning and Discussion Techniques** (Includes quality of questions, discussion techniques, and student participation)

6. **Engaging Students in Learning** (Includes activities and assignments, student groups. instructional materials and resources, and structure and pacing)

7. **Using Assessment in Instruction** (Includes assessment criteria, monitoring of student learning, feedback to students, and student self-assessment and monitoring)

8. **Demonstrating Flexibility and Responsiveness** (Includes lesson adjustment, response to students, and persistence)

Can you provide specific examples of how teachers are using technology to support new instructional practices in any of the areas defined above?

Appendix G. Reynolds Walk Through Tool

Appendix H. ELPA21 Proficiency Descriptors

Mt. Hood Cable Regulatory Commission Walk-Through Tool

To be used in the evaluation of strategies being implemented through the Mt. Hood Cable Regulatory Grant.

This survey is non-evaluative and teacher names will not be attached to the data. The data can be shared with the cohort of teachers if they wish, and will be shared with Justin Birmingham and the MHCRC board to review the success of the grant. A data summary may be shared with principals, but cannot identify individual teachers, and only building level data will be shared. The results will be used to inform how to inform the use of technology, prioritize staff development, and increase the working knowledge for staff around integrating technology in secondary Math who are participating in the MHCRC TechSmart Initiative in the Reynolds School District to best-support student learning.

* Required

Date *

mm/dd/yyyy

Building *

Observer First Name *

Teacher First Name *

There is evidence of educational technology in use within the classroom. *

- Yes
- No

Please note the following Standards for Mathematical Practice, when evidence is observed.

(Check all/any that apply)

Make sense of problems and persevere in solving them.
(Check all/any that apply)

- Find meaning in problems.
- Look for entry points.
- Analyze, conjecture and plan solutions pathways.

- [ ] Monitor and adjust.
- [ ] Verify answers.
- [ ] Ask themselves the question: "Does this make sense?"
- [ ] Not observed.

Reason abstractly and quantitatively.
(Check all/any that apply)

- [ ] Make sense of quantities and their relationships in problems.
- [ ] Learn to contextualize and decontextualize.
- [ ] Create coherent representations of problems.
- [ ] Not observed.

Construct viable arguments and critique the reasoning of others.
(Check all/any that apply)

- [ ] Understand and use information to construct arguments.
- [ ] Make and explore the truth of conjectures.
- [ ] Recognize and use counterexamples.
- [ ] Justify conclusions and respond to arguments of others.
- [ ] Not observed.

Model with Mathematics.
(Check all/any that apply)

- [ ] Apply mathematics to problems in everyday life.
- [ ] Make assumptions and approximations.
- [ ] Identify quantities in a practical situation.
- [ ] Interpret results in the context of the situation and reflect on whether the results make sense.
- [ ] Not observed.

Use appropriate tools strategically.
(Check all/any that apply)

- [ ] Consider the available tools when solving problems.
- [ ] Are familiar with tools appropriate for their grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools).
- [ ] Make sound decisions of which of these tools might be helpful.
- [ ] Not observed.

Attend to precision.
(Check all/any that apply)

- [ ] Communicate precisely to others.
- [ ] Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes.
- [ ] Calculate accurately and efficiently.

- [ ] Not observed.

Look for and make use of structure.
(Check all/any that apply)

- [ ] Discern patterns and structures.
- [ ] Can step back for an overview and shift perspective.
- [ ] See complicated things as single objects or as being composed of several objects.
- [ ] Not observed.

Look for and express regularity in repeated reasoning.
(Check all/any that apply)

- [ ] Notice if calculations are repeated and look both for general methods and shortcuts.
- [ ] In solving problems, maintain oversight of the process while attending to detail.
- [ ] Evaluate the reasonableness of their immediate results.
- [ ] Not observed.

Please note the following 6 Educational Technology Standards, when evidence is observed, as they pertain to math instruction.

(Check all/any that apply)

Students Demonstrate creative thinking and problem solving skills in mathematics to innovative products and processes using (digital) technology.
(check any/all that apply)

- [ ] A. Apply existing knowledge to forecast possibilities and generate new ideas, products or processes.
- [ ] B. Create original works as a means of personal or group expression.
- [ ] C. Develop or apply models and simulations to explore complex systems, issues and trends.
- [ ] Not observed.

Students use digital media and environments to communicate and work collaboratively, across the global community, to support individual learning and contribute to the learning of others.
(check any/all that apply)

- [ ] A. Interact and collaborate with peers, experts, or others employing a variety of digital environments and media.
- [ ] B. Effectively communicate and publish to multiple audiences using a variety of media and formats.
- [ ] C. Engage with learners from other cultures to develop cultural understanding and global awareness.
- [ ] D. Contribute to project teams. Produce original works or solve problems in a team setting.
- [ ] Not observed.

Students select and apply digital tools to gather, evaluate, validate, and use information.
(check any/all that apply)

- [ ] A. Plan strategies to guide inquiry.

- [ ] B. Locate, organize and use information ethically from a variety of sources and media.
- [ ] C. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
- [ ] D. Analyze, evaluate, and summarize information or data and report results.
- [ ] Not observed.

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
(check any/all that apply)

- [ ] A. Identify and define authentic problems and significant questions for investigation.
- [ ] B. Plan and manage activities to develop a solution or complete a project.
- [ ] C. Collect and analyze data to identify solutions and or make informed decisions.
- [ ] D. Use multiple processes and diverse perspectives to explore alternative solutions.
- [ ] Not observed.

Students understand issues related to digital technology and practice legal, ethical, and responsible behavior.
(check any/all that apply)

- [ ] A. Advocate and practice safe, legal, and responsible use of information and digital technology.
- [ ] B. Model and practice a positive attitude toward using digital technology that supports collaboration, learning, and productivity.
- [ ] C. Demonstrate personal responsibility for lifelong learning.
- [ ] Not observed.

Students utilize technology concepts and tools to learn.
(check any/all that apply)

- [ ] A. Select, use, and troubleshoot tools efficiently.
- [ ] B. Transfer current knowledge to learning of new technologies.
- [ ] Not observed.

Evidence of Student and Teacher Usage/Workflow when evidence is observed

Is there evidence the teacher provides feedback/communicates with students digitally (in legal compliance)? *

- ( ) Yes
- ( ) No

Is there evidence that students engage in the content through technology? *

- ( ) Yes
- ( ) No

There is evidence that the following is used in the classroom by teachers.

(check all that apply)

- [ ] Projector
- [ ] Student computers (Dell Venue Pro 10)
- [ ] Mobile Devices
- [ ] Teacher computer (Surface Pro 3)
- [ ] Schoology
- [ ] Student use of active stylus
- [ ] OneDrive (Cloud Storage)
- [ ] Online Video Lessons (Khan Academy, Discovery Ed, Teachertube, etc.)
- [ ] Excel
- [ ] Word
- [ ] OneNote
- [ ] Surveying/Polling Apps and Websites (Socrative, etc.)
- [ ] Online/Digital Collaboration
- [ ] Other:

There is evidence that the following is used in the classroom by students.
(check all that apply)

- [ ] Projector
- [ ] Student computers (Dell Venue Pro 10)
- [ ] Mobile Devices
- [ ] Schoology
- [ ] Student use of active stylus
- [ ] OneDrive (Cloud Storage)
- [ ] Online Video Lessons (Khan Academy, Discovery Ed, Teachertube, etc.)
- [ ] Excel
- [ ] Word
- [ ] OneNote
- [ ] Surveying/Polling Apps and Websites (Socrative, etc.)
- [ ] Online/Digital Collaboration
- [ ] Other:

Submit

100%: You made it.

Never submit passwords through Google Forms.

2016 ELPA21 Proficiency Descriptors

Emerging

- ELPA21 Official Students are Emerging when they have not yet attained a level of English language skill necessary to produce, interpret, and collaborate on grade-level content-related academic tasks in English. This is indicated on ELPA21 by attaining a profile of Levels 1 and 2 in all four domains. Students scoring Emerging on ELPA21 are eligible for ongoing program support.

- Oregon "family friendly" version Emerging – A student at the Emerging level does not yet have the ability produce grade-level academic content in the English language. For the ELPA21 annual assessment, this means the student scores either Level 1 or Level 2 in each of the four domains of reading, writing, listening, and speaking.

Progressing

- ELPA21 Official Students are Progressing when, with support, they approach a level of English language skill necessary to produce, interpret, and collaborate, on grade-level content-related academic tasks in English. This is indicated on ELPA21 by attaining a profile with one or more domain scores above Level 2 that does not meet the requirements to be Proficient. Students scoring Progressing on ELPA21 are eligible for ongoing program support.

- Oregon "family friendly" version Progressing – A student at the Progressing level is approaching the ability produce grade-level academic content in the English language with support. For the ELPA21 annual assessment, this means the student scores above a Level 2 on one or more domains, but does not yet meet the requirements to be at the Proficient level on the four domains of reading, writing, listening, and speaking.

Proficient

- ELPA21 Official Students are Proficient when they attain a level of English language skill necessary to independently produce, interpret, collaborate on, and succeed in grade-level content-related academic tasks in English. This is indicated on ELPA21 by attaining a profile of Level 4 or higher in all domains. Once Proficient on ELPA21, students can be considered for reclassification.

- Oregon "family friendly" version Proficient – A student at the Proficient level can produce grade-level academic content in the English language. For the ELPA21 annual assessment, this means the student scores either Level 4 or Level 5 on each of the four domains of reading, writing, listening, and speaking.