TECHSMART INITIATIVE, 2020-2021 EVALUATION REPORT

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TechSmart Initiative 2020-2021 Evaluation Report

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 2023 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 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.

TechSmart Goals

The MHCRC worked 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 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 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.

- **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's 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 program 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.

District	Year Funded	Grade	Focus Area
David Douglas SD	2014; 2018	K-3	Kindergarten Readiness (first grant); 3rd Grade Reading (first grant); 8th Grade Math (second grant); ELL (both grants)
Parkrose SD	2014	9-12	9th Grade Credit Attainment; High School Graduation; ELL
Reynolds SD	2015; 2020	7-9 9-12	8th Grade Math; ELL (first grant) 9th grade credit attainment; Attendance High School Graduation; ELL (second grant)
Portland Public Schools	2015	K-3	3rd Grade Reading; ELL
Gresham-Barlow SD	2016; 2020	K-3	3rd Grade Reading; ELL (first grant) 8th Grade Math; ELL (second grant)
Centennial SD	2018	7-9	7th-9th Grade Math and Science; ELL

Table 1. Grantee Funding Date and Focus Area

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 received a second grant and began implementing again in the 2018-19 school year (SY 18-19). Parkrose finished grant implementation in the 2017-18 school year (SY 17-18) and is not included in this report. Reynolds School District received their first grant in SY 15-16 and began

implementation immediately. Reynolds received their second grant and began implementation in early 2020. 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. In 19-20, PPS received a grant extension through SY 21-22. Gresham-Barlow School District began implementation of their first grant in SY 16-17 and their second in SY 19-20. Centennial School District began implementation in SY 18-19.

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						Overlap		
Centennial								

Table 2. Grant Timelines

This report describes evaluation results for the five districts who were within their grant implementation period during SY 20-21 (i.e., all districts listed in Table 2 except for Parkrose). Project descriptions for each of these school districts are included below, followed by the data collection methods used for evaluation in each district during SY 30-32, 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 also includes a project summary as an introduction to the evaluation results.

PROJECT DESCRIPTIONS

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.

DAVID DOUGLAS SCHOOL DISTRICT

David Douglas School District (DDSD) began implementation of its first MHCRC TechSmart grant during SY 14-15 through SY 17-18 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 received another grant with implementation beginning in SY 18-19 with both Mill Park Elementary School and Menlo Park Elementary School. The second grant allows for hardware and software purchases, such as the Imagine Learning curriculum to target needs of ELL students, Smartboards, RedCat audio systems, Chromebooks, and tablets. Additionally, the second grant includes a technology integration coach to share between the two schools. Goals include increased student achievement in mathematics and closing the achievement gap of historically underserved populations.

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. SY 19-20 represented one year after grant implementation was complete.

RSD's second TechSmart grant was funded in SY 19-20 and focused on expanding the work of the first TechSmart grant to the High Schools. The purpose of the Expansion of Constructivist Classrooms Across Reynolds High Schools (High School Expansion) project is to assimilate the use of instructional technology throughout the student and teacher instructional experience at the high school level. SY 20-21 will be RSD's first full year of implementation for this grant.

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. PPS received an extension for this TechSmart grant that will provide funding through SY 21-22 and allow the district to extend TechSmart services to the district's remaining Title I schools.

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 grades 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.

GBSD's second TechSmart grant was funded in SY 19-20 and focuses on Middle School Math. The purpose of the Embedding Technology in Middle School Math project is to provide intensive and targeted support for increasing student achievement in mathematics. The project will specifically target the achievement of 8th grade students and math credit attainment of students in 9th grade the following year.

CENTENNIAL SCHOOL DISTRICT

Centennial School District (CSD) began implementation of its 4-year MHCRC TechSmart grant during SY 18-19 with math and science students in grades 7 to 9. The primary focus of the grant is an integrated, hands-on, student-centered approach referred to as Project-Based Learning (PBL). The grant allows for purchase of Chromebooks for students and staff, projectors and document cameras for classrooms, digital microscopes and other experiential science technology, and Hapara licensing. The grant also includes a full-time STEM coach for the first three years, half-time STEM coach for the final year, and PBL-specific PD for teachers. CSD's goals include increasing teachers' knowledge, implementation, and use of PBL strategies and improvement in student achievement outcomes, including closing achievement gaps for historically underserved populations.

METHODS

TEACHER TECHNOLOGY SURVEYS

Each district completed a teacher survey at one or two time points during SY 20-21, 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. The SY 20-21 survey was modified slightly to ensure questions were relevant in the context of CDL instruction which took place for the majority of this school year.

TEACHER INTERVIEWS

PRE conducted teacher interviews with a sample of teachers from each district during SY 20-21. 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. The SY 20-21 survey was modified slightly to ensure questions were relevant in the context of CDL instruction which took place for the majority of this school year. See Appendix C for the complete interview protocol.

DISTRICT LEADER INTERVIEWS

PRE facilitated district leader interviews in spring 2021 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. Similar to other data collection methods, leaders were asked to reflect on the recent shift to CDL due to the COVID-19 pandemic. See Appendix D for the complete interview protocol.

STUDENT SURVEYS

For TechSmart projects targeting middle and high school students, a student survey has historically been 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. Due to fact that students were in Comprehensive Distance Learning for the majority of SY 20-21, the student survey was not applicable and was not administered for the evaluation this year.

OBSERVATIONS

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 form on the year-end survey in SY 20-21. Historically, an online leadership observation form has been used to gather observations of individual TechSmart classes. This observation form was not completed in SY 20-21 since teachers were in a remote environment due to the pandemic.

- **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.

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

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.

STUDENT ACHIEVEMENT DATA

PRE receives student-level data from the Oregon Department of Education (ODE) and directly from school districts to analyze the relationship between TechSmart investments and key student outcomes. The key outcomes examined for students are included in Table 1. Outcomes regarding 3rd grade reading and 8th grade math are evaluated using data from the Smarter Balanced assessment, described below. There is a one-year time lag in the data PRE receives from ODE. As a result of this one-year time lag, the data presented in this report comes from SY 15-16, SY 16-17, SY 17-18, and SY 18-19. Student achievement data for SY 20-21 are included in this report only in those instances that districts were able to provide PRE with student achievement data directly. Details regarding formative student data is included in the methods section of each district report.

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. Due to the COVID-19 pandemic, the SBAC assessment was not administered to students in SY 20-21.

Chapter 2: David Douglas School District

TechSmart Initiative 2020-2021 Evaluation Report

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PROJECT SUMMARY

David Douglas School District's (DDSD) TechSmart grant focuses on math proficiency in grades 3-5, which the district determined as a primary barrier preventing students from graduating high school. To support the goal of improving student graduation rates and math proficiency, DDSD chose to implement several interventions throughout students' school careers. In part, DDSD's TechSmart goals work toward improving elementary math curriculum and instruction, especially for historically underserved populations, which are prevalent in DDSD.

The main goal of DDSD's participation in TechSmart was to increase student achievement in mathematics for grades 3-5. A Technology Integration Coach was hired to work with the two TechSmart schools (Mill Park and Menlo Park). Due to the COVID-19 pandemic, the coach supported not just the two schools but the entire district during SY 19-20. Additionally, TechSmart funds were used to support personnel costs including Mill Park and Menlo Park Principals to support implementation, the Curriculum Director to plan summer training, Student Achievement Specialists to provide training for LearnZillion and Google Classroom, the District Math Specialist to support the online components of the math curriculum, and the Mill Park and Menlo Park Language Coaches to support teaching in math discourse strategies.

COVID-19 CONSIDERATIONS

Findings shared in this report detail the first full year of virtual instruction amid the COVID-19 pandemic. While the transition to remote teaching in Spring 2020 was abrupt, it accelerated the integration of technology into learning environments tremendously. District

METHODS

A general description of the methods included in the TechSmart evaluation are included in the introduction to the full report. Survey and conversation quotes have been edited for grammar and brevity. Data collection efforts are summarized below.

Teacher Survey: A post-implementation teacher survey was administered in May of 2021. A total of 16 teachers completed the survey. Additionally, a baseline teacher survey was administered in Spring of 2019. A total of 20 teachers completed the baseline survey.

Teacher Focus Groups: One focus group was administered with teachers and coaches from Mill Park Elementary and Menlo Park Elementary. A total of six people participated in the one-hour conversation, sharing thoughts on how TechSmart funding impacted SY 20-21 and supported distance learning.

District Leader Interviews: PRE interviewed three district administrators from DDSD: two principals and the Instructional Technology Coach.

Year-End Status Report: PRE reviewed the annual status report district leadership submits to the Mt. Hood Cable Regulatory Commission on grant activities.

Student Achievement Data: Statewide assessments did not occur due to the COVID-19 pandemic. David Douglas was able to provide Math Inventory assessment data for the year

leaders, teachers, and students were forced to adapt and become proficient in a range of digital environments quickly. The impact of this experience is documented in this report and evidenced by the large jumps in reported skills developed, comprehension of various tools, and confidence utilizing them from baseline data.

The findings from the SY 20-21 evaluation at David Douglas 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. Evaluation questions guiding this study were designed to respond to these seven factors. Each factor is further framed by these questions, with key findings highlighting trends in data relative to each guiding line of inquiry.

FINDINGS

TEACHING EFFECTIVENESS

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

According to DDSD's project plan, the district planned to provide ongoing embedded coaching and training using their Professional Learning Team (PLT) structure, modeling and co-teaching with the Coach, professional development (PD) for the Augmentation and Modification levels of SAMR, and ongoing support for LearnZillion math management and Google Classroom integration. PD and training were provided on a group and individual basis. As shown in Figure 1, all teachers a who responded to the year-end Spring 2021 teacher survey reported receiving PD in a group setting, with most (93.8%) receiving between 1-8 hours of training with others. A majority of DDSD teachers also received individualized training (81.1%), with nearly one-third receiving a minimum of nine hours of personal training.

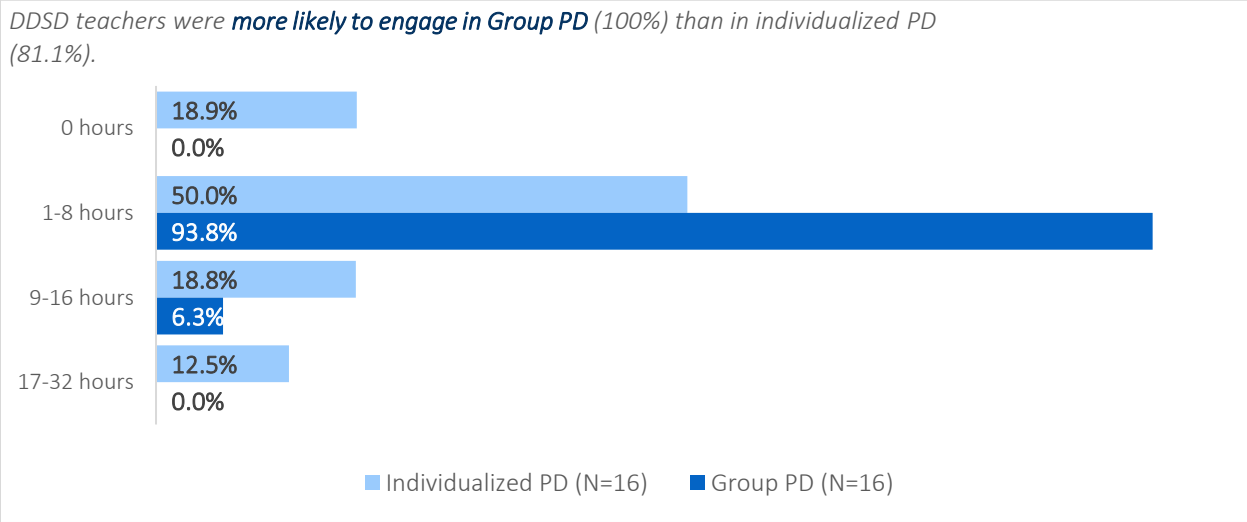


Figure 1. Time DDSD Teachers spent in individualized and group professional development.

Survey respondents were asked to rate how useful they found both modes of PD to be, using a 1-5 scale. Response data for both categories showed that teachers found both training options to be useful. About

34% more teachers indicated that individualized PD was extremely useful to them when compared to group PD.

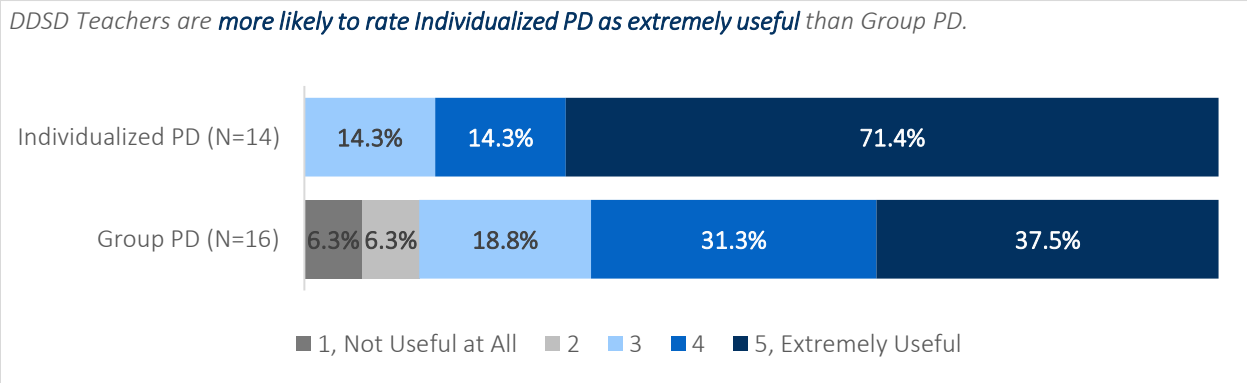


Figure 2. DDSD Teacher ratings of how useful professional development was, by type.

Teacher focus groups provided added opportunities to learn about the professional development received. Echoing survey data, teachers described receiving one-on-one support from the Instructional Coach, and that often this was "on demand" or "as needed." Common support needs teachers listed include navigating Google Meet, SMART Boards for distanced and hybrid instructions, and creating breakout rooms.

> *I had to get some extra help with my Smart Board this year because, being away from it for a year, I had forgotten how to do some things on it. Some new things could be uploaded to it and stuff. The Coach did come and help me get that going. [He also helped me with] Google Meet. I was having some issues with it. Bless his heart, on a Friday afternoon when he was at the beach, he got online to Google Meet with me so we could troubleshoot and figure out what was going on.*
>
> *I think this year, a lot of the professional development has been more one-on-one or small group for specific needs that we have that we're having trouble with.*

Teachers placed a strong emphasis on communicating how the one-on-one support they received was a result of their Coach making himself so available to them: "I agree. I think his accessibility is just beyond the call because he'll answer a text about video cameras or anything, and he comes in and he gets it going, and it didn't work before and then he figures out a way and it's amazing. It's good." Teachers also spoke about how the Coach supported student engagement with technology. For one class, he ran a coding club: "I don't know if this is tech support, [but I want] to add to this… To try to have kids on in the afternoons and to make it a little more fun, I was doing clubs. We'd have art club, or we'd have whatever. He agreed to come and run a coding club. He came on for several weeks and worked with my kids on code.org. It was just an extra fun thing for them to just keep them engaged." Another described how he engaged with students in their native language and got them excited about technology: "He'll come in and just say hi to our kids. He's fluent in Vietnamese and I have a Vietnamese student who has some

learning challenges. He comes in and he can chat with them. That makes that kid's day. It's great. That kid super loves computers and everything."

Part of why teachers feel their Instructional Coach is so accessible – and feel so comfortable reaching out for support – is because he works part-time on their campus. They recognize that this is an added privilege through the grant and not something all schools have access to: "It's a little tricky because I don't know for sure what it is at the non-TechSmart schools. Definitely the presence of a coach in the building… I think someone that you can have a personal relationship with and feel comfortable asking questions and even just because things come up."

While easy access to an Instructional Coach was a common motivator for teachers to seek out support, it was not the only reason. One SPED teacher spoke about how their classrooms are often overlooked in technology plans; however, because the grant afforded them devices, they were motivated to pursue trainings to better learn how to utilize them with students.

> *I wouldn't have even had a Smart Board had it not been for this grant. I would have never had this technology as a special ed teacher. At my last school, there was one Smart Board for the whole school. People shared it, but not everybody knew how to use it because it just wasn't accessible.*
>
> *Had the grant not brought all this equipment into my room, I wouldn't have even had the impetus to do any trainings or do anything. That's what started it.*

In their interviews, leadership confirmed that group PD was not a priority in the 2020-2021 school year, and that emphasis was placed on individualized training. This was viewed as a strategic decision, giving teachers more time to work and request support as needed. Eventually, though, district leadership plans to re-integrate more group work that helps train teachers on technology, specific subject areas, and other areas of need.

KEY FINDINGS	How is professional development impacting teacher instruction?
	Teachers shared generally positive responses to the value of the PD model, emphasizing how valuable their Instructional Coach was to the experience.
	Teachers increasingly planned technology-related activities in their classroom with the goal of supporting student skills development and actively sought out activities that promote problem-solving.

The Spring 2021 survey asked how effective the PD model has been in impacting teacher instruction. Fourteen teachers responded to this open-ended question, sharing generally positive views of the PD model (n=10). Five teachers specified how essential their Instructional Coach was in making their training a positive experience. When teachers expressed frustration, they often stated it was because they spent time training on platforms that they did not end up using throughout the year or that did not work as expected (n=5). A sample of responses for each response theme is shown below in Table 1.

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?	
Positive (n=15)	*"Very effective."* *"Essential."* *"It really helped me with online school this year."* *"The model largely seemed to be individual choice and assistance/ coaching as needed. This model seemed to work well in differentiating between the needs of different staff."*
Negative (n=5)	*"Picking one effective platform and sticking to it, so we can be trained on one thing and not waste our time."* *"We spent A LOT of time talking about and learning about the Fuel Ed platform, which we then very seldomly used this year. It was confusing and overwhelming, especially early on when we only had a beta version to look at. I wish we could have used that time to learn more about the systems we had been using in our classrooms and in our digital classrooms already (Google Classroom, Docs/Slides, Epic!, Zearn, Flipgrid, Coding.org) and how to use those to engage students in CDL."*
Praise for Tech Coach (n=5)	*"Our Coach has done and continues to do a great job teaching us how to use different programs, trouble shoot, etc."* *"My technology coach was ALWAYS readily available and willing to help me out with ANY technology need or advice. I relied on him, as well as exploring a lot on my own. I still have MUCH to learn. Surveying staff for technology training needs and then offering PD around that is always a good idea."*

Table 3. Feedback on Grant 2 PD Model, Spring 2021 Survey Data

Teachers also reported the extent to which they are integrating technology into various instructional practices at baseline and in the Spring of 2021. Using a 7-point scale, indicating the extent to which a statement was true of [them], respondents agreed that they plan technology-related activities in their classroom with the goal of supporting student skill development and actively seek out activities that

promote problem-solving. There were respective 10.0% and 18.8% increases in performance of these activities from baseline data. Additionally, teachers reported a 17.5% increase in integrating research on teaching and learning in how they use classroom technology from baseline data.

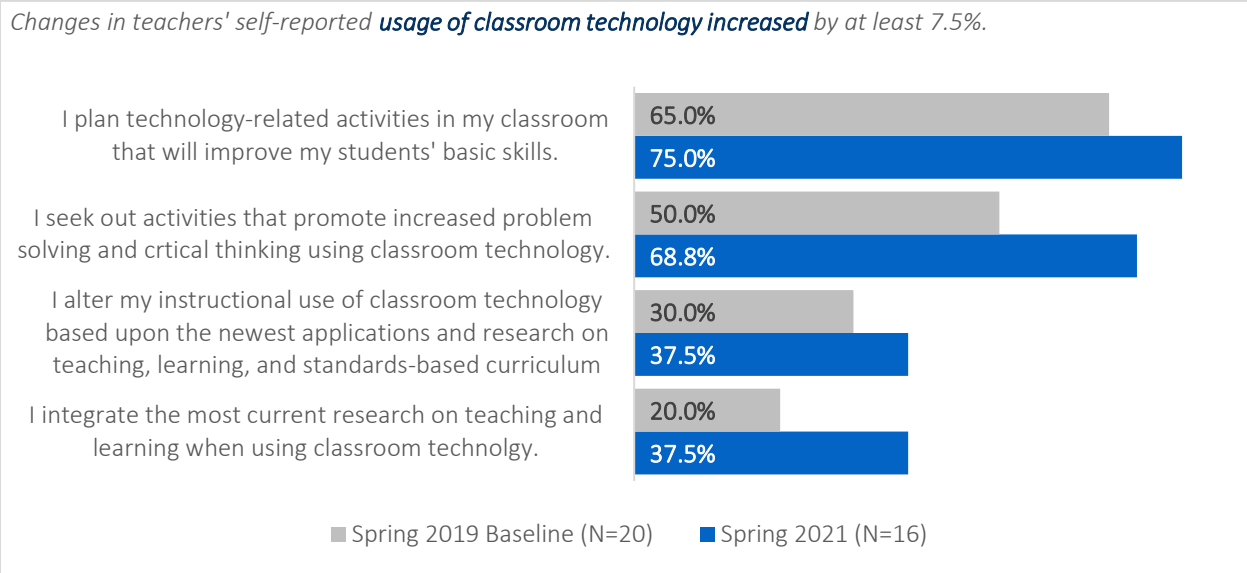


Figure 3. DDSD Teacher self-assessment of technology use in the classroom (% True of Me/ Very True of Me)

Similar to the Spring 2019 baseline survey, teachers rated their current technology skill level on year-end surveys by indicating which technological proficiency level felt most aligned with their skill set, shown below.

TECHNOLOGY SKILL LEVEL	
1	I get someone else to do technology-based tasks for me.
2	I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.
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.
4	I use a variety of technology tools and I use them efficiently for all aspects of my job.
5	I use technology efficiently, effectively, and in creative ways to accomplish my job.

Responses from the year-end survey show slight regression in self-identified skill levels, though all teachers continued to report skills in levels 3 through 5. About 8% fewer teachers feel they are using technology effectively and creatively (the highest skills progression). There was a 5.0% increase in teachers

who report using technology efficiently and a 3.8% increase in those who feel they are skilled enough to use technology to perform necessary tasks.

*Though fewer teachers feel they are using technology effectively and creatively, they are **increasing reported use of technology efficiently and to perform necessary tasks**.*

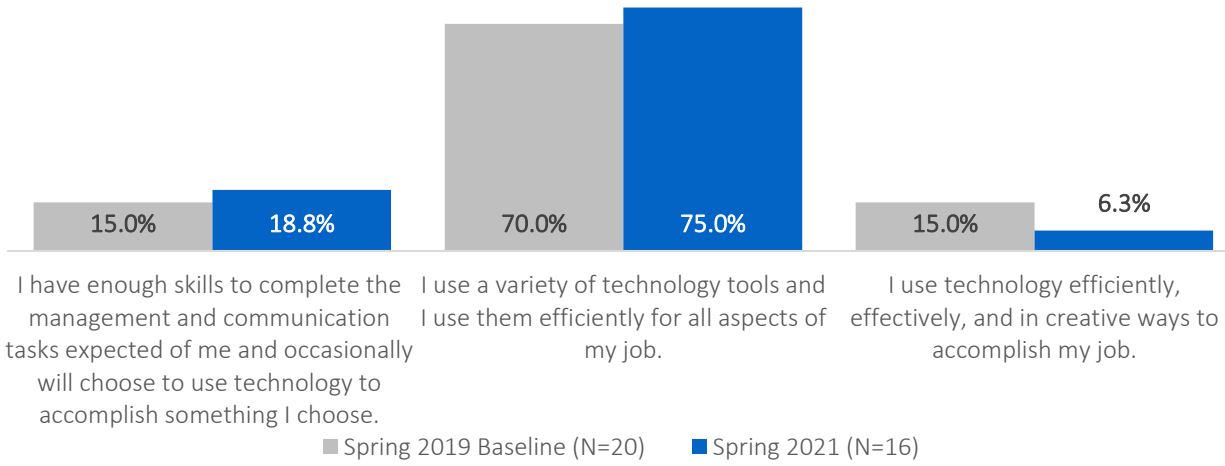


Figure 4. DDSD Teacher self-rating of technological skill level (%A Moderate Amount/ A Great Deal)

KEY FINDINGS	What new instructional strategies are teachers reporting?
	DDSD leaders spoke with great admiration about the ways teachers adapted instructional strategies during distanced and hybrid learning and worked to flex or reinterpret curricula as needed.
	Building off a baseline familiarity with Google Classroom, teachers began integrating additional platforms (e.g., SeeSaw, Flipgrid, Loom, Screencastify, and Jamboard) into their instruction and leveraging a flipped classroom model.

Leaders spoke positively, and with admiration, about how their teachers adapted their use of technology to remote instruction. They observed teachers working with one another to share strategies, test out new approaches or ideas, and maintain focus on student engagement.

I just think that they're really creative and open to coaching from the district and each other. Some people are just more tech-savvy than other people. Our team

> *really collaborated during the PLT times, and they would help each other figure out what are the most effective strategies to get kids engaged. They tried so many different things. I was really impressed that teachers were willing to put it out there and do things in a new way and try to experiment with technology.*

This resiliency extended to how teachers interpreted curricula. Using a new curriculum that was assigned by the district, leaders called the content frustrating and mentioned it had a lot of "tech problems." Aware of this problem, leaders gave teachers the flexibility to use the curriculum as a guide. This resulted in teachers gravitating towards use of Google Classroom and co-creating new lessons that utilized assigned materials and leveraged platforms they were familiar with.

Additional instructional strategies that leadership reported teachers using include one-on-one meetings, screen sharing, recording lessons, casting demos onto Smart Boards, modifying assignment requirements (e.g., speeches, written assignments, recordings), and becoming more creative in content delivery methods.

> *I think the integration of multimedia into the classroom has been something that I've noticed regardless. My teachers, because they are in more of a digital setting now, they think of those more. We're very used to, as teachers, thinking of things from a tactile perspective.*
>
> *Now we actually have teachers thinking about like, "Wait, maybe instead of a drawing or something, maybe I can actually put in a photo here, or maybe put in a video, and we can watch a clip, or maybe we can do a Jamboard."*
>
> *All of those little bits of technology have been really helpful. It's all the bits of integrated technology into the curriculum have been really helpful for our kids.*

Teachers provided more insights on the range of instructional strategies in use throughout their conversation, including new strategies specifically implemented for remote teaching. Teachers mentioned having a foundational knowledge of Google Classroom before the pandemic. This proved to be critical in their transition to remote instruction.

> *I was very thankful that [we] had already [been] taught us how to do Google Classroom. I was using it in my classroom before the shutdown last year. When everything's switched and we suddenly have to put stuff on there… I knew that my kids knew how to get into it; it wasn't going to be this brand new, crazy thing.*

Having this baseline familiarity allowed teachers to focus instead on stronger integration of learning management systems to support their instruction. Commonly mentioned platforms include SeeSaw, Flipgrid, Loom, Screencastify, and Jamboard. Teachers reported using these tools to support a flipped classroom model. Doing this also allowed them to better differentiate their teaching strategies for

students based on individual need. Another common strategy that teachers spoke about was using breakout rooms to give students a chance to build relationships and develop collaborative skills.

> *The thing that we were using a lot of computers before the pandemic, but what I hadn't experienced before was breakout rooms. Fifth graders are too punky to put [alone in a room without an instructor], and they don't work very well together. I'll still use them, even if we're sitting in the same classroom. I will teach them how to be respectful and one of them will be a moderator and how it's supposed to work so you can collaborate. It will be fun.*

While teachers were able to adapt their instructional strategies for remote learning, several still missed the ability to interact with students in-person. They spoke about how difficult it was to observe and respond to body language virtually. This was true generally but felt particularly important when discussing asynchronous students or school days.

> *I guess this ties into the technology of the async of kids often doing stuff by themselves. Even though in a classroom kids are doing stuff by themselves, and they have independent work, it made me appreciate how much teachers use body language to watch and know when a kid is getting off or is having trouble. Not having them there, that was a real detriment.*

When thinking ahead to what instructional strategies they will carry forward, teachers express enthusiasm for deepening the integration of Smart Boards. One teacher clearly stated: "I love my Smart Board. I can't imagine what it would be like if I had to come into a room without a Smart Board anymore." Another spoke about how Smart Boards made tasks, like drawing shapes or showing visuals, easier for them.

KEY FINDINGS	How are the new instructional strategies impacting student engagement?
	**While teachers continued to self-report strong feelings of confidence in their abilities to engage students through use of technology, the percentage of teachers who agreed they felt confident decreased very slightly (1.2%) from baseline data.**

Teachers were asked to indicate the extent to which they agreed with a statement about their confidence engaging students with technology. The percentage of teachers who reported confidence in their ability to engage students (rating Agree or Strongly Agree) through the use of technology decreased slightly from baseline to May 2021.

*DDSD Teacher **confidence in their ability to engage students with technology decreased very slightly** from Spring 2019 baseline data.*

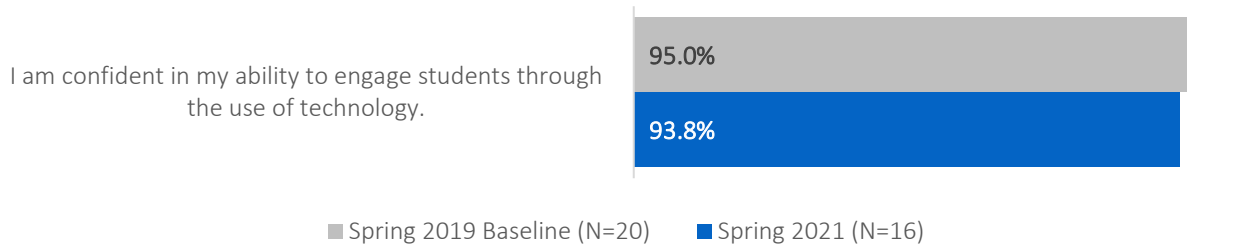


Figure 5. DDSD Teacher confidence in ability to engage students with technology (% Agree/Strongly Agree)

Students appeared to stay relatively engaged with teachers throughout the school year. Some teachers described in focus group conversations how students preferred using devices and surmised this may have been a contributing factor. For example, one teacher shared a story of a student who was continually losing their physical workbook. Because of the Chromebook, the student would ask for things to be shared digitally so that they couldn't lose it. Other teachers also shared stories of students being more proactive in seeking out feedback or support because they knew teachers could watch them work via screensharing or through the learning management platform.

> *The kids really appreciate it. They'll even raise their hand, "Will you please check my assignment?" They want that immediate feedback because they know I can see it right in front of me. That is something that has been a really important thing for me with the distance thing, really being able to see where they are at all times.*

The ability to discreetly differentiate lesson plans for students though Google Classroom was also believed to be a contributing factor in maintaining student engagement.

KEY FINDINGS	Are the new instructional strategies showing promise for improving academic outcomes?
	In almost all cases, the percentage of Treatment school students who were at or above proficiency on the Math Inventory assessment increased from Fall 2020 to Spring 2021.
	The percentage of Treatment school students from at-risk subgroups who were at or above math proficiency on the Math Inventory outpaced that of Comparison school students by Spring 2021 for LEP students, Gifted and Talented students, and students with IEPs.

Student Achievement Data

The district provided Math Inventory data for the 2020-2021 school year. The number of students who took the Math Inventory assessment in Fall and Spring of each grade level during SY 20-21 are presented in Table 2. The Math Inventory is an adaptive assessment that measures math ability from kindergarten to Algebra II. Within each grade level, scores fall into four proficiency categories: Below Basic, Basic, Proficient, and Advanced. Students whose scores fall into the Below Basic category are considered significantly below grade level, while students whose scores fall into the Basic category are considered below grade level. The Proficient category represents students performing in line with their grade level, and the Advanced category represents students performing above their grade level.

	GRADE 3 FALL '20	GRADE 3 SPRING '21	GRADE 4 FALL '20	GRADE 4 SPRING '21	GRADE 5 FALL '20	GRADE 5 SPRING '21
Mill Park (Treatment)	4	4	35	32	36	35
Lincoln Park (Comparison)	16	16	30	30	9	9
Menlo Park (Treatment)	46	44	59	59	45	42
Ventura Park (Comparison)	35	32	32	29	21	17

Table 4. David Douglas Treatment & Comparison Schools Math Inventory Sample Sizes

The figures below showcase the change in percentage of students per grade and per school who scored either Advanced or Proficient on their Math Inventory exam. Charts are organized by grade level to show Treatment and Comparison pairings:

- Pairing 1: Mill Park (Treatment) and Lincoln Park (Comparison)
- Pairing 2: Menlo Park (Treatment) and Ventura Park (Comparison)

Figure 6 shows percentages of Grade 3 students scoring Proficient or Advanced on the Math Inventory in Fall 2020 and Spring 2021. Mill Park students are excluded due to small sample size. The percentage of Grade 3 students from Lincoln Park (Mill Park's comparison school) scoring Proficient or Advanced on their Math Inventory exam decreased between Fall and Spring. Treatment school Menlo Park showed an increase in the percentage of Grade 3 students scoring Proficient or Advanced, while their comparison school, Ventura Park, showed a very slight decrease in percentage of Grade 3 students at or above math proficiency. Although Menlo Park started with a lower percentage of Grade 3 students at or above proficiency, by Spring 2021, the percentage (40.9%) neared that of Ventura Park (43.8%).

*The percentage of **Grade 3 Menlo Park students at or above proficiency on the Math Inventory increased from Fall 2020 to Spring 2021**, while comparison schools decreased.*

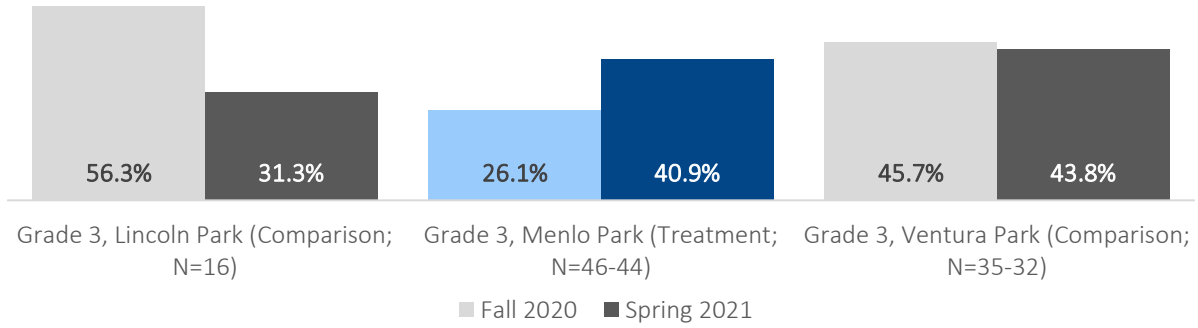


Figure 6. Percentage of Grade 3 Students Scoring Proficient or Advanced on Math Inventory

Figure 7 shows percentages of Grade 4 students scoring Proficient or Advanced on the Math Inventory in Fall 2020 and Spring 2021. During Fall 2020, the percentage of Grade 4 students at or above proficiency was slightly higher in the Treatment schools (Mill Park and Menlo Park) than their respective Comparison schools. Although the same did not hold true in Spring 2021 (i.e., Comparison schools had a slightly higher percentage of Grade 4 students at or above proficiency than Treatment schools), within each Treatment school results were neutral or positive. Mill Park maintained the same percentage of Grade 4 students at or above proficiency from Fall to Spring, and Menlo Park increased its percentage from Fall to Spring.

*Treatment schools showed **no change (Mill Park) or positive change (Menlo Park) in the percentage of Grade 4 students at or above proficiency** on the Math Inventory.*

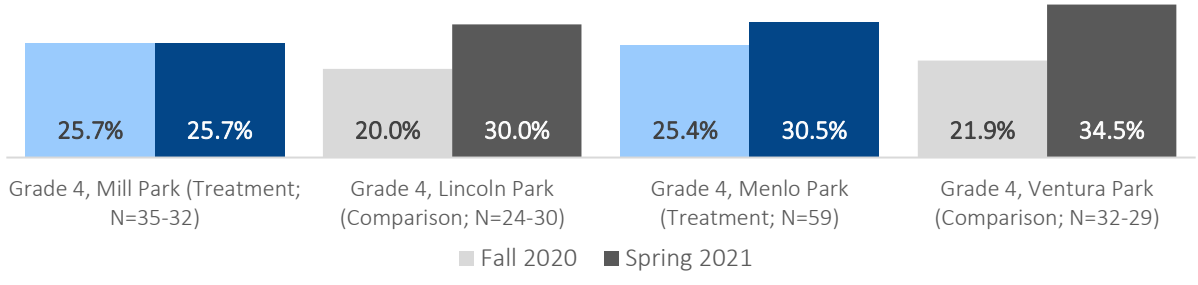


Figure 7. Percentage of Grade 4 Students Scoring Proficient or Advanced on Math Inventory

Finally, Figure 8 shows percentages of Grade 5 students scoring Proficient or Advanced on the Math Inventory in Fall 2020 and Spring 2021. Mill Park showed the opposite trend of its Comparison school (i.e., Lincoln Park), with the percentage of Mill Park Grade 5 students at or above proficiency starting higher in Fall 2020 and ending up lower in Spring 2021. Menlo Park showed positive growth in the percentage of Grade 5 students at or above proficiency on the Math Inventory and outpaced similar positive growth in its Comparison school, Ventura Park; Menlo Park's percentage started and ended higher than Ventura Park's percentage.

While both Treatment schools started with a higher percentage of Grade 5 students at or above proficiency than their Comparison schools, ***Menlo Park improved from Fall 2020 to Spring 2021 and outpaced its Comparison school's positive change****.*

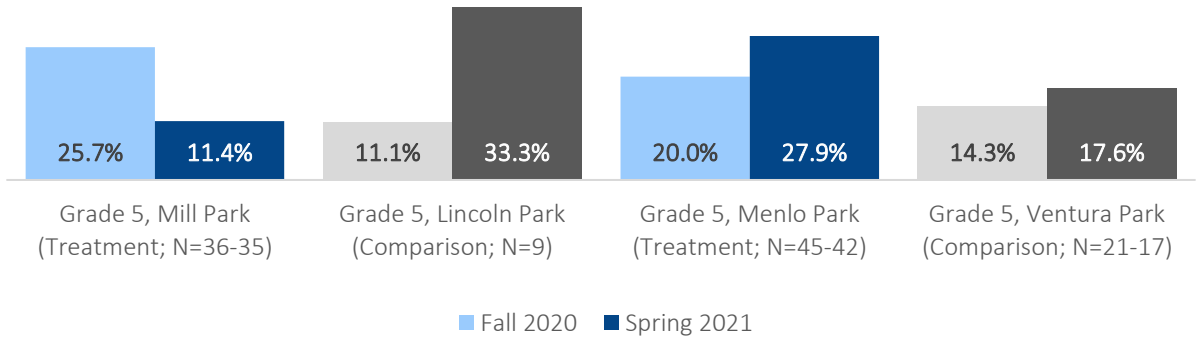


Figure 8. Percentage of Grade 5 Students Scoring Proficient or Advanced on Math Inventory

Student Achievement Data: Average Test Scores, by Student Demographics

Demographic data was gathered along with Math Inventory scores, allowing for a deeper examination of student performance by subgroup. Results are presented for the following subgroups: non-Caucasian students, limited English proficiency (LEP) students, gifted and talented students, and students with an individual education program (IEP). Overall, the Comparison group had a slightly higher rate of non-Caucasian students than the Treatment group (Figure 9), as well as a greater proportion of female students (Figure 10) and Gifted and Talented students (Figure 11). Note that Figures 9, 10, and 11 represent all Treatment and Comparison school students, regardless of whether the student took the Math Inventory.

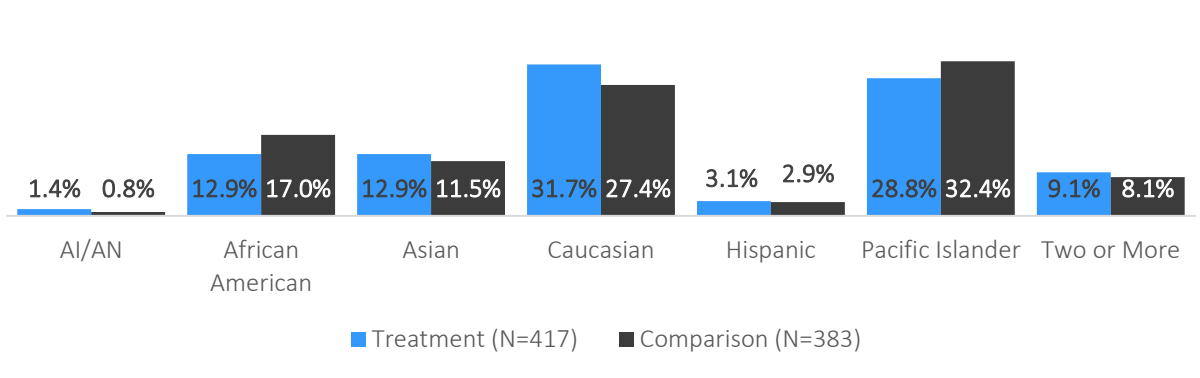
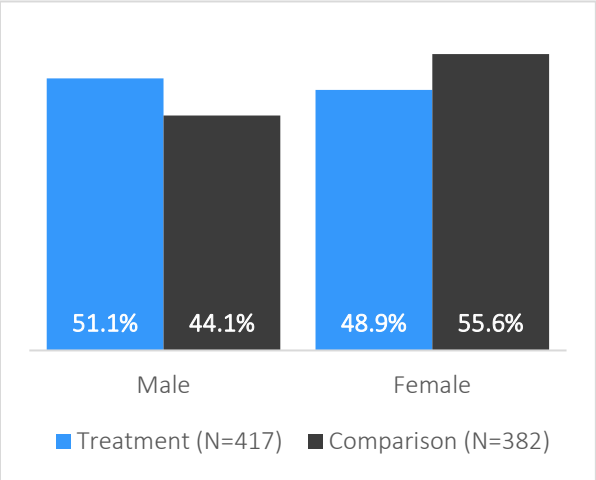


Figure 9. Percentages of Treatment and Comparison students by race



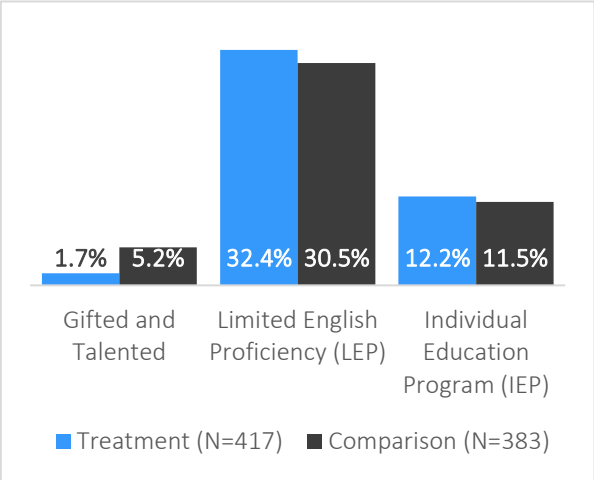


Figure 10 (left) and Figure 11. Percentages of Treatment and Comparison students by demographic group

Non-Caucasian Students

Figure 12 compares the percentage of Fall 2020 and Spring 2021 Math Inventory scores that fell into Proficient or Advanced categories for non-Caucasian students, aggregated by Treatment and Comparison schools. The percentage of Grade 3-5 students at or above proficiency increased in both Treatment and Comparison schools from Fall 2020 to Spring 2021. Despite Treatment schools showing a lower percentage at both time points, the increase between time points was substantially larger for Treatment schools (8.0%) than Comparison schools (2.8%).

*While the **percentage of students at or above math proficiency increased in both Treatment and Comparison schools**, the increase was greater for Treatment schools.*

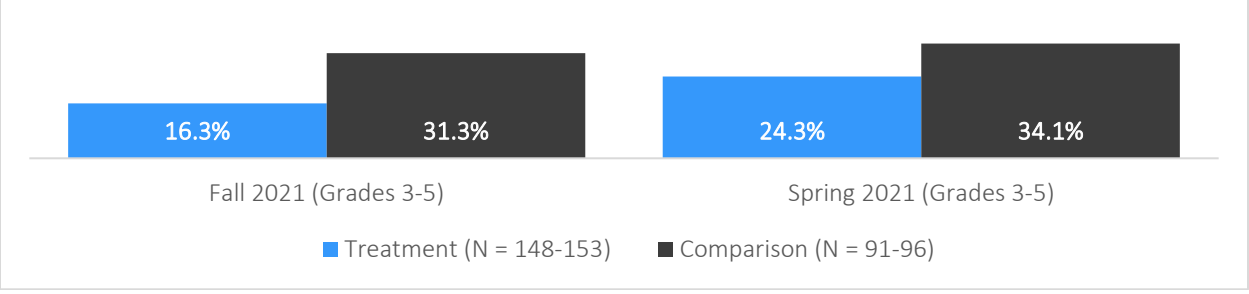


Figure 12. Percentages of non-Caucasian Grade 3-5 students with Proficient or Advanced scores on the Math Inventory by treatment condition

Limited English Proficiency Students

Figure 13 shows the percentage of students with limited English proficiency (LEP) whose scores fell into the Proficient or Advanced categories on the Math Inventory across Treatment and Comparison schools. The percentage of LEP students at or above math proficiency in Treatment schools increased substantially from Fall 2020 to Spring 2021, while the opposite occurred in Comparison schools.

*The percentage of **LEP students at or above math proficiency increased from Fall 2020 to Spring 2021 for Treatment schools but decreased for Comparison** schools.*

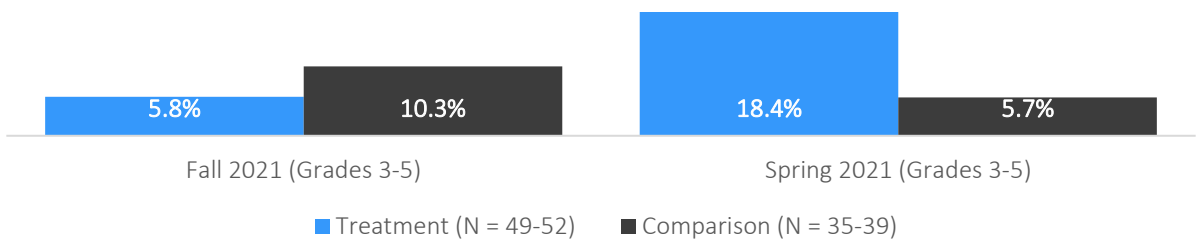


Figure 13. Percentages of LEP Grade 3-5 students with Proficient or Advanced scores on the Math Inventory by treatment condition

Gifted and Talented Students

Figure 14 compares the percentage of Fall 2020 and Spring 2021 Math Inventory scores that fell into Proficient or Advanced categories for Gifted and Talented students, aggregated by Treatment and Comparison schools. The percentage of Grade 3-5 students at or above proficiency increased in both Treatment and Comparison schools from Fall 2020 to Spring 2021, leading to 100% proficiency in Treatment schools by Spring 2021—a rate that surpassed that of Comparison schools, despite starting lower. However, it is important to note that sample sizes were particularly small for Gifted and Talented students (*N* = 7-14).

*Despite starting with a lower proficiency rate in Fall 2020, **100% of Gifted and Talented students in Treatment schools were at or above proficiency on the Math Inventory by Spring 2021**, outpacing similar students in Comparison schools.*

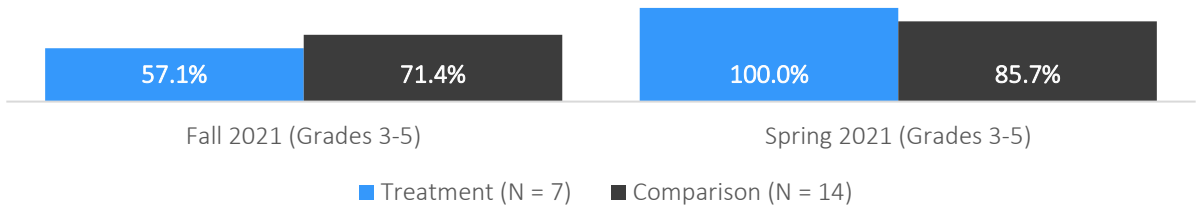


Figure 14. Percentages of Gifted and Talented Grade 3-5 students with Proficient or Advanced scores on the Math Inventory by treatment condition

Students with Individual Education Programs (IEPs)

Figure 15 shows the percentage of students with IEPs whose scores fell into the Proficient or Advanced categories on the Math Inventory across Treatment and Comparison schools. The percentage of IEP students at or above math proficiency increased from Fall 2020 to Spring 2021 for both Treatment and Comparison schools, with Treatment schools starting lower than Comparison schools but outpacing Comparison schools by Spring 2021. It is important to note that all sample sizes were very small, so results should be interpreted with caution (*n* = 5-15).

Treatment schools outpaced Comparison schools in percentage of students in special education at or above math proficiency by Spring 2021. *However, it is important to note small sample sizes.*

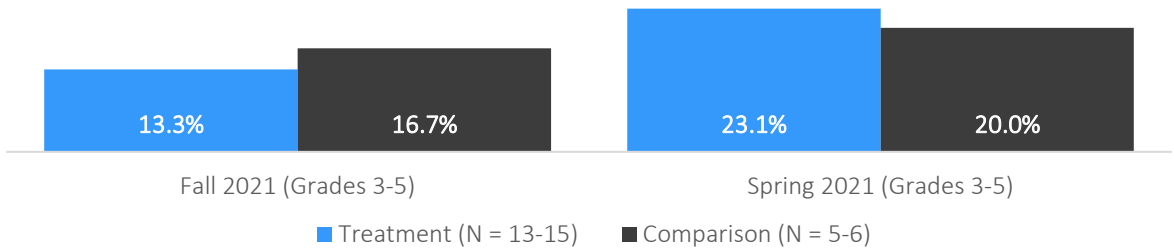


Figure 15. Percentages of Grade 3-5 IEP students with Proficient or Advanced scores on the Math Inventory by treatment condition

KEY FINDINGS	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)?
	Teachers report using multiple forms of integrated technology in their instruction to specifically support students in at-risk subgroups.
	Acquired technology is widely believed to enable staff to "meet students where they are" relative to all their diverse experiences or needs. Translation and captioning services through devices and platforms appear to be particularly valuable.
	Additional strategies, such as one-on-one meetings with students and tracking student data, allowed teachers to pay more attention to a student's unique needs. This, in addition to grouping students who had similar needs, was believed to have positively impacted student performance, particularly for ELL students.

The Spring 2021 survey invited teachers to provide examples of the ways in which they used technology to support instruction with at-risk subgroups (e.g., students of color, ELL, SPED, low SES) during distance learning. Fourteen responded to this open-ended question, with five key themes emerging in the data. Almost all responses indicated the use of two or more examples used in their instruction. Teachers most frequently (n=8) described integrating audio/visual components or interactive tools into their instruction to provide students multiple ways of interacting with content. The second most often listed example (n=7) was modifying lesson plans, assignment instructions, or assessment expectations for students in need. Additionally, some teachers (n=6) said they made time for direct communications with students via

meetings, chats, screensharing, and coaching, or created spaces for small groups to discuss work together. Five teachers wrote that they share additional content-specific resources to help students understand content, and two teachers use a translation or captioning service. A sample response for each theme is shown below in Table 3.

Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES) during distance learning.	
Using Audio/Visual or Interactive Tools (n=8)	*"1. Google images to use visual 2. Google Slides for lessons."*
Modifying Lesson Plans, Assignment Instructions, or Passing Expectations (n=7)	*"Individualized Meets to explain at a student's understanding level, breakout rooms for small team projects, access to smart software that differentiates material based on a child's skill and understanding."*
Small Group Work, Private Meetings, and Coaching (n=6)	*"Breakout rooms, Fuel Ed, posting assignments according to a student's level, giving feedback daily on assignments since I can see what they are working on while they are working on it."*
Sharing Additional Resources or Materials (n=5)	*"Made use of the district's digital resources to teach Black History and AAPI lessons."*
Translation or Captioning Services (n=2)	*"Use translation software; visual schedules."*

Table 5. Ways Technology Supported Instruction for At-Risk Subgroups During Remote Learning, Spring 2021 Survey Data

Next, the survey asked teachers to provide examples of the ways in which they used technology to support instruction with at-risk subgroups (e.g., students of color, ELL, SPED, low SES), generally. Fifteen teachers responded to this prompt. Nine teachers wrote that their school provided students Chromebooks, and six teachers mentioned how some families were provided hotspots for internet access. Five teachers described ways they were engaging families through home visits or caregiver meetings. Three teachers also wrote about added IT support or academic support they were providing students and their families. A sample response for each of the themes is shown below in Table 4.

Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES).	
Providing Students with Chromebooks (n=9)	*"Every student has a Chromebook."*
Providing Families with HotSpots (n=6)	*"My district provided Chromebooks to all students and paid internet bills and set up more hot spots."*
Home Visits and Building Relationships with Families (=5)	*"A lot of support for parents and families, streamlined curriculum and meetings."*
Tech/School Support (n=3)	*"SPED support for students."*

Table 6. Examples of Technology used to Support Instruction for At-Risk Subgroups During Remote Learning, Spring 2021 Survey Data

Leadership interviews provide more observations on the ways TechSmart grants are helping to close the achievement gap. Most notably, leaders described how the technology they've acquired has enabled their staff to effectively "meet students where they are" relative to all their diverse experiences or needs and allow them to be reflected in their course work. Translation tools in Google Classroom and SeeSaw have been helpful in supporting English language learners, "to either be understood or to translate what they might not understand into their native language." Similarly, leaders saw how classrooms with REDCap for audio were better positioned for hybrid lectures. They stated that masks sometimes made it difficult for students to hear the teacher, and technology helped mitigate that difficulty. Further, having the Chromebooks helped connect students to a wider range of narratives and content to aid in their learning.

> *Because of our Google Chromebooks, students have access to a lot of different online libraries that we haven't had in the past in those libraries – much more diverse authors and such. Because it's provided in the classroom, where they're learning, students have been able to access and choose resources that more accurately reflect them, reflect themselves, and have that choice in place at that moment.*

Having access to technology also allowed teachers to reimagine how they manage their classrooms. Leaders observed teachers integrating universal design elements into their classrooms. Leaders also spoke about how they've tried to ensure teachers have access to holistic professional development that can satisfy a range of student needs.

> *That would be our language development specialists, who would do language for all kids in our school. As well as language skills, then my student achievement specialists, and my student behavior specialists. We look at training for the staff from all of those lenses and how we can integrate that together because we don't want it all siloed, and then feed it through our school prevention plan. Technology is actually a tool.*

Focus group conversations showcased the ways in which teachers changed how they communicate with students, particularly those who have been historically underserved, to sustain engagement. One teacher described having a student on an IEP for whom writing was difficult. The Chromebook and Google

Classroom platform have a speech-to-text feature. Once the student began using this feature they engaged more in class and demonstrated greater comprehension. Another teacher had a similar story about a student who also had difficulty with motor skills like handwriting; however, the switch to computers and typing removed that barrier.

> *Even if they can't read, they can copy and type and do all kinds of things on the computer we couldn't do because of their physical limitations as well as intellectual. I think I may continue to really explore writing with the technology that we have.*

Virtual classrooms also meant that teachers were able to interact with student families more. It became much easier for teachers to communicate with parents about their child's performance, and ways they could work together to support their student: "For my kids, the parent was right there helping prompt because our kids are really heavily dependent on that kind of help." Indeed, connecting with parents appeared to be a critical component for how teachers worked to support students who have been historically underserved. The virtual component made it easier for parents to meet with teachers: "I have so much better attendance in my IEP meetings doing them virtually and I will probably continue that after the fact. Even though I love to have the parents here in person, a lot of them are uncomfortable or they just have children, and they can't manage it." Language barriers were also easier to navigate through virtual meetings. Interpreters did not have to rush between classrooms or schools; they could simply log on when needed. Further captioning or translation services, while not perfect, helped communications flow easier. In fact, one teacher mentioned how these services prompted them to learn how to become a stronger bilingual teacher.

> *I began teaching bilingually this year for those families, because I would be teaching their child something in English. I would ask them, "How do you say that in your language?" They would tell me, so I'd start trying to use that and they would be trying to use English. It's a neat thing. It prompted me to get more resources in their language and use more of their language. I have all this technology to do that. I never used Google Translate as much as I have this year.*

Additional strategies some teachers described include having regular one-on-one meetings with all of their students and tracking student data. Individualized meetings meant teachers could pay more attention to a student's unique needs in addition to grouping them with students who had similar needs. They found this particularly helped students who struggled in a school setting be more open to learning. Changes in student performance helped reaffirm this approach. While teachers recognized that data was "a little wonky" this year, some teachers did see substantial growth for their ELL students.

KEY FINDINGS	Is the rate of student growth in one or more All Hands Raised (AHR) outcomes greatest for at-risk student subgroups (i.e., students of color, LEP students, and students with IEPs)?
	Both Caucasian and non-Caucasian students in Treatment schools showed a higher rate of math proficiency in Spring 2021 than Fall 2020, with non-Caucasian students showing a higher rate of growth between Fall and Spring.
	The percentage of both LEP and non-LEP students in Treatment schools whose scores were at or above proficiency on the Math Inventory increased, with a higher rate of change over time for LEP students.
	Both students with and without IEPs in Treatment schools showed a higher rate of proficiency in Spring 2021 than Fall 2020, with IEP students showing a higher rate of growth from Fall to Spring.

To determine whether the rate of student growth in math proficiency as measured by the Math Inventory assessment was greatest for at-risk student subgroups, the percentage of students whose scores met criteria for Proficient or Advanced ratings on the Math Inventory with Treatment schools was compared by membership in at-risk subgroups (i.e., race, English proficiency, and IEP status).

Non-Caucasian Students

Figure 16 compares the percentage of Fall 2020 and Spring 2021 Math Inventory scores that fell into Proficient or Advanced categories for Caucasian and non-Caucasian students in Treatment schools. The percentage of Grade 3-5 students at or above proficiency increased across both Caucasian and non-Caucasian students from Fall 2020 to Spring 2021. Although the percentage of scores at or above proficiency was lower at both time points for non-Caucasian students, the rate of change was higher, as the percentage was 8.0% higher in Spring 2021 for non-Caucasian students and only 3.8% higher for Caucasian students.

*Both **Caucasian and non-Caucasian students showed a higher rate of Math proficiency in Spring 2021 than Fall 2020**, with non-Caucasian students showing a higher rate of growth.*

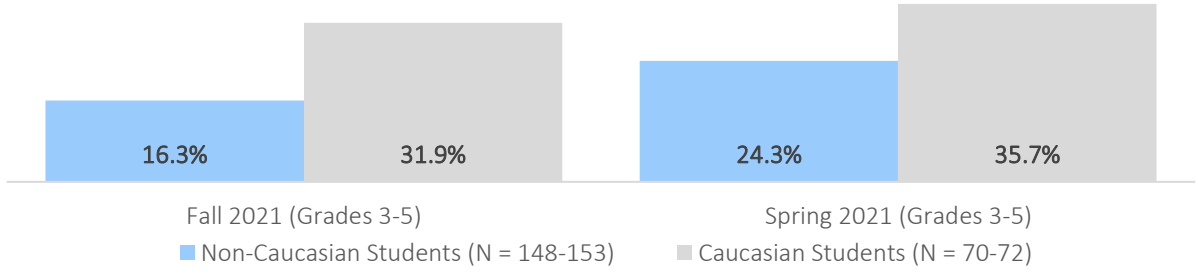


Figure 16. Percentages of Treatment school Grade 3-5 students with Proficient or Advanced scores on the Math Inventory by race

Limited English Proficiency (LEP) Students

Figure 17 shows the percentage of Treatment school LEP and non-LEP students whose Math Inventory scores fell into the Proficient or Advanced category in Fall 2020 and Spring 2021. While the percentage of students at or above proficiency increased from Fall to Spring in both groups, the increase was substantially greater for LEP students than non-LEP students. While LEP students did not meet the same rate of proficiency as non-LEP students, the difference in rate of growth is an important indicator of change.

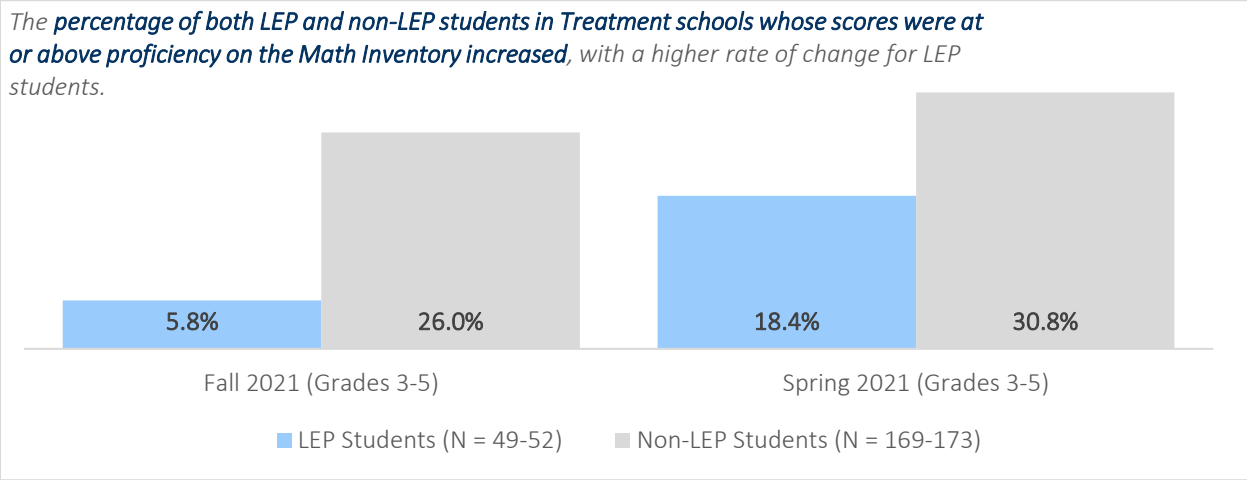


Figure 17. Percentages of Treatment school Grade 3-5 students with Proficient or Advanced scores on the Math Inventory by English proficiency

Students with Individual Education Programs (IEPs)

Figure 18 compares the percentage of Fall 2020 and Spring 2021 Math Inventory scores that fell into Proficient or Advanced categories for Treatment school students depending on IEP status. The percentage of Grade 3-5 students at or above proficiency increased across both IEP and non-IEP students from Fall 2020 to Spring 2021. Although the percentage of scores at or above proficiency was lower at both time points for non-IEP students, the rate of change was higher for IEP students, as the percentage was 8.8% higher in Spring 2021 for IEP students and only 6.4% higher for non-IEP students. Note that the sample of students with IEPs was small and should be interpreted with caution.

Both students with and without IEPs showed a higher rate of proficiency in Spring 2021 than Fall 2020, with IEP students showing a higher rate of growth.

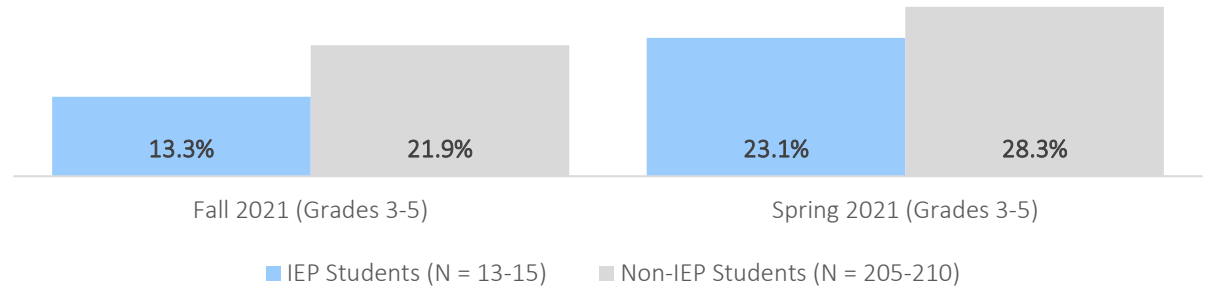


Figure 18. Percentages of Treatment school Grade 3-5 students with Proficient or Advanced scores on the Math Inventory by IEP status

DIGITAL AGE LEARNING CULTURE

Districts embrace a cultural shift and view technology as positive.

KEY FINDINGS	Has the use of technology to support instructional practices increased?
	By Spring of 2021, 93.8% of Grant 2 teachers who completed the survey reported students individually using technology A Moderate Amount to A Great Deal, which represents an increase over baseline.
	By Spring of 2021, 93.8% of Grant 2 teachers who completed the survey reported using technology to adapt activities to students individually, deliver instruction, and create lesson plans A Moderate Amount to A Great Deal, representing an increase over baseline.

In terms of frequency of technology use, the areas that saw the greatest increase from teachers between the Spring 2019 baseline and Spring 2021 follow-up were around students' individual use of technology. Teachers were asked to indicate the frequency of several technology uses across the past school year. Figure 19 below shows the percentage of teachers who selected responses of A Moderate Amount and A Great Deal across Spring 2019 and Spring 2021 surveys. Response data show that technology usage, which was strong in 2019, continued to be strong in Spring 2021 and increased in most areas.

Self-reported technology useage for individuals or groups increased by at least 12%.

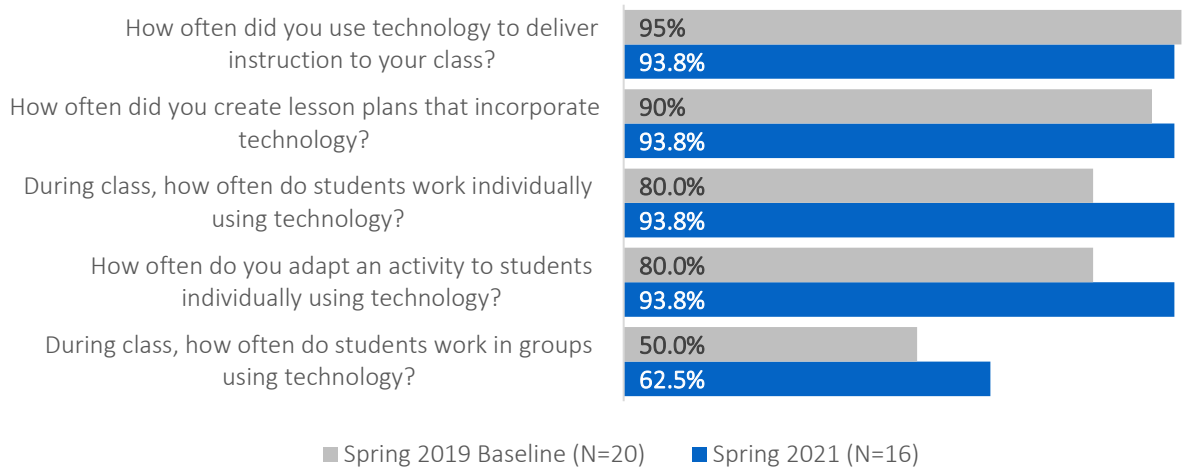


Figure 19. DDSD teacher frequency of technology integration (% A Moderate Amount/ A Great Deal)

KEY FINDINGS	Do teachers have increased access to and use of digital content and resources?
	All teachers (100%) reported using digital content and resources in their instruction.
	A majority of teachers (at least 87.5%) already agreed, or strongly agreed, that their students were comfortable using digital tools, knew which tool to choose, and were able to work independently, demonstrating an increase over baseline data.
	All teachers (100%) also agreed or strongly agreed that distance learning enhanced their personal confidence in using technology for instruction.

DDSD teachers provided self-reports on how frequently they use digital content and resources during instruction, selecting from a range of options (Never, Rarely, Occasionally, A Moderate Amount, and A Great Deal). The percentage of teachers who selected A Moderate Amount or A Great Deal is presented in Figure 20. At baseline, almost all teachers who completed the survey (95.0%) reported that they used digital content and resources A Great Deal or A Moderate Amount. The percent of teachers who agreed increased to 100% by Spring 2021.

Building from a strong baseline, ***all teachers agree they use digital content and resources*** *in their instruction.*

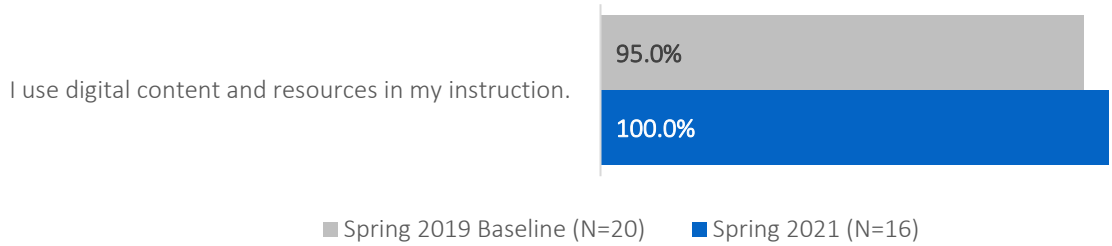


Figure 20. DDSD teacher integration of digital content (% Agree/Strongly Agree)

Further, teachers were asked to rate a series of statements comparing their current students to students from their previous year of teaching. As shown in Figure 21 below, most teachers (at least 70.0%) already agreed, or strongly agreed, that their students were comfortable using digital tools, knew which tool to choose, and were able to work independently in 2019 baseline data. By 2021, that number increased to at least 87.0% of teachers.

When compared to baseline data, DDSD teachers reported ***student ability to work independently increased by 17.5%.*** *Teacher ratings of students' abilities to select and use the appropriate tool for learning also increased.*

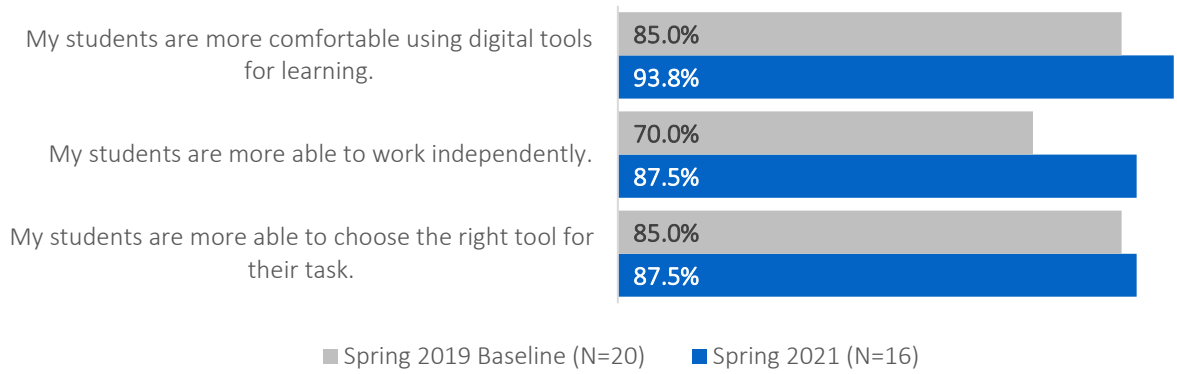


Figure 21. DDSD teachers' agreement with statements about 2020-2021 students' technological proficiency (% Agree/Strongly Agree)

A new question on the Spring 2021 survey asked teachers about instructional strategies amid the COVID-19 pandemic. All teachers agreed or strongly agreed that they developed new skills during distance learning that they plan to bring back to in-person teaching. All teachers also agreed or strongly agreed that distance learning enhanced their personal confidence in using technology for instruction. Teachers were also asked to indicate to what extent they agreed that online instruction has not been convenient for them during the pandemic; about one-third of teachers (37.5%) agreed or strongly agreed it was not convenient for them.

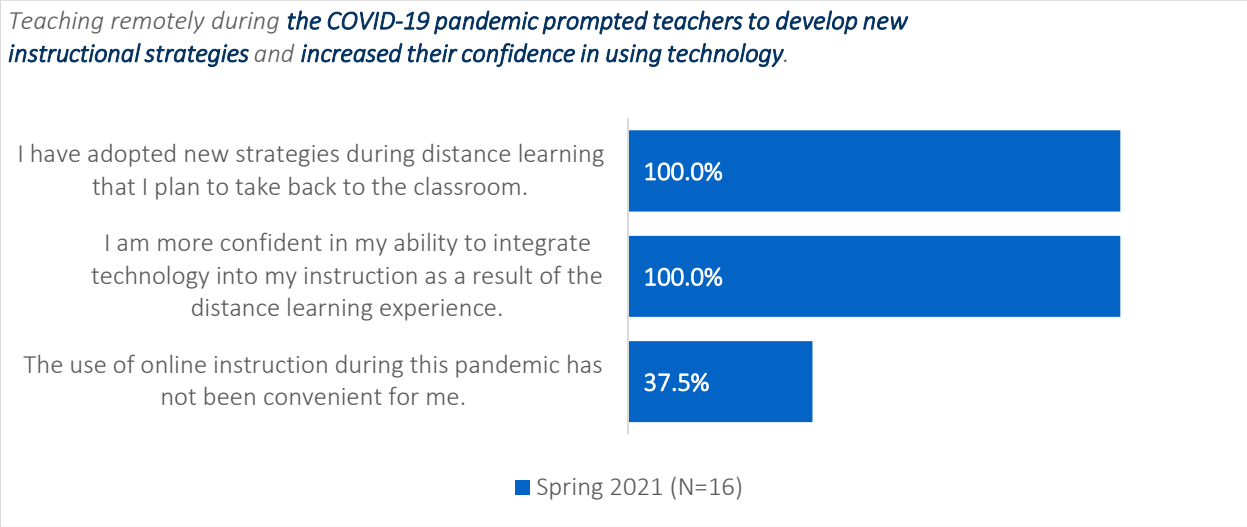


Figure 22. DDSD teachers' agreement with statements about using technology during distance learning (% Agree/Strongly Agree)

KEY FINDINGS	Is there evidence of district wide support for technology integration?
	A higher percentage of teachers agreed with statements representing positive views of a culture of support for technology integration in the Spring of 2021 than at baseline, providing evidence the culture may have improved over time.

During the teacher survey, teachers were asked to rate their agreement with several statements regarding school culture of support for technology integration. These data, presented in Figure 23, provide evidence that DDSD has made some progress in creating a culture of support for technology integration. There was a 20.0% increase in reported agreement that teachers understand how technology can be used to enhance learning. There was a smaller increase (2.5%) for the number of teachers who agreed or strongly agreed that teachers are continually learning or seeking new ideas. There was a 10.0% decrease in the number of teachers who agreed or strongly agreed that teachers are unafraid of learning about and using new technologies in their classrooms.

*While 20% more teachers reported **agreeing that they share an understanding of how to use technology to enhance learning**, **10.0% fewer teachers agreed that they are not afraid of learning about or implementing new technologies**.*

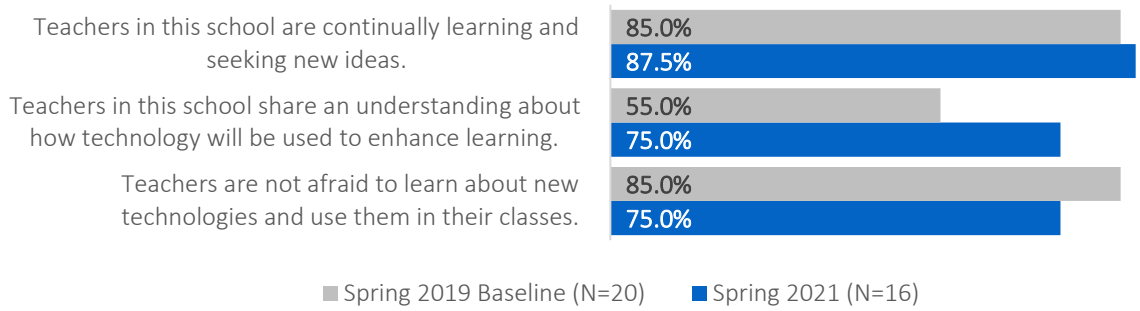


Figure 23. DDSD teachers' agreement with statements about school culture of support for technology integration (% Agree/Strongly Agree)

Leadership reported feeling confident that the district intends to continue investing in technology integration. A leading reason was the district's goal for every child to have a device, which is an effort the district already "put money into." In fact, one leader spoke about how this goal had been met and that their school had a surplus of devices to use as trade-in options should a student's Chromebook be broken or in need of repair. Leaders also spoke about the district increasingly investing in Smart Boards. Results thus indicate the district is making efforts to stay current with changes in technology.

> *I think our district knows it's a priority. This is the technology world, it's not paper and pencil anymore, so they're trying to keep up with it.*

The Instructional Coach position was, at the time of data collection, grant funded; however, leaders spoke about district intent to continue funding the position. This was widely believed to be a demonstration of the district's investment in continued technology integration.

KEY FINDINGS	Do parents have an increased understanding and utilization of districts' technology assets?
	Virtual instruction, meetings, and the use of learning management systems connected parents to teachers and to student performance.
	Online or virtual tools also helped mitigate traditional barriers, like language, by adding in a visual communication component.
	Many teachers indicated their relationships with families were the strongest they had ever been, as evidenced by nearly 100% of families participating in conferences.

District status report data affirmed that at least three meetings and events were offered throughout the school year as spaces for parents to interact with school leadership. Six additional events with the specific focus of increasing parents' ability to use and/or support student learning using technology were also provided. These events included monthly Parent Technology Time for Mill Park parents, using Google Meet, and a Family Café centered around math instruction. Events averaged about 25 participants. Communications with parents regarding efforts towards technology integration included teacher-produced newsletters, emails, and phone calls. The district also maintains a Facebook page and Twitter handle to communicate technology-related efforts.

As mentioned throughout earlier sections of this report, teachers described strong parent engagement throughout the 2020-2021 school year. Virtual instruction, meetings, and the use of learning management systems connected parents to teachers and parents to student performance in myriad new ways. Leveraging these combined tools allowed for deep trust and relationship-building: "I've been entering their home for a year and a half and have been part of their family. They feel so comfortable with that now, and they know the technology now." Further, online assessment and assignment tools mean that teachers can better communicate with parents what their child is struggling with without delay, "When parents ask, you can also have that immediacy and be able to tell them what kinds of things their child's struggling with or what they need help with and not have to wait until I can get something corrected."

Online or virtual tools also helped mitigate traditional barriers, like language, by adding in a visual communication component. For example, one teacher described how they used screensharing to help demonstrate how students were performing: "I can share my screen and show them how to do stuff. The visuals – because I also work mostly with the non-English speaking families. It's so nice to just have that visual video piece to be able to problem solve and work with the families." Similarly, connectivity tools like Google Voice, with Google Translate integrated in, and general texting helped teachers connect with parents.

Many teachers indicated their relationships with families were the strongest they had ever been. An example of this is an increase in parents participating in conferences. One teacher reported that, because they were all online, they had all but one parent attend conferences. Teachers also said that parents were more visible during general instruction time. One shared a story of a student who was in a one-on-one meeting with their teacher, with their mom in the background. At the end of the Meet the student indicated their mom had been listening and had some clarifying questions to help ensure she could best support her child.

KEY FINDINGS	Are an increased number of students utilizing and engaging with new technology?
	Students responded positively to technology, which helped them maintain connection to their peers, integrating social connections into their learning.

District status report data highlighted the ways teachers used virtual learning platforms (predominantly in the Google portfolio of offerings) to engage students across the school year. Jamboard, a Google product, is an interactive whiteboard that can be integrated into Google Meet or use independently. Teachers frequently used this platform to have students post notes or comments throughout instruction, to label activities, and to spur class-wide conversations. Google Meet offers additional features like breakout rooms and polls that teachers also used to keep students engaged. FlipGrid, a non-Google product, gathers student feedback via video or voice recording. Reportedly, students enjoyed being able to comment on their peers' recordings. Use of these tools helped provide students with social interaction that they were missing with their peers.

KEY FINDINGS	How has TechSmart impacted the shift to distance learning?
	Teachers strongly credited their Instructional Coach in supporting them as they learned new technology, believing that that the grant made them and their students feel more prepared for the transition to virtual learning.
	Leadership expressed that the one-to-one approach to technology that the grant helped them achieve was "fortuitous." It ensured students had devices prior to the pandemic.
	There was strong desire to continue using many of the strategies developed to support distance learning when returning to a hybrid or fully in-person classroom. Teachers were eager to continue utilizing learning platforms to manage classrooms using online digital documents, assignments, and course materials, and using breakout rooms in instruction.

The year-end status report described how the Chromebooks that were purchased from the grant were "pivotal in CDL and Hybrid [Instruction]." Because the technology was already purchased, students were quickly able to receive devices and continue learning. Further, students and teachers had baseline familiarity with the devices. TechSmart funds also had an impact on students outside of grant-targeted grade levels. The schoolwide implementation of instructional technology meant teachers did not have to spend much time receiving training or explaining how to use technology. The grant also supported the purchase of Smart Boards. These devices helped make the return to in-classroom, hybrid instruction a success.

The Spring 2021 survey asked teachers to write in comments about how the TechSmart grant impacted their instruction during the past school year with remote instruction. Eight teachers responded to this open-ended question. Teachers expressed how thankful they were to have an Instructional Coach to support them in learning new technology (n=5) and shared that the grant made them, and their students, feel more prepared for the transition to virtual learning (n=4). One teacher described the ways it addressed common inequities between SPED classrooms and general education classrooms. Another teacher spoke about the value in having a personal device. A sample response for each theme is shown below in Table 5.

Do you have any comments about how your experience with the TechSmart grant impacted your instruction during distance learning?	
Felt Supported While Learning New Technology (n=5)	*"Having someone to support new learning is the most beneficial part of the grant."*
Felt Prepared for Distance Learning (n=4)	*"Distance Learning did not freak our team out. We knew exactly what to do. Our Coach helped a lot whenever we needed him."*
Addressed Inequities between SPED and GE Classrooms (n=1)	*"Being a Special Education classroom, we would never have had access to a Chromebook cart or SMART Board. Those things are usually reserved for general education classrooms only as many administrators in the district office are nervous about providing expensive equipment to students with significant behavioral and emotional impacts. But I find that they are already so tech savvy and are so motivated by technology. The technology was provided by this grant, and I was able to show others how competent my students can be and how much support technology can provide students who especially have deficits in communication functioning and fine motor/handwriting. Technology fills a lot of gaps."*
Value Having a Personal Device (n=1)	*"It was great having our own set of Chromebooks. The only thing that would have been better is if we had touch screens for intermediate. "*

Table 7. Grant 2 Impact on Remote Instruction, Spring 2021 Survey Data

Leadership interviews provided more context on the ways in which TechSmart Grants have impacted instructional strategies during remote learning. Many spoke about how the timing of the grants and the district's one-to-one approach to technology was fortuitous. Because students had devices prior to the pandemic, leaders felt slightly more prepared to navigate distanced instruction.

> *I think it's enabled the majority of children to engage in education while there's been such a crazy year. I feel like it was perfect timing because we had just gotten one-to-one technology two years before, or a year and a half before, this COVID thing started. Kids were pretty sufficient on their Chromebooks. I was very thankful for that. Sending them all home, into their homes, it was interesting to see the impact. Not only did it help the kids, they know how to do it, but it also taught parents a lot about technology that they may not have learned otherwise.*

Smart Boards were also frequently referenced as being instrumental tools in the past school year, particularly in hybrid learning environments. As one leader observed, "Those have worked better in distance and hybrid because it's easier for students to take turns when physically only one or two of them can take turns within a fully digital setting because the technology doesn't support that. Then in-person, because there's fewer kids in the classroom, the teacher is able to give each student more of an opportunity to work with the technology." The ability to use Smart Boards to simulcast teaching also

meant that educators could connect with students in person and at home at the same time. This was believed to help teachers better manage their cohorts.

Conversations with teachers reiterated the general preparedness they felt when transitioning to remote learning. They stated that their Instructional Coach had already spent previous grant years training them on Google Classroom. Teachers and students, particularly those in 3rd-5th grades, had foundational knowledge for how to interact on the platform. Younger students did have more of a challenge adapting. Despite that, teachers were able to focus on strategic use of the technology purchased through the grant, rather than having to learn how to navigate it.

> *When we went to the distance learning in the spring, all the teachers who had been using Google Classroom, third through fifth, were fine. It was a real nightmare getting those [kindergartners] logged onto their classrooms.*
>
> *I think in the spring we used Google Classroom. We didn't switch to Seesaw until the following year.*
>
> *The little kindergartners are trying to do Google Classroom. It's just ridiculous.*

The Spring 2021 survey invited teachers to share what one new technology-related instructional practice developed in the past year of remote instruction they wanted to continue using when classroom-based teaching resumes. Fifteen teachers responded to this open-ended question, with five overarching themes emerging in the data. Most frequently mentioned (n=7) was a desire to continue using learning platforms to manage classrooms. Teachers also wanted to continue using online digital documents, assignments, and course materials (n=7). Further, five teachers explicitly mentioned an appreciation for services provided through the Google platform. Two teachers mentioned use of breakout rooms in instruction, and one teacher wanted to continue to meet with parents virtually. A sample response for each theme is shown below in Table 6.

What is one new technology related instructional practice that you acquired during distance learning that you anticipate taking back to the classroom?	
Use of Learning Platforms to Manage Instruction (n=7)	*"I'll be using SeeSaw to manage independent tasks, assignments, & differentiated instruction. That will be completely new for me!"*
Digital Documents, Assignments, and Materials (n=7)	*"Having my students make videos of themselves to do presentations when they often are too burnt out/overwhelmed to do it in the moment."*
Google Platforms (n=5)	*"Google everything!"*
Breakout Rooms (n=2)	*"Breakout rooms, if needed, next year."*

What is one new technology related instructional practice that you acquired during distance learning that you anticipate taking back to the classroom?	
Remote Meetings (n=1)	*"As much as I enjoy meeting and talking with parents in person, I had such a marked increase in participation in meetings and parent trainings holding the meetings virtual. Parents were much more accessible and willing to meet more often because of the convenience of being at home. So, I will continue this practice. I also had more available translators in this format. I am totally comfortable sharing documents on my screen and using DocuSign and using a multi-media presentation to share their children's school progress. It's been great."*

Table 8. Instructional Practices from Remote Teaching Teachers Plan to Bring Back to the Classroom, Spring 2021 Survey Data

VISIBLE LEADERSHIP

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

KEY FINDINGS	Are districts identifying effective instructional practices and disseminating information and results to other districts?
	DDSD staff appeared to be in consistent communication with peers at other districts, engaging in virtual chatrooms, monthly meetings, and shared professional development opportunities.
	Leaders found value in seeing how other districts have navigated experiences and comparing where they were in their learning journey based on levels of familiarity with technology across students, teachers, and staff.

The year-end status report described how TOSAs held weekly Curriculum Team Meetings to discuss strategies and instructional practices that could help coach teachers. They also used this time to share, generally, what individuals were working on, suggestions, ideas, and thoughts. The report also included mention of Digital Management Team Meetings, where the group discussed and gave updates on the Digital Curriculum used in the district. These meetings were a space to discuss challenges and successes using, effectively implementing, and troubleshooting the programs.

In interviews, DDSD leaders indicated they participated in virtual chat rooms and meetings, and occasionally attended professional development with staff from other districts. Some leaders described conversations being more organic in nature, with the topics naturally gravitating towards helping students get online, what happens when students are online, and general appreciation for the technology itself. Others participated in more structured conversations, with a group of district professionals continuing to meet in a formal Consortium.

> *We're still meeting as the East County Technology Consortium so myself, Gary from Reynolds, Roger from Gresham, and Elizabeth from Gresham. We still meet and talk about integration and how we're helping teachers and some issues that each district is having. We're still able to do that as far as sharing to other districts. That's the extent that I've been doing.*

In these more structured spaces, time was made to discuss technology rollout, relationships between technology departments and teachers, experiences with new Google products, and discussion around additional platforms schools are using to support learning or classroom management. Leaders found value in seeing how other districts navigated experiences and comparing where they were in their learning journey based on levels of familiarity with technology across students, teachers, and staff.

KEY FINDINGS	Do teachers feel increased support from district leaders regarding technology integration?
	Consistent with baseline data, all teachers (100%) continued to agree that they had the support of their school administrators for technology integration.

During the teacher survey, teachers were asked to rate their agreement with a statement regarding school culture of support for technology integration. Combined totals for Agree and Strongly Agree are presented in Figure 24 and show that teachers continued to fully agree that they had the support of school administrators for technology integration.

*DDSD teachers continued **to unamimously agree that administrators support technology integration** efforts.*

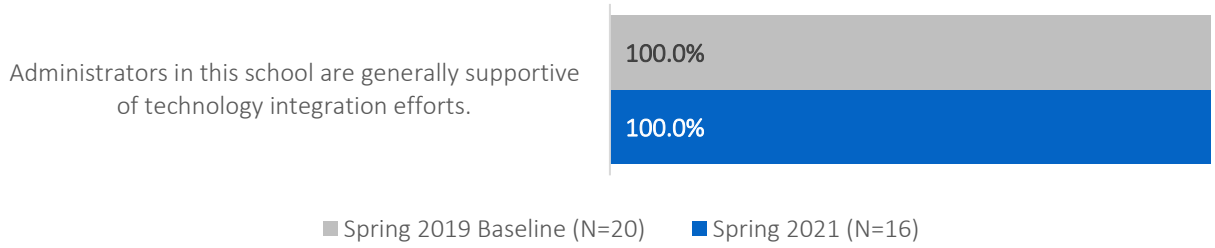


Figure 24. DDSD Teachers' perceptions of a culture of support for technology integration (% Agree/Strongly Agree)

DATA-DRIVEN IMPROVEMENT

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

KEY FINDINGS	How are schools using data to improve instruction, professional development, and student performance?
	Almost all survey participant teachers reported using technology for evidence-based instruction (100%), to differentiate instruction (100%), and to analyze data about student learning by Spring of 2021 (93.8%), representing substantial increases from baseline data.
	By Spring of 2021, 100% of teachers who participated in the survey reported use of formative assessment to inform instructional practice.
	Almost all teachers (93.8%) agreed or agreed strongly that they are now comfortable integrating technology into their instructional practices and have found effective means for doing so.
	Teachers agreed that learning management tools can help in tracking student performance, but that all data gathered in this year should be treated with great caution.

DDSD teachers provided self-reports on how frequently they use digital content and resources during instruction. Selecting from a range of options (Never, Rarely, Occasionally, A Moderate Amount, and A Great Deal), response data for A Moderate Amount combined with A Great Deal provided a baseline for comparison to data gathered in May 2021. By Spring of 2021, over 90.0% of teachers indicated they used technology for evidence-based instruction, to analyze data about student learning, and to differentiate instruction A Great Deal or A Moderate Amount. This represents substantial increases in the percent of teachers who use technology to differentiate instruction (50.0%) and use technology for evidence-based instruction (37.5%).

*All DDSD **teachers indicated usage of technology for evidence-based instruction and to diferentiate instruction**, representing at least a 37.5% increase from baseline data.*

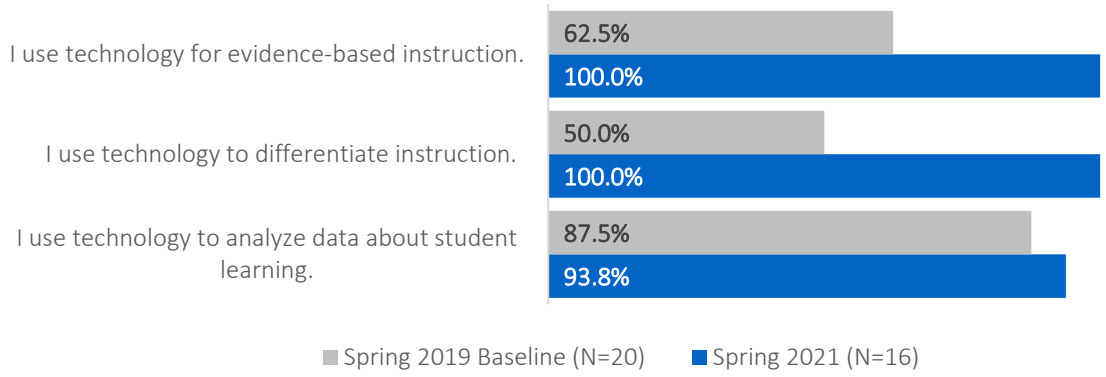


Figure 25. DDSD Teachers' Instructional Technology Usage (% A Moderate Amount/ A Great Deal)

Similarly, on the Spring 2021 survey, teachers were asked to self-report how frequently they used formative assessments to identify effective instructional practices. Aligned to the same five-point scale as above, all teachers indicated moderate or great use of this approach.

***All teachers used formative assessments to inform instructional practices** a moderate or great amount.*

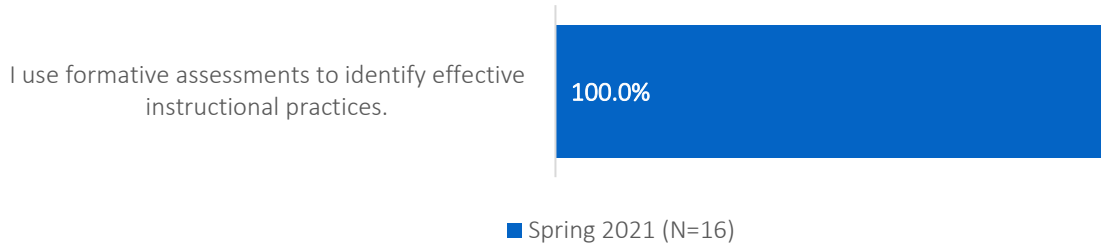


Figure 26. DDSD Teachers' Formative Assessments Usage (% A Moderate Amount/ A Great Deal)

Using a five-point scale, teachers were asked to indicate how much they agreed with three prompts describing their experiences with distance learning, online instruction, and returns to the classroom. Figure 27 below shows combined response data for Agree and Strongly Agree ratings. Baseline data showed that at least 90.0% of teachers agreed that they felt confident in their ability to use student data to differentiate instruction and assess student progress. This number increased to 100% in Spring 2021 data.

*By Spring 2021, all **teachers felt confident in their ability to asssess student progress and differentiate instruction** based on student data.*

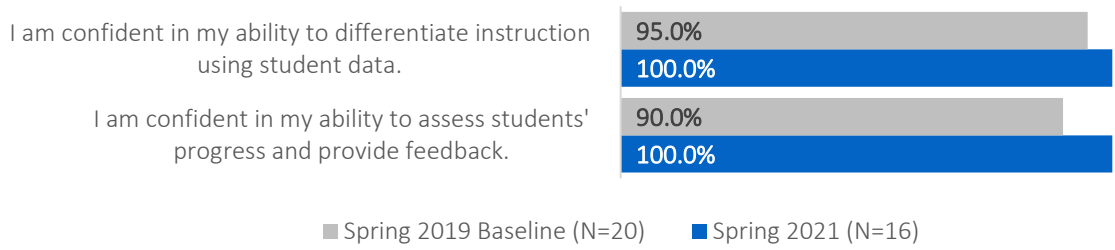


Figure 27. DDSD Teachers' Agreement with Statements Describing Remote Teaching (% Agree/Strongly Agree)

The same five-point scale was applied for two questions new to the Spring 2021 survey. On this survey, most teachers agreed or agreed strongly that they were comfortable integrating technology into their instructional practices and have found effective means for doing so.

*Teachers are both **comfrotable with using technology and have identified effective strategies for using it** in their instruction.*

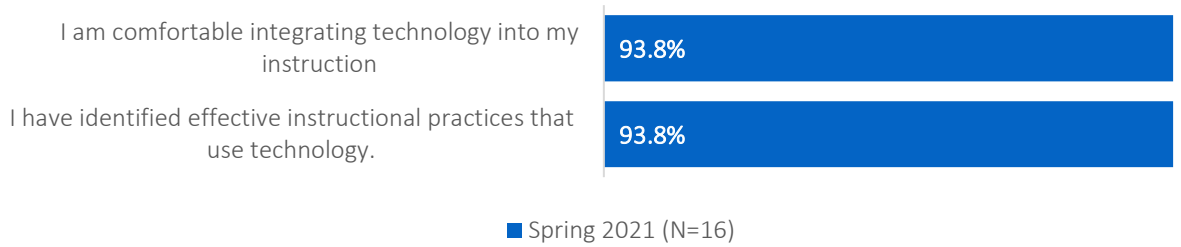


Figure 28. DDSD Teachers' Agreement with Statements Describing Comfort and Competence with Technology (% Agree/Strongly Agree)

Teachers were encouraged to share the ways in which they used formative student data to inform instructional practices. Again, the ability to track student progress through assignments and assessments through online platforms like LearnZillion and Fuel Ed was mentioned as supportive toward these goals. Students, it appears, also found value in having teachers monitor their work. One teacher spoke about how a platform gives students visibility of their peer's scores and how this has turned into, presumably, healthy competition.

> *They love it because they just show you where they're at. It shows me which ones they've gotten wrong.*
>
> *They're competing with each other. "Is this how you do this?" The whiteboards within the system are great. They're doing more math because it's fun.*

While these tools can be helpful in tracking student performance, teachers also expressed some skepticism as to how valid they are. Because students were at home, it was impossible to know if they

were receiving assistance in their tasks or if someone was completing the task for them. They have reason to be skeptical, too. One teacher shared a humorous story of a student who was struggling with work during virtual class. They forgot to mute their device and the class overheard them asking a smart device (e.g., Amazon Alexa) to solve the math problems for them.

The consensus among teachers in the focus group discussion was that learning management tools can help in tracking student performance, but that all data gathered in this year should be treated with great caution.

FUNDING & BUDGET

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

KEY FINDINGS	Have districts identified at least one opportunity for repurposing resources to support technology integration?
	Excess funds were being directed towards enhancing the in-classroom experience, making rooms better equipped for hybrid teaching.
	In an effort to sustain Institutional Coach support, DDSD found ways to extend the role's contract for at least one more year post-grant funding.

As stated in earlier sections of the report, technology integration appears to be a priority for DDSD. Excess funds were used to purchase four additional Smart Boards to ensure almost all teachers had access to them. Indeed, the leader stated they hoped to buy six, but two were on backorder and that they would need to use Fall budget (if available) to meet the goal of all teachers having access to this technology. While Smart Boards are the ideal, some teachers have been able to use school budget to purchase big-screen HD televisions and use those in similar capacities. This solution is both cost effective and indicates teachers' increasingly creative proficiency with technology.

> *We were able to, thought my own school budget, purchase some regular big-screen HD televisions, and swap those in. We were then able to re-acquisition Smart Boards to different classrooms so that more classrooms could have more technology. That's really interesting because of the understanding that my staff has developed with technology. They were able to better understand, "Wait, where is this technology going to best serve the students? It can be better to have this interactive piece of technology in a classroom or in a pull-out setting and make them…"*

Additionally, DDSD reworked the way in which the Instructional Coach's salary was funded to extend the length of their contract after grant-funding concluded.

> *We were able to, in David Douglas, budget responsibly to be able to carry over half of my salary for next year to extend this for year four. The district basically matched the other half for my salary for year four. Again, money is support in David Douglas or in any schools. They're basically supporting by paying the other half of my salary.*

Leaders spoke about places where budget was conserved, too. Pivoting to free professional development opportunities online proved to be a key area for "freeing up money." Further, hybrid instruction meant

that subscriptions to Smart Notebook did not need to be renewed. Many devices were purchased in previous years, so there were not any big purchases to be made.

STRATEGIC PLANNING

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

KEY FINDINGS	Does the district's strategic plan reflect shared commitment to improving outcomes for students?
	The district was reviewing its overarching equipment plan, ensuring teachers consistently use the same technology with students, minimizing student and teacher need to continually adapt to different learning modalities for different teachers.
	Leadership articulated a goal of offering more professional development for teachers on language development, student achievement, and on student behavior.

This year's leadership interview asked leaders to reflect on how technology fit into their district's strategic plan. One person reviewed how the district has an overarching equipment plan, which TechSmart has helped to meet. Specifically, the goal is to ensure all teachers have the same types of equipment at their disposal. This was the motivation for the aforementioned purchasing of additional Smart Boards with excess funds.

Professional development and training are also central elements of the district's strategic plan. Leadership stated that the decision to invest in new or more devices frequently included funding training for teachers to ensure they felt confident using new equipment. Leaders also spoke about providing training to teachers relative to language development, student achievement, and on student behavior.

Additional goals are to support student and staff mental health and socio-emotional learning. Several teachers spoke about a continued need to address the achievement gap and focus on equity-building practices. Indeed, each director was required to have an equity goal. Examples of this could include access to technology and internet at home. Pursuing an additional grant to give families internet hotspots was one way this goal was being achieved in addition to the devices procured through the MHCRC grant. Continuing to offer online school as an option was another way leadership hoped to offer more accessible, equitable means of engaging with school in the 2021-2022 school year.

We're moving forward with an online school next year. We're doing three elementary positions. Our model is a little bit different in secondary.

For secondary, it sounds like it's going to be a lot of independent learning and using teachers as check-in and then teachers using posting-based synchronous work.

In the elementary, there'll be live teachers. We're hiring three elementary teachers, a half-time Spanish teacher, an online counselor along with that too. There's going to be social-emotional lessons as well. I'll that support next year so that's great.

While the strategic plan outlines efforts to continue integrating technology, one leader expressed concern about the sustainability of the grant-funded technology from the lens of depreciation. The individual was unaware of how aging technology would be requisitioned and replaced and hoped to see plans be developed.

EVALUATION INSIGHTS

The SY 20-21 evaluation at DDSD produced the following insights:

- The district's Technology Integration Coach was, again, consistently emphasized as the critical contributor to DDSD's success thus far in implementing TechSmart within Mill Park and Menlo Park schools as well as managing the shift to distance learning. Teachers explained the coach's valuable role in their PD, both in groups and individually, and their ability to support their students.

- Integration of technology for teaching, particularly distanced or in hybrid classrooms, has made a significant impact on teachers. Many teachers highlighted the ways it enabled them to deepen engagement with their students and their intentions to sustain strategies developed during remote learning moving forward.

- Teachers reported substantially higher average skill levels with technology broadly, as well as with specific tools (e.g., SmartBoard, Google Classroom) from baseline data. Teachers also reported higher comfort levels with technology.

- Typical student achievement data were not available, but Math Inventory data indicated the percentage of Treatment school students at or above proficiency increased in most cases from Fall 2020 to Spring 2021. When comparing at-risk subgroups across Treatment and Comparison schools, the percentage of Treatment students from at-risk subgroups at or above math proficiency outpaced that of at-risk subgroup Comparison students over time in several cases.

- DDSD teachers seemed particularly engaged in providing instruction that benefits and targets those students from at-risk subgroups. Many participants described use of accessible technology, such as translation and captioning services, to support equity in access to learning. Other participants discussed the ways in which learning management systems and online assessments allowed teachers more immediate ways to track and respond to individual student performance as needed.

- Culture seemed to be generally positive regarding support for instructional practices that integrate technology. The majority of teachers indicated that they share understanding about how to use technology, seek out new ideas, and are not afraid to learn about and use new technologies. The Technology integration Coach was emphasized as important to building the culture of support.

CHAPTER 3: REYNOLDS SCHOOL DISTRICT

TechSmart Initiative 2020-2021 Evaluation Report

CONTENTS

PROJECT SUMMARY

Reynolds School District's (RSD) first TechSmart grant (Grant 1), which concluded in Spring of 2019, focused on improving student achievement in 8th grade math, 9th grade credit attainment, and English learners' progress. Funding for the first grant supported middle and high school math classroom technology and related teacher professional development (PD). District administrators implemented a staggered-rollout strategy where they onboarded a cohort of math teachers every school year for the first three years of the grant. By school year 2018-2019 (SY 18-19), RSD had full implementation of technology-rich math curriculum across all middle schools and 9th grade students at the high school. In addition, the first grant helped 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.

In SY 20-21, RSD began implementation of its second TechSmart grant (Grant 2). The latest funding has a goal of extending and scaling the success of the first grant to support students and instructors at both Reynolds High School and Reynolds Learning Academy, the district's alternative high school. Specifically, the second grant focuses on instructional strategies that use a constructivist approach and an equity-driven digital curriculum, as well as technology supports provided by 1:1 Chromebooks, short throw projectors, and Schoology. The grant professional development (PD) centers on collaborative professional learning communities (PLCs) and instructional lab cycles, with support from the district's Instructional Technology Coach.

METHODS

A general description of the methods included in the TechSmart evaluation are included in the introduction to the full report. Survey and conversation quotes have been edited for grammar and brevity. Data collection efforts summarized below.

Teacher Survey: A post-implementation teacher survey for Grant 2 was administered in May of 2021. A total of 65 teachers completed the Grant 2 survey. Additionally, a baseline teacher survey for Grant 2 was administered in May of 2020. A total of 8 teachers completed the Grant 2 baseline survey.

Teacher Focus Groups: One focus group was administered with teachers and coaches from both Reynolds High School and Reynold Learning Academy. A total of 7 people participated in the one-hour conversation, sharing thoughts on how TechSmart funding impacted the 2020-2021 SY and supported distance learning.

District Leader Interviews: PRE interviewed two district administrators from RSD, the Director of Instructional Technology and an Instructional Technology Coach. These interviews centered on Grant 2, though occasional reference to Grant 1 was made.

Year-End Status Report: Review of the annual status report district leadership submits to the Mt. Hood Cable Regulatory Commission on grant activities.

Student Achievement Data: Grade point averages and credit attainment totals were analyzed across four subject areas and were compared to a Historical Comparison Group made up of students from SY 16-17

RSD chose to focus on these strategies based on the success of Grant 1 implementation, and on continued need at other grade levels of the district. According to their latest project plan, RSD's failure rate in 9th grade math reduced from 56% in 2015 to 28% in 2019. However, RSD continues to work to reduce a digital divide that impedes student access to technology and the internet at home. With their second TechSmart grant, RSD hopes to extend the outcomes of the first grant to full implementation at the high school level.

The primary vehicle for instructional changes at RSD centers on a PD plan that focuses on establishing PLCs within each high school and across departments and utilizing lab cycles for collaborative co-teaching, classroom observation, and data analysis. During lab cycles, teachers implement an instructional practice, collect student data, and work together with their PLC to determine next steps. Additionally, teachers receive at least one "late start" PD period per month that is focused on TechSmart-related instructional practices and student assessment data.

This report presents data from school year 2020-2021 (SY 20-21), the first year of implementation at RHS and RLA. This report thus focuses primarily on information and data related to Grant 2, with all cohorts presented together as an overall, combined evaluation. Data from SY 19-20 were used as a comparative baseline for survey data analysis. Data from SY 16-17 were used as a Historical Comparison Group for student achievement data analysis.

ABOUT SPRING 2021 SURVEY RESPONDENTS

A total of 65 teachers from Reynolds High School and Reynolds Learning Academy provided response data to the 2021 end of year survey. This marks a substantial increase from baseline data, which received only eight responses. As such, Spring 2021 data, with a sample of 62 teachers, likely presents a more accurate picture of teachers' perceptions and experiences. A majority of responses (92%) were from Reynolds High School teachers. Respondents taught an average of three grade levels, and teachers for all four grades in traditional high school environments were well represented (see *Figure 29*).

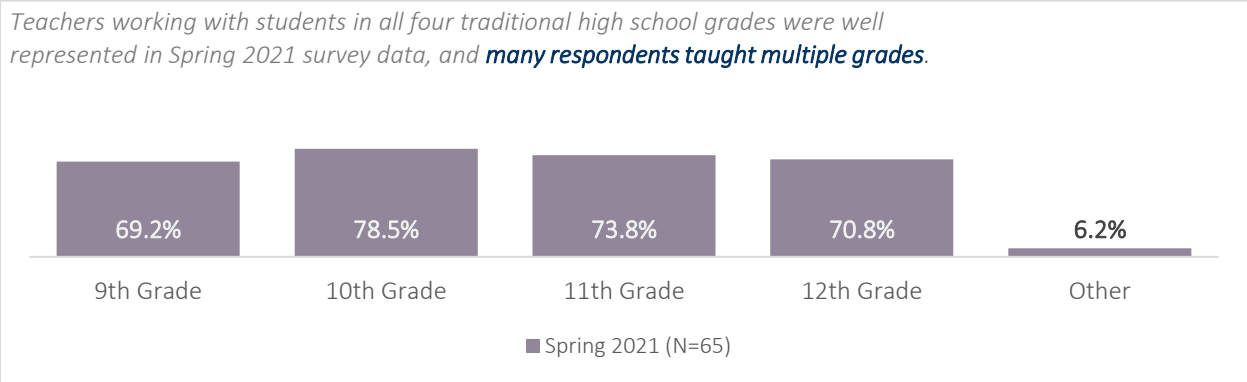


Figure 29. Grade levels RSD Spring 2021 survey respondents taught

Survey respondents were predominately long-time teachers at the k-12 level. More than two-thirds (67.7%) had been teaching for over 11 years, with 35.4% of teachers serving for over 21 years.

*A majority of **survey respondents were long-time K-12 educators**, with over one-third of respondents teaching for over 21+ years.*

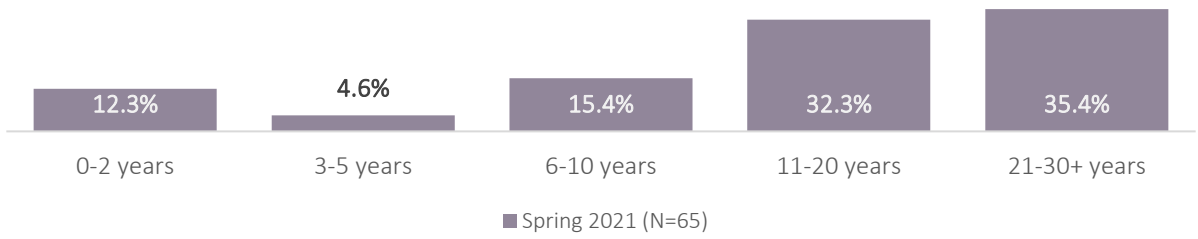


Figure 30. Teacher tenure of RSD Spring 2021 survey respondents

COVID-19 CONSIDERATIONS

Findings shared in this report detail the first full year of virtual instruction amid the COVID-19 pandemic. While the transition to remote teaching in Spring 2020 was abrupt, it accelerated the integration of technology into learning environments tremendously. District leaders, teachers, and students were forced to adapt and become proficient in a range of digital environments quickly. The impact of this experience is documented in this report and evidenced by the large jumps in reported skills developed, comprehension of various tools, and confidence utilizing them from baseline data. However, negative effects of the pandemic on student achievement are very likely given the complexities of education during SY 20-21 and the entire pandemic. As such, student achievement data in particular should be considered carefully in the context of the pandemic and its ongoing implications for student outcomes.

FINDINGS

The findings from the SY 20-21 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. Evaluation questions guiding this study were designed to respond to these seven factors. Each factor is further framed by these questions, with relative key findings highlighting trends in data relative to each guiding line of inquiry.

TEACHING EFFECTIVENESS

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

As shown in *Figure 31*, half of TechSmart teachers who responded to the post-implementation survey for Grant 2 reported receiving between 1-8 hours of individualized professional development (PD) during SY 20-21. Comparatively, teachers spent more time in group PD, as 56.9% of respondents received at least 17 hours of group training.

*RSD Teachers spent far **more time in Group PD** (57%, 17+ hours) **than in Individualized PD** (52%, less than 8 hours).*

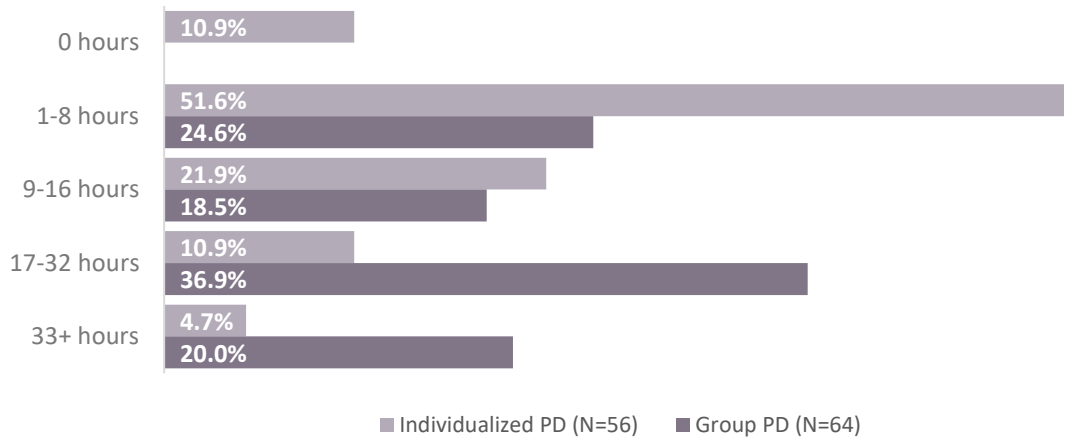


Figure 31. Time RSD teachers spent in individualized and group professional development.

Though time spent in individualized PD was limited, one-third of respondents felt it was extremely useful. Less than 20% felt the same about group PD; nearly one-quarter of respondents found group PD to be moderately useful.

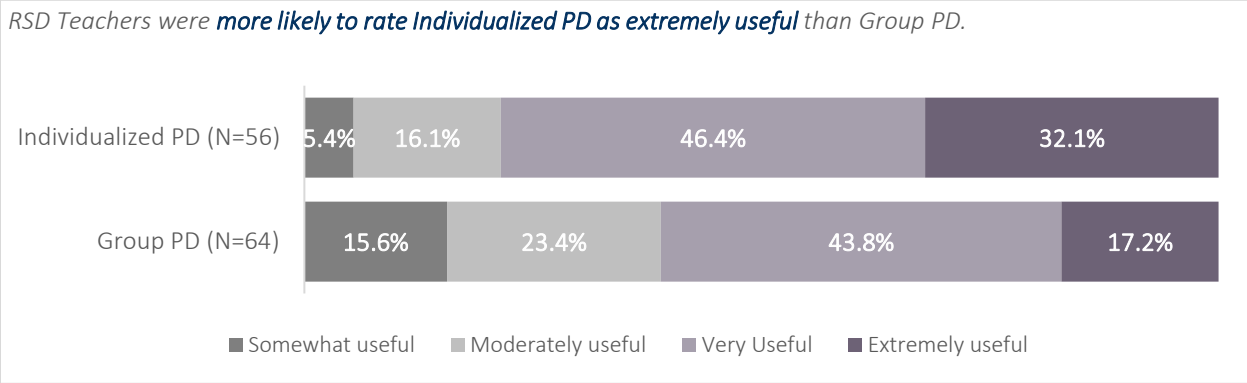


Figure 32. RSD teacher ratings of how useful professional development was, by type.

Respondents were asked if they felt the PD received through the grant differed from general PD support for adapting to distance learning. Less than 20% of respondents were able to definitively state that it was or was not discernable.

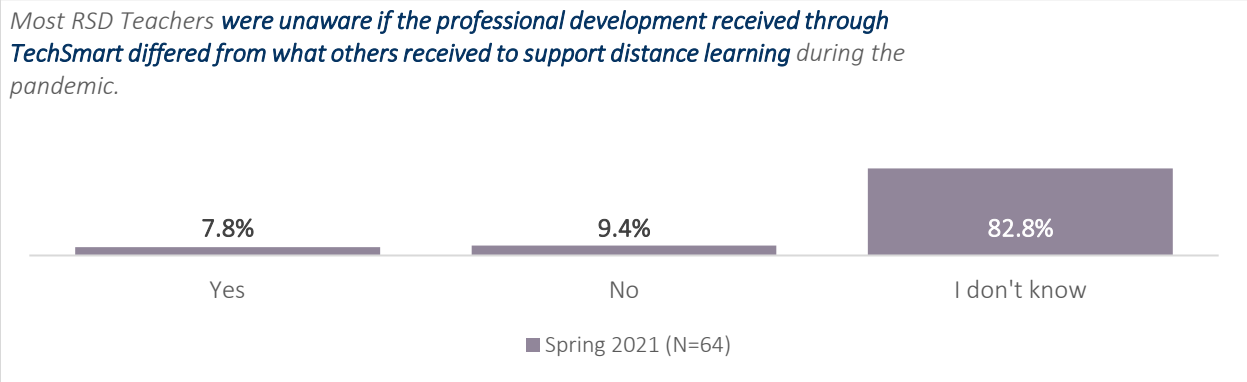


Figure 33. RSD teacher belief that TechSmart-provided professional development differed from what others received to support distance learning in the COVID-19 pandemic.

Teacher focus groups provided added opportunity to learn about the PD received. Teachers described having a consistent schedule of weekly technology-based PD led by the Instructional Technology Coach at the school. Termed "Late Start Mondays," these were mornings dedicated to building teacher knowledge on how to use various platforms, applications, or other topics the Coach felt were important. In addition to this standing PD time, teachers were also given the option to have one-on-one check-ins or appointments when additional assistance was needed.

Focus group participants felt the approach to PD in the past school year was collaborative. Not only did individuals feel supported by coaching, they described being able to find "experts" among their peers who could help support continued learning and departmental growth. One teacher specifically stated how the TechSmart grant enabled this capacity-building:

I would add, this being on the grant's nickel, we've really built the capacity for teacher leaders that we didn't have around tech integration objectives early on. A lot of the training was done by the people on this call and that was not the case three years ago… I would make the argument that we were probably better positioned than other districts that might not have had this grant in place prior.

Further, having received the grant for multiple years aided in this growth: "The first year there was Gary. That was it. He was the expert, he was our ringleader and over the past five, six years. Now, this is just a fraction of who I would consider to be technology experts in our building. It's really expanded to have a solid 25 or 30 teachers who can really lead targeted PD in certain areas."

The Instructional Technology Coach described how there was an initial learning curve in determining how different platforms could best support teachers. This teacher-centered approach resulted in strategizing sequential training around usability: "We tried to be really connected with what people needed as we roll things out and what students needed. Once the teachers decided on the platform, then we could say, okay, where and when, and how are we going to show kids this, then they can use it?" This approach resonated with teachers: "I appreciated that there was a lot of thoughtfulness in different levels of comfort that our staff has. There was beginner – you just need the nuts and bolts – and then a little bit more intensive training."

KEY FINDINGS	How is professional development impacting teacher instruction?
	**Teachers shared generally positive views of the professional development (PD) model, describing how critical having access to technology was for their instruction in the past year.**
	**Teachers increasingly planned technology-related activities in their classroom with the goal of supporting student skills development and actively sought out activities that promote problem-solving.**

The Spring 2021 survey asked how effective the professional development (PD) model has been in impacting teacher instruction. Twenty-nine teachers responded to this open-ended question, sharing generally positive views of the PD model (n=18). Teachers described how critical having access to technology was to their instruction in the past year, with a few articulating long-term plans for continued integration of technology in their teaching once in-person teaching resumes. To a lesser extent, some teachers (n=6) stated that they were unaware of any TechSmart-specific PD activities. Four respondents provided more neutral or ambivalent feedback about the PD or technology received. A sample of responses for each response theme is shown below in *Table 9*.

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?	
Positive (n=18)	*"Very. Couldn't have done CDL without it. And I have many more options moving forward when back to in-person instruction."* *"Very effective. I have been able to integrate technology into my lessons more than ever before and I have a collection of material online now that can easily be done in-person."* *"It was helpful."* *"My instruction has really changed over the past year to include technology."* *"It has totally changed my teaching."*
Unaware of TechSmart Activities (n=6)	*"I cannot answer this question as I don't know that I have received TechSmart brand training."* *"I do not know if any TechSmart specific PD has been done."* *"I am unaware of any specific TechSmart Professional Development."*
Ambivalence/ Feedback (n=4)	*"None, really. I received a laptop, which has been useful as it can go back and forth, but it hasn't changed my instruction."* *"Hard to tell during CDL when instruction HAD to be changed and become more reliant on technology."*

Table 9. Feedback on Grant 2 PD model, Spring 2021 survey data

Teachers who participated in Grant 2 also reported the extent to which they are integrating technology into various instructional practices at baseline and in the Spring of 2021. Using a 7-point scale, indicating the extent to which a statement was True of [Them], respondents largely agreed that they have altered instruction based on new applications and research, that they integrate new research into teaching when using technology, and that they seek out activities promoting problem-based learning. Figure 34 shows a substantial increase in all three (25% to 49%) categories between baseline and year-end survey data.

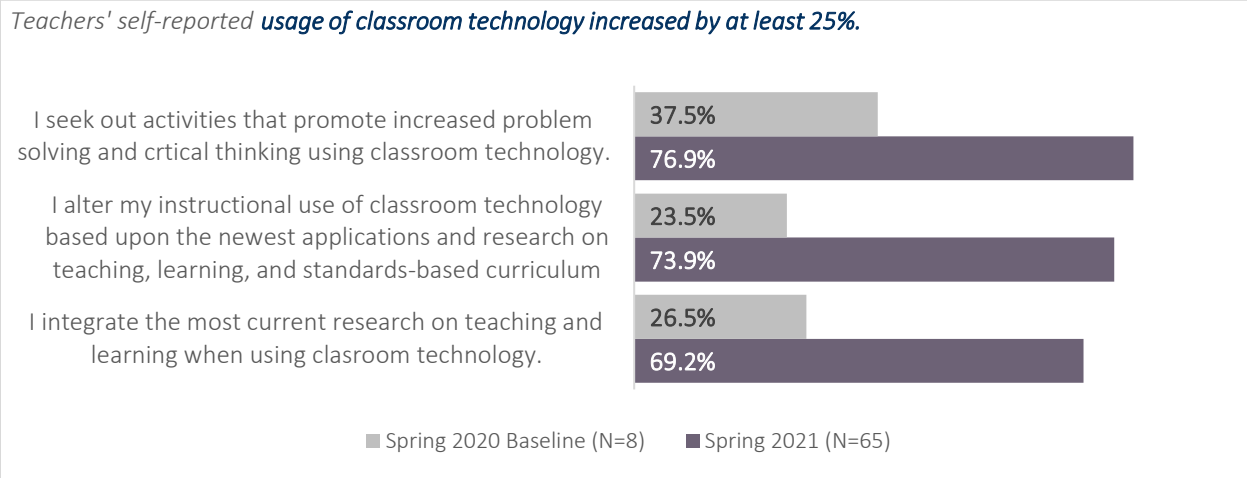


Figure 34. RSD teacher self-assessment of usage of technology in the classroom (% True of Me/ Very True of Me)

Similar to the Spring 2019 baseline survey, teachers rated their current technology skill level on year-end surveys by indicating which technological proficiency level felt most aligned with their skill set, shown below.

TECHNOLOGY SKILL LEVEL	
1	I get someone else to do technology-based tasks for me.
2	I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.
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.
4	I use a variety of technology tools and I use them efficiently for all aspects of my job.
5	I use technology efficiently, effectively, and in creative ways to accomplish my job.

Almost all teachers (98.5%) reported efficiency when using technology to perform tasks. Further, more than three-quarters of respondents (77.0%) indicated that their current skill set allowed them to meet basic productivity needs, with many having the added ability to use a range of tools to support professional needs. An additional 21.5% of RSD teachers surveyed indicated they felt proficient enough with technology that they were able to think creatively about how tools can be used in their work.

By the end of school year 2020-2021, ***teachers felt their technological skill sets included a strong ability to use technology effectively and efficiently*** *(a combined 77%), with many (22%) able to think creatively about how tools can be used in their class*

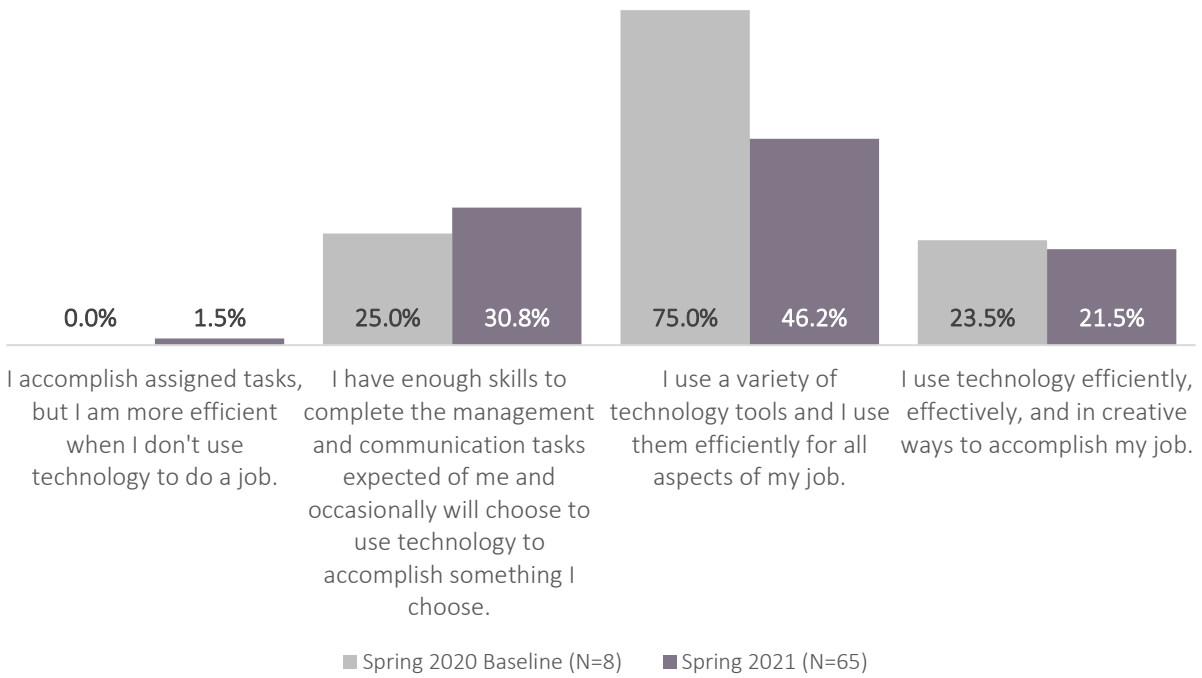


Figure 35. RSD Teacher self-rating of technological skill level (%A Moderate Amount/ A Great Deal)

Interviews with RSD leadership provide insights on the professional development (PD) program model for SY 20-21. Both RHS and RLA shared an Instructional Technology Coach that was focused on supporting PD activity relative to device platforms and common apps used in both schools. PD was structured around these shared needs for teachers from both schools together. Added, more focused PD was available at the department and individual level upon request. All trainings were designed to support beginner, intermediate, or advanced needs. Leadership felt: "It was beneficial to having an Instructional Technology Coach that will help support teachers with the integration of the technology, whether it's the device, the platform, and then also taking it to that next step of tying it in with instructional strategies and best practices."

KEY FINDINGS	What new instructional strategies are teachers reporting?
	Teachers most commonly reported using online platforms and tools for remote instruction.
	Blended learning strategies were leveraged during distance learning and are something many teachers intend to continue when in-person instruction resumes.
	District leadership provided anecdotal support for the benefit of new instructional strategies, focusing on how adaptable and creative teachers were when developing curriculum.

In the year-end survey, RSD teachers provided examples of technology-related instructional strategies that they believe have been effective in their classroom instruction and rated the strategies on a scale of one to five, with five being the most effective. Table 2 shows the ways in which teachers described use of technology, along with average effectiveness ratings. Teachers most commonly reported using online learning platforms and tools for remote instruction, such as NearPod and Schoology.

Instructional Supports	Effectiveness Rating
Additional Digital Learning Platforms and Devices (N=20)	4.4
Online lessons and learning activities (N=14)	4.1
Differentiating Instruction (N=12)	3.8
Small Group Work (N=10	3.3
Assessment (N=7)	4.1
Student Support (N=7)	4.3
Microsoft Office Programs (N=5)	4.0

Table 10. Effectiveness ratings for self-reported examples of technology related instruction strategies RSD teachers are using in their classrooms, Spring 2021 survey data

Leaders briefly touched on instructional strategies in their interviews, and predominately focused on how teachers adapted to creative use of the available technology when developing curricula. One of the leaders shared that they felt accessibility to technology helped push teachers into new or different ways of engaging students in their curriculum. They described it as "the catalyst to get them moving."

Teachers provided more insights on the range of instructional strategies in use throughout their conversation, including new strategies specifically implemented for remote teaching. One teacher shared that the pandemic not only spurred the use of a blended model, but it is also a strategy they planned to continue using: "I found that the modern classroom instructional model worked really well, which is

basically amping up the blended classroom. It transferred really well to distance learning, but it was designed for in-person learning. That is something I will be continuing when we return to the building next year." While integrating a blended learning strategy was new for some teachers, others were more familiar with the approach: "I've been doing that for a while in the classroom. I just see a different level of importance to it now, and really getting the small bits, the foundational information, out in small chunks and then using your class time to really delve a little bit deeper. We have some more targeted instruction for smaller groups, so you can pinpoint a little bit easier what people are struggling with."

Leveraging online learning management systems towards stronger student engagement was another common theme when discussing instructional strategies. Specifically, teachers and Instructional Technology Coaches spoke about how preparing and posting content was one of the top skills developed this year. While teachers acknowledged that it could be a lot of front-end prep work, once developed it became much easier to implement differentiation, gather performance data, and support students.

> *I think more teachers are going to be using that to their benefit. Once they realize that it is a little bit more work upfront, that the work level backs off and you can really spend your time worrying about students and their individual weaknesses and bringing them up to speed where needed.*

Sustaining and continuing to build on strategies learned came to the forefront of teachers' minds as they thought about classroom learning long-term. As one teacher described, knowing how to post content online was just the beginning; the next hurdle is adapting strategies developed during distance learning for in-person engagement.

> *I think actually the big moves on this are coming up in the next couple of years where we've figured out how to get content online quickly. Teachers know how to do it. Now, how do I run a blended classroom? I think is really the next step. I'm guessing that it's a pretty small minority at our school have the tools and know-how to do that. I personally tried running a flip classroom and it was a total bust.*
>
> *I'm really looking forward to trying again because my strategies and tools are different. My students' expectations around learning are different. It feels like it's a whole new world, let's try something again.*

Additional changes teachers were considering included scaling back curriculum content, altering grading practices or modes of performance assessment, and maintaining peer-to-peer support through message boards.

KEY FINDINGS	How are the new instructional strategies impacting student engagement?
	Teachers continued to self-report strong feelings of confidence in their abilities to engage students through use of technology, increasing slightly from baseline data.
	Student engagement was observed to be low, but teachers were empathetic to student experiences and spoke about ways they adapted to best support students at whatever level of engagement they were able to achieve

While student survey data were not collected in SY 20-21, teachers were asked to indicate the extent to which they agreed with a statement about confidence engaging student with technology. The percentage of Grant 2 teachers who reported confidence in their ability to engage students (rating Agree or Strongly Agree) through the use of technology increased from baseline to May 2021.

*RSD teacher **confidence in their ability to engage sutdents with techonology increased by 27%** between Spring 2020 and Spring 2021.*

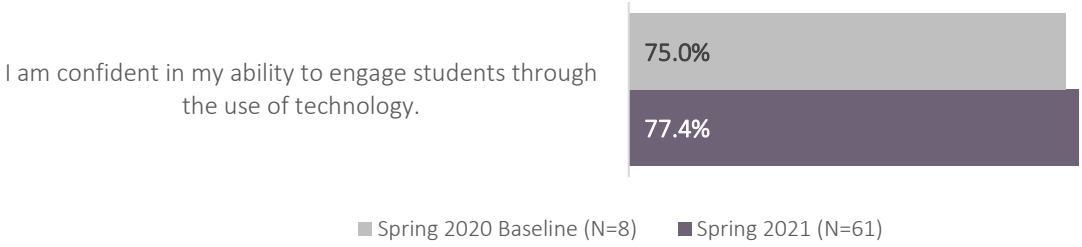


Figure 36. RSD teacher confidence in personal ability to engage students (% Agree/Strongly Agree)

There was resounding agreement throughout teacher focus groups that student engagement was low during SY 20-21. However, teachers were empathetic to students' experiences and spoke about ways they adapted to best support students at whatever level of engagement they were able to achieve. One teacher spoke about how their students needed more of an overview on the OneDrive platform, the Schoology platform, and how to submit assignments. Reiterating this, one participant stated, "One of the things that was reinforced for all of us this year is that technology isn't a panacea. What we've seen is clearly if you just hand a kid a Chromebook and say, do this course, that's not effective—that's not going to work."

While active student participation in virtual classrooms may be low, it does not always mean that students are disengaged. One teacher shared how their students did not always show up to class, but because of the learning management systems, they were still completing coursework. The flexibility for students to be able to do this was seen as a positive:

> *I've got students who don't come to class, but they do all their work because they have access to it. Just that whole thing of providing access to it at any given hour, which we know that you get emails at 2:00, 4:00 in the morning sometimes from students, providing that access is huge. I think it's going to be a real game changer once we're back.*

Scaffolding instruction appeared to have mixed results on student engagement. Some teachers felt this helped keep students learning at the appropriate content level for their individual needs, rather than pulling students up/down to meet students with more/less support needs. Others described how the social-emotional toll of the pandemic eventually became the dominant factor in student engagement.

> *Even though we tried to make it more accessible from the bottom up of ability level, it didn't really pan out that way. A lot of those kids just disconnected and were unengaged during the course of the year.*

> *I'm not going to say that's a blanket statement, because I do have kids who have struggled and recovered. Towards the last month of school, engagement just fell off the cliff a bit. Even with my kids who you'd expect to be there, my avid students who are 12th graders, they just are on their own page right now and just missing school really, really badly more for the personal connections than anything.*

One teacher spoke about how they feel the students who did show up or interact were actually engaging well and succeeding—the challenge was getting students motivated enough to use the technology: "A lot of kids are really succeeding this way also. I don't want to be at all negative. It's just getting them there to begin with has been the extra challenge, not so much of what to do once we have a full class going on. It's more of 'How do we get these kids to actually open their Chromebook and log into class every day' when they need to be there?"

KEY FINDINGS	Are the new instructional strategies showing promise for improving academic outcomes?
	The evaluation team compared grade point averages and credit attainment by subject area (language arts, math, science, and social studies) across a Historical Comparison Group from SY 16-17 and the SY 20-21 Treatment Group.
	In general, grade point averages fell from Fall to Spring across all subject areas and across the Treatment and Historical Comparison Groups. However, the mean Treatment Group subject grade point average was higher than the mean Historical Comparison Group subject grade point average in many cases.
	In almost all cases, Treatment Group students earned more credits on average in Fall than Spring across subject areas. The average number of credits earned per subject area was generally lower in the Treatment Group than the Historical Comparison Group, perhaps in part due to the substantial impacts of the COVID-19 pandemic.

Student Achievement Data

Analyses of student achievement data for SY 20-21 targeted understanding the impacts of RSD's second TechSmart grant, which began in January 2020. Because RSD's first TechSmart grant focused on grades 7 through 9 outcomes and RSD's second TechSmart grant focuses on high school outcomes, many of the students who are included in the second grant's Treatment Group were already exposed to TechSmart during their earlier years of school (i.e., the first grant). As such, having a true comparison group (i.e., one comprised of students who had not been exposed to TechSmart) was not possible, and no other high schools could provide relevant and concurrent comparison data. Instead, to create a comparison group, the evaluation team requested student achievement data for a historical comparison group of students who were in high school in SY 16-17, SY 17-18, SY 18-19, and SY 19-20 (i.e., the four years prior to RSD's second TechSmart grant). In this report, data are presented for the Treatment Group in SY 20-21 and for the Comparison Group in SY 16-17, representing one year of data for each group. In subsequent reports, additional years of data will be added for both groups. *Table 11* shows the number of students per grade level in each group. Note that not every student shown in the table had data for grades or credit attainment, so sample sizes vary for each specific analysis.

Grade Level	Treatment Group (SY 20-21)	Historical Comparison Group (SY 16-17)
Grade 9	N = 802	N = 736
Grade 10	N = 729	N = 723
Grade 11	N = 657	N = 688
Grade 12	N = 762	N = 657

Table 11. Sample sizes for SY 20-21 Treatment Group and SY 16-17 Historical Comparison Group

To examine student achievement outcomes, PRE analyzed the grades and number of credits students received, comparing student achievement in math classes with student achievement in language arts,

science, and social studies classes. Math was selected as the primary focal area based on the goals of RSD's TechSmart grants. Grades and credits were considered by semester. For grades, each student's average grade in each subject area was computed for Fall and Spring, using RSD's grade point system: A=4, B=3, C=2, D=1, and F=0. Advanced Placement and some other classes, such as classes taken for college credit, were assigned on a separate system, per RSD's instructions: A=5, B=4, C=3, D=1, and F=0 (i.e., grades below a C do not earn additional credit). Scores other than a letter grade (e.g., pass/fail, incomplete) were removed from the data file prior to analysis. Grades for summer classes were also removed from the data file prior to analysis. For credit attainment, each student's credits per semester were totaled for Fall and Spring in each subject area.

Before conducting student achievement data comparisons, PRE examined the demographic breakdown of the Treatment Group in SY 20-21 and the Historical Comparison Group in SY 16-17. Figure 37 shows students' race/ethnicity for the Treatment Group in SY 20-21 and the Historical Comparison Group in SY 16-17. While the Comparison Group had a higher percentage of white students and a lower percentage of Hispanic/Latino students, the overall proportions of each racial/ethnic group were relatively similar. Figure 38 and Figure 39 show the proportions of Special Education (SPED) and Limited English Proficiency (LEP) students, respectively, across the Treatment Group in SY 20-21 and the Historical Comparison Group in SY 16-17. While the Comparison Group had slightly higher proportions of SPED and LEP students, the differences between groups were less than four percentage points.

*The **Treatment Group had a somewhat higher proportion of Hispanic/Latino students** and a somewhat lower proportion of white students.*

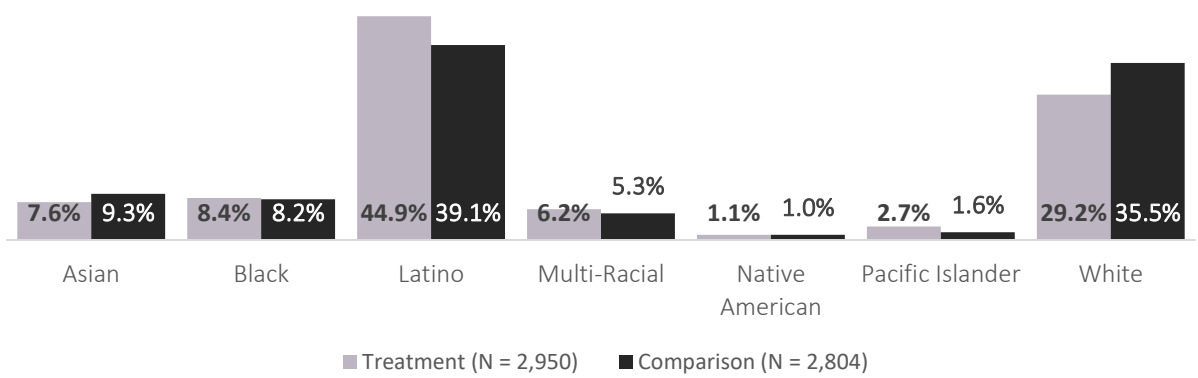


Figure 37. Race/Ethnicity of Treatment (SY 20-21) and Comparison (SY 16-17) students.

*The **Treatment Group had a slightly higher proportion of SPED students than the Comparison Group**, but the difference was small.*

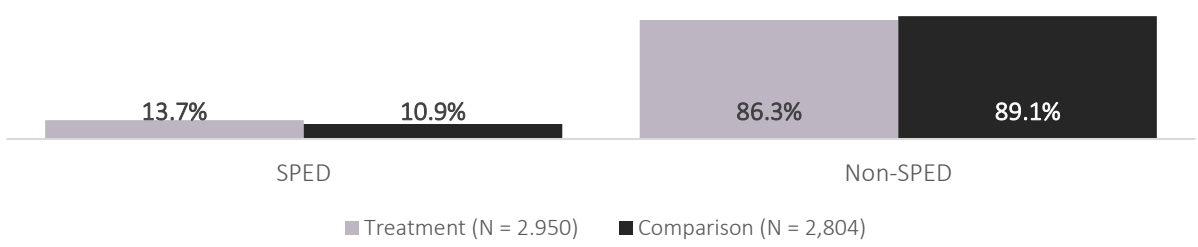


Figure 38. Special Education status of Treatment (SY 20-21) and Comparison (SY 16-17) students.

*The **Treatment Group had a slightly higher proportion of LEP students than the Comparison Group**, but the difference was small.*

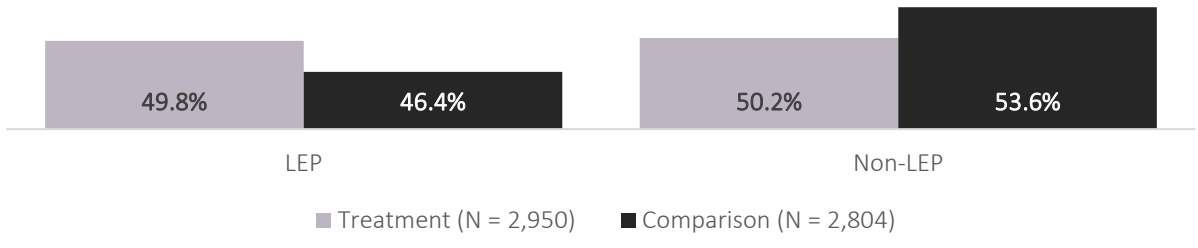


Figure 39. English proficiency status of Treatment (SY 20-21) and Comparison (SY 16-17) students.

To examine differences between the Treatment Group and Historical Comparison Group in student achievement, the evaluation team compared grade point average and credit attainment by subject area and grade level. The "Fall" time point represents Fall 2020 for the Treatment Group and Fall 2016 for the Historical Comparison Group, while the "Spring" time point represents Spring 2021 for the Treatment Group and Spring 2017 for the Historical Comparison Group. **Tables 4 through 7 detail RSD students' grade point averages in each subject area**, with Table 12 representing 9th grade students, Table 13 representing 10th grade students, Table 14 representing 11th grade students, and Table 15 representing 12th grade students. Note that the number of students with available grades for social studies classes was very low (less than 11 per semester in each grade), due to the limited social studies data provided by RSD. Science grades were also limited in some cases, especially 9th grade. As such, **social studies grades should be considered with caution, as the very small sample size substantially limits generalizability of any conclusions.**

In general, grade point averages fell from Fall to Spring across all subject areas, with the exception of Language Arts in the Historical Comparison Group, which increased from Fall to Spring in all but 11th grade, and Math in the Historical Comparison Group, which stayed approximately level from Fall to Spring. However, the mean Treatment Group subject grade point average was higher than the mean Historical Comparison Group subject grade point average in many cases, including:

- 9th grade language arts, math, and science in both Fall and Spring
- 10th grade language arts in both Fall and Spring and 10th grade math in Fall
- 11th grade language arts in both Fall and Spring and 11th grade math and science in Fall
- 12th grade language arts in Fall

Grade 9	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	3.05 (n = 454)	2.62 (n = 438)	2.20 (n = 686)	2.35 (n = 664)
Math	2.50 (n = 560)	1.83 (n = 591)	1.79 (n = 676)	1.79 (n = 649)
Science	3.29 (n = 14)	3.00 (n = 12)	3.07 (n = 14)	2.47 (n = 16)
Social Studies	2.86 (n = 7)	2.86 (n = 7)	3.62 (n = 8)	3.55 (n = 11)

Table 12. Mean RSD Grade 9 grade point averages per subject area by semester.

Grade 10	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	3.12 (n = 369)	2.78 (n = 394)	2.29 (n = 682)	2.47 (n = 659)
Math	1.98 (n = 538)	1.64 (n = 634)	1.72 (n = 678)	1.72 (n = 639)
Science	2.80 (n = 20)	1.92 (n = 25)	2.94 (n = 71)	2.27 (n = 92)
Social Studies	2.12 (n = 8)	—	3.89 (n = 9)	3.89 (n = 9)

Table 13. Mean RSD Grade 10 grade point averages per subject area by semester.

Grade 11	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	2.97 (n = 434)	2.43 (n = 446)	2.39 (n = 600)	2.36 (n = 619)
Math	2.04 (n = 514)	1.72 (n = 487)	1.84 (n = 621)	1.75 (n = 582)
Science	2.92 (n = 379)	2.24 (n = 395)	2.26 (n = 531)	2.40 (n = 526)
Social Studies	—	3.17 (n = 6)	3.60 (n = 10)	3.82 (n = 11)

Table 14. Mean RSD Grade 11 grade point averages per subject area by semester.

Grade 12	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	2.84 (n = 509)	2.54 (n = 502)	2.82 (n = 534)	2.92 (n = 470)
Math	1.99 (n = 449)	1.80 (n = 376)	2.27 (n = 464)	2.25 (n = 329)
Science	2.55 (n = 254)	1.97 (n = 273)	2.70 (n = 335)	2.53 (n = 278)
Social Studies	—	—	—	—

Table 15. Mean RSD Grade 12 grade point averages per subject area by semester.

Tables 8 through 11 detail RSD students' credit attainment in each subject area, with Table 16 representing 9th grade students, Table 17 representing 10th grade students, Table 18 representing 11th grade students, and Table 19 representing 12th grade students. Note that the number of students with available credit totals for social studies classes and 9th grade science classes was once again low, due to the limited social studies data provided by RSD. As such, **social studies credit attainment and 9th/10th grade science credit attainment should be considered with caution, as the very small sample sizes once again substantially limit generalizability of any conclusions, similar to grade point averages presented above.**

In almost all cases, Treatment Group students earned more credits on average in Fall than Spring across subject areas. There was much more variety in the Historical Comparison Group, with students earning (on average) more credits in Fall in some cases, more credits in Spring in some cases, and equal credits in both semesters in other cases. **The average number of credits earned per subject area was generally lower in the Treatment Group than the Historical Comparison Group, perhaps in part due to the substantial impacts of the COVID-19 pandemic.**

Grade 9	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	.35 (n = 786)	.28 (n = 783)	.42 (n = 701)	.42 (n = 675)
Math	.34 (n = 773)	.25 (n = 767)	.35 (n = 691)	.35 (n = 664)
Science	.44 (n = 17)	.38 (n = 16)	.47 (n = 18)	.46 (n = 19)
Social Studies	.43 (n = 14)	.39 (n = 13)	.44 (n = 12)	.46 (n = 13)

Table 16. RSD Grade 9 average credit totals per subject area by semester.

Grade 10	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	.32 (n = 712)	.29 (n = 708)	.40 (n = 696)	.42 (n = 670)
Math	.27 (n = 703)	.27 (n = 697)	.34 (n = 693)	.35 (n = 655)
Science	.36 (n = 23)	.27 (n = 29)	.44 (n = 83)	.40 (n = 95)
Social Studies	.43 (n = 15)	.34 (n = 16)	.50 (n = 14)	.50 (n = 13)

Table 17. RSD Grade 10 average credit totals per subject area by semester.

Grade 11	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	.35 (n = 640)	.30 (n = 626)	.47 (n = 672)	.46 (n = 650)
Math	.34 (n = 621)	.29 (n = 597)	.36 (n = 655)	.36 (n = 620)
Science	.39 (n = 546)	.32 (n = 530)	.50 (n = 556)	.50 (n = 531)
Social Studies	.59 (n = 11)	.54 (n = 12)	.50 (n = 14)	.50 (n = 16)

Table 18. RSD Grade 11 average credit totals per subject area by semester.

Grade 12	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	.40 (n = 707)	.39 (n = 675)	.57 (n = 633)	.57 (n = 545)
Math	.33 (n = 589)	.29 (n = 522)	.46 (n = 530)	.54 (n = 423)
Science	.35 (n = 362)	.32 (n = 327)	.52 (n = 369)	.50 (n = 289)
Social Studies	.38 (n = 8)	.39 (n = 9)	.56 (n = 9)	.56 (n = 9)

Table 19. RSD Grade 12 average credit totals per subject area by semester.

KEY FINDINGS	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)?
	Subject area grade point averages and credit attainment averages generally did not yet indicate an impact of RSD's second grant on students from at-risk subgroups. With some exceptions, Treatment Group students from at-risk subgroups on average saw lower grades and fewer credits attained in Spring 2021 than Fall 2020. It is likely that the impacts of the COVID-19 pandemic were not able to be overcome in SY 20-21 by TechSmart funding alone.
	One promising key finding was that for the Fall semester, Treatment Group students showed higher grades, on average, than the Historical Comparison Group across all three at-risk subgroups examined. This may indicate that RSD's first TechSmart grant continued impacting students from at-risk subgroups in their high school years, particularly in language arts and math, where grades were consistently higher in the Treatment Group than the Comparison Group.
	Teachers reported using at least two forms of integrated technology in their instruction to specifically support students in at-risk subgroups.
	Student engagement and performance data gathered through learning management platforms allowed teachers to develop new approaches to grading, differentiating performance metrics to individual student needs.

Student Achievement Data

To better understand whether technology-supported instructional practices are showing promise for improving academic outcomes with at-risk student subgroups, mean grade point averages and credits earned were examined by subgroup for Treatment Group and Historical Comparison Group students. For these analyses, all grade levels were combined to provide a larger sample size.

Limited English Proficiency (LEP)

Table 20 presents average grades for students with limited English proficiency (LEP) in the Treatment Group (SY 20-21) and Historical Comparison Group (SY 16-17). Social studies data were not available for enough students to facilitate comparison. However, **for all other subject areas—language arts, math, and science—Treatment Group students showed higher grade point averages in Fall than did Historical Comparison Group students.** The trend carried through to Spring for language arts, with higher grades on average for LEP students in the Treatment Group than the Comparison Group, but not for math and science. **Grades were lower on average in Spring than Fall for LEP Treatment Group students across**

language arts, math, and science, whereas there was no consistent pattern for Historical Comparison Group LEP students.

LEP Students	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '16	SPRING '17
Language Arts	2.92 (n = 884)	2.55 (n = 876)	2.36 (n = 1,147)	2.49 (n = 1,133)
Math	2.08 (n = 1,080)	1.70 (n = 1,082)	1.84 (n = 1,168)	1.81 (n = 1,081)
Science	2.82 (n = 330)	2.10 (n = 349)	2.43 (n = 406)	2.43 (n = 392)
Social Studies	1.75 (n = 8)	—	—	—

Table 20. RSD grade point averages for LEP students per subject area by semester.

Table 21 shows LEP students' credit attainment across subject areas in the Treatment and Comparison Groups. LEP students in the Treatment Group earned more credits in the Fall than the Spring. The Historical Comparison Group exceeded the Treatment Group in number of credits earned at both time points in all subject areas (note the small sample size for social studies credits did not allow for comparison).

LEP Students	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '16	FALL '20
Language Arts	.36 (n = 1,436)	.32 (n = 1,411)	.46 (n = 1,247)	.47 (n = 1,215)
Math	.32 (n = 1,368)	.27 (n = 1,322)	.36 (n = 1,224)	.39 (n = 1,171)
Science	.38 (n = 483)	.32 (n = 456)	.50 (n = 430)	.48 (n = 397)
Social Studies	.47 (n = 16)	.35 (n = 17)	—	—

Table 21. RSD credit attainment for LEP students per subject area by semester.

Special Education (SPED)

Table 22 presents average grades for SPED students across the Treatment and Comparison Groups. For language arts and math grades, SPED students in the Treatment Group showed higher average grades than Historical Comparison Group SPED students across both Fall and Spring. The same was true in Fall for science grades, with the Treatment Group average higher than the Comparison Group average, but not in Spring or in social studies grades (note limited sample size for social studies relative to other subject areas). Across both groups, SPED students' average grades decreased from Fall to Spring for language arts, math, and science.

SPED Students	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '16	FALL '20
Language Arts	2.75 (n = 226)	2.61 (n = 256)	2.29 (n = 249)	2.10 (n = 251)
Math	2.55 (n = 189)	2.26 (n = 242)	1.95 (n = 220)	1.89 (n = 195)
Science	2.88 (n = 86)	2.22 (n = 97)	2.31 (n = 100)	2.26 (n = 107)
Social Studies	2.45 (n = 20)	2.60 (n = 20)	3.74 (n = 31)	3.76 (n = 33)

Table 22. RSD grade point averages for SPED students per subject area by semester.

Table 23 shows credit attainment for students in special education (SPED) across both the Treatment and Comparison Groups. SPED students in the Treatment Group earned slightly more credits in the Fall than

Spring, with one exception: math credits earned were equivalent across both time points, perhaps indicating some promise of the math-focused efforts of RSD's TechSmart grants. However, SPED students in the Treatment Group earned fewer credits than SPED students in the Historical Comparison Group across all subject areas and both time points.

SPED Students	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '16	SPRING '17
Language Arts	.34 (n = 382)	.32 (n = 388)	.44 (n = 285)	.46 (n = 263)
Math	.31 (n = 336)	.31 (n = 328)	.35 (n = 245)	.39 (n = 217)
Science	.35 (n = 130)	.31 (n = 130)	.41 (n = 128)	.46 (n = 113)
Social Studies	.46 (n = 47)	.41 (n = 49)	.50 (n = 48)	.50 (n = 50)

Table 23. RSD credit attainment for SPED students per subject area by semester.

Students of Color

Table 24 shows average grades for students of color across the Treatment Group and the Historical Comparison Group. Sample sizes were once again limited for social studies grades. **At the Fall time point, students of color in the Treatment Group showed higher average grades than students of color in the Comparison Group for language arts, math, and science. Students of color in the Treatment Group also showed higher average grades for the Spring timepoint in language arts, but not in math, science, or social studies**. Grades decreased on average from Fall to Spring in the Treatment Group, but there was no consistent pattern of change from Fall to Spring in the Historical Comparison Group.

Students of Color	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '16	FALL '20
Language Arts	2.87 (n = 1,198)	2.46 (n = 1,197)	2.27 (n = 1,588)	2.36 (n = 1,551)
Math	2.02 (n = 1,451)	1.62 (n = 1,491)	1.76 (n = 1,577)	1.71 (n = 1,429)
Science	2.67 (n = 460)	1.98 (n = 488)	2.33 (n = 602)	2.27 (n = 578)
Social Studies	2.11 (n = 9)	3.29 (n = 7)	3.88 (n = 17)	3.74 (n = 19)

Table 24. RSD grade point averages for students of color per subject area by semester.

Table 25 shows credit attainment data for students of color in the Treatment and Comparison Groups. **Students of color from the Treatment Group had fewer credits across most subjects and time points than students of color from the Historical Comparison Group, and students of color in the Treatment Group earned fewer credits in Spring than Fall.**

Students of Color	Treatment Group		Historical Comparison Group	
	FALL '20	SPRING '21	FALL '16	SPRING '17
Language Arts	.34 (n = 2,014)	.30 (n = 1,983)	.45 (n = 1,732)	.46 (n = 1,648)
Math	.30 (n = 1,913)	.26 (n = 1,852)	.35 (n = 1,664)	.37 (n = 1,546)
Science	.35 (n = 680)	.29 (n = 641)	.49 (n = 654)	.48 (n = 593)
Social Studies	.50 (n = 23)	.39 (n = 26)	.49 (n = 29)	.50 (n = 30)

Table 25. RSD credit attainment for students of color per subject area by semester.

Survey and Focus Group Data

The Spring 2021 survey invited teachers to provide examples of the ways in which they used technology *to support instruction with at-risk subgroups* (e.g., students of color, ELL/LEP, SPED, low SES) during distance learning. Twenty-five teachers responded to this open-ended question, with six key themes emerging in the data. Almost all responses indicated the use of two or more examples used in their instruction. Teachers most frequently (n=11) described modifying lesson plans, assignment instructions, or assessment expectations for students in need. They often described how the use of platforms, like Nearpod, made it possible for them to do so discreetly. The second most often listed example (n=9) was making time for direct communications with students via meetings, chats, screensharing, and coaching. An additional nine teachers mentioned increased usage of audio/visual components in their instruction. Seven teachers wrote that they resource and share additional content-specific resources to help students understand content, often through the Desmos platform. Three teachers use translation services, and three teachers integrate captioning, read-aloud, or gesture-based communications options. A sample of responses for each response theme is shown below in Table 26.

Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES) during distance learning.	
Modify Assignment Instructions or Expectations (n=11)	*"Options and choices for assignments within application or technology platform. Examples of work and how to demonstrate expectations of work."* *"Using our LMS to assign modified assignments and assessments to students with modified diplomas and IEPs."* *"As mentioned above, giving students technology and access to online learning platforms allows me to customize for subgroups discreetly."*
Private Meetings/Communications and Coaching (n=9)	*"I enjoy being able to use the private chat with students to check-in and make sure they are clear on things in a subtle way."* *"Utilizing online resources that support learning, sharing materials and resources, meeting 1-on-1 with students remotely during office hours and after class."* *"Screenshare to help students with instructions for activities and group work, apps such as Nearpod for engagement and formative assessment to determine student comprehension and inform my teaching for effective student learning."*

Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES) during distance learning.	
Audio/Visual Components (n=9)	*"Music, video, image integration that is current, relevant, and in multiple languages. Frequent SEL activities and check-in's for student needs."* *"Nearpod has been great for checking for understanding during a video presentation. I have also used translation applications."*
Sharing Additional Resources (n=7)	*"We use Desmos assignments for Math 2. The assignments are far superior to the materials we were using prior to this year. Students are able to explore and understand the materials more effectively. Teachers are able to monitor progress more effectively."* *"I embed a link into Desmos activities. The link brings students to a webpage to which I add supplemental materials when the unit progresses."*
Translation Services and Options (n=3)	*"Provided ELL students with translations, live translations, and the option to complete their assignments in the language of their choice. Used translators over Zoom meetings with families."*
Captioning, Read-Aloud, or Gesture-Based Communication Options (n=3)	*"I only teach SPED - I have been doing distance learning with students where only one in the group can use words he speaks to communicate. All others are using assistive tech or gestures to communicate."* *"I am a SPED teacher, so everything I do is for at-risk subgroups. Accommodations -- Computer reads something to student; Student dictates and uses speech to text writing technology;"*

Table 26. Ways technology supported instruction for at-risk subgroups during remote learning, Spring 2021 survey data

Next, the survey asked teachers to provide examples of the ways in which they used technology to support instruction with at-risk subgroups (e.g., students of color, ELL/LEP, SPED, low SES) *generally*. Thirty-three teachers responded to this prompt. Many responses echoed themes in the preceding section, though some had added nuance (diversifying content in addition to modifying assignments or instruction and using online platforms or supplemental tools to house additional resources), and a few new themes emerged (self-paced options, modeling assignments, and reference to previous comments). A sample of responses for each of the nine themes is shown below in Table 27.

Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES).	
Online Platforms or Supplemental Tools (n=13)	*"Mostly what has worked for me is YouTube and Clever. I have also tried our curriculum N2Y's online resources, ABC Mouse, Moby Max... but just YouTube is really working."* *"Kahoot"* *"Assignments on Adobe Spark, Padlet, etc."* *"Keeping all materials located in Schoology in one place."*
Modify Assignment Instructions or Expectations, and Diversify Content (n=12)	*"Differentiated tools for assessments, checks for understanding, and feedback."* *"Independent, individualized instruction in grammar, spelling, etc. Extensions of learning, too."* *"Tailored assignments based on need and level of understanding (videos, zoom from a specific location outside of the classroom)."* *"In Desmos, I have set up questions at different levels for students to be successful."*
Private Communications, Coaching, and Monitoring (n=5)	*"Differentiated tools for assessments, checks for understanding, and feedback."* *"I can meet one-on-one with students and share resources."*
Expanded Communications Options (Translations, Captioning, Read-Aloud, Gesture-Based) (n=3)	*"I have used technology to support SPED student accommodations: Microsoft Word has Immersive Reader and Speech to Text features that allow students another way of responding to reading and writing tasks."* *"Translation programs to communicate with families."*
Audio/Visual Components (n=3)	*"Support videos"*
Self-Paced Instruction (n=2)	*"Students that were at risk were able to work at their own pace. Also, the breakout rooms allowed for more one on one instruction."*
Modeling Assignments (n=2)	*"I will use the example of Padlet. It allows ELL students to see their classmates' responses so they can model their own work."*

Table 27. Examples of Technology used to Support Instruction for At-Risk Subgroups During Remote Learning, Spring 2021 Survey Data

Leadership interviews provide more context on the ways in TechSmart grants are helping to close the achievement gap. When asked, one leader spoke about the evolution of what the grant has been able to provide for teachers. One leader spoke about how the first grant got them to a baseline of having laptop carts available for teachers to check out, something that was similar to what "most schools" can do. Through the second grant students were able to be served more directly, "There was an equity issue as far as access to technology. Students would have it during some classes, but maybe not during others. This definitely helped by providing all students with the device." Ensuring a 1:1 ratio of devices to student was helpful in ensuring that any student could access school-based offerings while at home. The other leader interviewed shared how the historic approach has been "just been plop a device in front of them and hope they can navigate it and understand it." This person went on to describe the ways in which the district has advanced its approach to "understanding that [historically marginalized students] need a lot more scaffolding… With the platforms and the apps we're learning so much. Microsoft has so much to do with accessibility features." Even with this understanding in place, leadership understood that narrowing the achievement gap is an ongoing, evolving process that requires continued reassessment of what current – or new – gaps exist and how technology is bridging those gaps.

Leadership also spoke about how they considered device capabilities and students through a lens of equity, and how this impacted purchasing decisions.

> *As far as equity, every student had access to a Chromebook. That was the general educational device. With some of our students who are receiving special ed services, maybe a Chromebook didn't work for them, or they needed more support. In some cases, they might have gotten two devices. What we did is we bought iPads also for those students to make sure that the device the students had met their needs.*
>
> *We didn't just one size fits all, "Here's your Chromebook." Even though we wanted to have some standardization, but we also looked at the needs of the student and made sure that they had a device that would work for them. We wanted to make sure we were thoughtful in that process.*

Focus groups conversations with teachers revealed more specific strategies being used with students during instruction and to foster engagement. Teachers noted how learning management systems allowed students to engage in coursework and peer discussion in a variety of modalities. They noticed how having these options empowered students: "A student with anxiety or an English Language Learner might not be willing to raise their hand and talk in class, but they might be willing to type something on a sticky note and put it on a jam board or answer a question that comes up in a Nearpod. We've seen some stuff that does equalize some things and lower some barriers that we can carry forward into next year." Learning management systems also enabled teachers to discretely implement modified lesson plans and performance goals for students pending need. This was viewed as an effective way of supporting students with specialized curricula and resulted in stronger engagement from students on these plans.

At RHS, there was a school-wide effort to reconsider grading practices to support at-risk students, and all students, during remote learning. The emphasis was placed on continued feedback and opportunity to improve rather than finite points for grading:

> *We've had a lot of conversation at RHS about equitable grading practices and how do we support the entry point and the turning in, and what we're doing and how much of it we're doing with looking at different grading scales and testing it out. It's been a big testing year for maybe moving away from points at some point or using more rubrics instead, and that feedback loop, helping our students really grapple with their learning and the process of it.*

Teachers were also aware of the limitations around the work they can do to engage at-risk subgroups while teaching remotely. They understood that some students need more than technology—they need internet access. Other challenges included state-mandated expectations for student engagement:

> *Part of the problem is way above our pay grade – like making internet a utility. We're talking Salem level stuff here. Even district level items like when we force students to attend in a normal schedule, not on their own time when they are able to. [Some] focus better in the evening; they have to take care of siblings or their own kids, whatever the case may be. All of this chatter about returning to five days a week, next school year, I'm just like, "Oh my gosh, we have an opportunity here to really do something about how we do school."*

Considerations for students' home lives is strong. Teachers are mindful that many students need adult support at home to understand how to use technology for tasks. One teacher described how students could benefit from having someone coach them on ways to prioritize course load needs, identify starting points, how to connect to platforms, and how to draft an email to teachers when they need more help.

> *When you talk about our Special Ed population, a lot of them did really well because they had a caring adult to really be on their side and support them the whole way. Now they just had more access with technology. I think that's where I'm noticing a big problem. The technology was great, but they needed an adult to intervene, which teachers can only do so much. That's completely overwhelming.*

KEY FINDINGS	Is the rate of student growth in one or more All Hands Raised (AHR) outcomes greatest for at-risk student subgroups (i.e., students of color, LEP students, and SPED students)?
	Within the Treatment Group, there was mixed evidence about student achievement outcomes for students with limited English proficiency (LEP students) relative to non-LEP students. On average, LEP students showed slightly lower grade point averages in most subject areas, but the decrease that both LEP and non-LEP students showed from Fall to Spring was smaller for LEP students than non-LEP students in both language arts and math. LEP students earned equal to or more credits than non-LEP students in language arts, math, and science across both time points.
	SPED students showed the greatest evidence of beneficial impact from TechSmart exposure of any at-risk subgroup examined. On average, SPED students received higher grades than non-SPED students in Fall 2020 for language arts, math, and science classes, and in Spring 2021 for math and science classes. SPED students earned fewer credits in Fall 2020 than non-SPED students, but more credits in language arts and math in Spring 2021, once TechSmart funding had begun.
	Students of color had lower average grades in all subject areas than white students across both time points, and students of color received fewer credits, on average, than white students in language arts, math, and science. It may be than students of color and other at-risk subgroups will see improved outcomes after more exposure to TechSmart in SY 21-22.

Student Achievement Data

To better understand whether technology-supported instructional practices are showing promise for improving academic outcomes with at-risk student subgroups, mean grade point averages and credits earned were examined for students from at-risk subgroups, compared to non-at-risk groups. For these analyses, similar to previous subgroup analyses described earlier in this report, all grade levels were combined to provide a larger sample size.

Limited English Proficiency (LEP)

Table 28 presents average grades for Treatment Group students with limited English proficiency (LEP), compared to non-LEP students. **On average, LEP students showed slightly lower grades than non-LEP students in language arts and math in both Fall 2020 and Spring 2021, as well as science in Spring 2021, but showed higher average grades in science in Fall 2020. Grades decreased on average from Fall 2020 to Spring 2021 in both LEP and non-LEP students, but the decrease was smaller for LEP students (.37 to .38 change from Fall to Spring) than non-LEP students (.42 to .43 change from Fall to Spring) in language arts and math.** Note that social studies samples were too small to facilitate generalizable comparison and are thus excluded.

	LEP Students		Non-LEP Students	
	FALL '20	SPRING '21	FALL '20	SPRING '21

Language Arts	2.92 (n = 884)	2.55 (n = 876)	3.05 (n = 882)	2.62 (n = 904)
Math	2.08 (n = 1,080)	1.70 (n = 1,082)	2.20 (n = 981)	1.78 (n = 1,006)
Science	2.82 (n = 330)	2.10 (n = 349)	2.75 (n = 337)	2.17 (n = 356)
Social Studies	1.75 (n = 8)	—	2.92 (n = 12)	2.60 (n = 15)

Table 28. RSD grade point averages for Treatment Group LEP and non-LEP students per subject area by semester.

Table 29 shows Treatment Group students' credit attainment across subject areas for LEP and non-LEP students. **LEP students earned equal to or more credits than non-LEP students in language arts, math, and science across both time points. All students showed decreases in the number of language arts, math, and science credits earned from Fall 2020 to Spring 2021, with minimal difference between LEP and non-LEP students.** Social studies sample sizes were once again too small to facilitate generalizable comparisons.

	LEP Students		Non-LEP Students	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	.36 (n = 1,436)	.32 (n = 1,411)	.35 (n = 1,409)	.32 (n = 1,381)
Math	.32 (n = 1,368)	.27 (n = 1,322)	.32 (n = 1,318)	.27 (n = 1,261)
Science	.38 (n = 483)	.32 (n = 456)	.37 (n = 465)	.32 (n = 446)
Social Studies	.47 (n = 16)	.35 (n = 17)	.45 (n = 32)	.44 (n = 33)

Table 29. RSD credit attainment for Treatment Group LEP and non-LEP students per subject area by semester.

Special Education (SPED)

Table 30 presents average grades for Treatment Group students in special education (SPED) compared to non-SPED students. **On average, SPED students received higher grades than non-SPED students in Fall 2020 for language arts, math, and science classes, and in Spring 2021 for math and science classes**. Social studies sample sizes were too small to facilitate generalizable comparisons so are excluded. **Grades decreased from Fall 2020 to Spring 2021 on average for both SPED and non-SPED students, but decreases in both language arts and math grades were substantially smaller for SPED students (.14 to .29 grade points) than non-SPED students (.43 to .44 grade points). These results indicate promise for the impacts of TechSmart on SPED students' achievement.**

	SPED Students		Non-SPED Students	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	2.75 (n = 226)	2.61 (n = 256)	3.02 (n = 1,540)	2.58 (n = 1,524)
Math	2.55 (n = 189)	2.26 (n = 242)	2.10 (n = 1,524)	1.67 (n = 1,846)
Science	2.88 (n = 86)	2.22 (n = 97)	2.77 (n = 3,064)	2.12 (n = 608)
Social Studies	2.45 (n = 20)	2.60 (n = 20)	—	—

Table 30. RSD grade point averages for Treatment Group SPED and non-SPED students per subject area by semester.

Table 31 shows Treatment Group students' credit attainment across subject areas for LEP and non-LEP students. **SPED students earned fewer credits in Fall 2020 than non-SPED students, but more credits in language arts and math in Spring 2021**. Social studies samples were once again too small to be included in comparisons. **While the number of credits once again generally decreased from Fall 2020 to Spring 2021 in both SPED and non-SPED students, the decreases were smaller for SPED students than non-SPED students, indicating promise for the benefits of TechSmart on SPED students' credit attainment.**

	SPED Students		Non-SPED Students	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	.34 (n = 382)	.32 (n = 388)	.36 (n = 2,463)	.31 (n = 2,404)
Math	.31 (n = 336)	.31 (n = 328)	.32 (n = 2,350)	.27 (n = 2,255)
Science	.35 (n = 130)	.31 (n = 130)	.38 (n = 818)	.32 (n = 772)
Social Studies	.46 (n = 47)	.41 (n = 49)	—	—

Table 31. RSD credit attainment for Treatment Group SPED and non-SPED students per subject area by semester.

Students of Color

Table 32 presents average grades for Treatment Group students of color compared to white students. Excluding social studies, which once again had very small sample sizes that did not allow for generalizable conclusions, **students of color had lower average grades in all subject areas than white students across both time points. Average grades for both students of color and white students decreased from Fall 2020 to Spring 2021 in language arts, math, and science, and the decreases were slightly larger for students of color than white students.**

	Students of Color		White Students	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	2.87 (n = 1,198)	2.46 (n = 1,197)	3.23 (n = 568)	2.84 (n = 583)
Math	2.02 (n = 1,451)	1.62 (n = 1,491)	2.42 (n = 610)	2.05 (n = 597)
Science	2.67 (n = 460)	1.98 (n = 488)	3.05 (n = 207)	2.48 (n = 217)
Social Studies	2.11 (n = 9)	3.29 (n = 7)	2.73 (n = 11)	2.23 (n = 13)

Table 32. RSD grade point averages for Treatment Group students of color and white students per subject area by semester.

Table 33 shows Treatment Group students' credit attainment across subject areas for students of color and white students. Mirroring results for grade point averages, **students of color received fewer credits, on average, than white students in language arts, math, and science across both time points. The number of credits each group earned decreased from Fall 2020 to Spring 2021.** There was no consistent pattern in the amount of decrease from Fall to Spring.

	Students of Color		White Students	
	FALL '20	SPRING '21	FALL '20	SPRING '21
Language Arts	.34 (n = 2,014)	.30 (n = 1,983)	.39 (n = 831)	.36 (n = 809)
Math	.30 (n = 1,913)	.26 (n = 1,852)	.36 (n = 773)	.31 (n = 731)
Science	.35 (n = 680)	.29 (n = 641)	.43 (n = 268)	.37 (n = 261)
Social Studies	.50 (n = 23)	.39 (n = 26)	.42 (n = 25)	.44 (n = 24)

Table 33. RSD credit attainment for Treatment Group students of color and white students per subject area by semester.

DIGITAL AGE LEARNING CULTURE

Districts embrace a cultural shift and view technology as positive.

KEY FINDINGS	Has the use of technology to support instructional practices increased?
	By Spring of 2021, 75.4% of Grant 2 teachers who completed the survey reported students individually using technology a moderate amount to a great deal, which represents a slight decrease from baseline.
	By Spring of 2021, 67.7% of Grant 2 teachers who completed the survey reported using technology to adapt activities to students individually, an 18% increase over baseline.

In terms of frequency of technology use, Spring 2021 survey data showed both increases and decreases from baseline, depicted in *Figure 40* below (responses for A Moderate Amount and A Great Deal are combined). Teachers reported a 12% decrease in students' individual use of technology, and a 61% decrease in their groupwork using technology. Teachers did, however, report a nearly 18% increase in how they adapt activities towards students' individual use of technology.

*Teachers reported **decreases in the frequencies at which students use technology individually and in a group setting** to do work, and an **increase in how they adapt activities for students' individual use of technology**.*

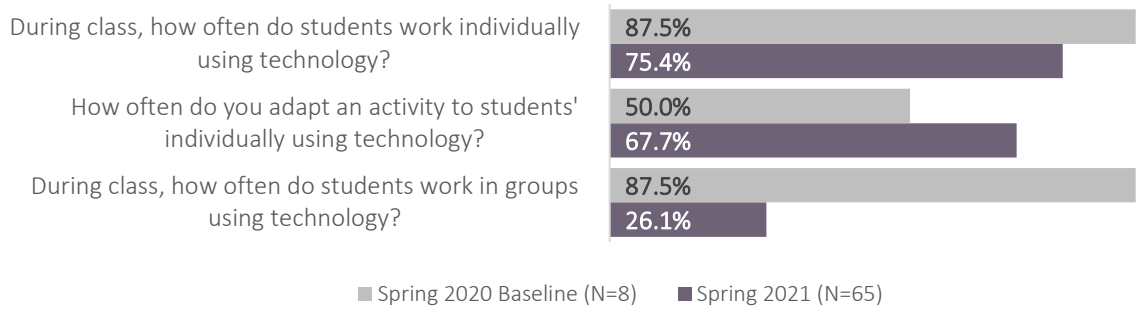


Figure 40. RSD teacher observed frequency of technology integration (% A Moderate Amount/ A Great Deal)

KEY FINDINGS	Do teachers have increased access to and use of digital content and resources?
	Almost all teachers (95.0%) reported using digital content and resources in their instruction by the Spring of 2021, representing a nearly 30% increase from baseline.
	Just under 50% of teachers agreed or strongly agreed that students in SY 20-21 were more able to work independently or choose the right tool for the task than their students from SY 19-20.
	Most teachers (91.7%) agreed or strongly agreed that distance learning enhanced their personal confidence in using technology for instruction.

Reynolds teachers provided self-reports on how frequently they use digital content and resources during instruction. Selecting from a range of options (Never, Rarely, Occasionally, A Moderate Amount, and A Great Deal), response data for A Moderate Amount combined with A Great Deal provided a baseline for comparison to data gathered in May 2021. By Spring of 2021, almost all teachers who completed the survey (95.0%) reported that they use digital content and resources A Great Deal or A Moderate Amount.

*There was **nearly a 30% increase in teachers who reported using digital content and resources** in instruction.*

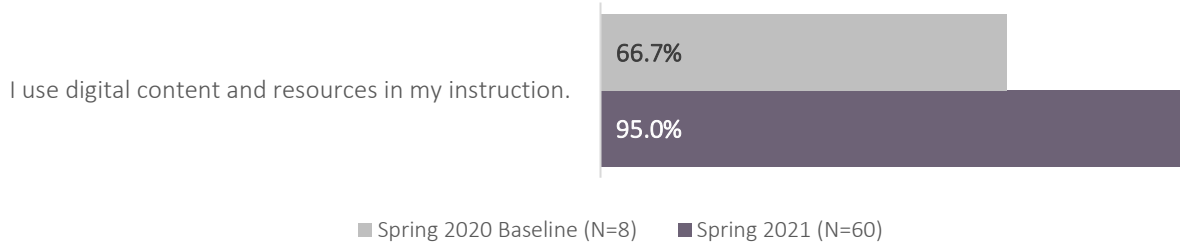


Figure 41. RSD teacher integration of digital content (% Agree/Strongly Agree)

Further, teachers were asked to rate a series of statements comparing their current students to students from their previous year of teaching. As shown in *Figure 42*, slightly less than half of teachers agreed or strongly agreed that students in SY 20-21 were more able to work independently or choose the right tool for the task than their students from SY 19-20. Almost two-thirds of teachers agreed their SY 20-21 students were more comfortable using digital tools for learning than students from the previous school year.

*2021 RSD teachers were **more likely to agree or strongly agree that their students are more comfortable using digital tools for learning** than they were to agree with statements about student ability to work independently or choose the right tool for the ta*

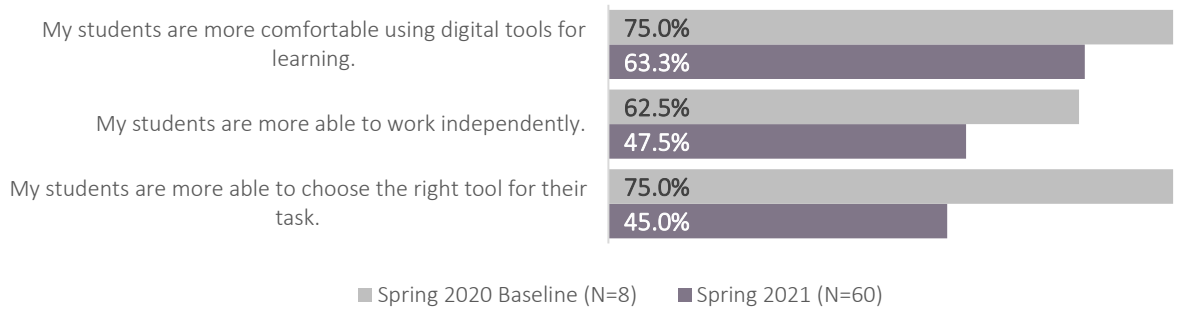


Figure 42. RSD teachers' agreement with statements about students' technological proficiency (% Agree/Strongly Agree)

A new question on the Spring 2021 survey asked teachers about instructional strategies amid the COVID-19 pandemic. At least 90% of teachers agreed or strongly agreed that they developed new skills during distance learning that they plan to bring back to in-person teaching, and that distance learning enhanced their personal confidence in using technology for instruction. Teachers were also asked to indicate to what extent they agreed that online instruction has not been convenient for them during the pandemic; about one-third of teachers (36.7%) agreed or strongly agreed it was not convenient for them.

*Teaching remotely during **the COVID-19 pandemic prompted teachers to develop new instructional strategies** and **increased their confidence in using technology**.*

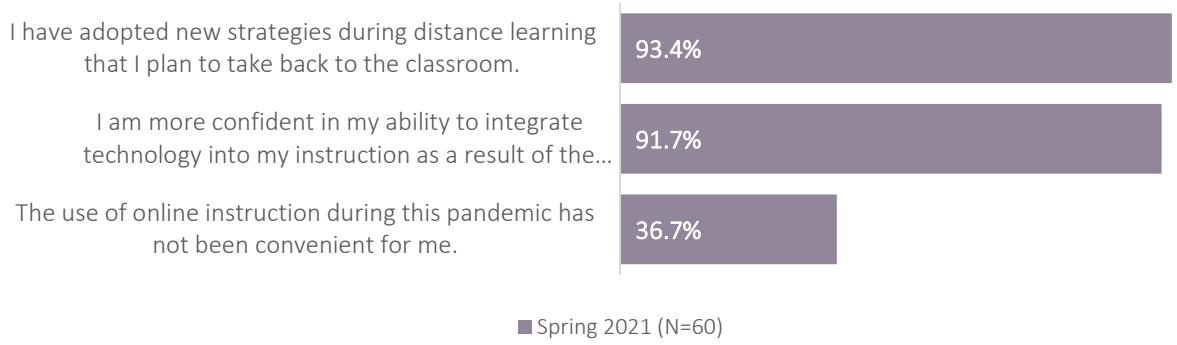


Figure 43. RSD teachers' agreement with statements about using technology during distance learning (% Agree/Strongly Agree)

KEY FINDINGS	Is there evidence of district wide support for technology integration?
	A higher percentage of teachers agreed with statements representing positive views of a culture of support for technology integration in the Spring of 2021 than at baseline, providing evidence the culture may have improved over time.

During the teacher survey, teachers were asked to rate their agreement with several statements regarding school culture of support for technology integration. These data, presented in *Figure 44*, provide evidence that RSD has made substantial progress in creating a culture of support for technology integration, as the percentage of teachers who agreed with each statement increased from baseline to Spring of 2021.

*RSD teachers report 13-20% **increases in agreement with statements about positive, innovative views towards a culutre of support** for technology integration.*

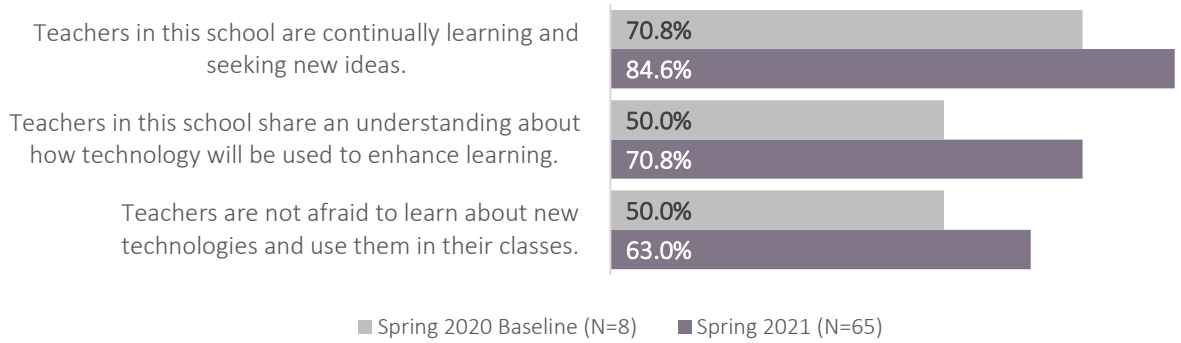


Figure 44. RSD teachers' agreement with statements about school culture of support for technology integration (% Agree/Strongly Agree)

Leadership reported feeling as though technology integration is on an expansion trajectory. They have already expanded into a department, something other districts do not have, and have plans to add at least one more staff person in the near future. They hoped this would demonstrate support in not just technology, but the access and knowledge to utilize the technology on the platforms purchased. Further, leadership described how the district has invested in web-based platforms that do not have a physical parallel (e.g., textbook or workbook). While these investments seem indicative of progression towards increased technology integration, there was also some concern around long-term vision and how decisions are made: "I'd be looking more toward leadership with the TOSAs. When it comes to executives and directors and stuff like that, it's a lot of lip service to get things going. It's the teachers and the TOSAs that actually do the work and make it happen. Hopefully, [executives and directors] just continue to support. That would be good. They don't have to understand the back end or all of that, but just have some vision that we need to continue with the tech. If they're supporting it, then we can utilize it and move further in bridging that gap."

KEY FINDINGS	Do parents have an increased understanding and utilization of districts' technology assets?
	Virtual instruction, meetings, and the use of learning management systems connected parents to teachers and parents to student performance.
	Online or virtual tools also help mitigate traditional barriers, like language, by adding in translation or transcription services.

District status report data affirmed that at least 13 meetings and events were offered throughout the school year as spaces for parents to interact with school leadership. Included among these offerings were activities such as conferences and culturally-specific parent night, which were designed to increase parents' abilities to use and/or support student learning using technology. During both events, Microsoft translation tools were utilized. Additional ways RSD helped parents understand efforts towards technology integration included communications via website, newsletters, and parent events.

Focus group conversations with teachers explored the ways in which technology was used to engage with parents across the 2020-2021 school year. Teachers described how the ability to facilitate conferences over Zoom helped increase parent engagement. It felt like a positive, more accommodating option than the traditional model of having parents take time off work or having to arrange childcare to meet with teachers on-site. RSD staff described how virtual conferencing allowed parents to join from their phone or to use their child's device if they didn't have a personal computer. Other benefits of using video conferencing to talk with parents included increased access to translation and captioning services. While teachers acknowledged limitations of these services, they reduced the complexity and challenges faced when upwards of 120 teachers needed to share eight translators.

Teachers also spoke about the ways in which use of learning management systems empowered parents to better support children at home. The ability to post and track content gave parents visibility on when assignments were due, if their child had turned them in, and how they were doing in their classes.

> *Having that posted content means that when some parent is trying to help their child figure out – you're missing some papers, some assignments, some whatever – it's right there. It's so much easier than whatever mess we had before. It's just beautiful to have the whole course right there. Just go ahead and take a look for yourself. If your student's telling you that they have it all done, then tell them to click on the grade book and you'll find out. It's just beautiful.*

Further, posted content connects parents to any supplementary materials teachers are able to provide. Teachers reported that they've had parents who will watch their instructional videos with their children to help them – something that has historically been more difficult for parents of high school children. Teachers found that a short 5-10 minute video was typically within the parent's bandwidth to watch and help them feel competent enough to support their child.

Parents expressed a need for community-building and peer support throughout the school year. Teachers responded to this need by creating a school newsletter for parents. They also created a Zoom room for parents to use as a support group to help each other navigate distance learning.

KEY FINDINGS	Are an increased number of students utilizing and engaging with new technology?
	**Every student had access to both the same level and same type of technology, allowing students to sustain engagement in coursework and maintain connection with peers.**

Due to the pandemic, data collection from students did not occur. However, the status report provided some insights as to the volume of students interacting with technology. Indeed, for the first time, staff from RHS and RLA were able to report that every student had access to both the same level and same type of technology. Further, the status report included acknowledgement that more facets and levels of the district-adopted digital curriculum in science, math, and social sciences were accessed. As expected, the closure of in-person instruction necessitated an increased student engagement with TechSmart devices. In addition to completing coursework, students used the devices to collaborate. This was accomplished through Zoom breakout rooms, student-shared documents, and use of OneDrive.

KEY FINDINGS	How has TechSmart impacted the shift to distance learning?
	Teachers reiterated how critical access to technology was to their instruction in the past year, recognizing that the grant made this possible.
	Technology positively impacted teachers' relationships with students, keeping them engaged and enabling them to stay connected with one another.
	Leadership felt that the grant was able to provide the district a baseline norm for tech usage in learning environments, effectively allowing RSD to "keep doing the work."

The Spring 2021 survey asked teachers to write in comments about how the TechSmart grant impacted their instruction during the past school year with remote instruction. Twenty-nine teachers responded to this open-ended question, with five key themes emerging in the data. Teachers reiterated how critical having access to technology was to their instruction in the past year (n=13), and often indicated gratitude for the grant itself (n=10). Some teachers (n=7) spoke about the positive impact the technology had on keeping students engaged academically and enabling teachers to stay connected with them. Three respondents shared that they were unaware of the grant and could not respond to the question. An additional five respondents provided "other" or one of comments that did not fall into a broad category. A sample of responses for each response theme is shown below in *Table 34*.

Do you have any comments about how your experience with the TechSmart grant impacted your instruction during distance learning?	
Critical for Instruction (n=13)	*"We could not have done this year with this! So many more inequities would have resulted without this grant! Thank you!"* *"Without the grant, I don't know how learning could have continued for our students during the pandemic."* *"Using the laptop that was supplied from the grant has been invaluable."* *"It has given me another avenue to teach from."*

Do you have any comments about how your experience with the TechSmart grant impacted your instruction during distance learning?	
Gratitude (n=10)	*"No, thank you very much!"* *"The grant has made distance learning possible. I appreciate the support. Thanks!"* *"Thank you"*
Devices Supported a Range of Student Needs (n=7)	*"Students had access to laptops, without that we would have been lost. It's amazing to have this grant! Thank you."* *"Every one of my students received a device and I was given training enough so that I could train the parent/care giver so that they could connect."* *"It has impacted the lives of our students in a positive manner by not only providing a valuable resource to continue learning at this level but it actually allowed us to indirectly prepare them for post-secondary life as well as the "new work environment!"*
Unaware of TechSmart Grant, Generally or Specific to Distance Learning (n=3)	*"I'm new and I don't really know what it is."* *"I don't know to what level the TechSmart grant impacted my instruction because I can't identify what TechSmart contributed."* *"I am unclear what activities we have done throughout the year were related to this grant. I know it provided devices for all our students, but specific trainings were not called out as TechSmart trainings. So I do not know what the grant provided other than physical devices. But that is such an amazing gift in and of itself! We could not have made it through this year without those devices for our students! I am very grateful!"*
Other (n=5)	*"It enhanced it and moved me away from paper."* *"Screencasting handwritten notes with touch device has been fantastic."* *"The biggest glitch that has happened this year- the chrome books for the students default to Google apps. An example, when students download reading selections it always goes into Google Docs. We need some way to remove the Google apps so that everything defaults to Microsoft Word. Microsoft Word has immersive reader and speech to text features that are very useful for string accommodations."*

Table 34. Grant 2 impact on remote instruction, Spring 2021 survey data

Leadership interviews provided more context on the ways TechSmart grants have impacted instructional strategies. One interviewee described that having access to the technology served as a "catalyst" for teachers to explore the breadth of options available. With these tools they could "dive into what kind of curriculums are out there and how they can engage the kids with some of the new stuff, new technologies, or new websites out there." Leadership reported feeling like they were able to provide a robust system of technological options to support the integration of technology in instructional strategies, and they identified teacher engagement as the critical factor in their success.

> *We have a pretty good system here in the district that we've developed. We use Schoology as an LMS. We're a Microsoft district, so our file sharing and our emails are all Microsoft. We've started to participate more in the use of Seesaw and Nearpod. This last year we've become so anchored into the digital platform. I think we have a really good setup. It just takes time for teachers to come along.*

Leadership also felt they've been able to successfully navigate integration of technology into instruction somewhat better than other districts. Challenges they heard from peers focused on having platforms that sync activities. One leader anecdotally commented those schools are likely "Google schools."

Conversations with teachers explored the extent to which they were integrating technology into their classroom instruction prior to distance learning, and the ways in which technology supported their transfer to distance learning. Teachers spoke about how the Schoology platform immediately implemented a school-wide structure for them to follow. Not only was this a help in transitioning to distance learning, it provided "bookkeeping" services that felt advanced compared to previous years.

> *When I've talked with other teachers in my department, many of them want to stick with Schoology assignments. They like the bookkeeping it offers for them, and the students, they like not lugging around paper everywhere. There's definitely a push in the building to not go back to 1950-style teaching all the way.*

Teachers did not share much about their experiences prior to distance learning, but when they did, they often referenced those approaches with terms like "old school," and spoke about being in a "new world." Indeed, teachers spoke passionately about not wanting to revert to former methods and about how student expectations around learning evolved in the past year.

> *I think that what's been accomplished over the last year is something that would have taken at least a decade of regular old-fashioned education. For our teachers, the primary skills that were built were to post online content. The tools that I think our teachers had to learn to use was how am I going to get my content online?*
>
> *As a teacher, I have to spend all my time on prep. How am I going to suddenly, on the fly, totally change the way that I'm prepping my course? It's a big ask. We were*

forced to do it and we were given time to do it. Now, every teacher at this school is capable of posting their content online.

Strategies that teachers identified as being particularly effective included posting content online, running a blended classroom, encouraging students to move through materials at their own pace, integrating peer review opportunities, and using messaging or chatting features to engage students as an alternative to calling on them to speak verbally. An underlying theme throughout teacher discussion on technology was the acknowledgement that integrating technology into learning means knowing how to adapt the hardware and the software to meet individual student needs.

One of the things that was reinforced for all of us this year is just that technology isn't a panacea. What we've seen is clearly if you just hand a kid a Chromebook and say, 'do this course' that's not effective. That's not going to work. We've seen an entire school year where kids had a Chromebook and were told to go. What has been reinforced is that what I need to figure out is how do I use these tools within an effective instructional framework once I get back inside the classroom?

The Spring 2021 survey invited teachers to share what one new technology-related instructional practice developed in the past year of remote instruction they wanted to continue using when classroom-based teaching resumes. Thirty-seven teachers responded to this open-ended question, with six key themes emerging in the data. Most frequently mentioned (n=21) was an increased awareness of and desire to use various learning platforms, with Nearpod (n=8) and Schoology (n=7) being most often mentioned as a specific tool they'd like to continue using. Some teachers (n=7) mentioned a desire to continue using online assessment tools, as well as continue engaging students with digital documents, materials, and online discussion boards (n=6). Further, five teachers intend to continue using online content and supplementary materials in their instruction. Three teachers talked about how they will use actual devices differently and how they've expanded their understanding of where/how learning can happen. A sample of responses for each response theme is shown below in *Table 35*.

What is one new technology related instructional practice that you acquired during distance learning that you anticipate taking back to the classroom?	
Awareness of Learning Platforms to Continue Using (n=21)	*"Use of learning Platforms like Canva to make virtual online projects."* *"Using Google slides and Pear Deck, the Language Gym."* *"I like Padlet!"* *"Using Schoology worksheets and Newsela articles to improve differentiation. I have been able to allow different modes of answering questions such as audio responses."* *"Nearpods will be useful for students that are absent and during live instruction."* *"Using PowerPoint and Nearpod to deliver instruction."* *"Zoom, Schoology assessments"*
Online Assessments (n=7)	*"Live data entry using Desmos or Stapplet platforms."* *"Schoology formative assessments"* *"Portfolios - digital summative assessments"*
Engaging Students with Digital Documents, Materials, and Discussion Boards (n=6)	*"Using technology to front load information for students or introduce them to a new idea/content."* *"Creation and utilization of digital documents and activities."* *"Posting weekly assignment schedules & accepting work turned in online"*
Online Content and Supplementary Materials (n=5)	*"I have learned to generate online content for student learning, and I will continue when we return to learning in person."* *"Making support videos"*
Use Devices Differently (n=3)	*"Double screen very helpful."*
Support for Zoom or Out-of-Classroom Instruction (n=3)	*"Taking instruction beyond the walls of the classroom. We will be mobile, and the classroom will and can be anywhere that supports the current topic (CTE, Environmental Science, History etc.)"*

Table 35. Instructional practices from remote teaching that teachers planned to bring back to the classroom, Spring 2021 survey data

Leadership interviews provided more context on the ways in TechSmart grants impacted the school district at large. Both interviewees viewed the grant funds as positive and having significantly contributed to the ways in which RHS and RLA were able to transition to distance learning. One leader described grant support fundamentally changing classroom teaching: "It's changing the way the classroom looks for teachers, and hopefully, making things easier. Technology has so many accessibility features that can be used by staff and for students." They further went on to elaborate how the TechSmart grant was able to provide the district a baseline norm for tech usage in learning environments. The other interviewee described the grant as helping RSD "keep doing the work." They see this resource as a critical support for providing teachers both the equipment and the proficiency needed to integrate and utilize technology to the best of their ability.

VISIBLE LEADERSHIP

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

KEY FINDINGS	Are districts identifying effective instructional practices and disseminating information and results to other districts?
	RSD staff appeared to be in consistent communication with peers at other districts, engaging in virtual chatrooms, monthly meetings, and shared professional development opportunities.

Conversations with leadership provided insights on the ways in which RSD is sharing about their TechSmart-funded efforts with other districts. One of the leaders interviewed is a TOSA and described regularly meeting with other TOSAs across the metro area to share experiences and check in on activity. The interviewee expressed some frustration with the group's lack of focus, expressing that they could be more productive if there was a guiding goal. A proposed reason for the disconnect was that RSD operates on a Microsoft platform and that many other districts utilize a Google platform.

> *Honestly, we haven't accomplished a ton in those groups. I'm hoping we could have a better goal and maybe achieve some things, but everybody else is a Google district. It's really hard to have conversations when you're a Google district and we're Microsoft because people aren't willing to believe that those two things can talk together, which they can.*

While the meetings may not always feel productive, they do serve as a space for TOSAs to share ideas and discuss the different visions district leadership has for them. Other cross-collaborative activity leadership described previously included site visits with conversations about approaches. A version of this continued virtually, though less frequently.

> *We've had a couple of other school districts come and visit us at the high school, walk around, visit classrooms, and then have conversations afterwards. That is still happening. It's been happening virtually. Not as frequently as it was this past year, but they're looking at continuing to get together on either a monthly or every other month basis to collaborate.*

KEY FINDINGS	Do teachers feel increased support from district leaders regarding technology integration?
	Most teachers (90.8%) continued to agree that they have the support of their school administrators for technology integration.

During the teacher survey, teachers were asked to rate their agreement with a statement regarding school culture of support for technology integration. Combined totals for Agree and Strongly Agree are presented in *Figure 45* and show sustained agreement that administrators are supportive of technology integration efforts.

*A vast majority of **RSD teachers agreed that administrators in their school are supportive of technology integration efforts**.*

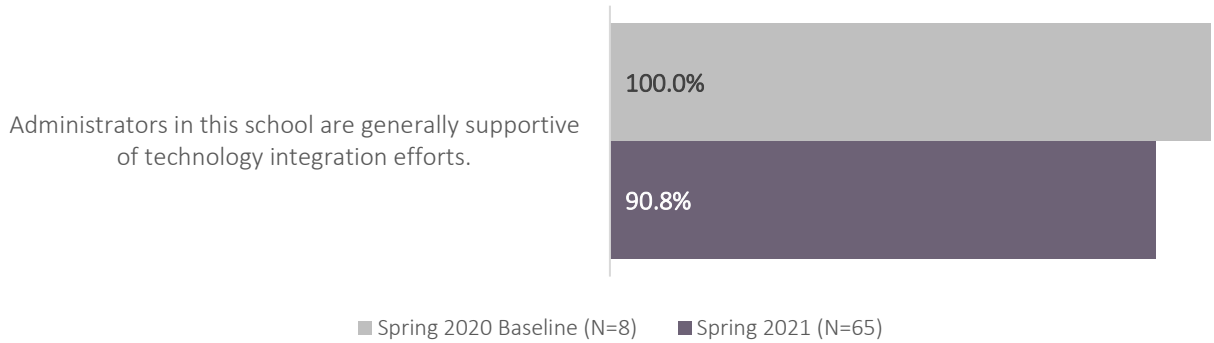


Figure 45. RSD teachers' perceptions of a culture of support for technology integration (% Agree/Strongly Agree)

DATA-DRIVEN IMPROVEMENT

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

KEY FINDINGS	How are schools using data to improve instruction, professional development, and student performance?
	About three-quarters of surveyed teachers reported use of technology for evidence-based learning, to analyze data about student learning, and to differentiate instruction.
	Most teachers (86.9%) used formative assessments to inform instructional practice.
	About 90% of teachers agreed or strongly agreed that they are now comfortable integrating technology into their instructional practices and have found effective means for doing so.

Reynolds teachers provided self-reports on how frequently they use digital content and resources during instruction. Selecting from a range of options (Never, Rarely, Occasionally, A Moderate Amount, and A Great Deal), response data for A Moderate Amount combined with A Great Deal provided a baseline for comparison to data gathered in May 2021. By Spring of 2021, about three-quarters of teachers indicated they used technology for evidence-based instruction and to differentiate instruction A Great Deal or A Moderate Amount. This represents at least a 30% increase since baseline. There was a slight decrease in the percent of teachers who indicated use of technology to analyze data about student learning.

*Three-quarters of **RSD teachers indicated use of technology for instruction and to differentiate instruction**, representing at least a 30.0% increase from baseline data.*

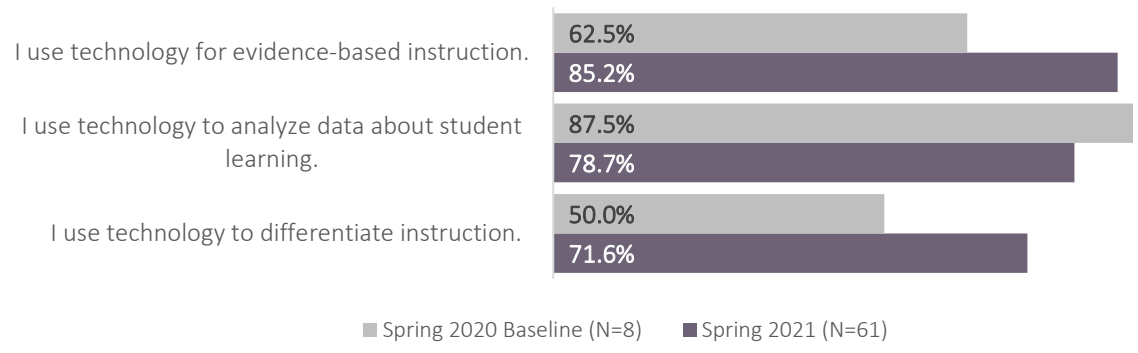


Figure 46. RSD teachers' instructional technology usage (% A Moderate Amount/ A Great Deal)

Similarly, on the Spring 2021 survey, teachers were asked to provide a self-report on how frequently they use formative assessments to identify effective instructional practices. Aligned to the same four-point scale as above, most teachers indicated moderate or great use of this approach.

Most teachers use formative assessments to inform instructional practices a combined moderate or great amount.

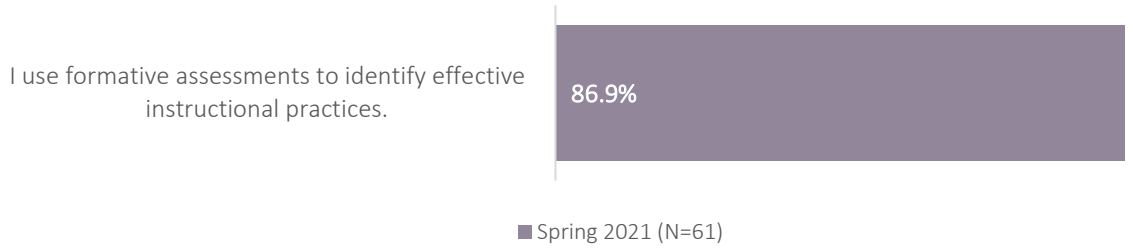


Figure 47. RSD teachers' formative assessment usage (% A Moderate Amount/ A Great Deal)

Using a five-point scale, teachers were asked to indicate how much they agreed with three prompts describing their experiences with distance learning, online instruction, and returns to the classroom. *Figure 48* shows combined response data for Agree and Strongly Agree ratings. A majority of teachers agreed that they developed new strategies through remote teaching that they will continue when in-person instruction resumes and that they were more confident using technology due to distance learning.

*While teachers showed **somewhat increased confidence in their ability to respond to student progress assessments**, their reports show **decreases in confidence to differentiate instruction based on data**.*

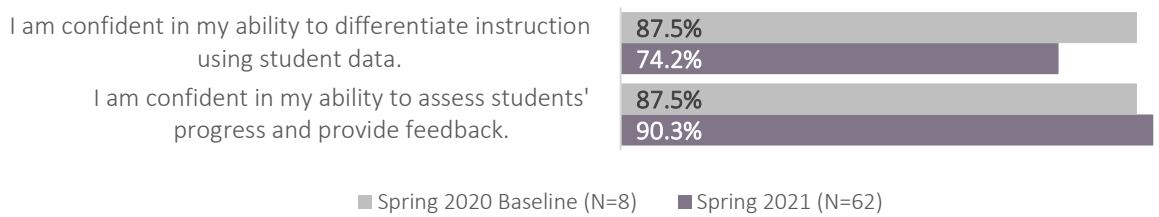


Figure 48. RSD teachers' agreement with statements describing remote teaching (% Agree/Strongly Agree)

The same five-point scale was applied for two questions new to the Spring 2021 survey. On these questions, most teachers agreed or agreed strongly that they were now comfortable integrating technology into their instructional practices and had found effective means for doing so.

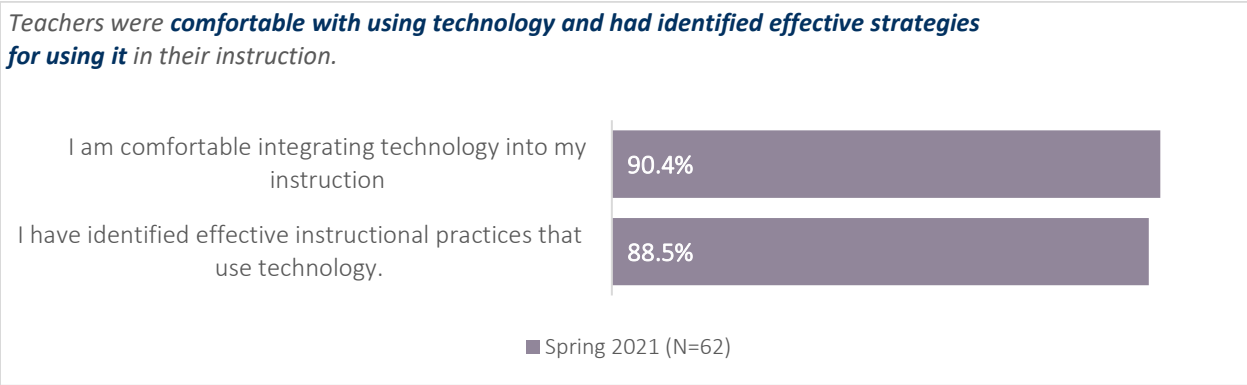


Figure 49. RSD teachers' agreement with statements describing comfort and competence with technology (% Agree/Strongly Agree)

In focus group conversations some teachers were able to describe the ways in which they were using tools like Schoology to gather data to inform instruction, whereas others were struggling with the practice. Having to integrate formative data assessment into their curriculum design felt, for many, like an added burden on top of remote instruction.

> *I think those formatives being digital in nature makes a really big difference for at least me. Because the way that I've always used quizzes in the past, I had to grade a big pile of papers. I can't do very many of those. Now it's a self-grading thing.*

Those who were able to use data to inform instruction said it was primarily because the platform automated gathering and processing information. Further, online platforms track student engagement with content, allowing teachers to better understand where students are having challenges with content.

> *I set up Schoology so that a student cannot proceed to the next lesson until they pass the lesson quiz. If they're not passing and they keep missing the same type of question, I have conversations – usually in chat – with the student and figure out what the misconception is. If they can explain it to me, I just pass them in the grade book. They don't have to retake the test; they move on.*

Other ways teachers sustained formative assessment activities was by having students share screens and walking them through coursework, projects, and describing where they are struggling.

> *I tend to do a lot of formative assessment. Generally, when I would have kids doing projects, I would walk around my classroom and see the projects that they're doing and see where they're struggling.*

Going into distance learning without Zoom would have been horrible. With Zoom, it was acceptable because we could screen share. The kid could show me what's going on, what they're stuck on, where they need to be.

I think it was just a very quick and abrupt learning curve of how to get that formative assessment back in place when you're not physically there.

One teacher spoke about how they used to implement a more mixed method approach to gathering and responding to student performance data. They felt that technology had limited them somewhat to more quantitative measures (e.g., quizzes, or engagement metrics) and limited the ways in which they could help students with grasping concepts. The teacher expressed an eagerness to return to classroom instruction, highlighting how it allowed them to create a more personalized instruction experience.

I'm just going to talk a little bit about what happened before COVID and how I would use [formative assessment] more on the qualitative side and the quantitative side, where I'm not necessarily going to be throwing a quiz at them every day. I did a lot of videos and instructional methods that way. I could spend nearly every single day in class troubleshooting individuals on where they need the help. I can go back as far as I need to in a small group, one-on-one whatever it may be to really pinpoint what they're actually struggling with. Because if I give them a quiz on something like rational equations, I need to know not that they got this question wrong, but why. That's a big concept that has a lot of moving parts.

Once I can really pinpoint that moving part, then I can actually solve their problem and help them understand this concept. I'm presenting this material, but if you're not understanding it, we need to back up and figure out why. Really, it allowed me to open up my entire classroom time that I had with them to basically personalized instruction for the small groups.

Sometimes people could walk by my room, and it may look like chaos, but it's a lot of organized conversation and chaos that's happening with students helping each other, me helping them, me helping small groups, one-on-one whatever it may be. I operate a lot more efficiently if I can converse with a student. I wasn't able to do that as much online, but in the classroom, I find it works pretty well.

FUNDING & BUDGET

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

KEY FINDINGS	Have districts identified at least one opportunity for repurposing resources to support technology integration?
	Grant funds were being well utilized and applied towards pre-determined needs.
	Efforts to sustain grant activities included the continued expansion of the Institutional Technology department.

Status report response data described how the Library/Media Assistant and Specialist role changed over SY 20-21 to offer more focused support for staff and student technology. Resulting from this is the addition of 11 Elementary Library Media Specialists for the 2021-2022 school year. As reiterated below in interview data, the status report also documented the addition of an Instructional Technology TOSA for the school year. The status report further noted that Federal ESSER funds were allocated to support student, staff, and classroom technology.

Leadership interviews indicated that funds had been spent as anticipated. Neither individual was able to identify a way in which grant money was explicitly repurposed. RSD has been able to grow the staffing of the Institutional Technology department, adding a third coach in the 2020-2021 school year and anticipate adding a fourth coach in the upcoming school year. All items purchased with grant funds were in active use, or as one leader phrased it: "All our resources that we have are being utilized as best we can. There's nothing that was from this grant that's now sitting in a warehouse."

STRATEGIC PLANNING

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

KEY FINDINGS	Does the district's strategic plan reflect shared commitment to improving outcomes for students?
	The strategic plan will focus on refining teacher's knowledge for how to operate and maintaining their devices.
	Additional goals are to offer curriculum that deepens understandings of media and digital citizenship, ensuring they are meeting goals for student engagement.
	Leadership sees current plans for technology use and integration to be pivotal in creating pathways for more culturally responsive teaching.

The SY 20-21 leadership interview asked leaders to reflect on how technology fits into their district's strategic plan. Refining teacher's knowledge for how to operate and maintain their devices is a central element of the current plan. As one leader described, teachers must submit tech ticket requests for simple efforts like updates. They described how teachers should have the capabilities – both permissions and trainings – on how to do this themselves. The desire to reduce the number of ticket support requests submitted is not limited to teachers. There was also an acknowledgement that now the district is 1:1 for devices per student, and, "that's going to stay this way forever, there's no going back." Given that student have personal devices and are increasing their proficiencies, this presents an opportunity to expand the district's STAR program. This program gathers teams of students who can take on ticket support requests from their peers and help them with device support issues.

Added strategic goals are to deepen media and digital citizenship curriculum. With a baseline established through the Schoology LMS and SD standards, the next step is to further integrate compatible software tools (e.g., Office 365, Schoology, Nearpod, Seesaw, and OneDrive). RSD reported that these tools, "do everything for us," and the goal is to best leverage them to be more engaging for students.

Leadership also sees great opportunity for using technology to support culturally responsive teaching. Digital resources and tools are able to connect people to a broader range of perspectives than are typically presented in textbooks.

Culturally responsive teaching – things are changing, thankfully. Books are typically written from one perspective. Books are getting a little bit better at providing some multiple perspectives, but technology provides students and teachers access to multiple perspectives on a certain event.

This is seen as important, also, in teaching students critical thinking skills. By using technology to better understand multiple perspectives, they are also being taught to evaluate the credibility of sources.

When asked to think about the sustainability of grant-funded efforts, leadership spoke about how they intend to build up from the baseline of technology that they have established. Now that all students and teachers have devices, the hope is to examine how individual classrooms are best equipped to supported to leverage devices. Discussion around reconfiguring what is on laptop carts, how short-throw projectors are utilized, and shifting from Wide Eye to Airtime were all considered for ways to continue evolving the classroom experience. Added sustainability efforts can be seen in the intent to continue expanding the number of TOSAs on staff.

EVALUATION INSIGHTS

The SY 20-21 evaluation at RSD produced the following insights:

- Reiterating findings from SY 19-20 findings, data collected highlight the ways in which Grant 2 provided a strong foundation for RSD's year of distanced learning. Teachers and district leadership agreed that the professional development (PD), devices, and preparation provided by implementation of TechSmart during Grant 2 set the district up for success keeping students engaged, connecting with parents, and providing a range of ways to support students.

- Teacher survey data generally indicated sustained improvement in teacher knowledge, skills, abilities, and experiences related to instruction that includes use of or relies upon technology. While changes from baseline to the Spring of 2021 varied, this is likely attributed to the substantial difference in response rates. Baseline data reflects the views of eight teachers; Spring 2021 data, with a sample of 62 teachers, likely presents a more accurate picture of teachers' perceptions and experiences. Findings from the 2021 survey generally show favorable views and reports; they will present an interesting comparison point for future years with, ideally, similarly more robust response rates.

- Student achievement data for the Treatment Group in SY 20-21 and the Historical Comparison Group in SY 16-17 did not yet show broad impact of RSD's second grant on grade point averages and credit attainment averages across language arts, math, and science classes (note that social studies data was limited so was excluded from many comparisons/analyses). For the Treatment Group, grade point averages and credit attainment averages were generally higher in Fall 2020 than Spring 2021, and credit attainment was generally lower in the Treatment Group than the Historical Comparison Group, perhaps due to the substantial impacts of the COVID-19 pandemic. However, the mean Treatment Group grade point average was higher than the mean Historical Comparison Group grade point average in many cases, showing promise for positive outcomes.

- For students from at-risk subgroups, analyses comparing the Treatment Group to the Historical Comparison Group showed that, with some exceptions, Treatment Group students from at-risk subgroups on average saw lower grades and fewer credits attained in Spring 2021 than Fall 2020. However, within the Fall semester, Treatment Group students showed higher grades, on average, than the Historical Comparison Group across all three at-risk subgroups examined. Because Treatment Group students were not exposed to RSD's second TechSmart grant until Spring 2021, this finding may indicate that RSD's first TechSmart grant continued impacting students from at-risk subgroups in their high school years. Within the Treatment Group, SPED students showed the greatest evidence of beneficial impact from TechSmart exposure when compared to non-SPED students, relative to other at-risk subgroups (i.e., LEP students and students of color).

CHAPTER 4: GRESHAM BARLOW SCHOOL DISTRICT

TechSmart Initiative 2020-2021 Evaluation Report

CONTENTS

PROJECT SUMMARY

Gresham-Barlow School District (GBSD) began implementing its second MHCRC TechSmart grant in the 2020-2021 school year (SY 20-21). The district's first grant was four years in length and focused on kindergarten through third grade classrooms at two GBSD elementary schools. This second grant is focused on integrating education technology tools in middle school math, particularly through the support of a Secondary Innovation Coach. The second grant will be implemented for three years, through SY 22-23 at GBSD's five middle schools.

In SY 20-21, which was the first year of the three-year grant, GBSD faced some obstacles to grant implementation, some of which were a result of the COVID-19 pandemic. Specifically, the district was unable to provide formal professional development opportunities or offer learning walks as a result of the pandemic. Additionally, the Secondary Innovation Coach position was filled by a math teacher from the district, but because the district needed to rehire the former math teacher's position, the coach role commenced later than anticipated in February 2021. Despite these obstacles, the year-end status report submitted by GBSD to MHCRC indicated that the district was able to complete some project activities in the first year of the grant. These activities included: (1) Surveying teachers regarding immediate needs for teaching digitally and interest in professional learning; (2) Planning and facilitating optional collaboration time for teachers to plan for hybrid instruction; (3) Providing a math STEM lesson adapted for middle school level using the digital tools Desmos and Google Slides; (4) Modeling

METHODS

A general description of the methods included in the TechSmart evaluation are included in the introduction to the full report. Survey and conversation quotes have been edited for grammar and brevity. Data collection efforts for the SY 20-21 evaluation in GBSD are summarized below.

Teacher Survey: A teacher survey was administered in May 2021. A total of 19 teachers completed this Spring 2021 survey. Additionally, a baseline teacher survey was administered in September 2020. A total of 22 teachers completed the Fall 2020 baseline survey.

Teacher Interviews: PRE conducted phone interviews with two teachers involved in the TechSmart grant at GBSD. Teachers taught 6th, 7th, and 8th grade math.

District Leader Interviews: PRE interviewed five district leaders from GBSD via phone, including three principals, the Secondary Innovation Coach, and the TechSmart administrator.

Student Achievement Data: Middle school math course sequencing serves as a determinant of the math course level students enroll in as high school freshmen. This creates a trajectory that influences who has access to advanced coursework. The district is interested in understanding if the TechSmart grant differentially impacts students in various middle school math courses and their resulting high school math trajectory. PRE will examine whether grades, iReady data, and math course in middle school is a determinant of high school math class and grades. The Cohort of students included in the impact study are those who were in 7th grade in SY 20-21. This first year of the grant will serve as a baseline due to the impact of the pandemic, and the second year (8th grade) will serve as the treatment year. The Cohort's outcomes will also be analyzed in 9th grade to determine impact of TechSmart on students' high school trajectory.

teaching for new teachers in Collaborative Breakout Groups; (5) Offering school site visits and introductions; (6) Reviewing whole district i-Ready data; (7) Meeting with new teachers to assist with planning; (8) Creating Station Rotation model lesson and choice board resources for teachers as well as a guide for implementation; (9) Providing digitally formatted i-Ready resources for data chats and student reflection; (10) Surveying teachers regarding professional learning needs and interests for SY 21-22; (11) Hosting on-demand professional learning on using EdPuzzle for instructional videos; (12) Creating how-to videos sent to teachers on how to leave feedback for students in Desmos; (13) Providing print resources, videos, and blurb for building admin to include in their newsletter regarding i-Ready assessments; and (14) Facilitating original job-alike with GHS and feeder middle schools to discuss 8th and 9th grade math scope and sequence as well as discuss transition from Algebra 1 to Integrated 1 courses.

ABOUT FALL 2020 AND SPRING 2021 SURVEY RESPONDENTS

Middle school teachers at GBSD provided responses to the Fall 2020 and Spring 2021 surveys. Twenty-two teachers responded to the Fall 2020 survey and 19 responded to the Spring 2021 survey. Fall and Spring survey data both indicated that most teachers taught in 6th, 7th, and/or 8th grade (they could select more than one option) (Figure 1). Those who selected Other were teaching 4th through 7th grade or special education. Respondents from both surveys were predominantly long-time teachers. In both instances, more than 68.0% of teachers had taught at least 11 years (Figure 2).

A majority of teachers taught 6th, 7th, and/or 8th grade.

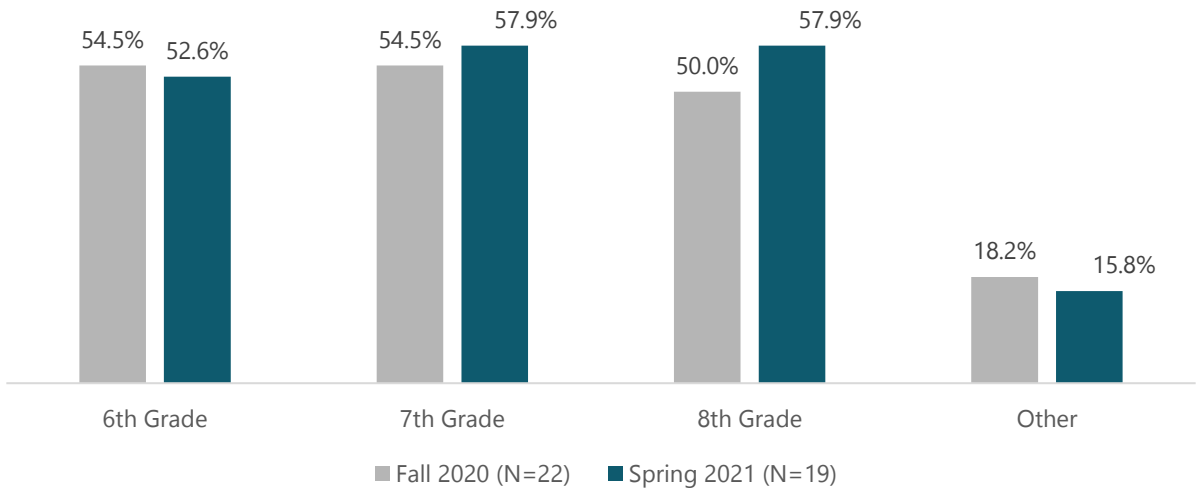


Figure 50. Grade levels GBSD Fall 2020 and Spring 2021 survey respondents teach

A majority of survey respondents in both Fall 2020 and Spring 2021 are long-time K-12 educators, with at least 68% of respondents teaching for 11 or more years.

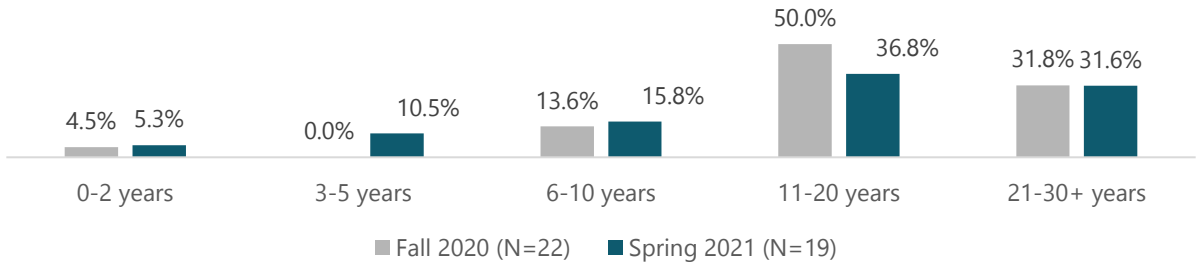


Figure 51. Teaching tenure of GBSD Fall 2020 and Spring 2021 survey respondents

COVID-19 CONSIDERATIONS

As noted previously, the COVID-19 pandemic impacted GBSD's grant implementation in SY 20-21. While the delayed hiring of a Secondary Innovation Coach played a role in professional development (PD) offerings, the pandemic also prevented the district from offering formal PD opportunities, according to the year-end status report. GBSD was also unable to do learning walks due to COVID-19 restrictions and closures. Despite this, student access to technology increased with the grant supporting 1:1 access to devices. Additionally, teachers received training opportunities on digital tools that support instruction in a distance learning format.

FINDINGS

The findings from the SY 20-21 evaluation at Gresham-Barlow School District (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. Evaluation questions guiding this study were designed to respond to these seven factors. Each factor is further framed by these questions, with relative key findings highlighting trends in data as they pertain to each guiding line of inquiry.

TEACHING EFFECTIVENESS

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

Teachers were asked to reflect on both group and individual professional development (PD) that they received as part of the TechSmart grant. One teacher mentioned that there were quite a few opportunities for group PD that included all teachers, educational assistants, and the administration. Additionally, there was a technology coach that observed teachers' utilization of technology and provided individualized feedback and methods for improvement. An instructional math technology coach was also present to provide PD regarding the app Desmos.

As shown in Figure 3, nearly eighty percent (78.9%) of TechSmart teachers who responded to the Spring 2021 survey reported receiving between one and eight hours of individualized PD during SY 20-21. Slightly more than ten percent (10.5%) of respondents were not a part of individualized PD at all. Comparatively, all (100%) TechSmart teachers participated in some level of group PD. In fact, most respondents (68.4%) spent over nine hours in group PD.

All teacher survey respondents spent some time in group PD.

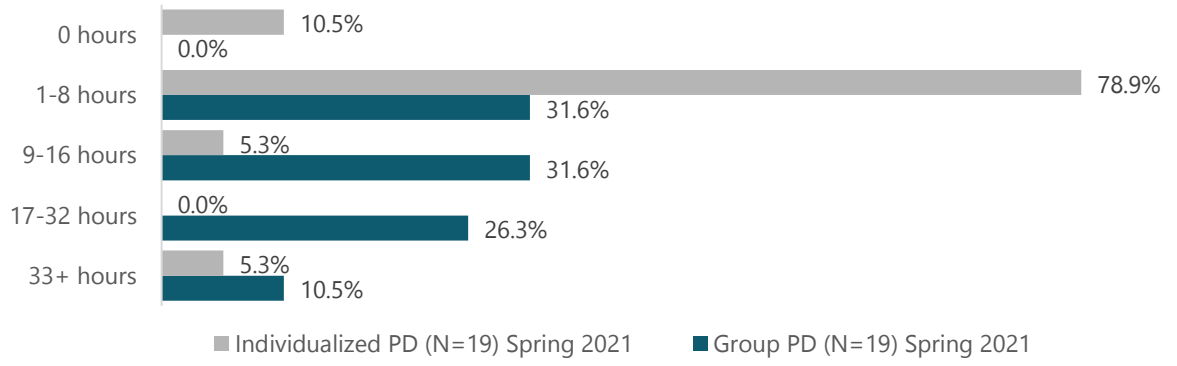


Figure 52. Time GBSD teachers spent in individualized and group professional development

Most teachers rated individualized PD and group PD as Moderately Useful (1 = Not at all useful; 5 = Extremely useful). Around 30% of Spring 2021 teacher survey respondents rated individualized and group PD as Very Useful or Extremely Useful (Figure 4).

A majority of teachers rated both group and individualized PD as at least Moderately Useful.

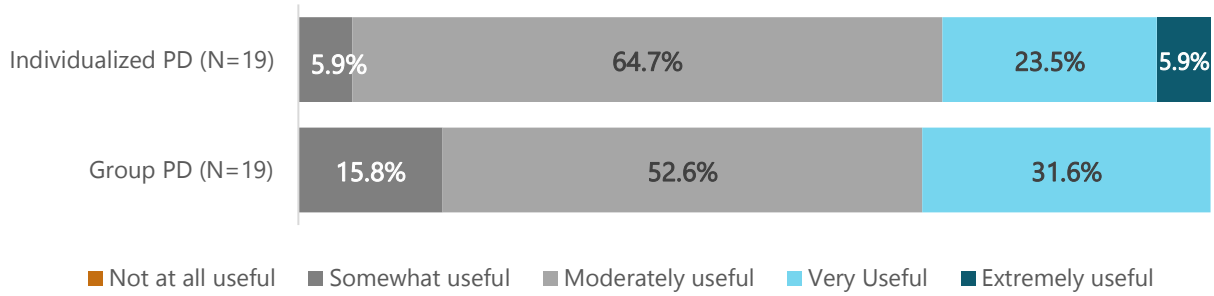


Figure 53. GBSD teacher ratings of how useful professional development was, by type. (1 = Not at all Useful; 5 = Extremely Useful)

Respondents were asked if they felt the individualized and group PD received through TechSmart differed from what others received to support distance learning in the COVID-19 pandemic. Slightly over a quarter (26.3%) of respondents indicated that PD received through TechSmart was different from what others received (Figure 5). These teachers explained that the TechSmart training differed in that it emphasized effectively using technology in distance learning and sharing different strategies they could use while distance learning, the training was more in-depth, and it demonstrated how to use technology both in and out of the classroom; however, nearly seventy percent (68.4%) of participants indicated that they were not sure whether the PD could be differentiated from what others were experiencing.

Nearly 70 percent of participants did not know if PD received through TechSmart was different from PD provided to support distance learning.

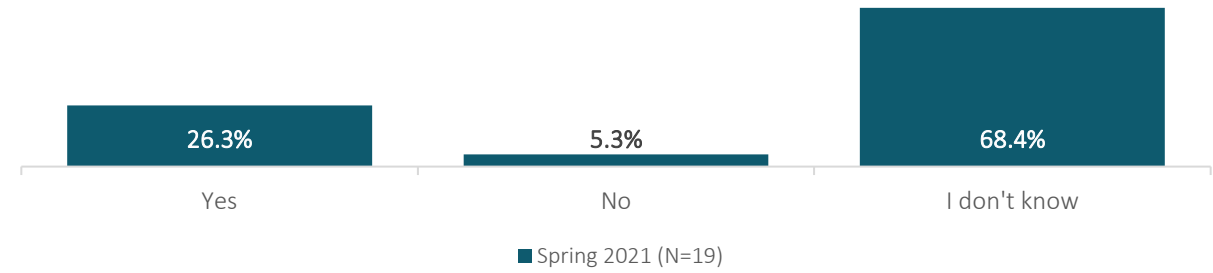


Figure 54. GBSD teacher belief that TechSmart-provided professional development differs from what others are receiving to support distance learning in the COVID-19 pandemic

Teacher interviewees confirmed that Individual and Group PD in SY 20-21 was limited due to the coaching role being filled later in the school year, but one of the teachers noted that the new Secondary Innovation Coach shared math resources from EdPuzzle. The year-end status report also included information explaining that the district was able to provide teachers with training on engagement tools during Winter 2020 that could support instruction in distance learning.

KEY FINDINGS	How is professional development impacting teacher instruction?
	GBSD faced obstacles in offering TechSmart professional development due to delays in hiring the Secondary Innovation Coach; however, some teachers confirmed they received beneficial support in SY 20-21, and the district was optimistic about training that would be offered in SY 21-22.
	There was a slight increase from Fall 2020 to Spring 2021 in the percentage of teachers who seek out activities that promote increased problem solving and critical thinking using classroom technology.
	From Fall 2020 to Spring 2021, there was a 23.1 percentage point increase in teachers whose self-ratings of their own skill levels for technology use fell into two highest skill categories.

GBSD leadership reported that the district was hindered in offering Individual and Group PD due to delays in hiring the Secondary Innovation Coach. Despite this, leadership confirmed that some PD was offered during SY 20-21. Specifically, the coach held a training on creating and adapting instructional videos with Edpuzzle and how to use the tool in a flipped classroom model. According to leadership, the coach had plans in place for SY 21-22 to further focus on PD. This would include i-Ready curriculum supports and engagement through i-Ready, annotation strategies using Desmos and the attached flat panels to support the connected phase of the curriculum and creating digital assignments using the GBSD curriculum. Further, the coach plans to deliver some of the PD by creating on-demand videos available to teachers whenever they have availability.

The Spring 2021 survey asked how effective the Individual and Group PD model has been in impacting teacher instruction. Teacher feedback varied. While some teachers provided positive accounts of the PD model by noting it is "very beneficial" and has allowed them to receive additional strategies and examples of how to use technology, other feedback was less positive. Specifically, one teacher explained that the training was not helpful because more time was needed to explore new ideas. Further, one teacher noted that the district's approach to PD is "top-down" in that the district does not listen to what teachers need from PD. Finally, one teacher said they did not think they had received training through TechSmart yet.

Teachers who participated in the TechSmart grant reported the extent to which they were integrating technology into instructional practice in both the Fall of 2020 and at the end of the year in Spring 2021. Respondents used a 7-point scale where they rated to what extent a statement was true (1 = Very Untrue of Me; 7 = Very True of Me.) Of the technology-specific behaviors teachers were asked about in both Fall 2020 and Spring 2021, there was an increase from baseline to Spring 2021 only for the item, "I seek out

activities that promote increased problem solving and critical thinking using classroom technology." (Figure 6)

Between Fall 2020 and Spring 2021, teacher survey respondents slightly increased in the rate at which they seek out activities that promote increased problem solving and critical thinking using classroom technology.

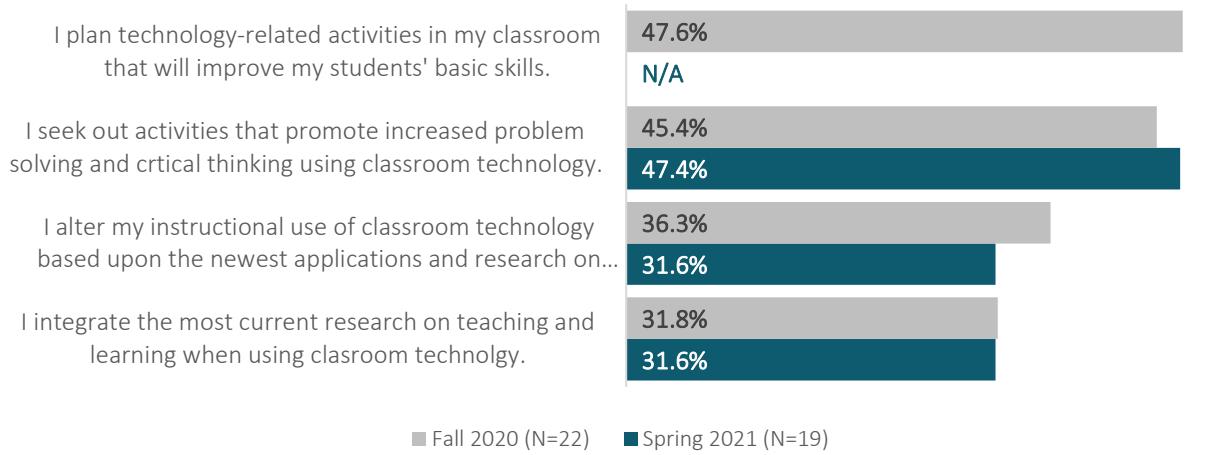


Figure 55. GBSD teacher self-assessment of usage of technology in the classroom (% True of Me/Very True of Me)

GBSD teachers were asked to identify their technology skill level on the Fall 2020 and Spring 2021 surveys. Specifically, teachers indicated which technological proficiency level felt most aligned with their skill set, as shown below.

TECHNOLOGY SKILL LEVEL	
1	I get someone else to do technology-based tasks for me.
2	I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.
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.
4	I use a variety of technology tools and I use them efficiently for all aspects of my job.
5	I use technology efficiently, effectively, and in creative ways to accomplish my job.

There was an increase in teachers' self-reported technology skill level from baseline (i.e., Fall 2020) to Spring 2021. At baseline, 45.4% of survey respondents rated their skill level at the highest two levels, compared to 68.5% in Spring 2021. (Figure 7)

By Spring 2021, a majority of teachers rated their technology skill level at the two highest levels.

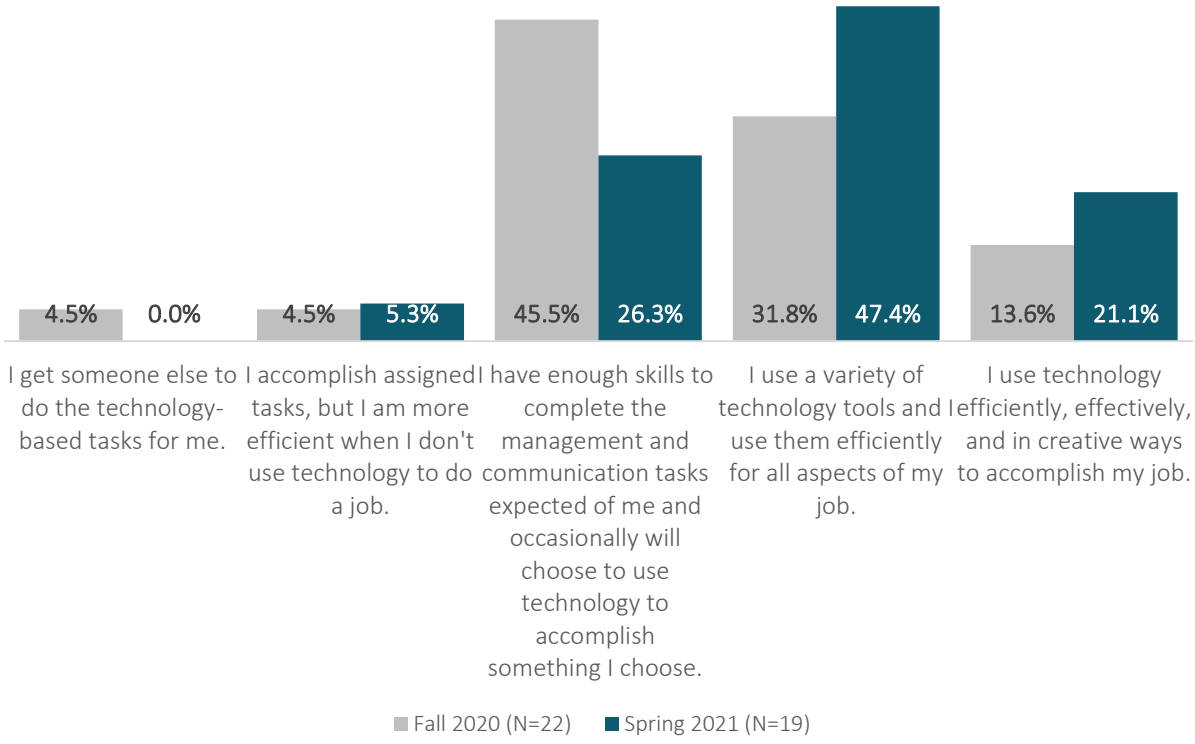


Figure 7. GBSD teacher self-assessment of technology skill level

KEY FINDINGS	What new instructional strategies are teachers reporting?
	Teachers used a variety of technology tools and noted that Google Suite, Canvas, and Desmos were useful during distance learning.
	Teachers most commonly indicated that they used technology to engage students, instruct in small groups, differentiate instruction, and provide hands-on activities.
	Teachers rated formative assessments and differentiating instruction as the most effective instructional strategies that utilize technology.

GBSD teachers shared new instructional strategies that emerged during distance learning and further elaborated on whether these new strategies may carry over when GBSD transitions back to in-person learning. Teachers mentioned utilizing a variety of technology tools during distance learning such as the i-Ready curriculum, Kahoot!, Google Classroom (including Google Slides), Desmos, Nearpod, GoGuardian, RazKids, Boom Cards, Edpuzzle, and documents for students to share their thinking simultaneously. Other practices teachers mentioned include providing math practice that gives immediate feedback to students by providing the correct answer, using online platforms to communicate with families, annotating work being presented to students, utilizing a classroom management tool, printing less, supporting time management, and having students turn in more work digitally.

Teachers provided examples of technology-related instructional strategies that they believe have been effective in their classroom instruction and rated the strategies on a scale of one to five, with five being the most effective (1 = Not at all Effective; 5 = Extremely Effective). Table 1 describes the ways in which teachers used new instructional strategies, along with average effectiveness ratings. Teachers most commonly reported using technology to engage students, instruct in small groups, differentiate instruction, and provide hands-on activities. Teachers rated formative assessments and differentiating instruction as the most effective strategies.

Instructional Supports	Effectiveness Rating
Student engagement	3.6 (n = 5)
Small group instruction	2.8 (n = 4)
Differentiating instruction	4.7 (n = 3)
Hands-on activities	3.3 (n = 3)
Formative assessments	5.0 (n = 2)
Independent student work	4.5 (n = 2)
Desmos	4.0 (n = 2)
Digital/interactive flat panel	4.0 (n = 2)
Whole class instruction	3.5 (n = 2)
Support SPED & ELD/Accessibility tools	3.5 (n = 2)
Other: Facilitate student discourse; Google Classroom suite; Smartboard; GoGuardian; Build relationships/rapport; Chromebooks; Tracking data; Synchronous learning	

Table 1. How new technology is being used for instruction by GBSD teachers

GBSD leaders briefly discussed instructional strategies in their interviews; however, overall, leaders did not have a great deal of insight to share. Several of the leaders mentioned that adjusting to the new learning environment during the pandemic had taken precedence over providing PD that focused on adopting new instructional strategies. Toward the end of SY 20-21, GBSD brought on a Secondary Innovation Coach so that the teachers could begin to adopt new instructional methods, according to leadership. Those who did share insights into adopted instructional strategies mentioned that technology was being used in distance learning to facilitate student discourse, which otherwise faltered in an online setting.

Teachers discussed what technology strategies have transferred well during distance learning. Teachers spoke highly of a variety of technological programs such as the Google Suite, Canvas, and Desmos. They acknowledged that these tools made their jobs easier and promoted student engagement during this

time. Teachers also recognized the importance of sustained use of these tools even as students begin to return to the classroom.

KEY FINDINGS	How are the new instructional strategies impacting student engagement?
	Teachers' confidence in their ability to engage students through the use of technology noticeably increased from Fall 2020 to Spring 2021.
	Engaging students in learning during distance education was difficult; however, teachers addressed this obstacle by utilizing technology to gamify lessons.

There was a notable increase from Fall 2020 (59.1%) to Spring 2021 (89.4%) in the percentage of teachers who felt confident in their ability to engage students through the use of technology (Figure 8). This jump indicates that teachers are becoming more self-assured about engaging students through technology.

By Spring 2021, teacher survey respondents were noticeably more confident in engaging students through technology.

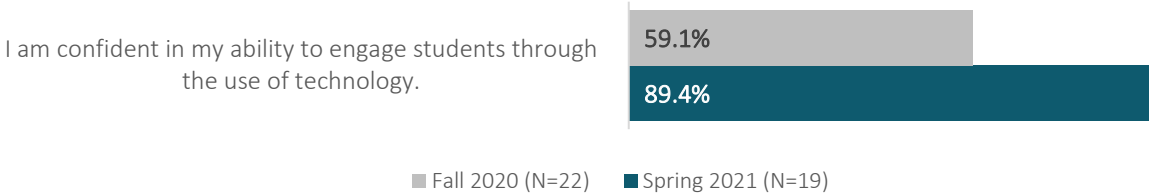


Figure 8. GBSD teacher confidence in personal ability to engage students (% Agree/Strongly Agree)

Teachers were asked to discuss what student engagement has looked like over the past year. Both teachers who were interviewed lamented that it has been difficult to engage students. One teacher even noted that only half of their students consistently showed up and attempted to participate in remote learning. To increase interest and involvement, teachers attempted to gamify lessons, which facilitated slightly more participation. One teacher described their efforts to include more gaming content into lessons when they stated,

> *"Really, the main thing was trying to gamify lessons. We did actually have a PD around gamifying lessons, and that was really helpful, but for me, it was really strategically using those specific sites like Desmos, Edpuzzle, and Gamekit, the latter of which is similar to Kahoot! but it's more learning based. I just try to do things online that are a little bit more interesting and more relatable to them…"*

This quotation exemplifies teachers' efforts to increase engagement through a variety of different e-learning platforms and indicates that PD around gamification was useful in supporting teachers' efforts.

KEY FINDINGS	Are the new instructional strategies showing promise for improving academic outcomes?
	Teachers were hopeful that gamification of lessons could support academic success by making curriculum more relatable and interesting.
	Students in the Tracked/Accelerated math courses had higher grades on average than those in the Not Tracked/Common Core math courses; the former also included a higher rate of white students as compared to students of color.
	There was a slightly greater percentage point increase in Not-Tracked/Common Core students who moved from below grade level to on or above grade level on the i-Ready Fall and Spring assessment as compared to Tracked/Accelerated students.

Interviewed teachers detailed whether they had adopted any new practices this year that would improve student academic success. One teacher noted that they had not had the opportunity to implement any new practices, as the year has been very challenging, or in their words "helter skelter." This teacher noted that this year's challenges stem from the lack of student engagement as a result of remote instruction. The other teacher who was interviewed was looking forward to integrating more game-based lesson plans, which they believed could make the curriculum more relatable and interesting.

Student Achievement Data

A summative evaluation study will be used to assess and compare student outcomes by the middle school math course in which students are enrolled (Not Tracked/Common Core vs. Tracked/Accelerated). Specifically, the district is interested in understanding if the TechSmart grant differentially impacts students in various middle school math courses and their resulting high school math trajectory. Over the course of GBSD's grant, evaluations will seek to answer the following question:

- Are grades, i-Ready data, and math course in middle school a determinant of high school math class and grades?

Due to the fact that GBSD is implementing TechSmart across all middle schools, there is limited opportunity for a real-time comparison group. Rather than creating a historical comparison group, PRE worked with the district to design a study that would be most meaningful to GBSD given the obstacles faced by the pandemic. In addition, since this is GBSD's second TechSmart grant, some of the middle

school students experienced TechSmart in elementary school making a true comparison group even more difficult.

As a result of the COVID-19 pandemic, GBSD faced barriers with grant implementation in SY 20-21. As such, the entire first year of the grant (SY 20-21) will serve as the baseline for all future evaluations of GBSD's current grant. Specifically, future evaluations will assess the TechSmart Cohort of students who were in 7th grade in SY 20-21; these students will receive the treatment in 8th grade (SY 21-22). The TechSmart Cohorts' outcomes will be analyzed again in 9th grade (SY 22-23), when they are no longer receiving the treatment, to determine the impact of the TechSmart grant on students' high school trajectory.

Figure 9 presents the number of students in the TechSmart Cohort (N = 800) during the baseline year (7th grade) by the type of math course they were enrolled in during SY 20-21. Seventy-seven percent of students were enrolled in Not Tracked/Common Core math. Two students started the school year in the Not Tracked/Common Core level but were transferred to the Tracked/Accelerated course group partway through the year; these two students were included in the Tracked/Accelerated group throughout the analysis below.

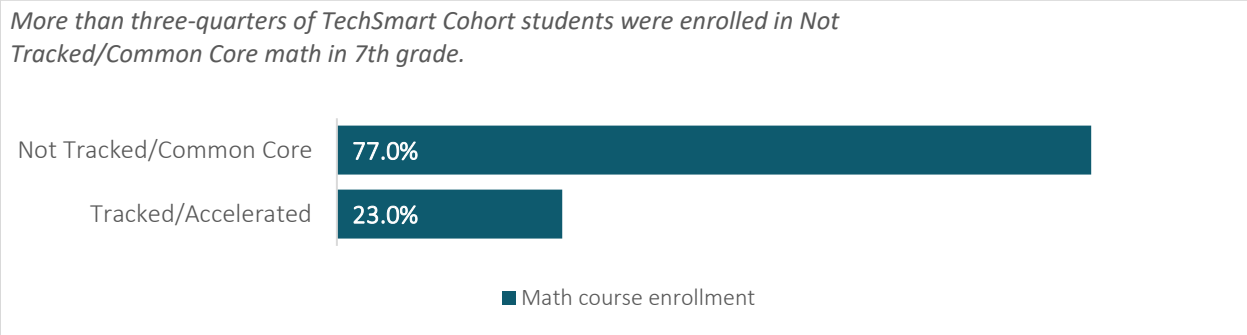


Figure 9. Sample size for GBSD TechSmart Cohort by math course (N = 800)

Figure 10 presents the at-risk indicators of special education (SPED), Limited English Proficiency (LEP) and students of color for the TechSmart Cohort in SY 20-21. A little more than half of the students were students of color.

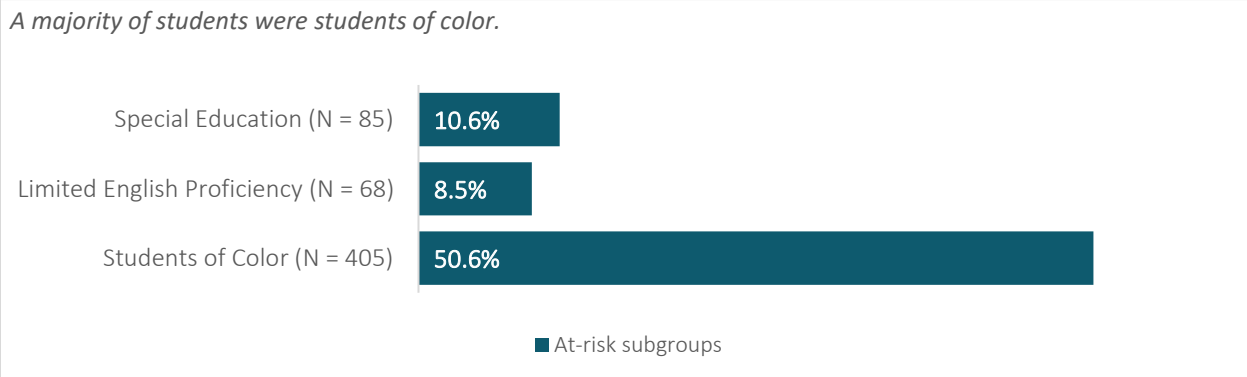


Figure 10. GBSD TechSmart Cohort at-risk Indicators (N = 800)

Figure 11 provides a summary of the breakdown of student race/ethnicity in the TechSmart Cohort. Just under half of the students at baseline were white, and approximately one-third were Hispanic.

Nearly half of the students in the TechSmart Cohort were white.

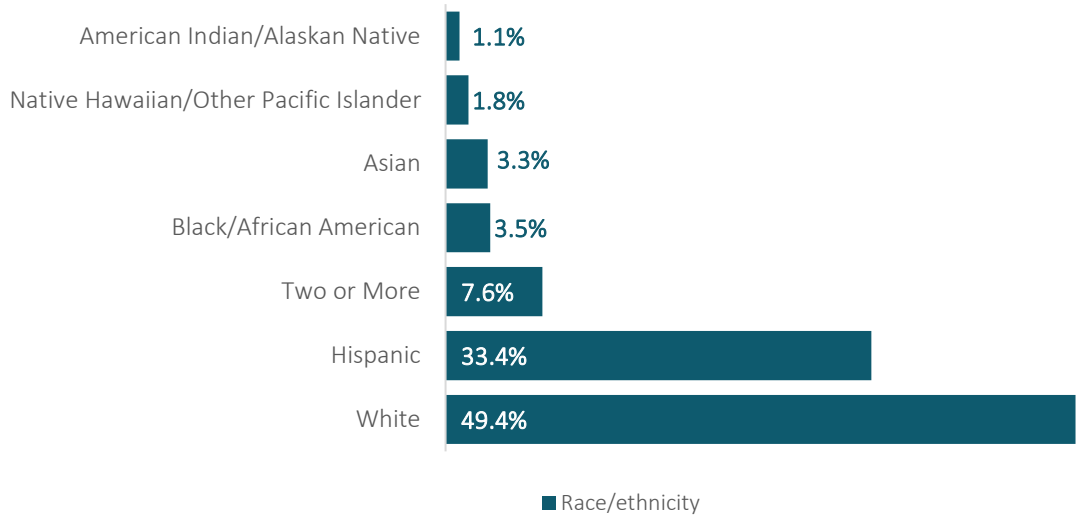


Figure 11. GBSD TechSmart Cohort race/ethnicity (N = 800)

As demonstrated by Figure 12, there was a higher rate of students of color enrolled in Not Tracked/Common Core, while a higher rate of white students was enrolled in Tracked/Accelerated (Figure 12) math.

A higher rate of students of color were enrolled in Not Tracked/Common Core math, whereas a higher rate of white students were enrolled in Tracked/Accelerated math.

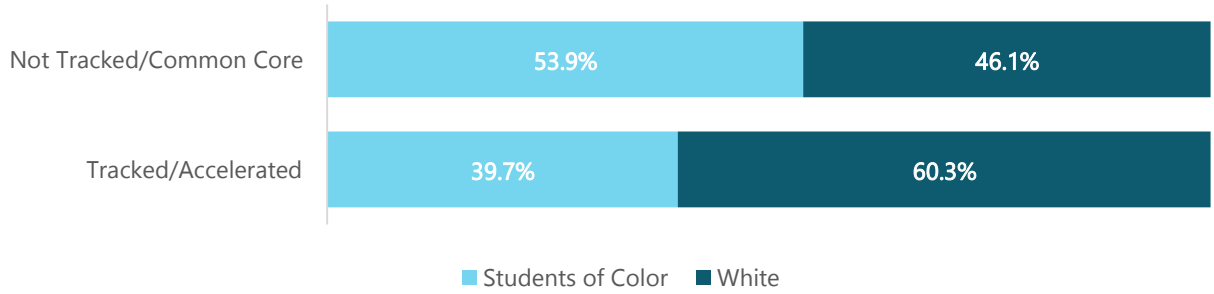


Figure 12. GBSD TechSmart Cohort math course enrollment by race/ethnicity (N = 800)

The GBSD TechSmart grant focuses on improving student achievement in math, as measured by math course grades and i-Ready assessment data.

Math Course Grades

Figure 13 demonstrates the TechSmart Cohort's average grade (F = 0; D = 1; C= 2; B = 3; A = 4) by SY 20-21 math course level. Students enrolled in Not Tracked/Common Core math had an average grade of a D to a C (1.58), while students in Tracked/Accelerated math had an average grade of almost a B (2.81).

The average grade for students in Tracked/Accelerated math was more than a grade point higher than students in Not Tracked/Common Core math.

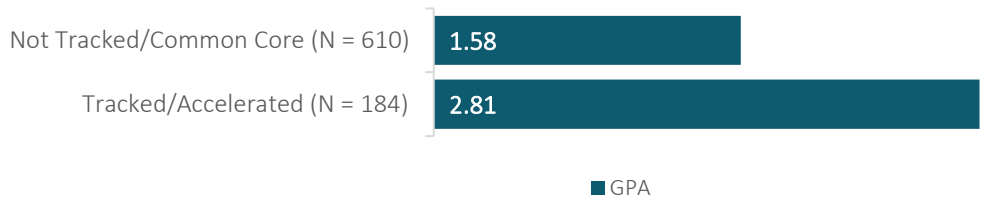


Figure 13. TechSmart Cohort average grade by math course level (F = 0; D = 1; C = 2; B = 3; A = 4)

Evaluators also assessed the breakdown of students' average grade in each course level by race/ethnicity. Average grades were higher for white students in both Not Tracked/Common Core and Tracked/Accelerated math (Figure 14).

The average grade was higher for white students in both math course levels.

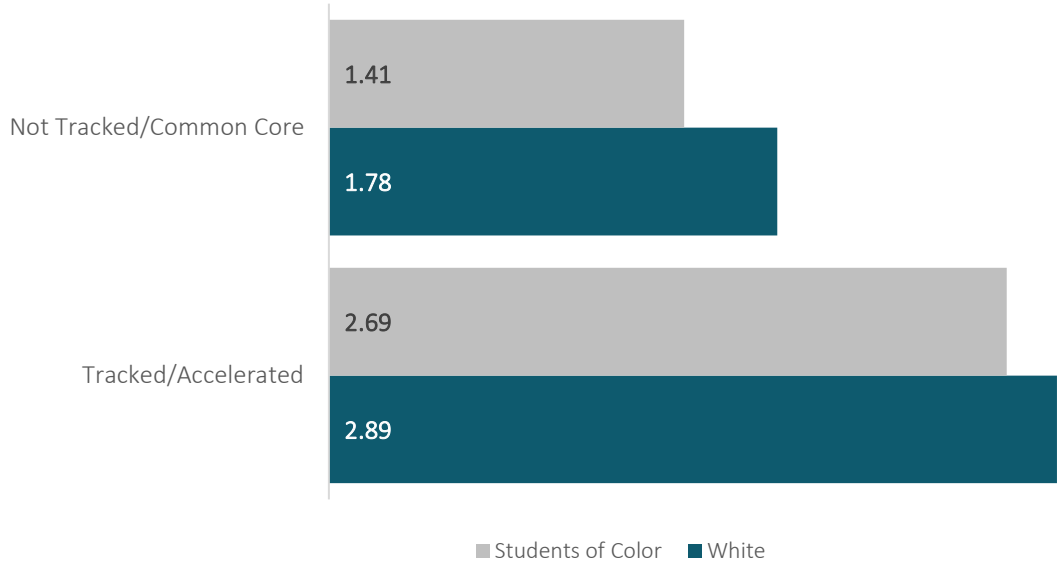


Figure 14. GBSD TechSmart Cohort average grade by course level and race/ethnicity (F = 0; D = 1; C = 2; B = 3; A = 4)

i-Ready Assessment

i-Ready is a comprehensive assessment and instruction program that connects diagnostic data from assessment results with personalized instruction through individualized learning paths.

Based on scaled scores, students fall into one of seven achievement level categories:

- Three or more grade levels below (479 or less)
- Two grade levels below (480-492)
- One grade level below (493-517)
- On grade level – Early (518-540)
- On grade level – Mid (541-574)
- On grade level – Late (575-585)
- Above grade level (586 or higher)

Scores from the 7th grade i-Ready assessment are presented below for the Fall 2020 and Spring 2021 time points by math course. For TechSmart Cohort students in Not Tracked/Common Core math, there was a 11.3 percentage point increase from Fall 2020 to Spring 2021 in the total percentage of students who were on or above grade level. This increase was slightly higher than that of students in Tracked/Accelerated math, in which there was a 10.1 percentage point increase in the total percentage of students who were on or above grade level. Notably, a majority of Tracked/Accelerated students were on grade or above grade level at both time points (62.1-72.2%), whereas only a small portion of Not Tracked/Common Core students were on or above grade level at each time point (9.3-20.6%).

Math Course Level	i-Ready Achievement Category	Fall %	Spring %
Not Tracked/Common Core (N = 516-616)	Three or more grade levels below	36.2%	41.1%
	Two grade levels below	16.5%	11.4%
	One grade level below	38.0%	26.9%
	On grade level – Early	8.3%	13.3%
	On grade level – Mid	1.0%	6.5%
	On grade level – Late	0.0%	0.0%
	Above grade level	0.0%	0.8%
Tracked/Accelerated (N = 179-184)	Three or more grade levels below	1.1%	3.8%
	Two grade levels below	1.7%	4.3%
	One grade level below	35.2%	19.6%
	On grade level – Early	44.1%	27.7%
	On grade level – Mid	16.8%	38.0%
	On grade level – Late	0.6%	2.2%
	Above grade level	0.6%	4.3%

Table 2. GBSD TechSmart Cohort i-Ready

High School Credit Attainment

Three students (0.4%) earned high school math credit following 7th grade. All three of these students were enrolled in the 08 Integrated Math 1 course (one of the Tracked/Accelerated courses). Two of these students were white and one student was Asian. Additional data will be available for high school credit attainment in the SY 21-22 and SY 22-23 evaluation reports.

KEY FINDINGS	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)?
	The average math course grade was higher for all students as compared to the at-risk subgroups of limited English proficiency, special education, and students of color.
	All subgroups demonstrated an increase in the rate of students who moved from below grade level to on or above grade level with students with limited English proficiency and students of color showing a larger percentage point increase from below grade to on or above grade in comparison to all students.
	Teachers and leaders cited access to technology as an important method for supporting at-risk subgroups. Teachers further noted that technology supports at-risk subgroups by allowing them to differentiate assignments.

Student Achievement Data

To better understand whether technology-supported instructional practices are showing promise for improving academic outcomes with at-risk student subgroups, math grades and i-Ready assessment scores were examined by subgroups at baseline (SY 20-21). The at-risk subgroups examined included: students with limited English proficiency (LEP students), students in Special Education (SPED students), and students of color.

Math Course Grades

As shown in the figure below, math grade point average was highest for all students compared to the subgroups of limited English proficiency, special education, and students of color. Math grade point average for the students of color subgroup was closest to the average across all students of any of the three at-risk subgroups examined (Figure 15).

The average grade for all students was higher than that of any of the at-risk subgroups.

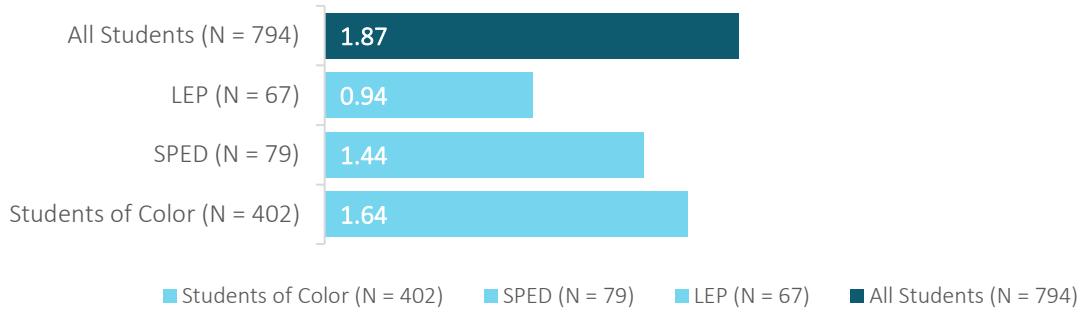


Figure 15. Average grade for GBSD TechSmart Cohort at-risk subgroups (F = 0; D = 1; C = 2; B = 3; A = 4)

i-Ready Assessment

Table 3 below shows the percentage of TechSmart Cohort students that fell into each i-Ready achievement category during Fall 2020 and Spring 2021, focusing on comparison with at-risk subgroups. All groups assessed showed an increase in the rate of students whose scores indicated they were on or above grade level. In fact, for students with limited English proficiency and students of color there was a larger percentage point increase from Fall 2020 to Spring 2021 in the total percentage of students who were on or above grade level than for all students. Across all students, 22.8% were on or above grade level in Fall 2020, while 32.5% were on or above grade level in Spring 2021. For LEP students, 0.0% were on or above grade level in Fall 2020, but a total of 14.7% were on or above grade level by Spring 2021. For SPED students, 5.7% were on grade level in Fall 2020, while 9.4% were on grade level by Spring 2021. Finally, for students of color, 16.9% were on or above grade level in Fall 2020, and 28.4% were on or above grade level by Spring 2021.

Math Course Level	i-Ready Achievement Category	Fall %	Spring %
All Students (N = 695/Fall; 800/Spring)	Three or more grade levels below	27.2%	32.5%
	Two grade levels below	12.7%	9.8%
	One grade level below	37.3%	25.3%
	On grade level – Early	17.6%	16.6%
	On grade level – Mid	5.0%	13.8%
	On grade level – Late	0.1%	0.5%
	Above grade level	0.1%	1.6%
Limited English Proficiency (N = 48/Fall; 68/Spring)	Three or more grade levels below	72.9%	58.8%
	Two grade levels below	6.3%	8.8%
	One grade level below	20.8%	17.6%
	On grade level – Early	0.0%	7.4%
	On grade level – Mid	0.0%	4.4%
	On grade level – Late	0.0%	0.0%
	Above grade level	0.0%	2.9%
Special Education (N = 70/Fall; 85/Spring)	Three or more grade levels below	77.1%	68.2%
	Two grade levels below	7.1%	8.2%
	One grade level below	10.0%	14.1%
	On grade level – Early	5.7%	8.2%
	On grade level – Mid	0.0%	1.2%
	On grade level – Late	0.0%	0.0%
	Above grade level	0.0%	0.0%
Students of Color (N = 337/Fall; 405/Spring)	Three or more grade levels below	33.5%	36.0%
	Two grade levels below	12.5%	9.9%
	One grade level below	37.1%	25.7%
	On grade level – Early	14.5%	16.3%
	On grade level – Mid	2.1%	9.4%
	On grade level – Late	0.0%	0.5%
	Above grade level	0.3%	2.2%

Table 36. GBSD TechSmart Cohort i-Ready results by at-risk subgroups

On the Spring 2021 survey, teachers were invited to discuss ways in which they used technology *to minimize barriers with at-risk subgroups* (e.g., students of color, LEP, SPED, low SES) during distance learning. Several key themes emerged from the data. Six teachers discussed how providing personal technology, such as Chromebooks, and Wi-Fi access supported instruction with at-risk subgroups. Teachers also emphasized the role that co-teachers and Educational Assistants have played in providing additional assistance to at-risk subgroups, such as through check-ins, study groups, or technology trainings. Additionally, a couple of teachers mentioned offering information sessions and translation services to ESL students. Sample responses for each theme are shown below in Table 4.

Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, LEP, SPED, low SES) during distance learning.	
Free technology (n=6)	*"Our school has a Verizon Grant, so all students were provided with a Chromebook that is Wi-Fi enabled."* *"Provided computers and hotspots for homes that don't have Wi-Fi."* *"Provided devices with built in Wi-Fi so every student has access to the learning environment."* *"Helped students gain access to Wi-Fi/LTE networks. Offered 1-to-1 for devices."* *"All students get a Chromebook and internet access."* *"Provide Chromebooks with internet and training to all families."*
Utilizing co-teachers and EA's (n=4)	*"We have intentionally placed EAs with our at-risk subgroups. Our ELD teacher also reaches out daily. We created study groups in the afternoons for these students with proper support from teachers and EAs as well. The counselor checks in with phone calls and meets frequently to help minimize barriers, especially if we start to notice them. Our school has also created a position called Engagement Liaisons who assist these students when in need."*
Translation Services and Options (n=2)	*"Lots and lots of interpretation help and support in the building; tele-language for translation services"* *"Offer information sessions in English and in Spanish"*
Modify Assignment Instructions or Expectations (n=1)	*"Our SPED team frequently calls and checks in with students who struggle with technology. Work is modified to their level."*

Table 37. Ways technology supported instruction for at-risk subgroups during remote learning, Spring 2021 survey data

Teachers also provided examples of how they have used technology to support instruction for at-risk subgroups (students of color, LEP, SPED, low SES) during distance learning. Some teachers explained that they supported differentiation of assignments based on student needs. For example, students may be allowed to work in different formats, or a variety of choices may be given for a particular assignment. Teachers also emphasized individualized or small group attention to at-risk kids. In this vein, a couple of teachers mentioned the program GoGuardian as a technological tool that helped them provide individual assistance to students online. Further assistance was available through breakout rooms or individual check-ins. Additionally, lessons were presented in a variety of formats and levels of interactivity. For example, students were taught to annotate PDFs, and slides included subtitles or translations. In addition, the use of the i-Ready curriculum by GBSD pinpointed students' strengths and weaknesses in math and

reading. From there, the curriculum helped fill in knowledge gaps. The other teacher also acknowledged the utility of i-Ready as an adaptive program.

Interviews with leadership provided additional insight on ways in which technology use has helped close the achievement gap. Nearly all GBSD leadership staff who were interviewed mentioned the importance of individual devices for students. All the students at GBSD have their own Chromebooks, which minimized the technological divide between students. Furthermore, hotspots were provided for students who did not have internet at home. These measures help close the equity gap regarding technology use, according to leadership. Because each student has their own device, all students are gaining important technological skills that they may have not had the opportunity to learn previously. One leader described a variety of skills that a student may gain by having access to personal technology by stating,

> *"Students who wouldn't necessarily have a computer access to those tools at home now have courses that are regularly like, 'This is how you do this on a Google slide. This is how you create a video to share with your teacher.' They're learning a lot of tech skills that I don't think they normally would have learned, even how to write an email appropriately."*

KEY FINDINGS	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)?
	Average math grades were lower for at-risk subgroups compared to non-at-risk subgroups.
	High school math credit attainment following 7th grade was very low for all students.

Analysis of math grades and high school credit attainment provided information regarding how student progress may differ for at-risk subgroups compared to non-at-risk subgroups from the TechSmart Cohort. Baseline data are provided below.

Math Course Grades

The average math grade for non-limited English proficiency students was about one grade point higher than for students with limited English proficiency (Figure 16).

Students who were non-limited English proficient had higher math grades, on average, compared to those with limited English proficiency.

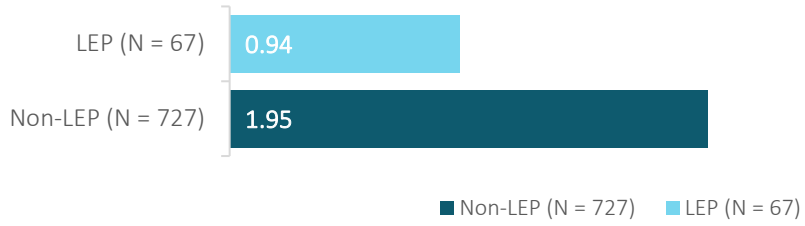


Figure 16. GBSD TechSmart Cohort LEP vs. Non-LEP average grades

As illustrated in Figure 17, the average math grade for white students was about half a grade point higher than for students of color.

Average grades are about a half a point lower for students of color compared to white students.

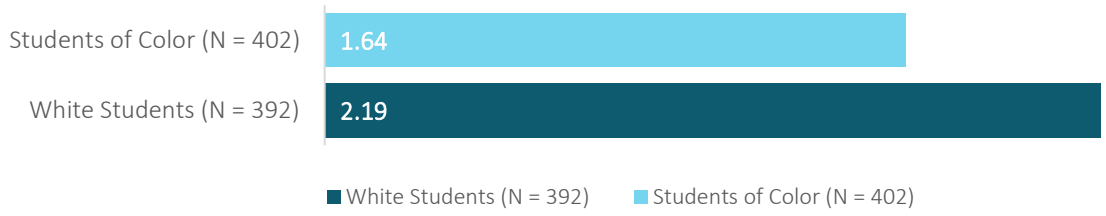


Figure 17. GBSD TechSmart Cohort students of color vs. white students' average grades

Similarly, Figure 18 illustrates that the average math grade for special education students was about a half a grade point lower compared to non-special education students at baseline.

Average grades are about a half a point lower for special education students compared to non-special education students.

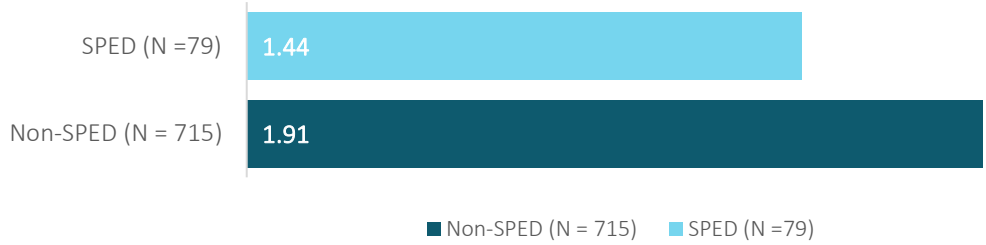


Figure 18. GBSD TechSmart Cohort SPED vs. Non-SPED average grades

Math Credit Attainment

Results are presented below for baseline high school math credit attainment. Students will have a greater opportunity to earn high school math credit as they progress to 8th (SY 21-22) and 9th (SY 22-23) grades, so additional math credit attainment results will be included in future evaluation reports.

As shown in Table 5 below, limited English proficiency students did not earn high school math credit in 7th grade. Although a higher percentage of non-limited English proficiency students earned high school math credit, the rate was still very low at 0.4%.

Subgroup	% Earned High School Math Credit
LEP (N = 68)	0.0%
Non-LEP (N = 732)	0.4%

Table 38. Credit attainment for LEP vs. Non-LEP

Table 6 demonstrates high school math credit attainment for students of color and white students. A very slightly higher rate of white students earned high school credit compared to students of color following 7th grade, but the percentage was very low for both groups.

Subgroup	% Earned High School Math Credit
Students of color (N = 405)	0.2%
White students (N = 395)	0.5%

Table 39. Credit attainment for students of color vs. white students

Table 7 shows math credit attainment for special education TechSmart students and non-special education TechSmart students. Non-special education students earned high school math credit at a slightly higher rate than special education students, but the rate of high school math credit attainment was very low for both groups following 7th grade.

Subgroup	% Earned High School Math Credit
SPED (N = 85)	0.0%
Non-SPED (N = 715)	0.4%

Table 40. Credit attainment for SPED vs. Non-SPED

DIGITAL AGE LEARNING CULTURE

Districts embrace a cultural shift and view technology as positive.

KEY FINDINGS

Has the use of technology to support instructional practices increased?

By Spring 2021, teachers increased the frequency at which they adapt activities to students individually using technology.

Figure 19 below compares survey responses from Fall 2020 to Spring 2021 specific to frequency of technology integration. Teachers indicated the greatest rate of change (50.0% to 68.4%) regarding how frequently they adapt activities to students individually using technology. The frequency of students working individually using technology remained high. (Note: the first two items were not included on the Spring 2021 survey.)

Teachers increased the frequency in which they adapt activities to students individually using technology.

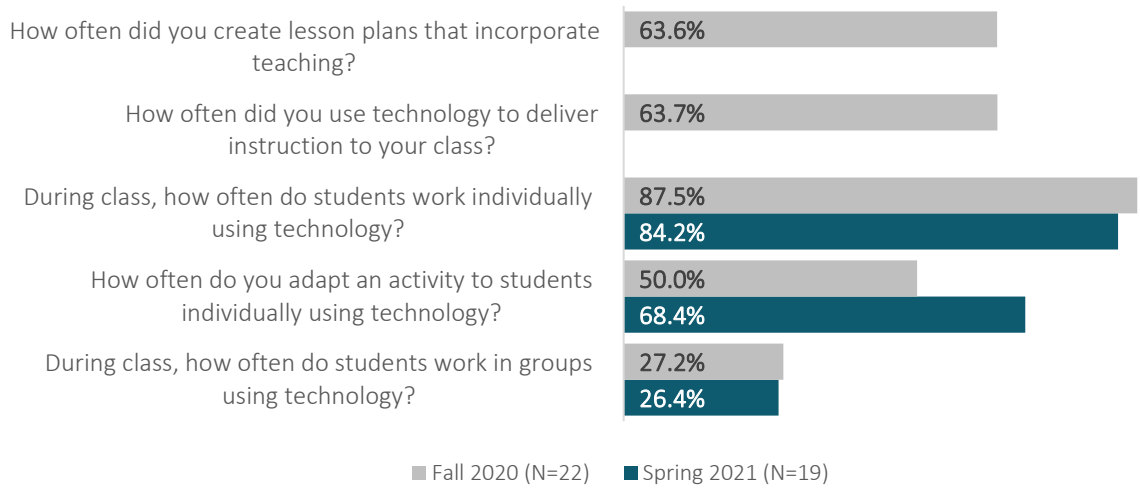


Figure 19. GBSD teacher observed frequency of technology integration (% A Moderate Amount/A Great Deal)

KEY FINDINGS	Do teachers have increased access to and use of digital content and resources?
	There was a noticeable increase from Fall 2020 to Spring 2021 in teachers who use digital content and resources in their instruction.
	According to teachers, students' technology proficiency increased from the previous school year, most notably around students' comfort using digital tools for learning.
	Nearly all teachers surveyed in Spring 2021 were more confident in their ability to integrate technology in their instruction as a result of the distance learning experience.

GBSD teachers provided self-reports on how frequently they use digital content and resources. By Spring of 2021, almost 85.0% of teachers who completed the survey reported that they use digital content and resources A Great Deal or A Moderate Amount compared to just 50.0% in Fall 2020 (Figure 20).

Nearly 85% of teachers use digital content and resources in their classroom. This was an increase of more than 30 percentage points from Fall 2020.

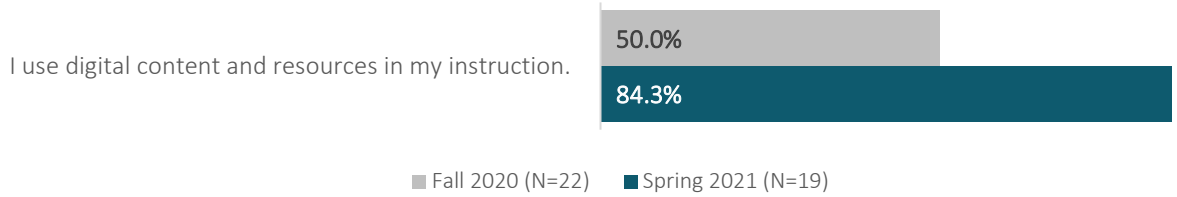


Figure 20. GBSD teacher integration of digital content (% A Moderate Amount/A Great Deal)

As shown in Figure 21 below, a large majority of teachers agreed that their current students are more comfortable than their SY 19-20 students using digital tools for learning. Nearly sixty percent of teachers (57.9%) agreed that, in comparison to their students in the previous school year, their SY 20-21 students are more able to work independently and that they can choose the right tool for their task.

Almost 90% of teachers surveyed in Spring 2021 reported that their students are more comfortable using digital tools for learning than their students in SY 19-20.

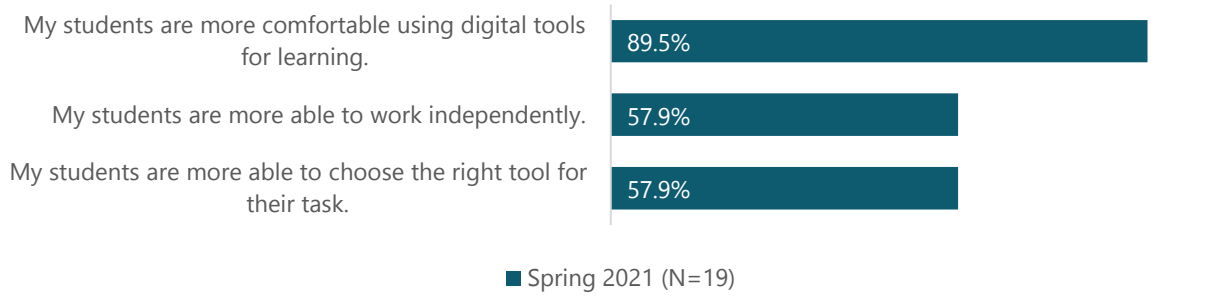


Figure 21. GBSD teachers' agreement with statements regarding 2020-2021 student's technological proficiency (% Agree/Strongly Agree)

GBSD teachers were asked to answer a series of questions regarding distance learning. Nearly ninety-five percent (94.7%) of teachers agreed or strongly agreed that they felt more confident integrating technology into instruction as a result of the distance learning experience (Figure 22). Almost ninety percent (89.4%) of teachers agreed they had adopted new strategies during distance learning that they planned to bring back to the classroom. Around one-third (36.8%) of teachers indicated that distance learning during the pandemic had not been convenient for them.

About 95% of teachers surveyed in Spring 2021 felt more confident in their ability to integrate technology in their instruction as a result of distance learning.

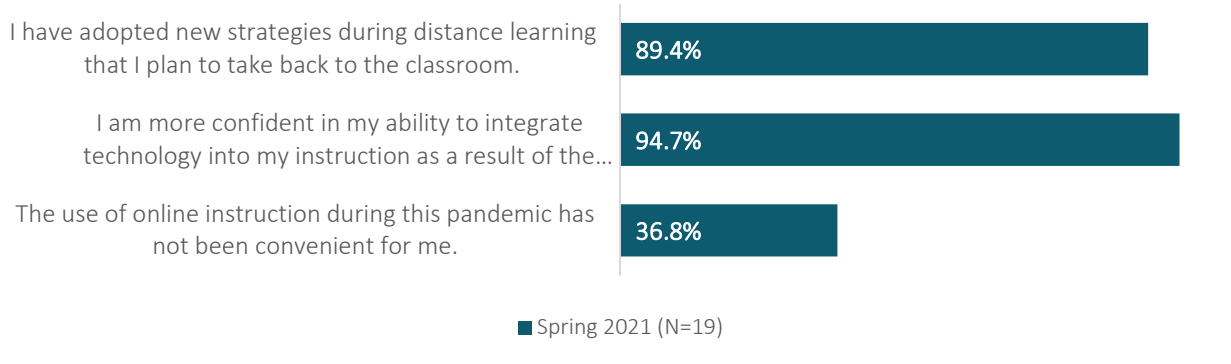


Figure 22. GBSD teacher's agreement with statements about using technology during distance learning (% Agree/Strongly Agree)

KEY FINDINGS	Is there evidence of district wide support for technology integration?
	Feedback from teachers on both the Fall 2020 and Spring 2021 survey suggested that GBSD supports technology integration; the district continued to make progress in this area during SY 20-21.
	Leadership suggested there needs to be a district-wide vision for technology integration.

Survey data, presented below, provided evidence that GBSD has made progress in creating a culture of support for technology integration. The percentage of teachers who agreed with the statements "Teachers in this school are continually learning and seeking new ideas" and "Teachers are not afraid to learn about new technologies and use them in their classes" increased from baseline in Fall 2020 to Spring of 2021 (Figure 23).

At least 72% of teachers surveyed in Spring 2021 agreed with statements that suggest GBSD cultivates a culture of support for technology integration.

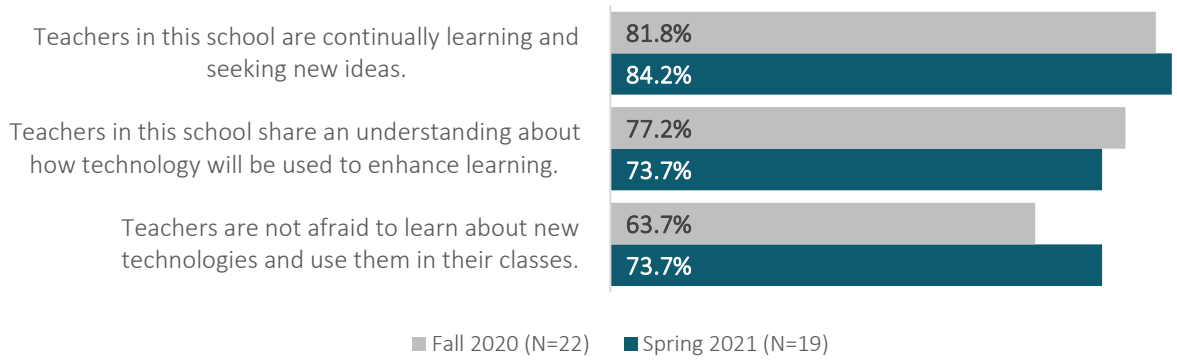


Figure 23. GBSD teacher perceptions of culture of support for technology integration (% Agree/Strongly Agree)

Leaders shared a variety of opinions regarding how district leadership will support technology integration efforts moving forward. On one hand, some leadership believed that it will be up to teachers to participate in PD opportunities to learn new technological strategies. On the other hand, some leadership staff acknowledged that there needs to be a district-wide vision for technology integration. Specifically, leaders described a need to emphasize intentional strategic planning to support institutional technology use.

Interviewed teachers were prompted to share the support that they have received from the district regarding using technology to encourage instructional change. Furthermore, they were asked how this support had changed over time and if they believed it would carry over once full-time in-person instruction resumes. Both teachers recognized that there has been a notable amount of support regarding

technological implementation and use over the last year. One teacher explained that they believe support for technology is going to continue, as the district continues to roll out new platforms.

KEY FINDINGS	Do parents have an increased understanding and utilization of districts' technology assets?
	Emails, texts, and virtual conferences have been useful methods for engaging parents through the use of technology.

Interviewed teachers were asked to reflect on using technology to engage with parents. The teachers mentioned that emails and text messages provided timely updates to parents. One teacher acknowledged that the use of text messages rather than emails had been popular, as parents tended to check their texts more readily than email. Both teachers believed this communication would continue as in-person instruction resumes. Furthermore, one teacher noted that parent-teacher conferences may continue to be hosted online, as the turnout was much higher than in-person parent teacher conferences. The year-end status report added that there were four trainings offered to parents on the use of the technology their students were using during distance learning.

KEY FINDINGS	Are an increased number of students utilizing and engaging with new technology?
	There was likely an increase in middle school students utilizing and engaging in technology with students having 1:1 access to devices.
	Teachers supported students with collaboration with tools such as Jamboard and shared documents.

Because the GBSD student survey was unable to be completed in SY 20-21 due to the COVID-19 pandemic, PRE cannot report on any student data related to utilization and engagement with new technology; however, evidence from the year-end status report indicates that it is very likely an increased number of students are utilizing and engaging with technology, particularly due to the shift to distance learning. Specifically, middle school students have access to 1:1 devices. Further, as discussed previously, teachers reported on the survey that technology has been an effective strategy for engaging students.

Leadership interviewees added that students were initially less inclined to engage in discussion during distance learning, but that teachers were able to find other means for supporting collaboration through Jamboard and shared documents.

KEY FINDINGS	How has TechSmart impacted the shift to distance learning?
	**Some teachers spoke positively about how TechSmart supported them in the shift to distance learning, while other teachers noted it was not clear what supports were provided by TechSmart or whether professional development had been offered.**

The Spring 2021 survey asked teachers to write in comments about how the TechSmart grant impacted their instruction during the past school year with remote instruction. Teachers discussed how helpful it was to have access to technology in the past year, including a touchscreen. Along these lines, a teacher added that "the technology has made distance learning so much easier." Two other teachers provided positive feedback when noting that the Secondary Innovation Coach was "fantastic and so helpful" and that the grant "made a good teacher better." Conversely, a few teachers provided input that suggested it is not clear to them what supports were provided by TechSmart and whether any PD had occurred yet.

VISIBLE LEADERSHIP

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

KEY FINDINGS	Are districts identifying effective instructional practices and disseminating information and results to other districts?
	GBSD did not share information with other districts regarding the TechSmart grant in SY 20-21.

GBSD leaders were asked if they had shared what they are doing with TechSmart with other districts. All the interviewed leadership members indicated that they had not yet shared any information with other districts regarding the TechSmart grant. Some hypothesized that they would eventually share their successes with other districts.

KEY FINDINGS	Do teachers feel increased support from district leaders regarding technology integration?
	Nearly all teacher survey respondents reported in Spring 2021 that administrators in their school are generally supportive of technology integration efforts.

Teacher survey respondents rated their agreement with a statement regarding school culture of support for technology integration. Figure 24 shows an increase from 86.4% in Fall of 2020 to 94.8% in Spring of 2021, indicating that GBSD's culture is supportive of technology integration.

Administrators were generally seen as supportive of technology integration efforts at both time points, with an increase from Fall 2020 to Spring 2021.

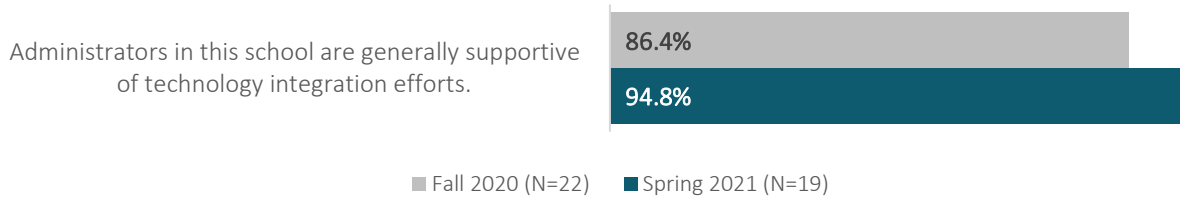


Figure 24. GBSD teachers' perceptions of a culture of support for technology integration (% Agree/Strongly Agree)

DATA-DRIVEN IMPROVEMENT

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

KEY FINDINGS	How are schools using data to improve instruction, professional development, and student performance?
	Teachers increased the rate at which they use technology for evidence-based instruction, to analyze data about student learning, and to differentiate instruction.
	Around three-quarters of surveyed teachers reported using formative assessments to identify effective instructional practices.
★★☆	Teachers reported confidence in their ability to differentiate instruction and to assess students' progress and provide feedback.

Teachers provided self-reports on how frequently they use digital content and resources during instruction. By Spring of 2021, at least three-quarters of teachers indicated they frequently use technology for evidence-based instruction, to analyze data about student learning, and to differentiate instruction (Figure 25). This represents a substantial increase since Fall 2020.

Teachers reported usage of technology increased from Fall 2020 to Spring 2021.

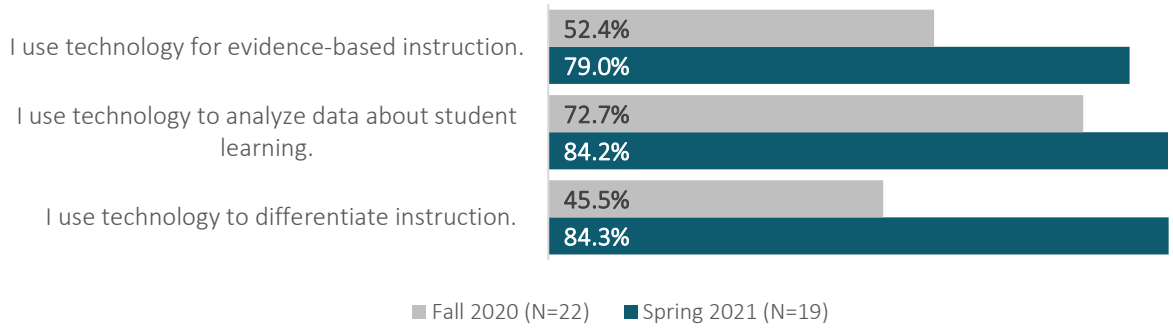


Figure 25. GBSD teachers' Instructional Technology Usage (% A Moderate Amount/A Great Deal)

Similarly, on the Spring 2021 survey, teachers were asked to self-report how frequently they use formative assessments to identify effective instructional practices. Most teachers indicated using formative assessments A Moderate Amount or A Great Deal (Figure 26).

Around three-quarters of surveyed teachers used formative assessments at both timepoints.

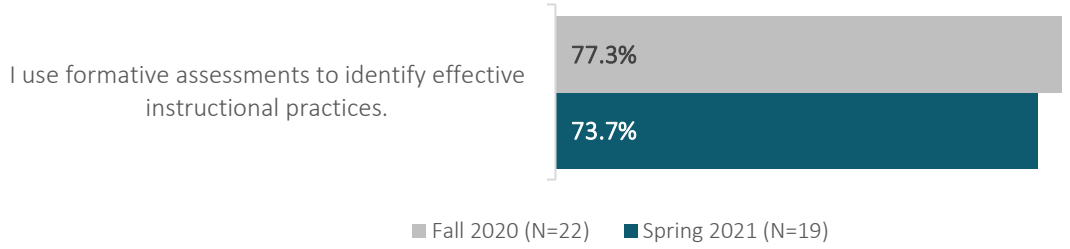


Figure 26. GBSD teachers' Formative Assessments Usage (% A Moderate Amount/A Great Deal)

On the teacher surveys in both Fall 2020 and Spring 2021, most respondents agreed that they were comfortable assessing student progress and providing feedback. Additionally, a majority of teachers indicated that they are confident in their ability to differentiate instruction using data. This percentage increased from Fall 2020 (63.6%) to Spring 2021 (78.9%), indicating that teachers are becoming more adept at data-driven instruction over time. The year-end status report explained that teachers were using data from i-Ready diagnostic and individual student pathway data from i-Ready.

Teacher confidence in their ability to differentiate instruction using data increased, while their confidence in their ability to assess students' progress and provide feedback decreased slightly but remained high.

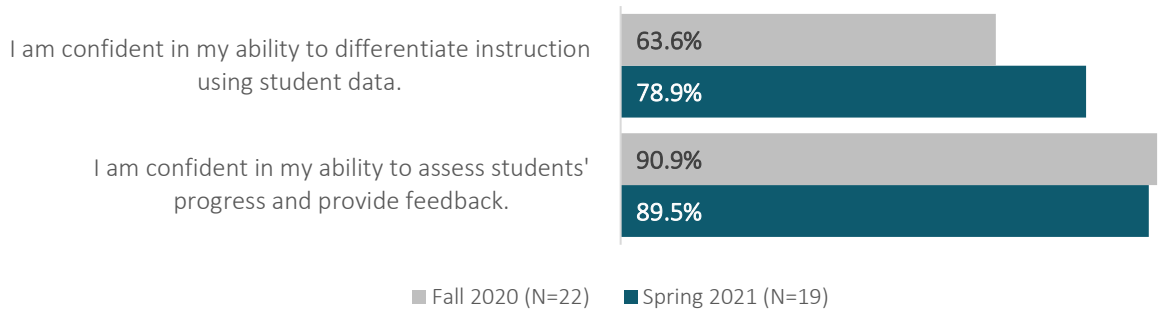


Figure 27. GBSD teachers' Agreement with Statements Describing Remote Teaching (% Agree/Strongly Agree)

Eighty-four percent of Spring 2021 survey respondents reported they were comfortable integrating technology into their instruction and that they had identified effective instructional practices that use technology (Figure 28). While the latter item was not assessed at baseline, the findings indicated an increase in teacher comfort with integrating technology into their instruction.

Spring 2021 survey results suggest that teachers are comfortable integrating technology into their instruction and that they have identified effective instructional practices that use technology.

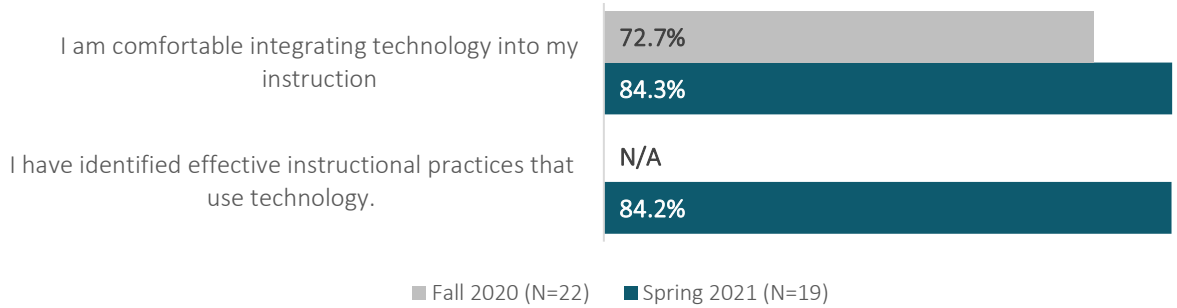


Figure 28. GBSD teachers' Agreement with Statements Describing Comfort and Competence with Technology (% Agree/Strongly Agree)

FUNDING & BUDGET

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

KEY FINDINGS	Have districts identified at least one opportunity for repurposing resources to support technology integration?
$	The district repurposed funds to purchase app subscriptions.

GBSD leadership interviewees were asked whether the district had repurposed resources to support technology integration in classroom learning. A handful of GBSD leadership members indicated that there was some repurposing of funds, such as use of supply money (i.e., to buy school supplies) to fund app subscriptions.

STRATEGIC PLANNING

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

KEY FINDINGS	Does the district's strategic plan reflect shared commitment to improving outcomes for students?
	The district is transitioning to the use of Canvas, which will promote accessibility and blended learning.
	Leaders suggested that grant sustainability will depend on teacher buy-in, which could be obtained through continued professional development opportunities.

Interviewed GBSD leaders were asked how technology fits into the overall strategic plan of the district. One leadership staff member mentioned a district plan that expired in 2018 and had not been updated due to the COVID-19 pandemic; however, another staff member underscored the transition to Canvas as an integral part of the district strategy. They mentioned that embedding Canvas into the institutional system is a top priority and is intended to promote accessibility and blended learning.

Further, leadership staff were asked what they thought about the sustainability of the TechSmart grant. Overall, staff expressed concern about the longevity of the grant. To promote continual success of the grant staff, interviewees emphasized the need for extensive teacher buy-in. Some staff members mentioned continuing professional development as a way to proliferate teacher support of the grant.

EVALUATION INSIGHTS

The SY 20-21 evaluation at GBSD produced the following insights:

- GBSD faced obstacles in their first year of the current TechSmart grant due to delays in hiring the Secondary Innovation Coach. This postponement resulted in the district offering limited formal professional development (PD) through the grant. As such, feedback from teachers and leadership regarding PD opportunities varied, with some providing positive feedback and others questioning whether they received any TechSmart-specific training.
- Leadership described the importance of teacher buy-in for the TechSmart grant. Some feedback from teachers suggested teachers are either not all bought into the grant or are not aware of the grant offerings. Thus, leadership could support TechSmart buy-in by ensuring they clearly communicate when activities are supported by the TechSmart grant.
- Teachers reported throughout the survey that they are using technology to differentiate instruction, and they feel confident doing so. Teachers rated this instructional strategy as effective and also noted it is useful in supporting at-risk subgroups.
- Students struggled with engagement during distance learning; however, technology tools and strategies allowed teachers to address this obstacle. Specifically, teachers used applications to facilitate student collaboration and integrated gamification to connect with students.
- The use of technology to make data-driven decisions was a strength for GBSD. Three-quarters of teachers reported using technology for evidence-based instruction, to analyze data about student learning, to differentiate instruction, and to identify effective instructional practices. Further, teachers reported that formative assessments were the most effective instructional strategy they adopted through the use of technology.
- The Tracked/Accelerated math courses comprised of a higher rate of white students compared to students of color and students in these advanced math courses had higher math grades on average, than their peers. Similarly, average math grades were lower for at-risk subgroups compared to non-at-risk subgroups. On the i-Ready assessment, all at-risk subgroups increased the rate of students who moved from below grade level in the Fall to on or above grade level in the Spring.

CHAPTER 5: PORTLAND PUBCLID SCHOOLS

TechSmart Initiative 2020-2021 Evaluation Report

CONTENTS

PROJECT SUMMARY

Portland Public Schools (PPS) is focused on improving literacy outcomes for its students and closing the opportunity gap for students from underserved populations. The **PPS Equity-Based Balanced Literacy (EBBL) framework** was first launched in school year 2016-17 (SY 16-17) for K-5 students and represents an approach to teaching reading and writing. The EBBL framework 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 PPS with resources to support the adoption of the EBBL framework, with goals that include: (1) 3rd grade students in PPS pilot classrooms will demonstrate grade-level proficiency in reading, and the opportunity gap will be eliminated for impacted student subgroups; (2) PPS will understand and implement instructional strategies and practices that leverage technology to provide culturally and linguistically relevant personalized learning; and (3) PPS will validate and disseminate effective instructional strategies and practices that use technology.

Implementation with TechSmart support began in SY 16-17 for **Kindergarten through 3rd grade** in five schools: Bridger, Grout, Lewis, Sitton, and Vernon (Cohort 1). During SY 17-18, PPS expanded the list of TechSmart schools to include: Atkinson, Bridlemile, Peninsula, Rigler, and Stephenson (Cohort 2). In SY 18-19, PPS included a further five schools: Astor, Cesar Chavez, Forest Park, Glencoe, and Woodstock (Cohort 3). During SY 19-20, PPS added five more TechSmart schools: Beach, Dr. Martin Luther King

METHODS

A general description of the methods included in the TechSmart evaluation is included in the introduction to the full report. Survey and conversation quotes have been edited for grammar and brevity. Data collection efforts for the SY 20-21 PPS evaluation are summarized below.

Teacher Survey: The teacher survey was administered online to educators. **160** Cohort 5 educators completed the survey at baseline in September 2020. For the May 2021 follow-up survey, **195** Cohort 1 to 5 educators responded. Cohort 5 represented almost half (44.1%) of the post-survey responses and Cohort 4 had the least representation at 6.7%.

Teacher Focus Groups: Two focus groups were conducted with a total of **6** participants from Cohorts 3, 4, and 5.

District Leader Interviews: In June of 2021, PRE facilitated a focus group with **7** TechSmart coaches. PRE also interviewed **9** principals with representation from all cohorts. In July of 2021, PRE conducted a focus group with **3** PPS administrators.

Student Achievement Data: DIBELS data were analyzed across Treatment and Comparison groups; however, methodology differed from previous PPS TechSmart reports due to substantial data limitations caused by the COVID-19 pandemic. DIBELS data are included for kindergarten through 3rd grade students, with the most data available for kindergarten and 1st grade students.

Jr., Scott, Lent, and Whitman (Cohort 4). In SY 20-21, PPS expanded TechSmart to include the following eleven schools: Boise, Faubion, Harrison Park, James John, Kelly, Lee, Marysville, Rosa Parks, Vestal, Woodlawn and, Woodmere (Cohort 5). **PPS scaled up TechSmart to include Grades 4 and 5 in SY 20 - 21. A total of 31 schools across the district have received Professional Development (PD) and piloted the technology infrastructure provided by TechSmart funding**.

ABOUT SPRING 2021 SURVEY RESPONDENTS

A total of 195 teachers provided response data to the 2021 year-end survey. Table 1 indicates representation on the Spring 2021 post-implementation survey by cohort, with greatest representation from Cohort 5. Cohort 4 had the least representation with only 13 teacher responses.

	n	%
Cohort 1	32	16.4%
Cohort 2	24	12.3%
Cohort 3	39	20.0%
Cohort 4	13	6.7%
Cohort 5	86	44.1%

Table 1. Spring 2021 survey responses by cohort (n = 195)

Around a quarter of surveyed teachers teach each K-5 grade level, with several respondents teaching more than one grade (Figure 1).

Teachers working with students in all six grade levels are represented fairly evenly in survey responses, with between 25% and 31% teaching each grade level.

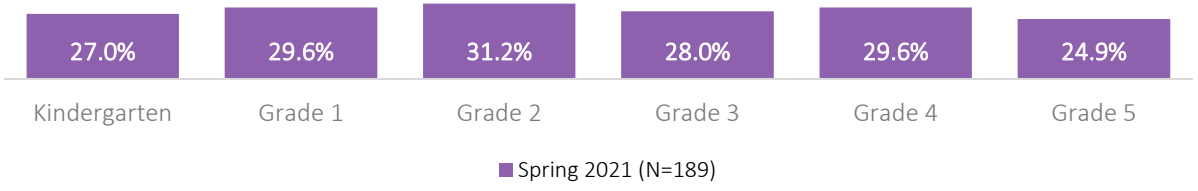


Figure 56. Grade levels PPS spring 2021 survey respondents teach

Ninety-five (95.4%) percent of surveyed teachers have taught for three or more years. Approximately 27.7% of teachers have served for more than twenty-one years (Figure 2).

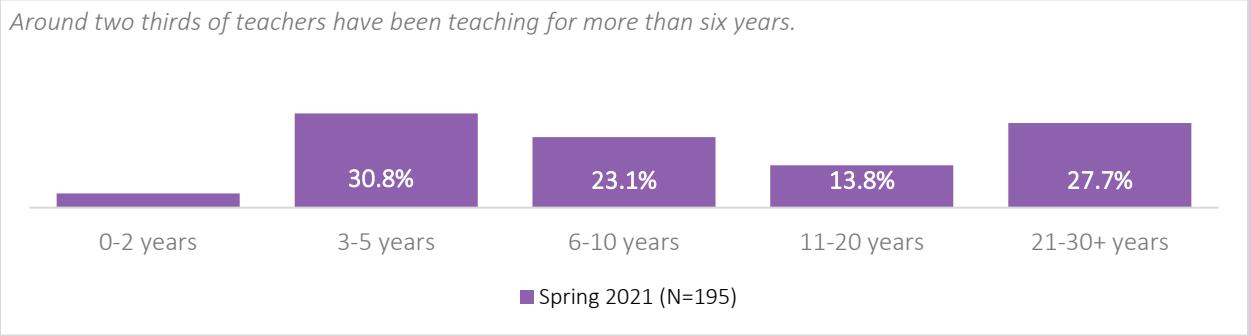


Figure 57. Years PPS Spring 2021 survey respondents have spent teaching

COVID-19 CONSIDERATIONS

Findings shared in this report detail the first full year of virtual and hybrid instruction amidst the COVID-19 pandemic. While the transition to remote teaching in Spring 2020 was abrupt, it accelerated the integration of technology into learning environments tremendously. District leaders, teachers, and students had to quickly adapt and become proficient in a range of digital environments. TechSmart teachers, and especially earlier cohorts, were notably more prepared for the transition to distance learning than non-TechSmart teachers in the district. TechSmart teachers primarily attribute success to the crucial support from TechSmart coaches and their foundation in instructional strategies utilizing technology that they had developed prior to the pandemic. TechSmart students were also more familiar with and comfortable using a range of digital tools. Looking ahead, teachers intend to continue to utilize technology they have relied on during distance learning once they return to hybrid and in-person learning and some feel virtual options offer better ways to connect with families moving forward. During distance learning, teachers have increased their use of technology tools to differentiate and meet students at their level and to promote student voice and choice, which has benefitted student subgroups impacted by the opportunity gap. PPS teachers, TechSmart coaches, and administrators also emphasized, however, that the pandemic has exacerbated deeper inequities for impacted student subgroups and their families. The COVID-19 pandemic impacted the availability of student achievement data. Because the DIBELS was administered inconsistently across schools and grade levels, was administered remotely, and was not administered in Fall 2020, student achievement data could not be examined across school years and was instead limited only to change *within* SY 20-21—that is, change from Winter to Spring 2021. The impact of the pandemic experience is documented in more detail throughout this report.

FINDINGS

The findings from the SY 20-21 evaluation at PPS are presented below and organized by the seven factors identified as essential for schools to effectively transform into technology-rich teaching and learning environments. Evaluation questions guiding this study were designed to respond to these seven factors. Each factor is further framed by these questions, with relative key findings highlighting trends in data relative to each guiding line of inquiry.

TEACHING EFFECTIVENESS

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

PPS educators received varied professional learning opportunities in SY 20-21, including but not limited to activities centered around how technology can support anti-racist teaching practices, protocols for Google Meets and virtual environments, use of tools like Lexia, MyOn, and Seesaw for individualized and group instruction, and use of Google Suite for supporting literacy learning. Teachers had access to literacy supports through an online resource hub housed on the PPS TechSmart website, received monthly TechSmart newsletters, and had access to TechSmart coaches through the PPS Hive Google Chat. Coaches collaborated on "Learning Tech Road Shows" to help teachers work through questions and challenges and offered teachers ongoing embedded professional development to increase familiarity with technology tools and use of app-provided data to inform instruction. Coaches participated in their own professional learning including a Coaching for Equity workshop and advanced training for Seesaw and Book Creator and attended the IntegratEd PDX conference. In addition, TechSmart coaches and district leaders participated in their own professional learning communities (PLCs) focused on technology enhanced instruction. TechSmart efforts were supported by the district's Learning Technologies team, housed in the PPS Office of Technology and Information Services and, in addition to other technology integration roles, this team includes a TechSmart Teacher on Special Assignment (TOSA).

On the teacher post-implementation survey, about **half (52.3%) of TechSmart educators reported they received 1 to 8 hours of individual professional development in SY 20-21, and around forty percent (41.8%) of respondents received 1 to 8 hours of Group Professional Development (PD).** While around twenty percent (22.1%) of respondents received no Individualized PD during SY 20-21, an additional 25.1% of teachers received 17 or more hours of Individualized PD.

Around half of the surveyed teachers received 1 to 8 hours of individualized PD, and around 40% of teachers received 1 to 8 hours of group PD in SY 20-21.

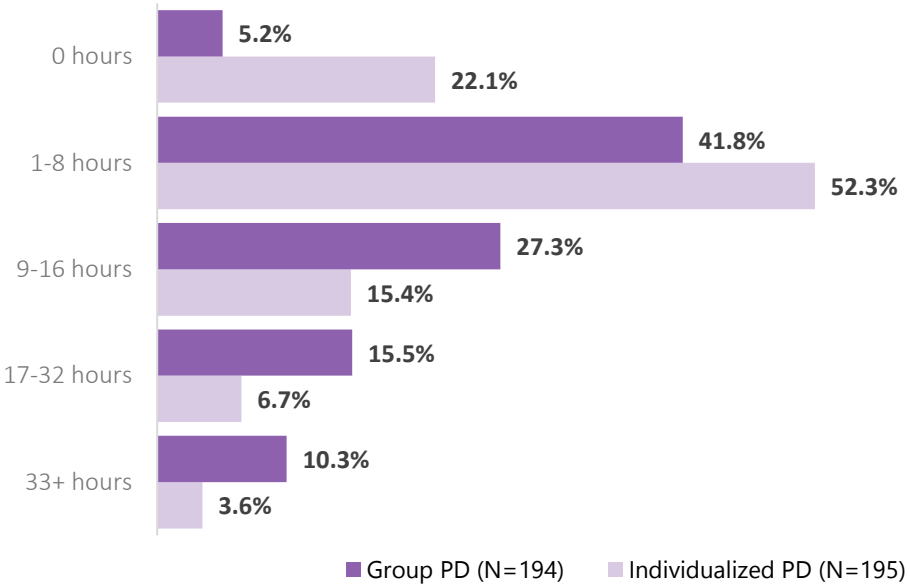


Figure 58. Time PPS teachers spent in individualized and group professional development

TechSmart teachers were generally positive about the Individualized and Group PD they received, and more than two thirds (68.7%) felt the Individualized PD was very or extremely useful (Figure 4). Sixty (60.2%) percent of teachers felt the Group PD they received was very or extremely useful, and one teacher noted, "They brought in support staff a few times during our staff meeting in breakout rooms. They supported on how to respond to students on Seesaw."

Teachers were somewhat more likely to rate individualized PD as very or extremely useful than group PD.

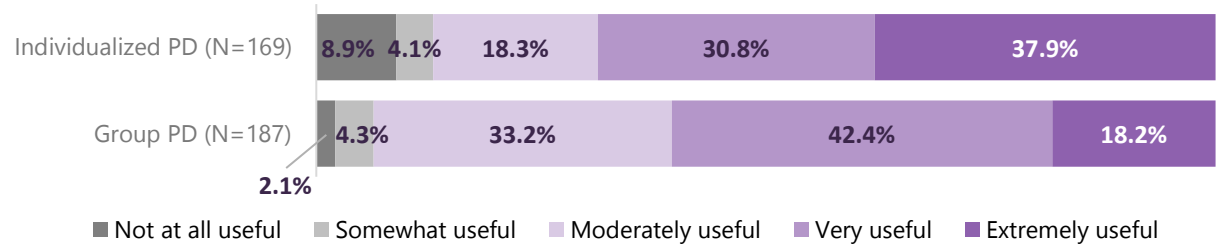


Figure 59. PPS teacher ratings of how useful professional development was, by type

More than seventy percent (71.7%) of respondents were unaware of whether the TechSmart PD they received differed from general PD support for adapting to distance learning (Figure 5). The 17.3% that indicated it did differ described TechSmart PD as more personalized (*n* =11) and more specific to distance learning needs (*n* = 8) than general PD support.

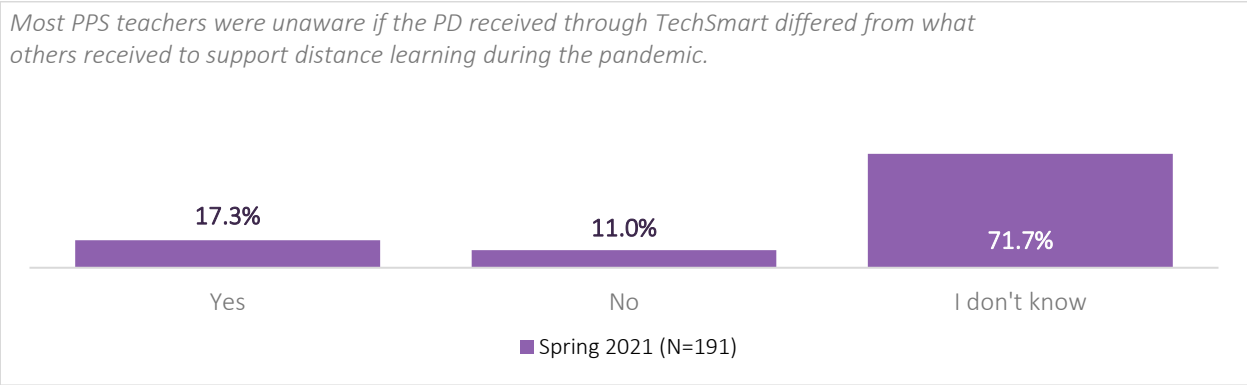


Figure 60. PPS teachers' belief that TechSmart-provided professional development differed from what others received to support distance learning during the COVID-19 pandemic

In focus groups, teachers noted they would have felt lost without the TechSmart PD provided by TechSmart coaches and would have pursued less learning, as one teacher stated,

> *I don't think I would have taken on as many things this year without a coach. I would have done the bare minimum. I was willing to try more programs, apps, things in class. I never would have taken on simulcast without a coach. Just knowing they were there to help me pushed me to do it and it worked really well.*

Similarly, another teacher commented, "If we didn't have a coach, I would have been asking colleagues or searching for videos. It was really helpful to have people who knew what they were doing at our fingertips." The support from the TechSmart coaches was appreciated by district leaders as well, as one principal stated,

> *I think largely the biggest advantage TechSmart provided us is our half-time TechSmart coach. That individual has been invaluable over this period of time, largely benefitting us in terms of developing our knowledge about all the different learning platforms and how to utilize those in the best ways to help students. Their help has been huge, I don't know how else we would have gotten this support. As a district, we don't do a great job with teacher training on how to use the tools in the classroom. They have bridged that gap beautifully.*

KEY FINDINGS	How is Professional Development (PD) impacting teacher instruction?
	Teachers were most likely to describe the Professional Development (PD) model as effective or very effective. Some teachers felt it would have been more effective if in-depth information had been provided about a select few resources, rather than limited information about a large volume of tools, and if training was provided over time instead of all at once.
	Teachers self-reported their usage of technology in the classroom improved somewhat from baseline to Spring of 2021, with the greatest growth in seeking out activities that promote increased problem-solving.
	Half (52.7%) of survey respondents felt they used technology efficiently (Level 4 or 5) at baseline and 74.6% felt they used technology efficiently on the post-survey.

More than 100 teachers provided open-ended feedback about the effectiveness of the district's professional development model in terms of helping teachers with providing their instruction in a distance learning format, and several offered suggestions for improvement. **Teachers were mostly likely to describe the Professional Development (PD) model as effective or very effective** (*n* = 38), and a smaller subset felt the PD model was moderately effective (*n* = 15) or ineffective (*n* = 11). **Twenty-two of the teachers who provided open-ended feedback felt overwhelmed by the large volume of resources and training they received all at once and noted the PD model would have been more effective if more in-depth information had been provided about a select few resources and if training was provided over time instead of all at once**. Further, seven teachers suggested that the model would be more effective if they were provided grade-level resources and tools. A sample of each response theme is shown in Table 2.

How effective has your TechSmart grant's Professional Development (PD) model been in terms of helping you change your instruction? Do you have suggestions for improvement?	
Effective and helpful PD model (n = 38)	*"I have appreciated the support. I went from not being sure how to provide instruction in a distance learning format to nailing it."* *"Providing the technology to the students and IT support to get it working was very well done. The workshops offered online were helpful. The drop-in hours during distance learning were very helpful."* *"The tools have been great, and I use many of them. There have been a lot of opportunities for PD. The asynchronous, self-directed PDs have been the least helpful by far, and the opportunities for 1-1 have been the most helpful."*

How effective has your TechSmart grant's Professional Development (PD) model been in terms of helping you change your instruction? Do you have suggestions for improvement?	
Overwhelmed by too many resources and/or training at once (n = 22)	*"There were many digital programs offered, which was overwhelming. I would have been happier having fewer options and getting really good with those programs versus having many different ones and learning a little about each."* *"There were so many apps offered, and it took a while to figure out what would work for me and what would not"* *"The PD model was somewhat successful but needs to be broken into shorter chunks; having hours and hours of training in a one-week time frame is exhausting and ineffective."*
Moderately effective PD model (n = 15)	*"It was somewhat helpful, because I was exposed to the many digital platforms available. I basically had to learn as I progressed through the year. My teaching colleagues provided the most help."* *"It was adequate for my needs."*
Ineffective PD model (n = 11)	*"Not effective this year. We need a Rep who is very familiar with the tools and is willing and able to help teachers with their questions. It would also be helpful if a Rep would ask teachers what they need for PD."* *"The district PD was not helpful at all. I relied on help from colleagues and on YouTube tutorials and Google searching for answers for my tech problems. I would recommend the district speak with teachers to find out what help/support is needed, then create the PD around that."*
Need for more grade level resources (n = 7)	*"We need separate grade level trainings or at least grade bands (K-2, 3-5). What works for lower grades isn't always going to work for upper grades."* *"I would have like more time to see what other teachers in my own building or in my grade-level within the district were doing to increase engagement and differentiate instruction."* *"Drop-in grade level forums for teachers to talk with other teachers and share resources at their grade level would have been nice. I know most schools did this at the building level, but at our school there are only two teachers per grade, and it would have been nice to have more access to other first grade teachers. Well-developed, tech-enhanced lessons with built-in choice*

How effective has your TechSmart grant's Professional Development (PD) model been in terms of helping you change your instruction? Do you have suggestions for improvement?	
	boards take time, and with more of a team we could divide the work and make each lesson even better."

Table 2. Feedback on PD model, Spring 2021 survey data (N = 110)

Teachers indicated the extent to which they were integrating technology into various instructional practices at baseline and in the Spring of 2021 (see Figure 6). Baseline refers to the data for the first available time point, which differs for each cohort (SY 16-17 for Cohort 1, SY 17-18 for Cohort 2, etc.). **Teachers self-reported their usage of technology in the classroom improved somewhat over time, with the greatest growth in seeking out activities that promote increase problem solving.** Across cohorts, respondents were most likely to indicate statements about their usage of technology were Somewhat True of Me.

On average, teachers self-reported that their usage of technology improved somewhat from baseline to Spring of 2021, with the most growth in seeking out problem-solving activities.

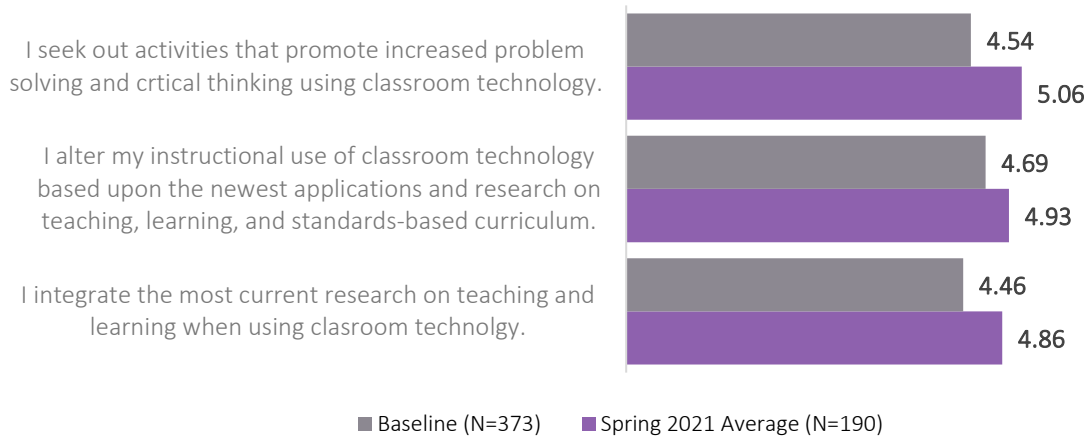


Figure 61. PPS teachers' average rating of their self-usage of technology (1 = Not all true of me, 7 = Very true of me)

Notably, teachers' technology proficiency level jumped from baseline to Spring of 2021; **half (52.7%) of all respondents felt they used technology efficiently (Level 4 or 5) at baseline and 74.6% felt they used technology efficiently by Spring 2021** (see Figure 7).

TECHNOLOGY SKILL LEVEL	
1	I get someone else to do technology-based tasks for me.
2	I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.
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.
4	I use a variety of technology tools and I use them efficiently for all aspects of my job.
5	I use technology efficiently, effectively, and in creative ways to accomplish my job.

Teachers' technology proficiency level improved notably over time as 74.6% of teachers felt they used technology efficiently (Level 4 or 5) by Spring of 2021.

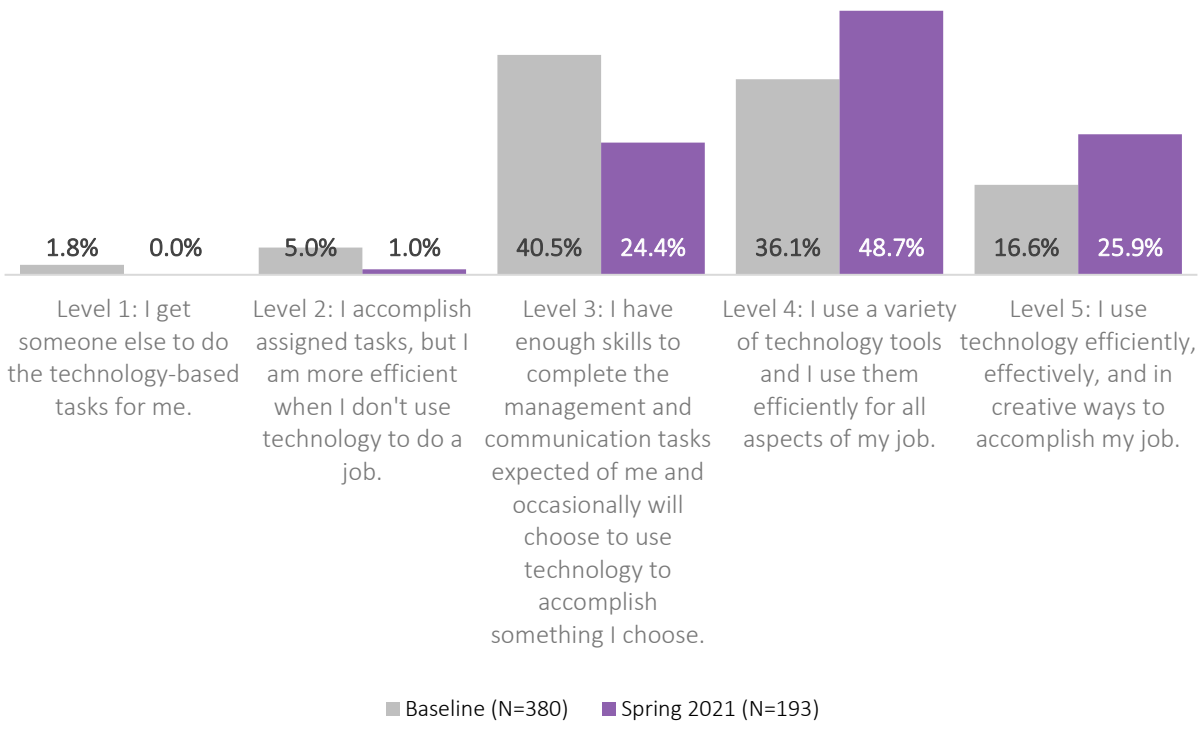


Figure 62. PPS teachers' self-reported technology proficiency level

Cohort 1 showed the most notable improvement in technology proficiency ratings, increasing from 32.0% of teachers feeling they used technology efficiently at baseline to 84.4% of teachers in Spring of 2021 (Table 3). Cohort 4 teachers showed the least improvement, from 58.1% rating their proficiency as efficient (Level 4 or 5) at baseline to 69.2% in Spring of 2021. However, this finding should be interpreted with

caution, as Cohort 4 had a small sample size of only 13 post-survey respondents and, by nature of the cohort model used to roll out TechSmart implementation across PPS, has not received as many years of TechSmart-related support as previous cohorts. The remaining cohorts showed a similar level of growth in Level 4 or 5 ratings of seventeen to twenty percent.

	Baseline	Spring 2021	Growth
Cohort 1	32.0%	84.4%	52.4%
Cohort 2	55.3%	75.0%	19.7%
Cohort 3	44.2%	61.5%	17.3%
Cohort 4	58.1%	69.2%	11.1%
Cohort 5	57.5%	77.4%	19.9%

Table 3. Percentage of teachers self-reporting technology proficiency at Level 4 or 5, by cohort

A TechSmart coach summarized the transformation in how teachers relate to technology as follows,

> *With specific teachers that I've been working with, I have seen them moving from tech for tech's sake, or like everyone's on tech in the station rotation, to teachers using it as a specific tool for differentiation or using tech as a specific tool for a specific instructional purpose.*

Similarly, a PPS principal noted, "Now I see teachers' ability to leverage technology for engagement and learning and they are not just putting the whole class on Lexia for 20 minutes. They are using Book Creator and different engaging activities, and students have more voice and choice. Students show how they use their learning. Distance learning pushed teachers to think about how they are using tech and learning." Another principal talked about how TechSmart pushed them to focus on technology "beyond devices" and noted that **devices are important but ultimately "the hardware is not nearly as useful as the people". TechSmart had more impact because it "supported teachers with the tools" through the TechSmart coaching model.**

KEY FINDINGS	What new instructional strategies are teachers reporting?
	Teachers were most likely to report using Seesaw, Google Suite, and Jamboard as instructional supports.
	Teachers' top three instructional strategies utilizing technology included formative and summative assessment, small group instruction, and enhancing instructional content using slides and other visuals.
	In open-ended feedback, teachers reported repeatedly that they used technology to differentiate for students, especially in the distance learning environment. PPS leaders echoed this feedback, noting how teachers were using technology to facilitate small-group instruction and differentiate, and relying on digital tools for foundational literacy (e.g., fluency reads, bridging content gaps for ELL students). Leaders highlighted that technology helped teachers increase student-led exploration of their own knowledge and voice and choice.

The top three instructional supports most commonly utilized by teachers were Seesaw, Google Suite, and Jamboard. As seen in Table 4, on average, these three tools are all rated as effective by teachers and were among the instructional supports with the highest average effectiveness ratings.

Top 10 Instructional Supports	n	Effectiveness Rating
Seesaw	94	4.16
Google Suite	81	4.34
Jamboard	50	4.24
Nearpod	22	3.91
Book Creator	15	4.20
Flipgrid	13	3.67
Lexia	12	4.00
Formative	12	4.00
Dreambox	10	3.60
Epic	8	4.63

Table 4. Top ten supports used for instruction by PPS teachers in SY 20-21 (1 = Not at all effective, 5 = Extremely effective)

Teachers used the technology tools above for the following top ten strategies listed in Table 5. **The top three most common instructional strategies utilizing technology were formative and summative assessment, small group instruction, and enhancing instructional content using slides and other visuals., all of which were rated as effective and fell among the highest average effectiveness ratings across instructional strategies.**

Top 10 Instructional Strategies	n	Effectiveness Rating
Formative and summative assessment (using Nearpod, Seesaw, Learning A-Z, Jamboard, Formative, Google Forms, Dreambox, Core5, Lexia)	34	4.39
Small group instruction (using Zoom or Meet breakout rooms)	22	4.30
Slide shows for enhancing instructional content (using Google suite)	20	4.74
Reading practice (using Nearpod, Seesaw, Learning A-Z, Epic)	19	4.28
Educational videos for providing instructional content and answering questions	13	4.25
Online resources for enhancing instructional content	11	4.11
Writing assignments (using Jamboard, Book Creator, Google Classroom)	10	4.90
Differentiated learning (using Seesaw, Clever)	10	4.00
Soliciting and providing feedback to students (using Seesaw, Jamboard, Google Classroom)	10	4.11
Screensharing to share student learning and instructional content	8	4.33

Table 5. PPS teachers' top ten instructional strategies using technology (1 = Not at all effective, 5 = Extremely effective)

In open-ended feedback, teachers expressed repeatedly that they used technology to differentiate for students, especially in the distance learning environment. One teacher described using Google Meet to record and send students individualized feedback and links that were customized for each student's learning level. Other teachers described using tools like Seesaw to provide targeted instruction to Talented and Gifted (TAG) students. Instructional strategies that teachers relied on for remote learning are described in more detail on page 34.

Leaders briefly touched on instructional strategies in their interviews, echoing survey feedback with comments about teachers using technology to facilitate small-group instruction and differentiate, and relying on digital tools for foundational literacy (e.g., fluency reads, bridging content gaps for ESL students). **Leaders highlighted technology helped teachers increase student-led exploration of their own knowledge and voice and choice**, as one PPS administrator commented,

> *We saw a shift from teachers letting go a little and letting students get more creative. I think of a 5th grade teacher who is retiring this year and is excited about Book Creator. She taught the intro to the students and let them go for it. The students did such a great job they ended up presenting to the school board about giving up plastics in the cafeteria. In the upper grades especially, teachers are really letting students create in the applications.*

KEY FINDINGS	How are the new instructional strategies impacting student engagement?
	As of Spring 2021, more than eighty percent of PPS teachers felt confident in their ability to engage students with technology.
	Teachers reported mixed feedback about student engagement in SY 20-21, describing students for whom distance learning is a good fit and others for whom it is not. Factors teachers described included, for example, age of students, children's home environment, and family support with technology use.
	Teachers generally felt that students responded well to using digital tools creatively to showcase their learning.

As of Spring 2021, **more than eighty percent of PPS teachers felt confident in their ability to engage students with technology** (Figure 8).

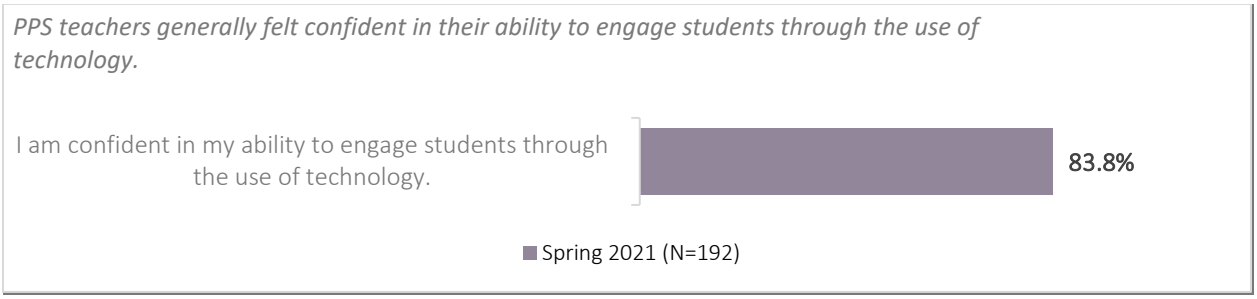


Figure 63. PPS teacher confidence in personal ability to engage students (% Agree / Strongly agree)

Teachers provided mixed feedback about student engagement over the past year, describing students for whom distance learning is a good fit and others for whom it is not. Some teachers felt **engagement depended heavily on the age of students** (e.g., Kindergarteners having a harder time sitting still on Zoom) and their **familiarity with technology going into the pandemic**. Further, teachers spoke about the impact of **children's home environment**, with some students having distracting home settings for learning and some receiving more parent and grandparent support with technology use than others. Teachers did feel, however, that once they got students past basics like how to mute/unmute, **students generally responded well to using digital tools creatively to showcase their learning**. As one teacher commented, "If an assignment was creative (e.g., video or design), students had higher buy-in. If they did Book Creator, they were really engaged. They were excited to design something." Some teachers described creating virtual award systems to incentivize students, such as student of the week celebrations or virtual Fun Fridays. Other teachers wished they been able to incorporate more creative elements into their instruction over the past year but found staying aligned with the core curriculum in an entirely virtual environment a big enough challenge unto itself.

KEY FINDINGS	Are the new instructional strategies showing promise for improving academic outcomes?
⚠	In SY 20-21, DIBELS assessment administration was severely impacted by the ongoing COVID-19 pandemic and could not be compared to previous years of PPS DIBELS data in the anticipated methodological framework.
🌱	Although the Treatment Group showed a lower percentage of students at DIBELS benchmark than the Comparison Group, the percentage consistently increased from Winter to Spring for the Treatment Group.

Student Achievement Data

To examine the impact of TechSmart-related efforts on student achievement in PPS, 2020-21 achievement data from students whose schools participated in TechSmart activities (i.e., Treatment Cohorts) were compared to 2020-21 achievement data from students whose schools had not yet participated in TechSmart activities (i.e., Comparison Groups). During each of the first three years of EBBL adoption, ten schools adopted the new literacy curriculum. Five of the ten schools were given access to new technology or Professional Development (PD) through TechSmart funding (i.e., Treatment schools), and five of the schools initially adopted the new curriculum without added technology or PD specific to TechSmart (i.e., Comparison schools). However, schools from each Comparison Group had to be removed as they were assigned to later Treatment Cohorts with access to TechSmart technology and PD. As a result of the pandemic, all PPS schools were implementing Comprehensive Distance Learning and the extent to which the DIBELS assessment was administered across schools was inconsistent. For SY 20-21, Treatment Cohort and Comparison Group DIBELS data were available as shown in Table 6. Note that Cohort 4 and Cohort 5 do not have a Comparison Group, as all potential comparison schools had already been exposed to TechSmart or assigned to an earlier Comparison Group.

Group Name	Number of Schools	First Year of TechSmart	SY 20-21 Sample Size
Cohort 1	5	SY 16-17	264
Comparison Group 1	2	—	229
Cohort 2	4	SY 17-18	239
Comparison Group 2	2	—	161
Cohort 3	5	SY 18-19	271
Comparison Group 3	2	—	126
Cohort 4	5	SY 19-20	154
Cohort 5	3	SY 20-21	160

Table 6. PPS Treatment Cohorts and Comparison Groups available in SY 20-21 DIBELS data

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[2]. 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. Because DIBELS is the only assessment given to students prior to 3rd grade, we include DIBELS results in this report for descriptive purposes, but we caution against assigning too much weight to these findings across grade levels.

In SY 20-21, DIBELS assessment administration was severely impacted by the ongoing COVID-19 pandemic. The assessment was administered inconsistently across schools and grade levels, and assessments were conducted online. **As such, SY 20-21 DIBELS data differs from previous years and cannot be compared to previous years of PPS DIBELS data in the anticipated methodological framework.** In previous TechSmart evaluations for PPS, the evaluation team has examined change over time for each cohort. However, due to the drastic differences in DIBELS administration, the SY 20-21 evaluation focused only on comparing students from all Treatment schools, hereafter referred to as the Treatment Group, to students from all Comparison schools, hereafter referred to as the Comparison Group. Table 7 presents the number of students in the Treatment Group and Comparison Group across grade levels, with all sample sizes based on those students with non-missing DIBELS data at each time point. Note that there were substantially more DIBELS scores in SY 20-21 for kindergarten students than students in other grade levels (1,169 of the total 1,604 students). Additionally, DIBELS data were available only for Winter 2021 and Spring 2021; no Fall 2020 data were available.

Grade Level	Treatment Group	Comparison Group
All Grades	1088	516
Kindergarten	858	311
1st Grade	179	145
2nd Grade	19	22
3rd Grade	32	38

Table 7. PPS Treatment Group and Comparison Group sample sizes by grade level in SY 20-21

To evaluate impacts of TechSmart implementation on student achievement in SY 20-21, the full Treatment Group, made up of all students from TechSmart schools whose DIBELS results were available in Winter and/or Spring 2021, were compared to the full Comparison Group, made up of all students from non-TechSmart schools whose DIBELS results were available in Winter and/or Spring 2021. The research question focused on whether the TechSmart schools were more prepared for CDL than those schools not involved in TechSmart prior to SY 2020-21. Figure 64 shows the percentage of students who received Core Support results, meaning they were at benchmark. **Although the percentage of Comparison Group students at benchmark was higher in both Winter and Spring 2021, the increase from Winter to Spring was substantially higher in the Treatment Group, with 3.4 percentage points more students at benchmark**

[2]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.

from Winter to Spring for the Treatment Group, compared to only 0.1 percentage point increase from Winter to Spring in the Comparison Group.

Although a larger portion of Comparison Group students reached benchmark, the rate of benchmark achievement on the DIBELS increased more substantially from Winter to Spring for the Treatment Group.

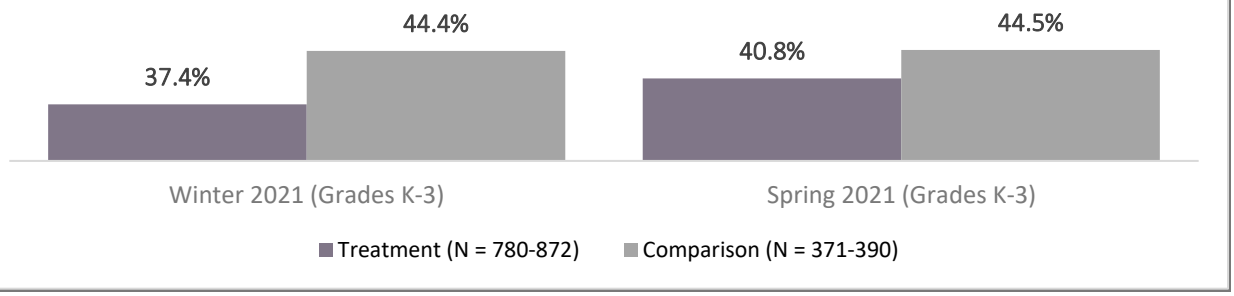


Figure 64. Percentage of PPS students at benchmark on the DIBELS assessment in Winter and Spring 2021

Next, a similar analysis was conducted by grade level, beginning with the largest group of DIBELS results available: kindergarten students. Figure 65 shows the percentage of kindergarten students who received Core Support results, reflecting they are at benchmark on the DIBELS, in Winter and Spring 2021. The percentage of kindergarten students at benchmark was slightly lower for the Treatment Group at both time points but increased 2.5 percentage points from Winter to Spring 2021.

The percentage of kindergarten students at benchmark was slightly lower for the Treatment Group, but increased 2.5 percentage points from Winter to Spring.

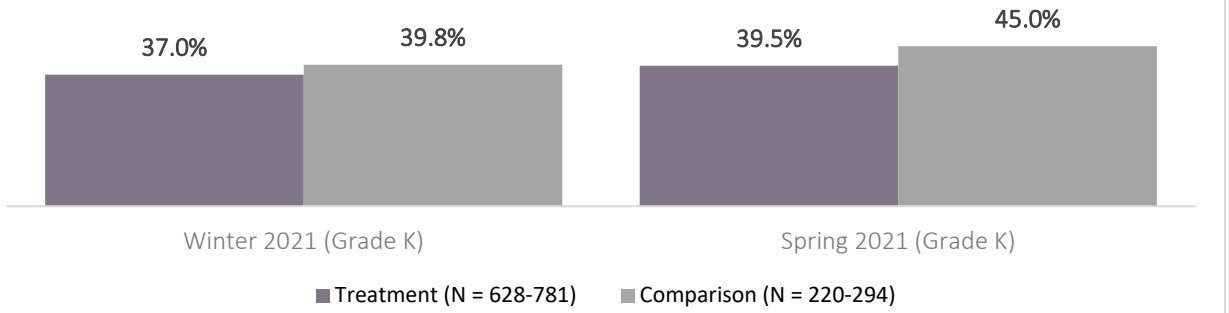


Figure 65. Percentage of PPS kindergarten students at benchmark on DIBELS assessment in Winter and Spring 2021

Results for 1st grade students are presented in Figure 66. The percentage of students at benchmark on the DIBELS was lower in the Treatment Group at both time points. However, from Winter to Spring 2021, the Treatment Group saw an increase in percentage of students at DIBELS benchmark (2.9 percentage points higher in Spring), whereas the Comparison Group saw a decrease in percentage of students at DIBELS benchmark (7.1 percentage points lower in Spring). **Although trends over multiple years could not be examined in the SY 20-21 evaluation due to the differences in how the DIBELS assessment was administered, if a similar trend were to continue over multiple years, it is possible that the Treatment Group could surpass the Comparison Group with time.**

Although the percentage of students at benchmark was lower in the Treatment Group, the percentage increased from Winter to Spring for Treatment Group students but decreased for Comparison Group students.

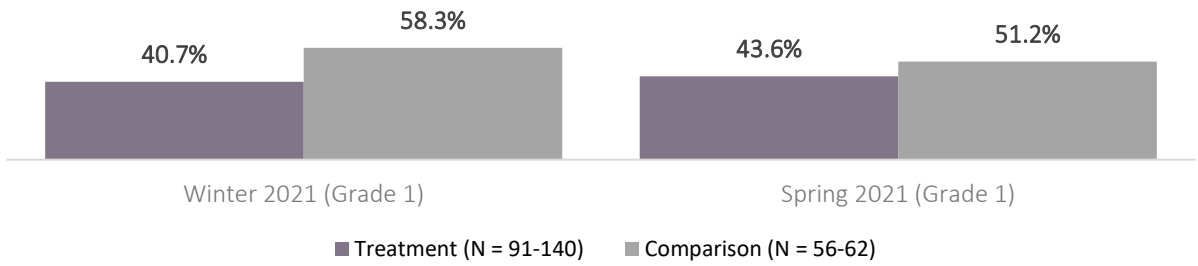


Figure 66. Percentage of PPS Grade 1 students at benchmark on the DIBELS assessment in Winter and Spring 2021

DIBELS assessment data for 2nd and 3rd grade students were available for only a very small number of students, resulting in very small sample sizes when broken out from the full K-3 sample. As such, results for 2nd and 3rd grade students are not broken out or presented on their own in this report.

KEY FINDINGS	Do instructional practices show promise for improving student academic outcomes with at-risk student subgroups (i.e., students of color, students with limited English proficiency, and students with IEPs), and those not on track to meet academic standards?
	DIBELS data from LEP students and students of color showed promising results. In both groups, the percentage of students at benchmark on the DIBELS increased from Winter to Spring in the Treatment Group but not the Comparison Group. Furthermore, the percentage of students at benchmark in the Treatment Group exceeded that of the Comparison Group by Spring 2021 for both LEP students and students of color.
	Teachers used technology to differentiate learning and provided targeted small group and one-on-one instruction via breakout rooms to support student subgroups impacted by the opportunity gap. Teachers' top reported strategies for how their school or district minimized barriers to online instruction included providing students with devices and internet access.
	Teachers noted the importance of supporting families to address student opportunity gaps, and several principals stressed that hot spots and equipment alone are not enough. TechSmart coaches supported educators in their anti-racism work and repeated the need to think about equity in terms of personal work and systems-level change.

Student Achievement Data

To examine impacts of TechSmart implementation on at-risk subgroups, results of the DIBELS assessment were compared across students in at-risk subgroups and all other students. Similar to other DIBELS results

shown in the SY 20-21 report, the evaluation team was not able to examine change over time due to the substantial shift in DIBELS administration that was caused by the ongoing COVID-19 pandemic. Cohorts and grade levels could not be individually examined due to limited sample sizes, so results are presented across all students.

Before comparing DIBELS data, the evaluation team first conducted demographic comparisons across Treatment and Comparison schools for all those students who took the DIBELS assessment in Winter and/or Spring 2021. Results are shown in Figure 67 for race, Figure 68 for gender, Figure 69 for special education, and Figure 70 for English proficiency. The percentage of students who fell into special education (SPED) and limited English proficiency (LEP) at-risk subgroups was very similar across Treatment and Comparison groups. The percentage of students who were female was also very similar across Treatment and Comparison groups. However, there was a relatively substantial difference in the percentage of students who were white, with the Treatment Group having only 55.1% of students identified as white and the Comparison Group having a total of 69.0% of students identified as white. The percentage of students belonging to each non-white racial group in Figure 67 was higher for the Treatment Group than the Comparison Group. This is important to note when considering findings related to race presented with DIBELS data below.

The Treatment Group had a higher percentage of students of color than the Comparison Group.

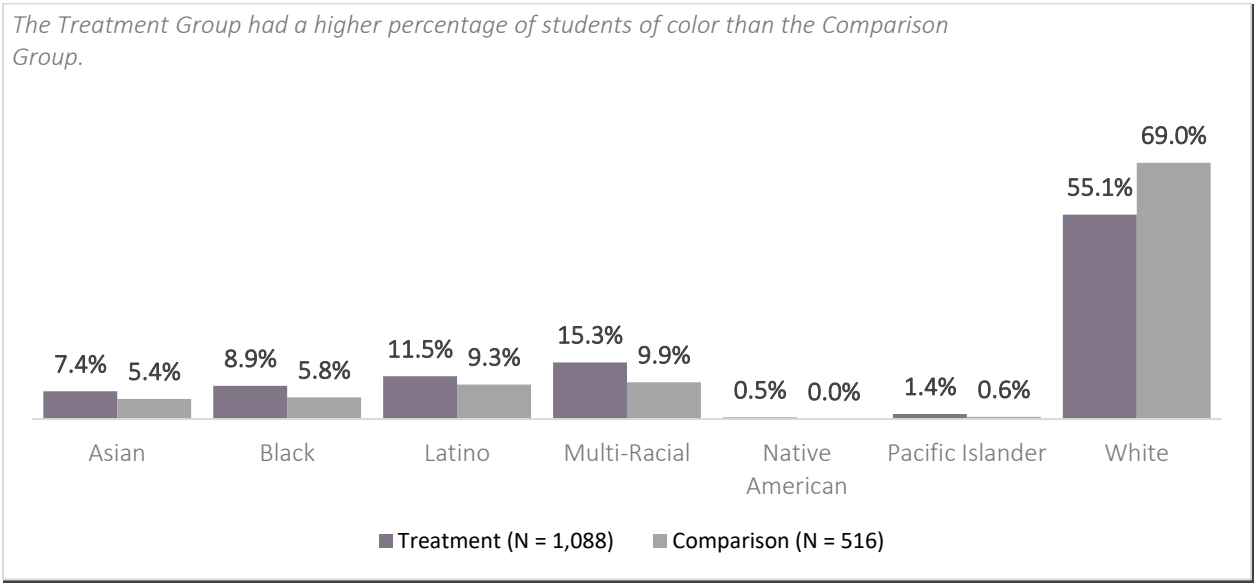


Figure 67. Percentage of PPS students by race and treatment condition

Proportions of female and male students were similar across the Treatment and Comparison groups, with a slightly higher proportion of female students in the Treatment Group.

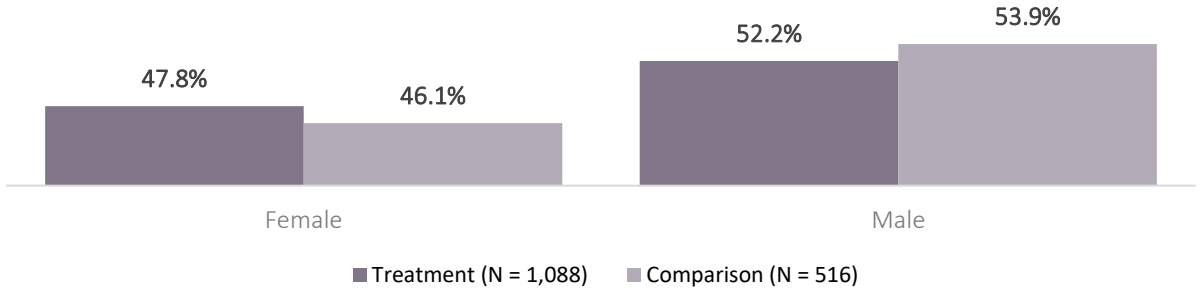


Figure 68. Percentage of PPS students by gender and treatment condition

Percentages of SPED and non-SPED students were nearly identical across the Treatment Group and Comparison Group.

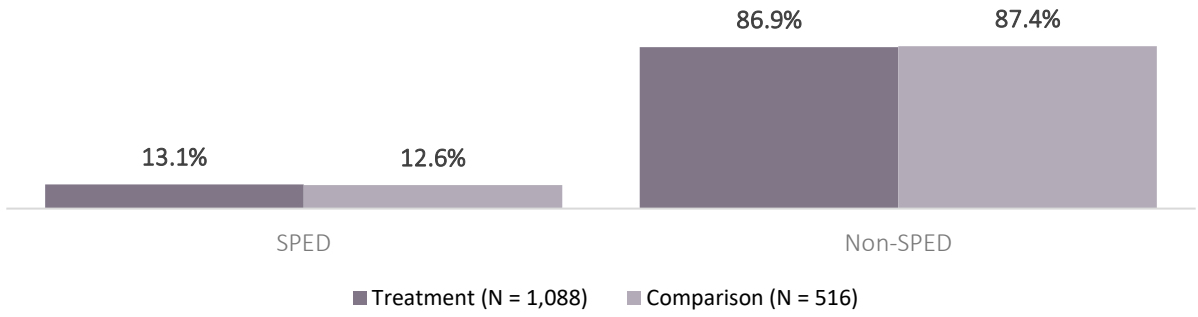


Figure 69. Percentage of PPS students by special education status and treatment condition

Percentages of LEP and non-LEP students were similar across Treatment and Comparison groups, with a slightly higher proportion of LEP students in the Treatment Group.

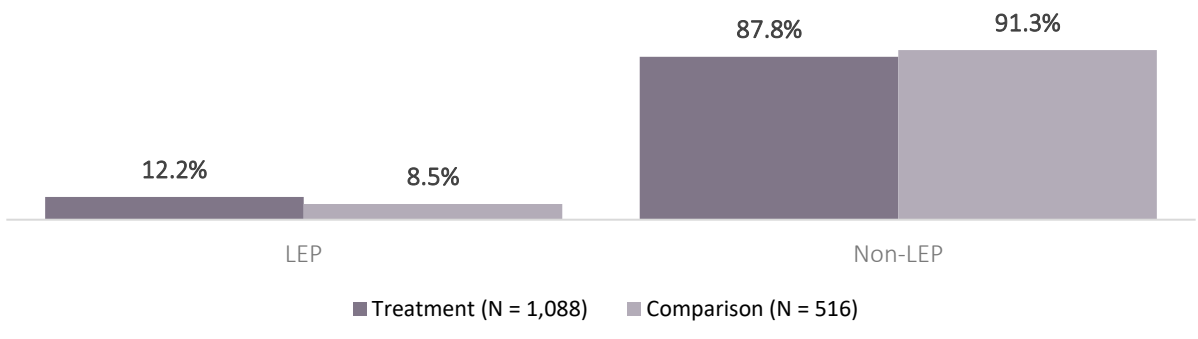


Figure 70. Percentage of PPS students by English proficiency and treatment condition

Limited English Proficiency Students

The evaluation team then examined DIBELS results for at-risk subgroups across the Treatment Group and Comparison Group. First, DIBELS results were compared for students with limited English proficiency (LEP students) across Treatment and Comparison groups. Results are displayed in Figure 71. The percentage of

LEP students at benchmark increased from Winter to Spring 2021 in the Treatment Group but decreased from Winter to Spring 2021 in the Comparison Group, showing promise for the impacts of TechSmart on LEP students. In fact, by Spring 2021 the percentage of LEP students at benchmark was higher in the Treatment Group than the Comparison Group. Note that sample sizes were relatively small for the Comparison Group.

By Spring 2021, the percentage of LEP students at benchmark on the DIBELS was higher in the Treatment Group than the Comparison Group.

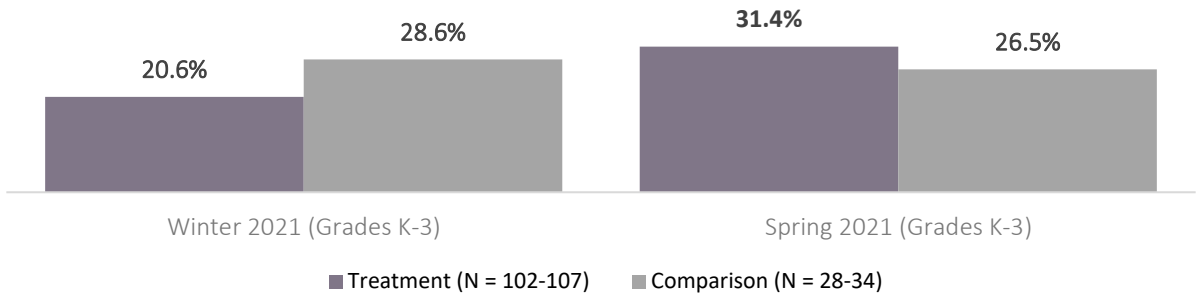


Figure 71. Percentage of LEP students at benchmark on the DIBELS assessment in SY 20-21 by treatment condition

Special Education Students

Next, results for students in special education (SPED) or those students with an IEP were compared across Treatment and Comparison groups. Results are displayed in Figure 72. A lower percentage of SPED students was at benchmark on the DIBELS at both time points.

A lower percentage of SPED students was at benchmark on the DIBELS assessment in SY 20-21.

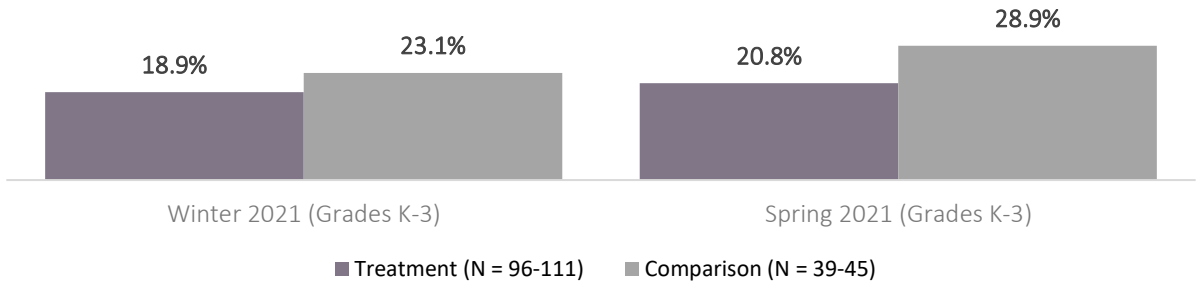


Figure 72. Percentage of SPED students at benchmark on the DIBELS assessment in SY 20-21 by Treatment condition

Students of Color

Finally, DIBELS assessment results were compared for students of colors across Treatment and Comparison groups. For the purposes of this analysis, students who identify as multi-racial were included in the students of color subgroup. Based on the demographics information provided by PPS, it was not possible to determine if this subset of students identify as white or non-white. Evaluators recognize that this method of disaggregating students includes limitations. Results are displayed in Figure 73 and mirrored results presented above for LEP students. The percentage of students of color who reached

benchmark on the DIBELS assessment increased from Winter to Spring 2021 in the Treatment Group but decreased from Winter to Spring 2021 in the Comparison Group, showing promise for the impacts of TechSmart on students of color. **By Spring 2021, the percentage of students of color at benchmark was higher in the Treatment Group than the Comparison Group.**

By Spring 2021, a higher percentage of students of color reached benchmark on the DIBELS assessment in the Treatment Group than the Comparison Group.

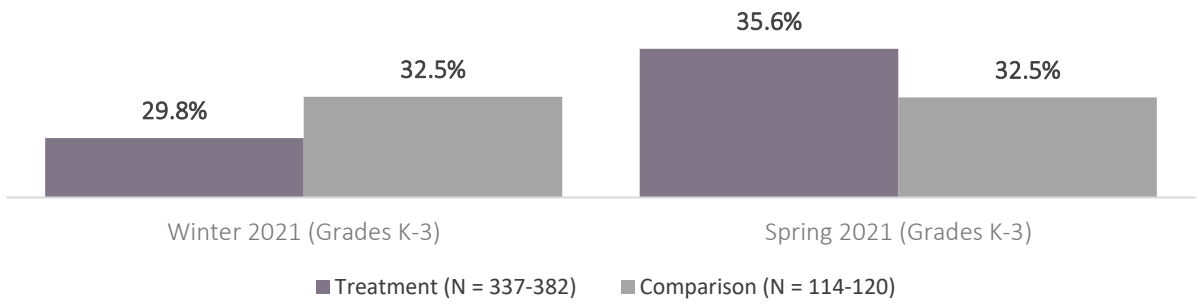


Figure 73. Percentage of students of color at benchmark on DIBELS assessment in SY 20-21 by Treatment condition

Outside of student achievement data, survey data provided additional insight into impacts on at-risk students. During distance learning, teachers used technology in a variety of ways to support instruction for students impacted by the opportunity gap. **Of the 138 teachers who provided open-ended input, thirty percent (*n* = 41) used technology to differentiate learning for their students with tools such as Seesaw or Jamboard. Additional top reported themes included teachers providing targeted small group instruction (*n* = 36) and one-on-one instruction via breakout rooms (*n* = 13) to student subgroups.** Around 10% of teachers offered audio aids, such as recorded instructions for assignments, and visual aids, such as slides or screen sharing, to support LEP students with learning vocabulary. Teachers offered voice-to-text options, which proved to be particularly effective for SPED students, and built in culturally responsive content. A sample of responses are included in Table 8.

Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES) during distance learning.	
Differentiated learning (n = 41)	*"I provided small group instruction specifically in ELA and Math. One example was book clubs; students would read a chapter book together in small groups. Groups were differentiated based on current data of reading levels. It was very effective because I could offer support and modeling of skills during this meeting time."* *"Technology helped me differentiate for my learners because I am able to assign adaptable programs and apps (Lexia, Learning A-Z, Dreambox). I also was able to create assignments that allowed for creativity and a variety of ways to respond or access via Seesaw."*

Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES) during distance learning.	
Small group instruction (n = 36)	*"Breakout rooms to scaffold content and engage students and support language acquisition."* *"Small group interactive collaboration tools (Jamboard, Padlet, etc.), differentiated videos & lesson materials."* *"I teach intervention groups for at-risk students, one to one support with my student teacher, or small group work in a breakout room with myself or my student teacher, and one to one support when I had office hours."*
One-on-one support (n = 13)	*"One-on-one support using Google meet, Jamboard, Padlet, and Seesaw."* *"Using breakout rooms to provide one-on-one instruction."* *"We provided one-on-one reading support to 2nd-5th grade students who showed they needed it, prioritizing native and Black students, then Latinx students."*
Audio aids (n = 13)	*"Provided my voice recorded as a read aloud option for all reading passages in Seesaw."* *"Providing recordings of readings that students can listen to and see the text, create fill in the blank vocabulary assignments."* *"The best features I used were the video and/or microphone to read directions aloud on assignments so students without reading skills could better access the content".*
Student choice (n = 12)	*"Students were allowed to present their working in different modalities, particularly students that struggle with writing and students that are neurodiverse. Recording their thinking and or drawing their ideas out in Seesaw."* *"Providing students with choice board activities."*
Visual aids (n = 11)	*"I can easily add visuals/video to presentations for ELL kids."* *"Jamboard is great for kids who can do the work independently or we work on the page together. It is also great to use when I simply share my screen for my younger kids who are less tech savvy but benefit from having lots of visuals (color coded, pictures, etc.) and can work on their papers at home as they watch me model how to do it."*

Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES) during distance learning.	
Voice-to-text (n = 10)	*"Voice-to-text is great for SPED students."* *"Speech to text support and use of "captions" in Seesaw to provide verbal support."* *"All students in at-risk subgroups were able to demonstrate a level of writing by creating a piece in Book Creator. The app can allow students to use voice-to-text if they are unable to spell and form a sentence."*
Culturally responsive content (n = 9)	*"Use of EPIC books featuring BIPOC."* *"BLM Seesaw assignments."* *"I have been able to design activities such as a "culture basket" to allow students to explore and share their diverse cultural identities."* *"One example is choosing read a-louds showing more families/children of color."*

Table 8. Ways technology supported instruction for at-risk subgroups during distance learning (n = 138)

In focus groups, teachers echoed the survey input, and stressed that supporting student subgroups using technology also includes supporting families with developing their technology skillset. Teachers highlighted that schools offered family tech support, led family outreach efforts, conducted home visits, and delivered paper packets to students. As shown in Table 9, teachers indicated multiple ways their school or district minimized barriers to online instruction for student subgroups who are impacted by the opportunity gap, and the **top reported strategies include providing students with devices and internet access.**

School and district-wide strategies for reducing barriers to online instruction	n
Provide students with devices (e.g., Chromebooks)	73
Provide students with internet access	58
Offer tech support to families	17
Lead family outreach efforts	13
Small group instruction	12
Home visits	9
One-one-one support	7
Deliver paper packets to students	6
Translation services	4
Little to no additional support was offered	3

Table 9. Top ten ways that the school/district minimized barriers for at-risk subgroups (n =121)

Providing all students with access to reliable internet and devices was a key step, as one survey respondent stated, "The district provided technology/hot spots, etc. for every student and created teams at schools to identify and assist at-risk subgroups. Our school team included the counselors who were the first out the door to deliver technology to homes, make calls, and assist in helping students get online and deal with tech issues." Similarly, another PPS teacher noted,

> *The district obtained huge amounts of equipment (Chromebooks, headphones, hotspots), and readily allowed students to trade in things that were broken. There was a lot of reaching out initially to learn about needs. In many cases, school staff hand-delivered things, and made every effort to help families get connected to Wi-Fi and/or hotspots. In addition, there were other resources provided, such as food, gift cards, connecting families to needed assistance, etc. Helping families with basic needs helped families to be more likely to have the capacity to engage in distance learning. Despite all the outreach, there were some students and families who did not connect consistently to online learning. There are students who I would have seen much more if we were having in-school, in-person instruction.*

In interviews, principals echoed the need for family outreach and tech support, noting examples of educators arranging drop-offs of equipment and hot spots to families and providing Clever sign-in tutorials in school parking lots. **Beyond devices and hotspots, however, principals spoke about needing to address deeper issues like students having to go to work with their parents and caring for siblings during the pandemic. Hot spots and equipment alone do not address the opportunity gap.** One principal noted that they leveraged their ESL teacher, who had a strong relationship with Spanish-speaking families prior to the pandemic, to reach out to families and increase student attendance and family engagement with technology**. TechSmart coaches supported teachers and administrators in this work, and repeated the need to think about equity beyond devices and internet, and more in terms of personal work and systems-level change**, as one coach stated,

> *I've been making an impact in terms of being on as many committees and leadership teams as I possibly can. I have been pushing anti-racism within technology and thinking about how we can make this accessible for Black and brown students. It's not just giving devices to kids. It's so much deeper than that. That's what I've been pushing with technology and TechSmart at all of my schools.*

KEY FINDINGS	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)?
	Although students from at-risk subgroups showed a lower rate of achieving benchmark on the DIBELS assessment, the percentage of students at benchmark increased more from Winter to Spring 2021 for students from at-risk subgroups than their non-at-risk peers.
	Results showed similar patterns across all at-risk subgroups, including LEP students, SPED students, and students of color.
	Results were not able to be examined over multiple school years due to limitations in the DIBELS data caused by the ongoing COVID-19 pandemic.

To determine whether the rate of student growth in academic outcomes as measured by the DIBELS assessment was greatest for at-risk student subgroups, the percentage of students whose scores met benchmark (i.e., ratings of Core Support on the DIBELS) was compared by membership in at-risk subgroups (i.e., English proficiency, and special education status, and race). **Note that, as in previous sections of this report, results were not able to be compared across multiple years due to substantial changes in how the DIBELS assessment was conducted in SY 20-21 to meet demands of the ongoing COVID-19 pandemic.**

Limited English Proficiency Students

First, DIBELS results were compared for students with limited English proficiency (LEP students) and non-LEP students. Results are displayed in Figure 74. **While LEP students had a lower percentage of students at benchmark on the DIBELS assessment at both time points, the percentage increased by 7.9 percentage points from Winter to Spring 2021 for LEP students. For non-LEP students, the percentage at benchmark increased only 1.9 percentage points. This provides evidence of closing the achievement gap for LEP students in TechSmart schools.**

While LEP students had a lower percentage of students at benchmark on the DIBELS assessment at both time points, the percentage increased at a higher rate for LEP students.

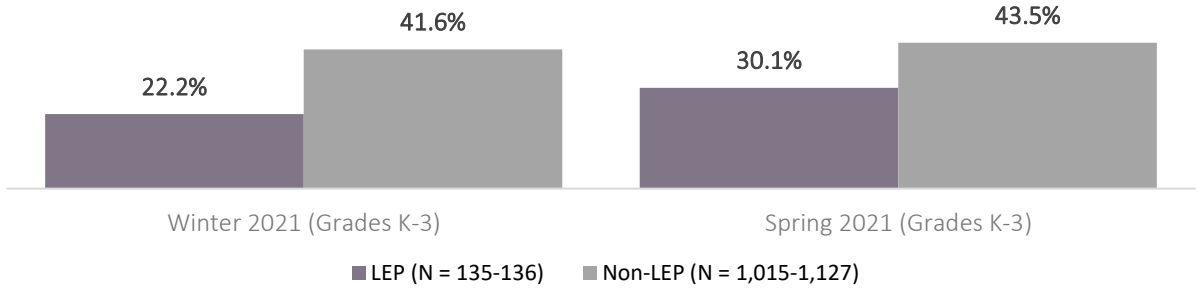


Figure 74. Percentage of LEP and non-LEP PPS students at benchmark on the DIBELS assessment in SY 20-21

Special Education Students

Next, results for students in special education (SPED) or those students with an IEP were compared to results for non-SPED students. Results are displayed in Figure 75, mirroring results for LEP students above. **SPED students had a lower percentage of students at benchmark on the DIBELS assessment at both time points, but the percentage increased by 3.4 percentage points from Winter to Spring 2021 for SPED students. For non-SPED students, the percentage at benchmark increased only 2.4 percentage points.**

While a lower percentage of SPED students reached benchmark on the DIBELS than non-SPED students, the percentage increased at a higher rate from Winter to Spring for SPED students.

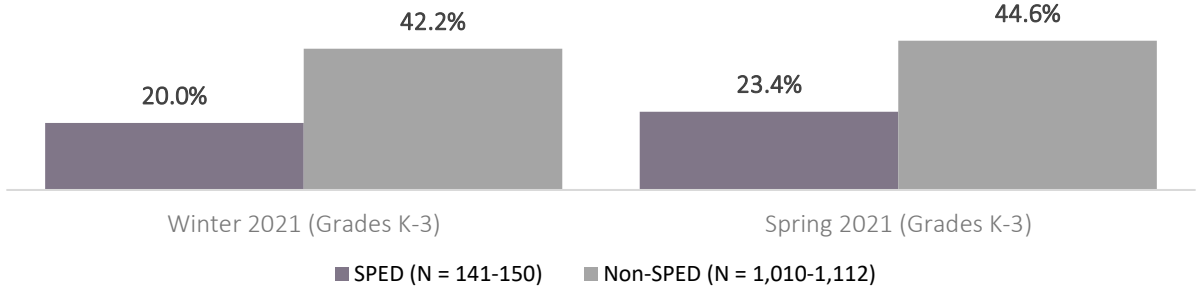


Figure 75. Percentage of SPED and non-SPED PPS students at benchmark on the DIBELS assessment in SY 20-21

Students of Color

Finally, DIBELS assessment results were compared for students of colors and white students. Results are displayed in Figure 76 and were similar to results for the other two at-risk subgroups. **While a lower percentage of students of color reached benchmark than white students across both time points, the percentage was 4.3 points higher from Winter to Spring for students of color but only 1.0 points higher from Winter to Spring for white students. This provides evidence of closing the achievement gap for students of color in TechSmart schools.**

While a lower percentage of students of color reached DIBELS benchmark, the percentage increased more from Winter to Spring for students of color than white students.

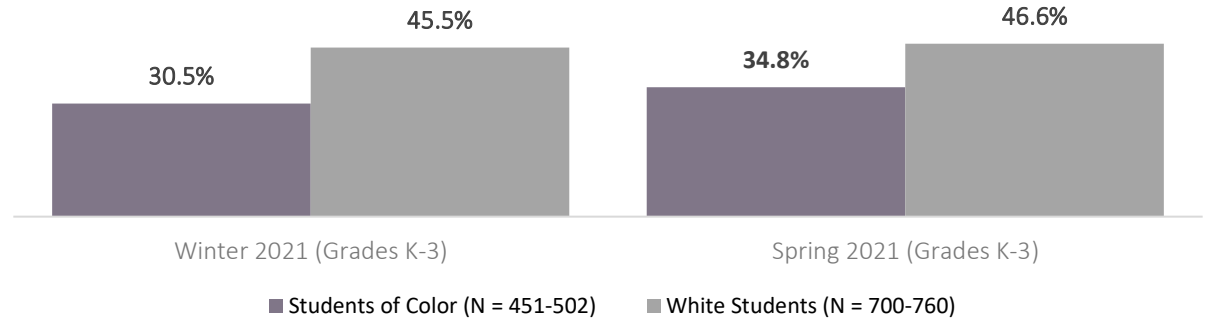


Figure 76. Percentage of students of color and white PPS students at benchmark on DIBELS assessment in SY 20-21

DIGITAL AGE LEARNING CULTURE

Districts embrace a cultural shift and view technology as positive.

KEY FINDINGS	Has the use of technology to support instructional practices increased?
	Frequency of technology use during class increased notably from baseline to Spring 2021, with the greatest increase in teachers adapting activities to students individually using technology.
	Support from TechSmart coaches allowed teachers to have the resources to better adapt activities to individual student learning.

Figure 22 indicates teachers' frequency of technology use during class. **The area with the greatest increase over time was teachers adapting activities to students individually using technology, from 46.2% at baseline to 78.6% in Spring of 2021.**

Frequency of technology use during class increased across all three areas, with the greatest increase in teachers adapting an activity to students individually using technology.

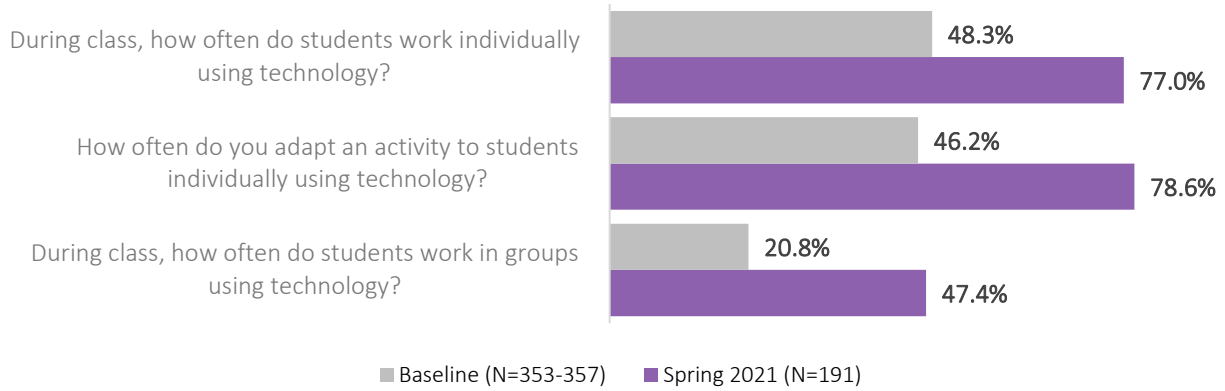


Figure 22. PPS teacher observed frequency of technology integration (% A moderate amount / A great deal)

In focus groups, TechSmart coaches emphasized they supported teachers, providing them the resources they needed to break down their instruction into individualized learning tasks, as one coach stated,

> *I think that having the tools and training available to dig in and think about instruction differently has helped teachers really spend time breaking down individualized learning tasks for kids, and the technology has allowed them to do it more efficiently and completely. I think the TechSmart grant was really pivotal. Teachers knew they could talk to and have direct quick access to answers to things they were dealing with and [TechSmart coaches] supported them in taking more risks to try new things.*

KEY FINDINGS	Do teachers have increased access to and use of digital content and resources?
	By Spring of 2021, a majority (88.3%) of surveyed teachers were using digital content and resources a moderate amount or a great deal in their instruction.
	A majority (88.6%) of teachers perceived that their students' comfort level with digital tools increased over time. According to PPS teachers, students' ability to work more independently, however, decreased by ten percent from baseline to Spring of 2021.

As seen in Figure 23, **in Spring of 2021, a majority (88.3%) of surveyed teachers were using digital content and resources a moderate amount or a great deal in their instruction.** This represents growth since SY 19 – 20, when teachers were somewhat less likely (79.1%) to indicate they had increased use of digital content and resources in their instruction since receiving technology specific Professional Development (PD).

By Spring 2021, a majority (88.3%) of surveyed teachers were using digital content and resources in their instruction.

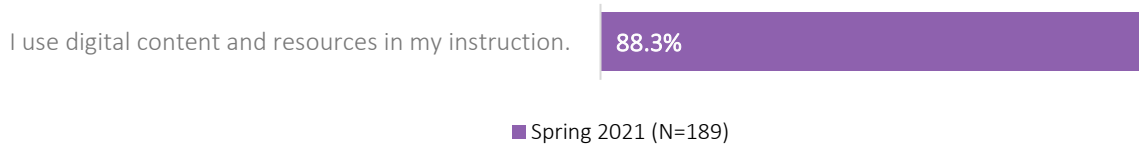


Figure 23. PPS teacher integration of digital content (% A moderate amount / A great deal)

By Spring of 2021, about two thirds (67.6%) of PPS teachers felt their students were more able to choose the right tool for the task (Figure 24). **Teachers' perception of students' comfort level with digital tools increased from baseline to Spring 2021, such that 88.6% of teachers agreed or strongly agreed their students were more comfortable using digital tools for learning by Spring 2021. According to PPS teachers, students' ability to work more independently, however, decreased by ten percent over time.**

Teachers' perception of their students' comfort level with digital tools increased notably to 88.6%, but students' ability to work more independently decreased by ten percent from baseline to Spring of 2021.

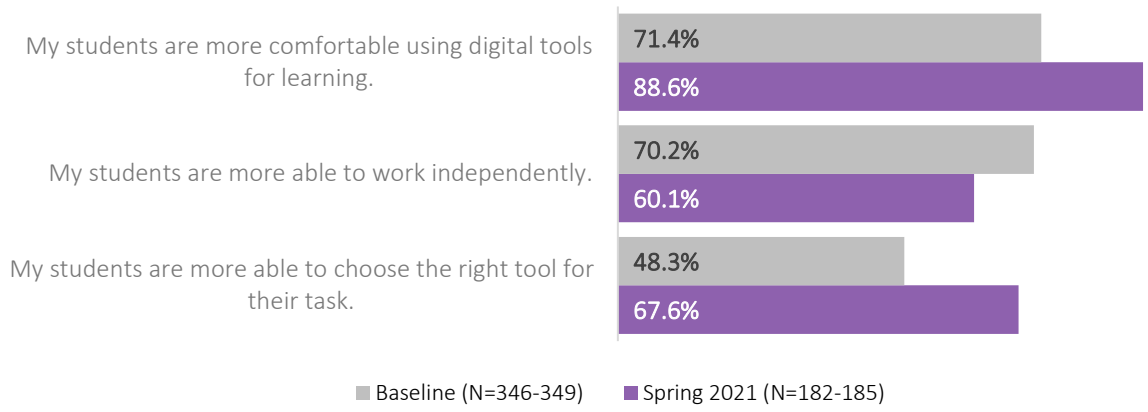


Figure 24. PPS teachers' perception of student technology proficiency (% Agree / Strongly agree)

KEY FINDINGS	Is there evidence of district wide support for technology integration?
	Survey data suggest PPS progressed in fostering a culture of support for technology integration. There is room for growth, however, in teachers' shared understanding about how technology can enhance learning.
	TechSmart coaches felt that the culture of support around technology increased because of an important shift in the perception of coaching as a correction tool to coaching as an effective tool for enhancing instruction.

Survey data presented in Figure 25 provide evidence that **PPS progressed in creating a culture of support for technology integration,** as the percentage of teachers who agreed with each statement increased from baseline to Spring of 2021.

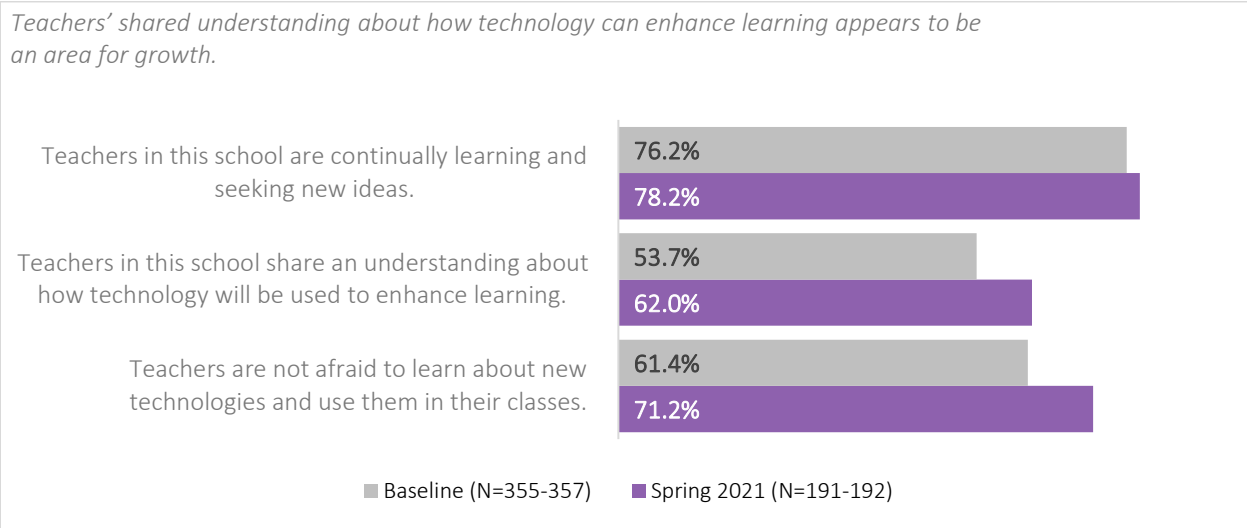


Figure 25. PPS teachers' perception of culture of support for technology integration (% Agree / Strongly agree)

TechSmart coaches felt that the culture of support around technology integration increased because of an important shift in the perception of coaching in general in the district. In the past, focus group participants commented that "coaching has been used as an accountability tool, as a corrective tool," which led to distrust of coaching models and limited instructional coach roles in the district. **The repeated, positive feedback about the impact of TechSmart coaches represents a notable, positive change in PPS teacher and administrator views on the effectiveness of coaching models**. TechSmart coaches felt their coaching model was especially effective because of the strong collaboration between coaches. In addition, coaches are part of the Learning Technologies team, which resulted in direct connections with district leadership and wide communication across the district to quickly disseminate the resources that coaches created and benefitted educators throughout PPS.

KEY FINDINGS	Do parents have an increased understanding and utilization of districts' technology assets?
	**Video conferencing and apps like Seesaw and Class Dojo, as well as texting apps, such as Remind, all provided key platforms for keeping families engaged in their students' learning.**
	**PPS educators' comments about barriers to parent engagement often spoke to deeper inequities. For example, teachers described high-density home situations with multiple students trying to log on to limited wi-fi. Teachers highlighted challenges faced by LEP students and families who may not have the tech skills to support their children during distance learning and who experience language barriers.**
	**Multiple teachers noted they think the district (and TechSmart) needs to focus more on developing parents' tech skills by, for example, offering classes on the basics of navigating computers so that families can better support their children in school.**

Teachers and principals alike commented repeatedly on the effective use of digital tools to connect with families. **Video conferencing and apps like Seesaw and Class Dojo, as well as texting apps, such as Remind, provided key platforms for keeping families engaged in their students' learning**. The SY 20-21 PPS year-end status report indicated that families had access to digital books at home and that the district provided instructional videos for families on how to access the TechSmart-funded e-library at home using Clever. Further, the year-end status report stated that 5,765 family members in TechSmart schools accessed their children's classrooms using Seesaw. Additionally, Spanish and Chinese language libraries were expanded in MyOn, and language-agnostic tools that support literacy across multiple languages were promoted, including Book Creator, Flipgrid, Nearpod, Formative and Jamboard.

In interviews, some teachers and principals noted they benefitted from video meetings and virtual parent conferences, and felt it often increased parent engagement as it was more convenient to schedule. These same teachers and principals hoped to continue to offer virtual options once in-person instruction resumes. As one interviewee noted,

> *For parents and teachers, the flexibility of meeting online has been life-changing in terms of scheduling meetings and IEPs. Now we can get everyone in the same room. That has been huge.*

Interviewees also described notable barriers that families faced related to technology. Some teachers spoke of beneficial drop-in sessions that were offered for parent tech support at the beginning of the school year. Other teachers, however, felt that families did not have the tech support they needed. Teachers described parents as overwhelmed by the transition to comprehensive distance learning (CDL) and deeply frustrated by the full reliance on technology this year. One teacher stated,

> *The parents were overwhelmed at having to support their children at home. So many parents were so frustrated that they had to be their child's teachers, they had to hire help or quit jobs. Many families are wealthy [at our school], the parents both have incomes with jobs in technology. It's an assumption on the part of our school that parents would find this transition easy, but actually they found it very difficult. Then we had families who were not as well resourced, we got less and less time with them and had attendance issues. It was hard to keep families engaged. They wanted school in-person; they were very frustrated.*

Interviewees' comments about barriers to parent engagement often spoke about deeper inequities. For example, teachers described high-density home situations with multiple students trying to log on to limited wi-fi. Teachers also highlighted challenges faced by LEP students and families who may not have the tech skills to support their children during distance learning and who experience language barriers. One principal noted their school tried to be responsive by relying less on email communication and more on phone calls to reach families in their language, but the pandemic meant "we no longer had people to do the phone calls".

Multiple teachers noted they think the district (and TechSmart) needs to focus more on developing parents' tech skills by, for example, offering computer classes so that families can better support their children in school. One teacher highlighted that these foundational skills are the primary barrier, and that technology skills can increase family engagement and student attendance,

> *We need TechSmart to teach families with limited access, to help them to learn the technology. Once they learn, attendance is really high. We have seen very high attendance in our school this year, 98% attendance! We became an example to our district. [Virtual learning] reduces commute time, I saw this with my ELL families. Families live a long way away, so when school was in-person we saw lower attendance and students missing classes. With computers, it's easier for students to jump in. All the students have access to the online resources, everyone has a Clever badge, they can use Seesaw, that helps their learning and reduces the gap.*

Some leaders expressed concern about how the district handled getting technology in the hands of families over the past year. These principals noted that district set up pick-up locations for families, but some families were fearful of COVID-19 and public spaces (especially families who identify as Asian who were experiencing pandemic-related discrimination), and others did not drive or have reliable access to transit. As one district leader stated, "I think there are we ways we could have gotten technology into the hands of families faster."

KEY FINDINGS	How has TechSmart impacted the shift to distance learning?
	More than eighty percent of teachers were more confident in their ability to integrate technology into their instruction as a result of distance learning and adopted new strategies that they planned to take back to the classroom.
	Teachers primarily described the positive impact of TechSmart on their distance learning instruction in terms of (a) the essential support from their TechSmart coach and (b) a strong foundation in teaching strategies utilizing technology and student familiarity with tools going into the pandemic.
	The top three technology supports that TechSmart teachers plan to continue to use in-person next year include Seesaw, Google Suite, and Jamboard. Teachers and TechSmart coaches talked about their intention to continue to utilize technology for "voice and choice", differentiation, and increasing student engagement in the classroom. Administrators echoed their support for ongoing use of these tools once in-person instruction resumed.

More than eighty percent of teachers were more confident in their ability to integrate technology into their instruction as a result of distance learning and adopted new strategies that they plan to take back to the classroom. As shown in Figure 26, less than one-third (29.7%) of teachers felt the use of online instruction during the pandemic was inconvenient.

A majority of teachers are more confident in their ability to integrate technology into instruction as a result of distance learning.

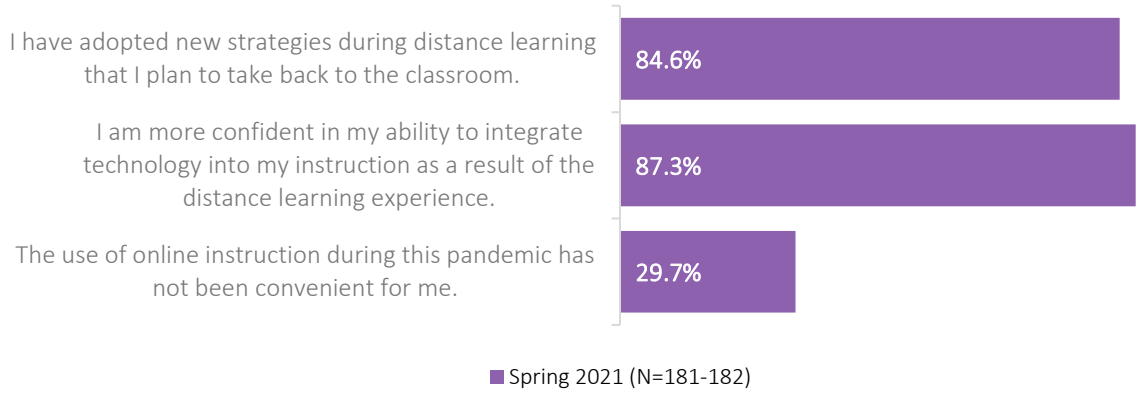


Figure 26. PPS teachers' input about using technology during distance learning (% Agree / Strongly agree)

Teachers primarily described the positive impact of TechSmart on their distance learning instruction in terms of (a) the essential support from their TechSmart coach and (b) a strong foundation in teaching strategies utilizing technology and student familiarity with tools going into the pandemic. A sample of these response themes is shown in Table 10.

Do you have any comments about how your experience with the TechSmart grant impacted your instruction during distance learning?	
Importance of TechSmart coach support (n = 40)	*"Our TechSmart coach, and the other members of their TechSmart team, have provided our staff with ample opportunities to ask questions and get tech/distance instruction related support. We could not have gotten through this school year without our coach's expertise, guidance, or advocacy."* *"I appreciated the support from our TechSmart coach! They were instrumental in helping me navigate tech issues as well as providing one to one, specific, one-time professional development I needed to assist my students online."* *"I saw some teachers really struggle to include more technology into their instruction and I felt fortunate to have already had several years in the TechSmart grant with a Tech Coach to help us with programs we ended up heavily relying on during distance learning."* "*It's been amazing! What a great year to finally get a TechSmart coach. They have been wonderful and so helpful. I don't know how our school would have functioned this year without TechSmart!"* *"I was able to have a coaching session and improve my tech skills greatly. I learned to have confidence to try things and a better ability to find solutions to my questions or how to create things to improve learning experiences."*
TechSmart built a foundation for integrating technology (n = 10)	*"Without the TechSmart grant, I don't think our school would have been able to transition to distance learning as smooth as we did. Teachers and students had more access to technology because of being a TechSmart school for the last three years, so it wasn't as big of a transition. I felt that I already had a strong foundation for integrating technology because of the grant, and while this was a tremendous shift in how I typically instruct, I felt that my students and I did not have to overcome as many obstacles."* *"As a TechSmart school from the very first year, I think that the learning at that time and over the years helped lay a foundation that helped us (teachers) adjust to this situation. We already had Chromebook carts and training on tech applications such as Seesaw, Core5, and more. Students in Grades 1 and up already had a lot of experience using these apps weekly or even daily while in school pre-pandemic. Perhaps that experience helped students to more easily adjust to online learning. I remember the state of technology in our building before TechSmart. If we had gone into CDL from that, it would have been a more difficult and longer transition. Equipment-wise, the first Chromebooks we got out to families in Spring 2020 were from the collections in our buildings. The vast majority of our collection was thanks to TechSmart."* *"We were so much better prepared to move to digital models of learning, we knew the basics of Clever and Seesaw and the students were much more adept at computers than kids at other schools."*

Do you have any comments about how your experience with the TechSmart grant impacted your instruction during distance learning?	
General positive feedback (n = 12)	*"I'm grateful for the technology my students were given for the school year."* *"It helped me become a better online teacher."* *"TechSmart made the whole year doable!!!!"* *"TechSmart was an invaluable resource".*

Table 10. TechSmart impact on remote instruction, Spring 2021 survey data (N = 60)

Feedback in teacher focus groups echoed survey feedback**.** Teachers in their first TechSmart year valued "having a coach, someone who knew how to use the platforms, understood the data side of the apps, and knew how to use data to see progress". **Teachers several years into TechSmart felt online apps and fluency with Chromebooks transferred especially well to distance learning.** Focus group participants felt the skills they learned in prior years prepared them for the transition, as one teacher stated,

> *In previous years, I had a lot of support from coaches, this year I didn't need as much because I had already received extensive support. Fortunately, going into CDL, I was ready to use all the tools. I knew how to use and interpret the data from Lexia. I was using Seesaw in my class for three years prior. I was using all the TechSmart tools – MyOn, Book Creator – it had to do with the amazing support the year prior.*

Moreover, teachers were able to use tools in more impactful ways during distance learning, as one teacher stated,

> *It was really easy for my students from last year to start using Seesaw 100%. They had already played with tools, I had already used them prior, and I used them more as a final step. With CDL, I focused on how to use technology for smaller steps, instead of just the final step of the learning process.*

TechSmart coaches repeated this theme, noting how teachers used technology during CDL to "think about instruction differently and break down individualized learning tasks for students, using technology to do so efficiently and completely." Coaches witnessed teachers utilizing technology to provide detailed, individual feedback on student work and felt the practice of putting together PowerPoints for instruction helped teachers clarify and emphasize learning outcomes for their students.

The top three instructional supports teachers plan to continue to use in the classroom include Seesaw, Google Suite, and Jamboard (Table 11).

Instructional Support	n
Seesaw	28
Google Suite	25
Jamboard	15
Nearpod	9
Book Creator	9
Formative	8
Flipgrid	7

Table 11. Instructional supports from remote instruction that PPS teachers plan to bring back to classroom (n = 137)

Survey respondents further specified they planned to continue to utilize slides to present educational content (*n* = 18), conduct online assessments (*n* = 7), and leverage online resources (websites, games, etc.; *n* = 7) when they returned to the classroom. As one teacher stated, "I will continue to use Book Creator for publishing writing, Seesaw for at-home extensions, and Google Slides to guide instruction (with visuals, links, etc.)." Another teacher noted, "I plan to use Google slides to organize and focus my instruction. Being able to use embedded links, videos, books, etc. in the slides allowed for a better flow and delivery of instruction." Additionally, some teachers intended to use Google polls and Dreambox for measuring student progress and Lexia for small group instruction. In focus groups, teachers and TechSmart coaches talked about their intention to continue to rely on technology for "voice and choice", differentiation, and increasing student engagement in the classroom.

PPS administrators support the ongoing use of the instructional supports once in-person instruction resumes. Administrators and teachers alike feel Seesaw is an important parent communication tool, as one administrator stated, "Seesaw will continue because of the parent communication piece. Parents like how they can see assignments and there are multiple ways to showcase student learning, and they appreciate seeing teacher feedback on student work." When schools shift to in-person learning, some teachers hoped to keep up video meetings with families and staff, including virtual parent conferences. TechSmart coaches noted that, after this challenging year, they saw promise in teachers overcoming fears of technology in the classroom and moving towards using technology to improve teaching practice and enhance student learning, as one coach stated:

> *"Let's talk about good practice in teaching, and then how do we further that? How do we take the best lesson that a teacher ever created for a classroom and enhance it and bring in resources they could never access before? How do we enrich the experience of learning? I feel the skills students and teachers learned really set us up for an opportunity to push that ball forward in our district. 'Finally' is the word that comes to mind. We're finally getting to a place where we can get away from fear and "I don't know how to use that and if I do, it might break and it might not work", and "what happens if this, what happens with that" to "Okay, I do know how to do some of that. Okay, Let's really talk about using that tool in a better way."*

VISIBLE LEADERSHIP

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

KEY FINDINGS	Are districts identifying effective instructional practices and disseminating information and results to other districts?
	Principals felt the intensity of the past year limited their opportunity to share learnings with other districts but noted that TechSmart coaches were able to build some cross-district connections.
	Administrators shared about TechSmart learnings with the Coalition of Oregon School Administrators (COSA) and at Seesaw Connect and often get questions from other districts about what they have learned from TechSmart.

Principals felt the intensity of the past year limited their opportunity to share learnings with other districts but noted that TechSmart Coaches were able to build some cross-district connections. One principal described coaches as "the bridge" between schools and buildings. Coaches themselves reflected that they felt there was more cross-pollination between districts in prior years when they attend conferences like iPDX. One coach stated: "Last year, we had the whole team there and all of us together could sit with and talk to presenters and people from other school districts because of the nature of iPDX and the fact that it's really designed to be a working conference where people have an opportunity to actually try out and use some of the things that are being presented." Coaches also highlighted the shared learning event organized each year by Mt. Hood Cable Regulatory Commission and Pacific Research and Evaluation as an opportunity for shared learning. **Administrators shared about TechSmart learnings with COSA and at Seesaw Connect and often get questions from other districts about what they have learned from TechSmart.**

KEY FINDINGS	Do teachers feel increased support from district leaders regarding technology integration?
✓	As of Spring 2021, a majority (89.6%) of teachers felt that administrators in their school were supportive of technology integration.
👏	Principals were generally positive about district support, and some noted TechSmart administrators had really stepped up in SY 20-21 and done great work, which they anticipate will have a lasting, district-wide impact.
⬡	TechSmart coaches also perceived the impact of TechSmart was felt district wide, beyond TechSmart schools, and that there was more recognition "higher up" of the impact of the training and learning opportunities that TechSmart coaches have developed.

As of Spring 2021, a majority (89.6%) of teachers felt that administrators in their school were supportive of technology integration (see Figure 27). As one teacher stated, "with a TechSmart coach I have felt heard more often by the district".

By Spring of 2021, teachers were more likely to agree that administrators in this school are generally supportive of technoligy integration efforts.

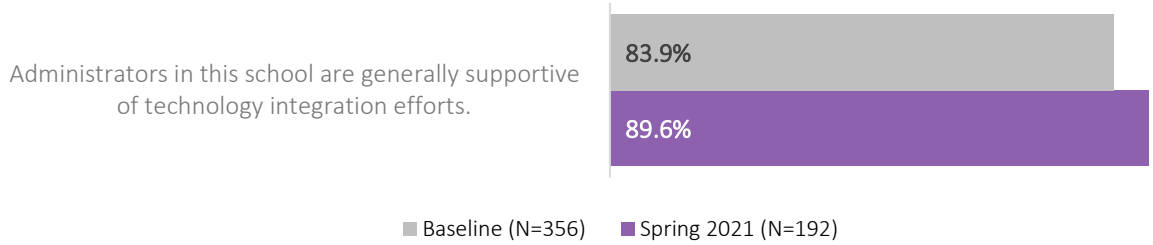


Figure 27. PPS Teachers' perceptions of a culture of support for technology integration (% Agree / Strongly agree)

Some principals received tech support from the district during staff meetings and appreciated being able to direct parents to the district tech office. Other principals expressed they need more basic tech support for tasks like fixing printers, figuring out why headphones are not working, and other basic trouble-shooting tasks that are not necessarily part of TechSmart. **Interviewees were generally positive about district support, and some noted TechSmart administrators have really stepped up this year and done great work, which they anticipate will have a lasting, district-wide impact.** As one principal stated,

> *Sometimes, you do these grants and the subset of schools that are participating field support, but once the grant goes away, there hasn't been any foundational work at the district level, and everything goes back to where it was before. But I see that over the multiple years and with the really planned outcomes of TechSmart, they are getting almost everybody through in an intentional way. We're seeing the infrastructure, the technology catching up and a real push to ensure all schools have access so that it becomes our new normal. It's not a one-off or a pilot situation.*

TechSmart coaches also felt the impact of TechSmart was felt district-wide, beyond just TechSmart schools, and that there was more recognition "higher up" of the impact of the training and learning opportunities that Coaches have developed. Coaches appreciated having a voice via the Learning Technologies team and also reported serving on various committees within schools to bring their unique strengths and perspectives to the table. Interviewees shared they hope TechSmart evaluation reports will be shared out across the district to a multitude of stakeholders so more can learn about the impact of TechSmart.

DATA-DRIVEN IMPROVEMENT

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

KEY FINDINGS	How are schools using data to improve instruction, professional development, and student performance?
	Teachers not only frequently used technology to differentiate, they were also confident in their ability to do so; more than 85.0% of survey respondents reported confidence in differentiating instruction by Spring of 2021.
	Almost eighty percent of teachers used formative assessment in SY 20-21 to identify effective instructional practices, using tools like Lexia, Raz Kids, and Seesaw. There were concerns, however, that parents were helping students, making it difficult to measure progress.
	More than eighty percent of surveyed teachers reported they were comfortable integrating technology into their instructional practices and had found effective means for doing so.

Around eighty-four percent of PPS teachers reported using technology for evidence-based instruction and to differentiate instruction A Great Deal or A Moderate Amount in Spring of 2021 (Figure 28).

Eighty-five percent of teachers use technology frequently for evidence-based instruction.Teachers were slightly less likely (75.4%) to report frequent use of technology to analyze student data.

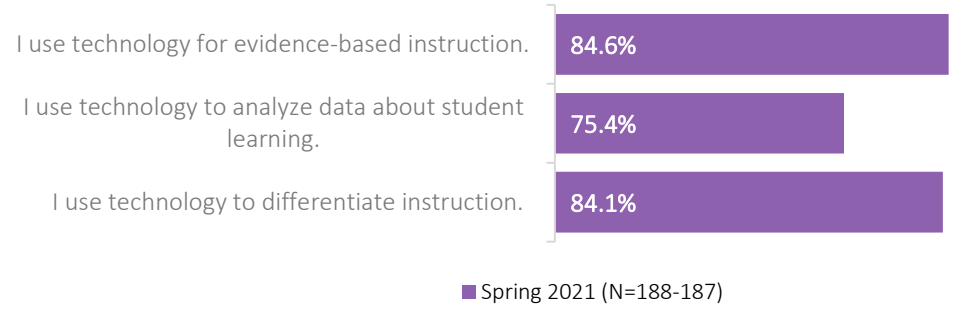


Figure 28. PPS teachers' instructional technology usage (% A moderate amount / A great deal)

Teachers not only frequently used technology to differentiate, they were also confident in their ability to do so; more than 85.0% of survey respondents reported confidence in differentiating instruction in Spring of 2021. (Figure 29).

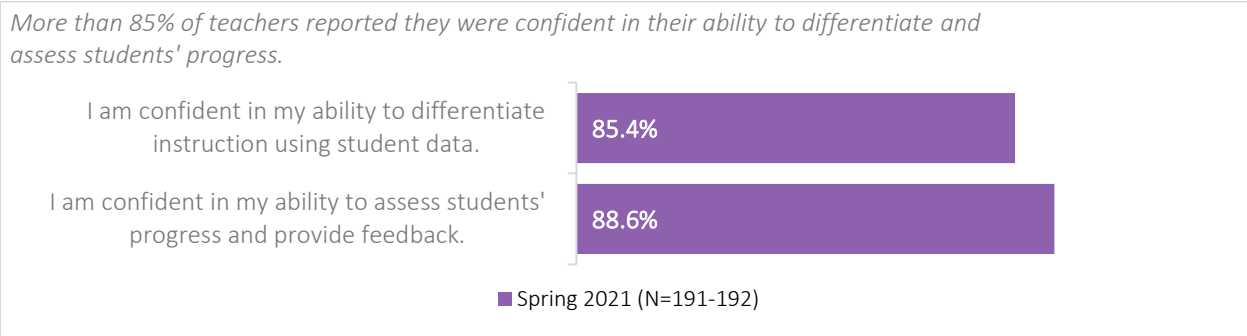


Figure 29. PPS teachers' ability to differentiate instruction and assess student progress (% Agree / Strongly agree)

Almost 80.0% of teachers reported using formative assessment to identify effective instructional practices (Figure 30). **Teachers noted they used the assessment tools in Lexia, Raz Kids, and Seesaw. There were concerns, however, that parents were helping students during CDL, making it difficult to measure progress.**

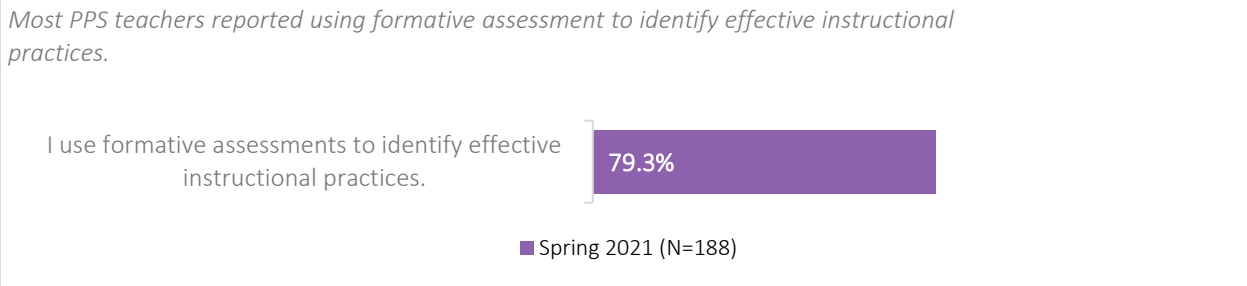


Figure 30. PPS teachers' formative assessments usage (% Agree / Strongly agree)

As seen in Figure 31, **more than eighty percent of surveyed teachers reported they were comfortable integrating technology into their instructional practices and had found effective means for doing so. These results echo SY 19-20 survey data, when 78.7% of teachers reported they had identified effective instructional practices that utilize technology.**

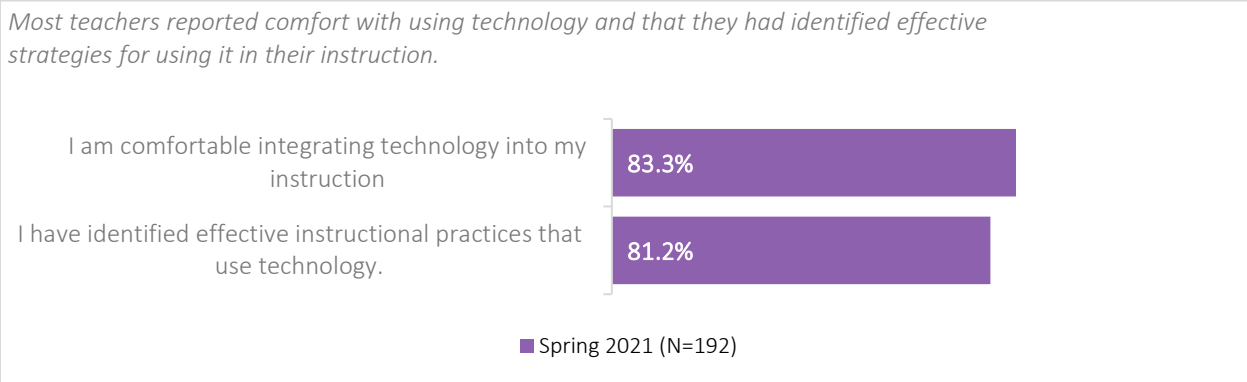


Figure 31. PPS teachers' comfort level and competence with technology (% Agree / Strongly agree)

FUNDING & BUDGET

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

KEY FINDINGS	Have districts identified at least one opportunity for repurposing resources to support technology integration?
	Educators noted shifts in how PPS prioritized funds to support technology integration in terms of, for example, purchasing devices and hotspots, bringing on TechSmart coaches in other roles, and repurposing funds to better leverage the Learning Technologies team.
	Notably, PPS content area departments opted to maintain their investments in the full suite of instructional applications they had purchased for CDL with the intent to see the tools' continued use for in-person learning.
	Administrators felt TechSmart has worked well in parallel with other grants focused on technology that all mutually reinforce each other and create a deeper, long-lasting impact for PPS.

In interviews, educators identified a few ways that PPS repurposed resources to support technology integration. Some principals noted **the district shifted funding to prioritize devices and hotspots for students and families in SY 20-21.** Several district leaders noted the change in the coaching model from having TechSmart coaches based at buildings to sharing coaches across schools. In terms of FTE, one principal talked about a change in the funding priorities to support a full-time instructional specialist that will continue next year and who works closely with the TechSmart coach. Another principal noted they hired their TechSmart coach as a school-based instructional coach. **A couple principals commented on the funding for the Learning Technologies team as an important reallocation of funds by PPS.** Administrators talked about the K-12 online school being implemented in SY 21-22 as a major undertaking and shift in funding priorities for the district. In the year-end status report, administrators noted that PPS dramatically expanded the suite of applications available to teachers and students during the pandemic, across all subject areas. **Toward the end of the school year, content area departments opted to main their investments in all instructional applications they had purchased for CDL with the intent to see the tools' continued use for in-person learning. Lastly, administrators felt TechSmart has worked well in parallel with other grants focused on technology that all mutually reinforce each other and create a deeper, long-lasting impact for PPS.**

STRATEGIC PLANNING

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

KEY FINDINGS	Does the district's strategic plan reflect shared commitment to improving outcomes for students?
	When asked about PPS' strategic plan, several principals spoke generally about the district's "clear commitment to technology" and appreciated "major investments" by the district in devices and take-home technology over the past year.
	Administrators highlighted PPS' major efforts to roll out a K-12 online school in SY 21-22 and to maintain investments in the full suite of tools used during CDL to ensure teachers, students, and families can leverage technology when they return to in-person learning next year.

When asked about PPS' strategic plan, several principals spoke generally about the district's "clear commitment to technology" and appreciated "major investments" by the district in devices and take-home technology over the past year. Other principals spoke about concerns over sustainability with loss of their TechSmart coach and with teacher turnover and feel there is a need for ongoing learning technology support and professional development opportunities.

Administrators again touched on PPS's notable efforts to roll out a K-12 online school in SY 21-22 as a commitment to improving student outcomes. Administrators also highlighted the district's continued investment in the full suite of tools used during CDL so teachers, students, and families can continue to leverage technology when they return to in-person learning in SY 21-22.

EVALUATION INSIGHTS

The SY 20-21 evaluation at PPS produced the following insights:

- **TechSmart coaches have provided pivotal support to teachers**. Teachers were generally very positive about the effectiveness of the professional development and highlighted pivotal support provided by TechSmart coaches. Cohort 5 teachers noted they valued "having someone to go to who knew how to use the platforms, understood the data side of apps, and who knew how to use the data to see progress". Teachers from earlier TechSmart cohorts valued the foundation they and their students had with using the tools in their daily work during this CDL year. These educators appreciated TechSmart coaches' additional support, as needed, and some teachers indicated they felt they could more effectively utilize the technology on their own this year compared to previous years because their coach had set them up for success.
- **Teacher confidence and use of technology to enhance instruction has increased.** Teachers' technology proficiency level jumped from baseline to Spring of 2021; half (52.7%) of respondents felt they used technology efficiently (Level 4 or 5) at baseline and 74.6% felt they used technology efficiently on the post-survey. Cohort 1, the cohort with the longest exposure to TechSmart, experienced the most notable improvement in technology proficiency ratings over time, with an increase from 32.0% of teachers feeling they used technology efficiently at baseline to 84.4% by Spring of 2021. Frequency of technology use during class increased notably, with 42.6% of teachers reporting they adapt activities to students' individually using technology at baseline to 78.6% by Spring of 2021. Further, survey and focus group data echo previous TechSmart evaluations; TechSmart teachers are more confident in their ability to differentiate instruction and use technology to support students at their level. TechSmart coaches and administrators feel that they have witnessed a notable transformation this year in how teachers utilize the TechSmart-funded tools to enhance their instruction.

- **Student achievement results show promise for the impact of TechSmart on PPS students impacted by the opportunity gap.** For the full sample of all students, the Treatment Group (i.e., TechSmart schools) consistently showed a lower percentage of students at DIBELS benchmark than the Comparison Group (i.e., non-TechSmart schools) in Winter and Spring 2021. However, the percentage increased from Winter to Spring for the Treatment Group and did not always increase for the Comparison Group. DIBELS data for samples of LEP students and students of color showed the percentage of students at benchmark increased from Winter to Spring in the Treatment Group but decreased in the Comparison Group. The percentage of Treatment Group students at benchmark exceeded that of the Comparison Group students by Spring 2021 for both LEP students and students of color.

- **Distance learning resulted in teachers adopting new instructional strategies utilizing technology that they plan to take back to the in-person classroom**. More than eighty percent of teachers felt more confident in their ability to integrate technology into their instruction as a result of distance learning. Teachers and TechSmart coaches intend to continue to utilize technology for "voice and choice", differentiation, and increasing student engagement next year. Coaches and

administrators alike noted that the impact of TechSmart goes far "beyond devices and hotspots". Teachers have enhanced their instruction with technology and students have benefitted from showcasing their learning in creative ways.

- **When talking about student engagement, family outreach, and how to utilize technology to improve outcomes for students impacted by the opportunity gap, PPS educators highlighted deeper inequities that need to be addressed.** Teachers used technology to support students impacted by the opportunity gap via, for example, targeted small group instruction in breakout groups and creative visual and audio tools. Schools distributed devices and internet hotpots this year to increase access for families and students. Educators feel PPS needs to help families develop technology skillsets so families can better support their students' learning. Teachers described, for example, situations with students in CDL with varying levels of parent and grandparent support (ranging from parents needing to work long hours and not being available to help their children, to students caring for their siblings while parents work, to parents doing their children's school work for them), families that experience language barriers, and families who could not readily access technology this year because of lack of transportation and/or fear of discrimination. TechSmart coaches stressed the importance of anti-racist practices, ongoing personal work, and systems-level change as critical for closing the opportunity gap moving forward.

CHAPTER 6: CENTENNIAL SCHOOL DISTRICT

TechSmart Initiative 2020-2021 Evaluation Report

CONTENTS

PROJECT SUMMARY

Beginning in the 2018-2019 school year (SY 18-19), Centennial School District (CSD) has been utilizing its MHCRC TechSmart grant to focus on improving student outcomes in math and science in Grades 7 to 9 through an integrated, hands-on, student-centered approach referred to as Project-Based Learning (PBL). The district aims to improve achievement across all students, but especially to close achievement gaps between groups of students, including historically underserved populations. Specifically, desired project outcomes include: (1) teachers knowing how to develop effective PBL units; (2) teachers effectively implementing PBL practices and strategies; (3) use of technology-supported PBL instruction that supports student creativity, collaboration, communication, and critical thinking; and (4) improving student outcomes.

In SY 20-21, which was the third year of the four-year grant, CSD faced some obstacles to grant implementation, many of which were a result of the COVID-19 pandemic that required the schools to operate in Comprehensive Distance Learning (CDL). Specifically, many grant activities were interrupted and the CSD STEM (TechSmart) coach left the position in October 2020 and was not replaced due to hiring obstacles. As a result of these barriers, CSD made the decision to update their project plan to shift most SY 20-21 activities to SY 21-22. Despite these hurdles to grant implementation, CSD utilized the TechSmart grant in SY 20-21 to support teachers in identifying additional technology resources to teach in an online format, developed new PBL curriculum that will be administered following CDL, and worked to create a list of newly hired teachers who will need training during SY 21-22.

A teacher survey was administered as part of the grant evaluation in Spring 2021 to learn about educators' experience related to the TechSmart grant. The report that follows also includes data from three interviews and references the year-end status report submitted by CSD to MHCRC.

ABOUT SPRING 2021 SURVEY RESPONDENTS

A total of five CSD teachers provided response data to the 2021 end of year survey. The survey was completed by two seventh grade teachers and three eighth grade teachers.

Survey respondents were predominately long-time teachers at the K-12 level (Figure 1). Sixty percent of teachers (60.0%) have been teaching for over 11 years, with 20.0% of teachers serving for over 21 years.

A majority of survey respondents have been teaching for over eleven years.

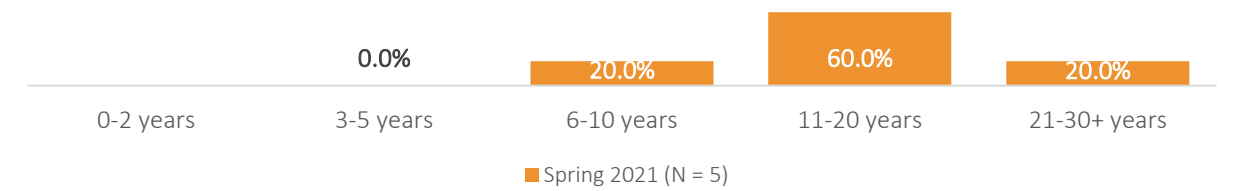


Figure 1. Years CSD Spring 2021 Survey Respondents Have Spent Teaching

COVID-19 CONSIDERATIONS

The shift to CDL as a result of the COVID-19 pandemic hindered CSD's ability to integrate PBL. Distance learning did provide teachers with the opportunity to use new instructional strategies that they plan to integrate once back in the classroom, such as the use of video resources and group learning. Further, during CDL all students had access to Chromebooks and Wi-Fi, which positively impacted the equity divide.

FINDINGS

The findings from the SY 20-21 evaluation at Centennial School District (CSD) are presented below and organized by the seven factors identified as essential for schools to effectively transform into technology-rich teaching and learning environments. Evaluation questions guiding this study were designed to respond to these seven factors. Each factor is further framed by these questions, with relative key findings highlighting trends in data relative to each guiding line of inquiry.

TEACHING EFFECTIVENESS

Districts support regular, inclusive, and shared Professional Development among teachers.

According to the year-end status report, teachers who were hired prior to the end of the last school year (SY 19-20) received PBL 101 training. Teachers who were hired later still need training, which CSD was hoping to provide in SY 21-22. The district has a list of educators for this training. One interviewed teacher had received training from the CSD STEM (TechSmart) coach on using Padlet prior to the coach leaving the district. Otherwise, no other TechSmart training was provided in SY 20-21.

The majority of TechSmart teachers reported receiving between 0 and 8 hours of both group and individual technology-related Professional Development (PD) during the 2020-2021 school year (Figure 2).

Teacher survey respondents spent more time in group PD than individual PD.

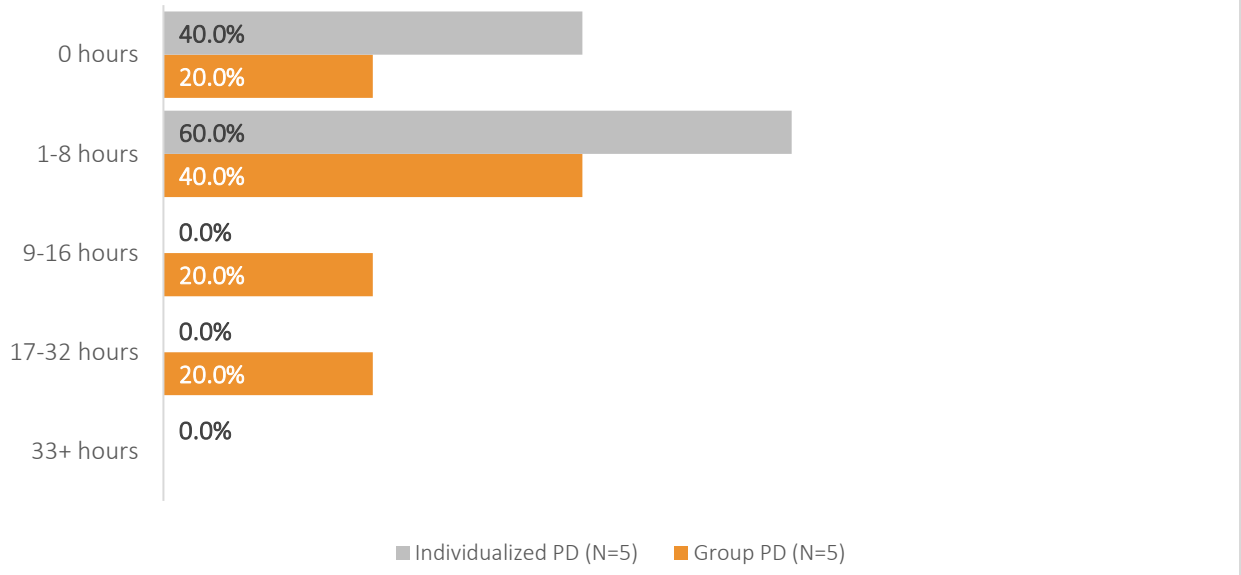


Figure 2. Time CSD Teachers spent in Individualized and Group Professional Development

Respondents rated both the individualized and group PD opportunities as Very Useful (Figure 3).

A majority of respondents who participated in PD found it Very Useful.

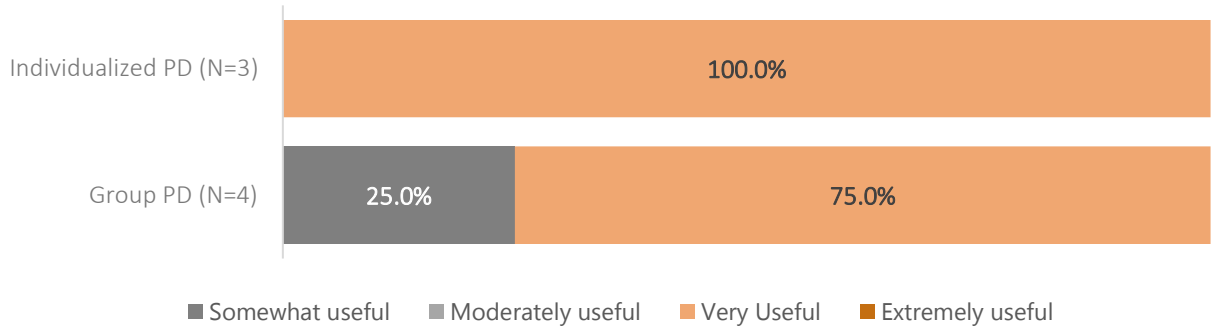


Figure 3. CSD Teacher ratings of how useful Professional Development was, by type.

Respondents were asked if they felt the Professional Development (PD) received through the grant differed from general professional development support for adapting to distance learning. Only twenty percent (N=1) of respondents stated that the TechSmart PD was different (Figure 4).

A majority of respondents do not believe that TechSmart PD that was different from other PD they received.

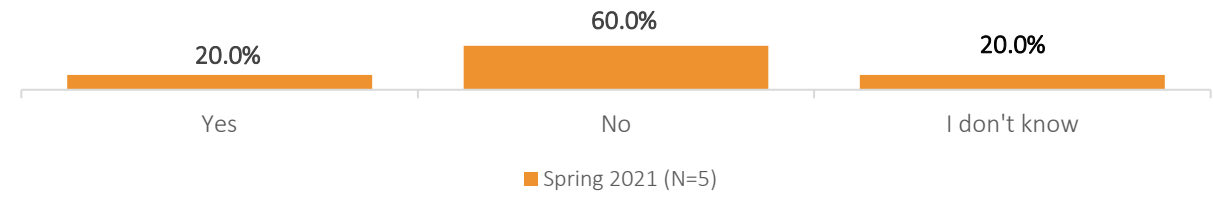


Figure 4. CSD Teacher belief that TechSmart-provided Professional Development differs from what others are receiving to support distance learning in the COVID-19 pandemic.

KEY FINDINGS	How is Professional Development (PD) impacting teacher instruction?
	Teacher survey respondents confirmed that there was no TechSmart-specific PD provided in SY 20-21.
	Despite the lack of TechSmart PD provided in SY 20-21, previous iterations of this PD may have impacted teacher instruction with a reported increase in technology specific instructional strategies since baseline and 100% of teacher survey respondents rating themselves at the two highest technology skill levels.

The Spring 2021 survey asked how effective the Professional Development (PD) model has been in impacting teacher instruction in a distance learning format. Three teachers responded to the prompt by

indicating that it has not been very effective. One respondent noted that most of the PD they have done has been on their own. Another noted that they do not believe there was PD delivered via TechSmart, which according to the year-end status report and teacher and leadership interviews, is an accurate observation.

Teachers also reported on the extent to which they are integrating technology into various instructional practices. The use of technology specific instructional strategies has increased over the course of the grant with nearly all survey respondents indicating they seek out activities that promote increased problem solving and critical thinking skills (Figure 5).

The use of technology specific instructional strategies has increased since baseline.

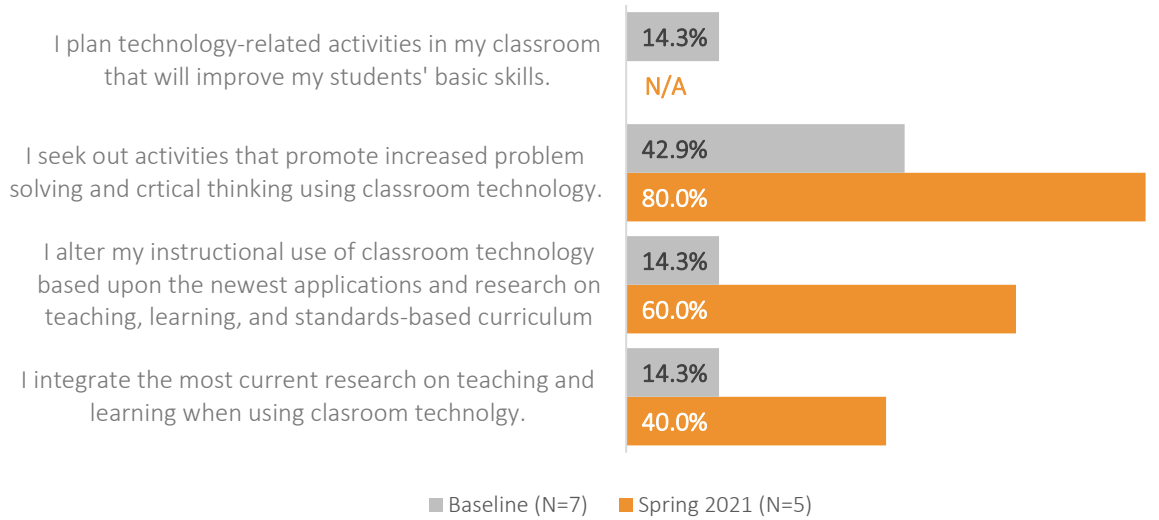


Figure 5. CSD Teacher self-assessment of usage of technology in the classroom (% True of Me/Very True of Me)

Teachers rated their current technology skill level at baseline and in Spring 2021 by indicating which technological proficiency level felt most aligned with their skill set shown below

TECHNOLOGY SKILL LEVEL	
1	I get someone else to do technology-based tasks for me.
2	I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job.
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.
4	I use a variety of technology tools and I use them efficiently for all aspects of my job.
5	I use technology efficiently, effectively, and in creative ways to accomplish my job.

All surveyed teachers in Spring 2021 reported they were in the two highest skill levels (Figure 6). This was an improvement of 14.3 percentage points from baseline. Further, there was a notable increase from baseline to Spring 2021 of teachers self-reporting in the highest level in which they use technology efficiently, effectively, and in creative ways to accomplish their job.

All surveyed teachers in Spring 2021 rated themselves at the two highest technology skill levels.

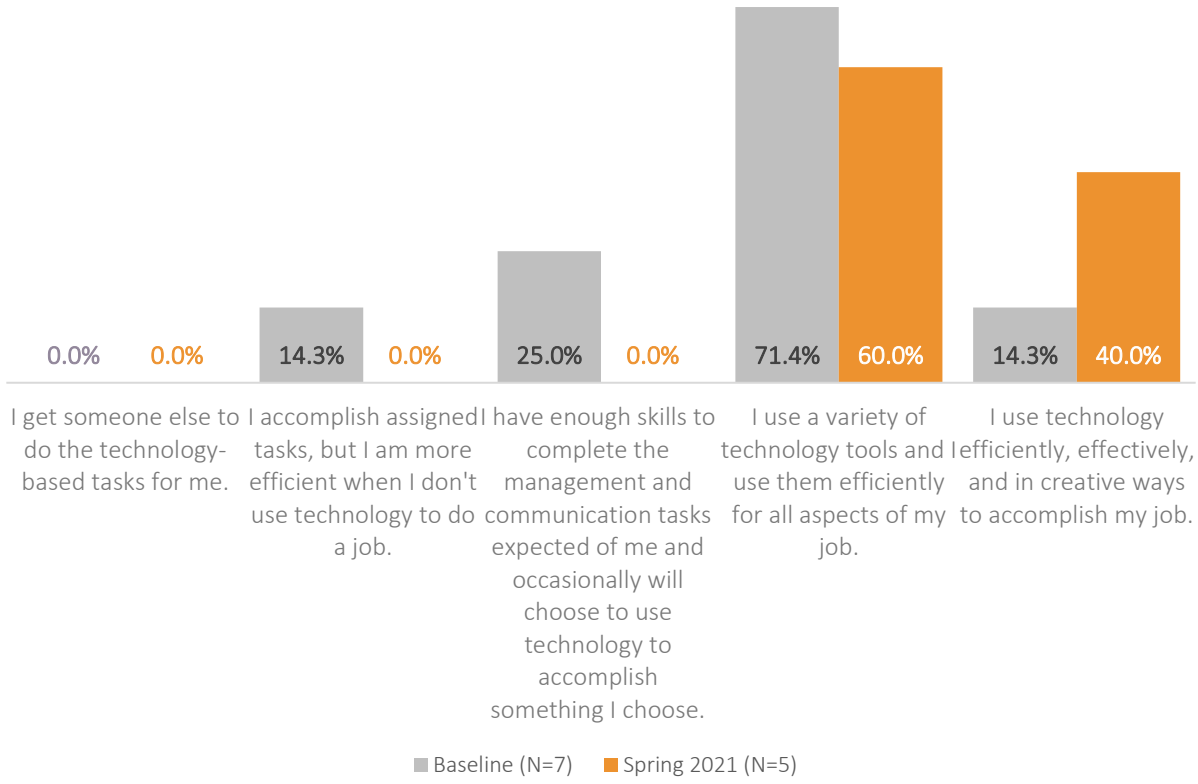


Figure 6. Centennial Teachers' Technology Skill Level

KEY FINDINGS	What new instructional strategies are teachers reporting?
	Teachers most commonly reported using technology to engage students, differentiate instruction, and teach in group settings.
	Teachers also utilized technology tools such as Zoom breakout rooms, Edpuzzle, WeVideo, and GoFormative.

A primary focus of the TechSmart grant at CSD is Project Based Learning. The two teachers who were interviewed reported limited opportunities for PBL during SY 20-21 and cited distance learning as a barrier. One teacher explained that PBL would not have worked in an online setting; however, the other

teacher believed PBL would have worked in the format but that multiple teachers need to be involved and did not have the capacity to participate due to the pandemic. Both interviewed teachers expressed disappointment for not being able to implement PBL. Despite this, they discussed strategies that emerged in SY 20-21 that they anticipate taking back into the classroom. Specifically, one teacher created their own resource videos using Google and Screencastify that would allow students who are absent or who need additional instructional support to review videos for more information. The other teacher plans to bring back to the classroom the skills they used in forming groups, such as creating group norms and discussing how to work best in groups.

Surveyed teachers provided examples of technology-related instructional strategies that they believe have been effective in their classroom instruction and rated the strategies on a scale of one to five, with five being the most effective (1 = Not at all Effective; 5 = Extremely Effective). Table 1 shows the ways in which teachers described use of technology, along with average effectiveness ratings. Teachers most commonly reported using technology to engage students, differentiate instruction, and instruct in group settings. In addition to the strategies listed below, surveyed teachers also listed tools such as Zoom breakout rooms, Edpuzzle, WeVideo, and GoFormative. Interviewed teachers confirmed they were using EdPuzzle, as well as Desmos, Google Classroom, Padlet, and Nearpod.

Instructional Supports	Effectiveness Rating
Engage students	4.0 (N=2)
Differentiate instruction	3.0 (N=2)
Use of technology in group settings	3.0 (N=2)
Promote discourse	4.0 (N=1)
Use technology to improve understanding of content	4.0 (N=1)
Gamification	3.0 (N=1)
Small group instruction	3.0 (N=1)

Table 1. How New Technology is Being Used for Instruction by CSD Teachers

KEY FINDINGS	How are the new instructional strategies impacting student engagement?
	**Teacher reports of confidence in their abilities to engage students through use of technology increased over the course of the grant.**

Teachers indicated the extent to which they agreed with a statement about confidence engaging students through the use of technology. The percentage of teachers who reported confidence in their ability to engage students through the use of technology increased from baseline to Spring 2021 (Figure 7).

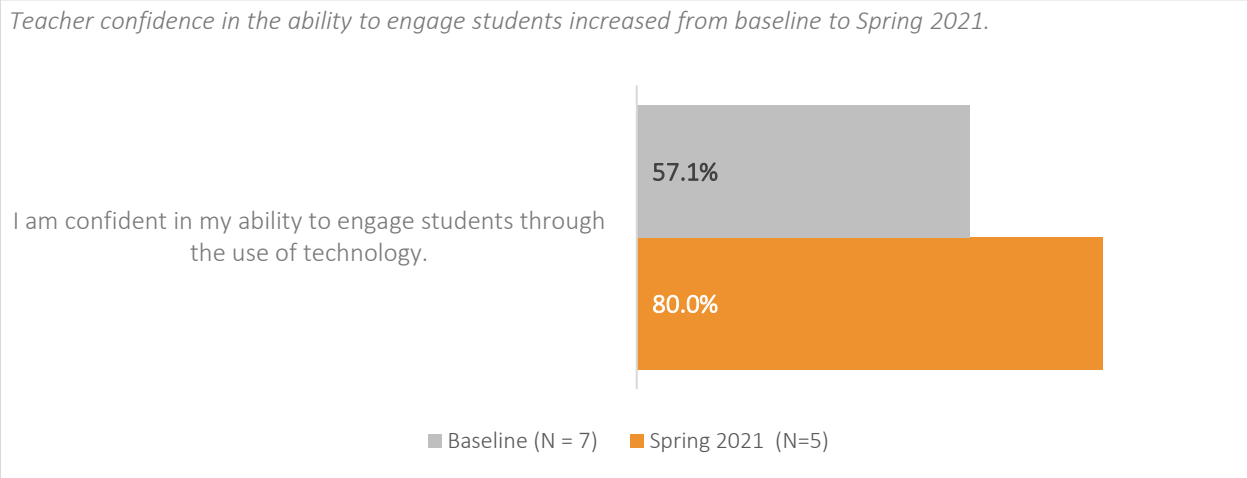


Figure 7. CSD Teacher confidence in personal ability to engage students (% Agree/Strongly Agree)

The year-end status report also noted that teachers are continuing to support students in the use of technology, which was pertinent given that the district was operating in CDL during SY 20-21. As such, students were completing almost all of their work online, including accessing online materials, communicating with peers and teachers, completing, and submitting assignments, and presenting summative products.

One interviewed teacher pointed out that engaging students in CDL was difficult but that it was helpful that all students had access to Chromebooks.

KEY FINDINGS	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)?
	Teachers used technology to support instruction with at-risk subgroups by differentiating instruction, pre-assigned Zoom breakout rooms, and one-one-one instruction through Zoom.
	At-risk subgroups, including students of low SES, were further supported by receiving technology and access to Wi-Fi.

The Spring 2021 survey invited teachers to provide examples of the ways in which they used technology *to support instruction with at-risk subgroups* (e.g., students of color, ELL, SPED, low SES) during distance learning. Four teachers indicated that they have used technology to support instruction for at-risk subgroups. One teacher noted that they differentiated assignments and pre-assigned breakout rooms. Additionally, metrics from quizzes allow teachers to assess and differentiate learning. Interviewed teachers confirmed that they used metrics from Google Forms to understand how to differentiate instruction and

then utilized Google Classroom to post different assignments to different students based on their needs. Another surveyed teacher acknowledged their belief that one-on-one instruction has become easier because of Zoom.

Next, the survey asked teachers to provide examples of the ways in which they used technology to support online instruction with at-risk subgroups (e.g., students of color, ELL, SPED, low SES). Three out of the four respondents indicated that providing technology and access to technology (i.e., Wi-Fi) has dramatically reduced barriers to online instruction for at-risk subgroups, particularly those of low SES. According to the year-end status report, students received Chromebooks to engage in online learning. The interviewed teachers commended the district's ability to provide all students with access to Chromebooks and Wi-Fi. As one of these interviewees stated, "Our school did an awesome job in crossing that digital divide. It was fantastic. Every one of my students had what they needed to get online. I was proud of my school; they did a ton of outreach at the beginning to deliver Chromebooks as needed." Despite this, one teacher pointed out that even with the digital divide addressed, at-risk subgroups faced other obstacles in CDL, such as a quiet space to work.

Furthermore, one surveyed teacher noted it has been beneficial to be able to provide "Lots of one-on-one/small-group instruction, supported by specialists and educational assistants."

DIGITAL AGE LEARNING CULTURE

Districts embrace a cultural shift and view technology as positive.

KEY FINDINGS	Has the use of technology to support instructional practices increased?
	All teacher survey respondents in Spring 2021 indicated that students work independently using technology; however, only 20.0% of teachers said students work in groups using technology.

Teachers were asked about frequency of technology use at baseline and in Spring 2021. Figure 8 shows that all Spring 2021 CSD teacher survey respondents indicated that students work independently a moderate amount, or a great deal. This was a notable increase from the baseline; however, at both time points, students were not frequently working in groups using technology.

All teacher survey respondents in Spring 2021 reported that students frequently work individually using technology.

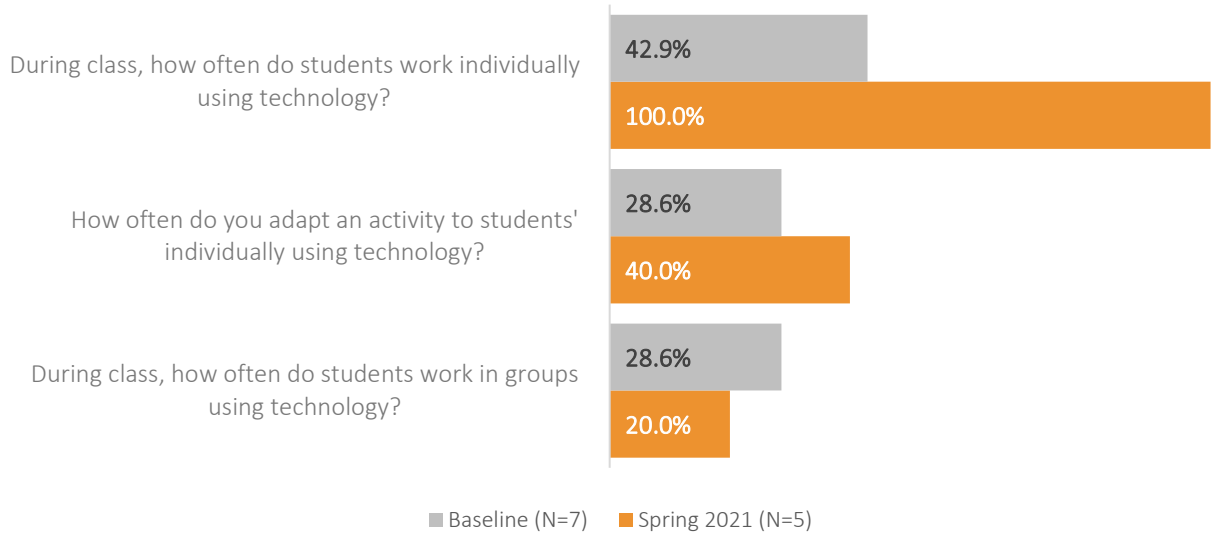


Figure 8. CSD Teacher observed frequency of technology integration (% A Moderate Amount/A Great Deal)

KEY FINDINGS	Do teachers have increased access to and use of digital content and resources?
	All teachers (100%) reported using digital content and resources in their instruction by the Spring of 2021, representing a substantial increase from baseline.
	A majority of teachers reported that students are more comfortable using digital tools for learning and students are more able to choose the right tool for their task compared to the previous school year.
	All surveyed teachers in Spring 2021 have adopted new strategies during distance learning and are more confident in their ability to integrate technology into their instruction as a result of distance learning.

CSD teachers provided self-reports on how frequently they use digital content and resources during instruction. By Spring of 2021, the percent of teachers who indicated that they used digital content and resources in their instruction increased from baseline, with all survey respondents indicating use of digital content and resources (Figure 9).

All Spring 2021 survey respondents use digital content and resources in their instruction, which is an increase from baseline.

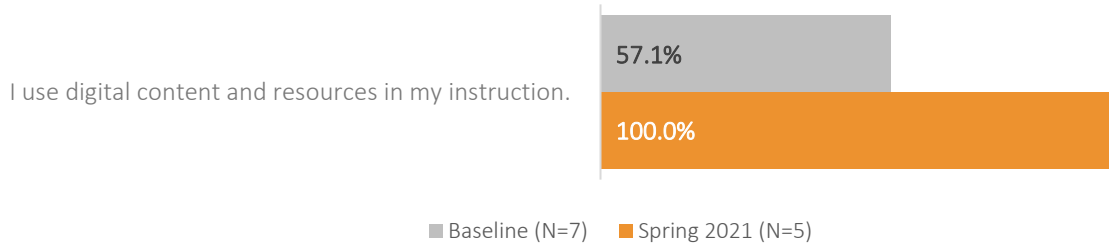


Figure 9. CSD Teacher integration of digital content (% A Moderate Amount/A Great Deal)

Further, teachers were asked to rate a series of statements comparing their current students to students from their previous year of teaching. For this set of survey items, the Spring 2021 responses are compared to those from the Spring 2020 teacher survey. There was a decrease in agreement related to students being able to work independently; however, in both years, 80.0% of respondents agreed students are more comfortable using digital tools for learning, and the rate of teachers agreeing students are able to choose the right tool for their task increased (Figure 10).

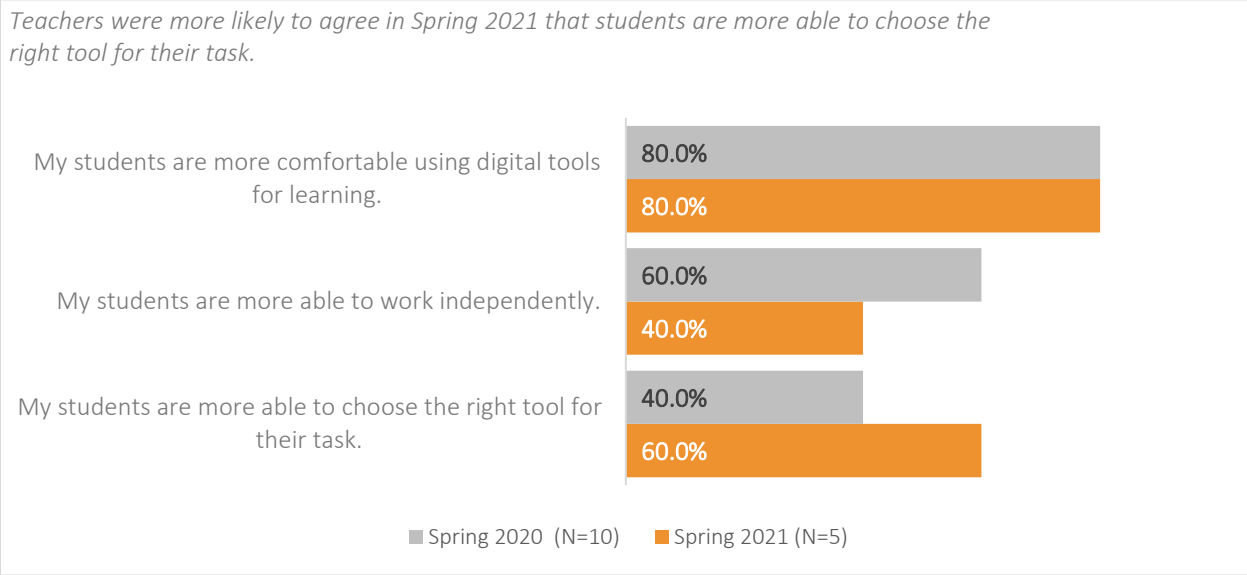


Figure 10. CSD Teachers' assessment of student's technological proficiency (% Agree/Strongly Agree)

All teacher survey respondents in Spring 2021 have adopted new strategies during distance learning that they will take back to the classroom and are more confident in their ability to integrate technology into their instruction as a result of the distance learning experience (Figure 11).

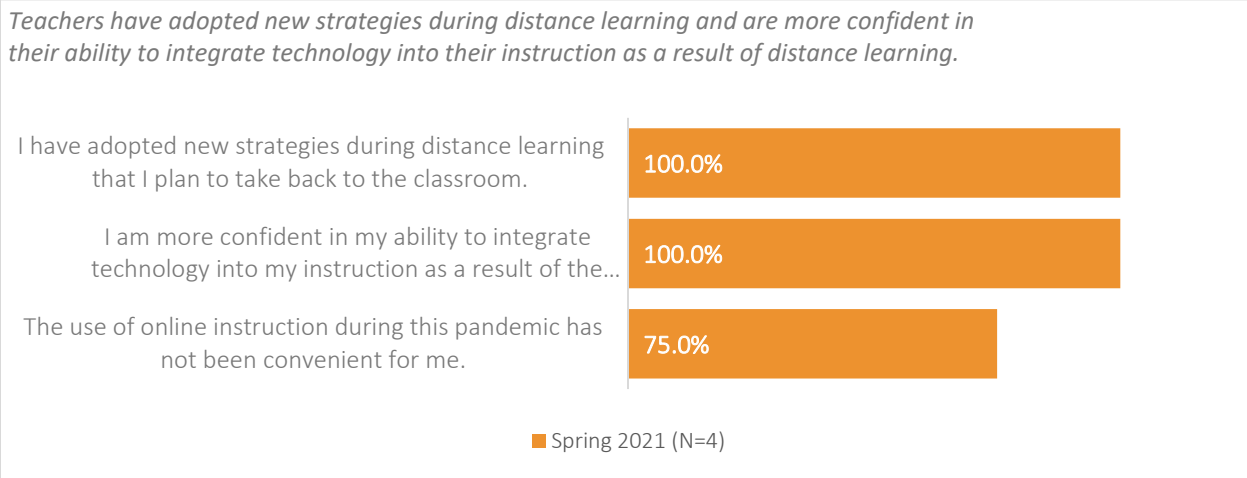


Figure 11. CSD teacher's agreement with statements about using technology during distance learning (%Agree/Strongly Agree)

KEY FINDINGS	Is there evidence of district wide support for technology integration?
	Eighty percent of surveyed teachers in Spring 2021 reported that teachers in their school are continually learning and seeking new ideas and teachers are not afraid to learn about new technologies and use them in the classroom.

During the teacher survey, teachers were asked to rate their agreement with several statements regarding school culture of support for technology integration. These findings, presented in Figure 12, provide evidence that CSD has made progress in this area, in that teachers agreed at higher rates in Spring 2021 compared to baseline that teachers are continually learning and seeking ideas and teachers are not afraid to learn about new technologies and use them in their classroom.

Nearly all surveyed teachers in Spring 2021 reported that teachers in their school are continually learning and seeking new ideas and teachers are not afraid to learn about new technologies to use in their classes.

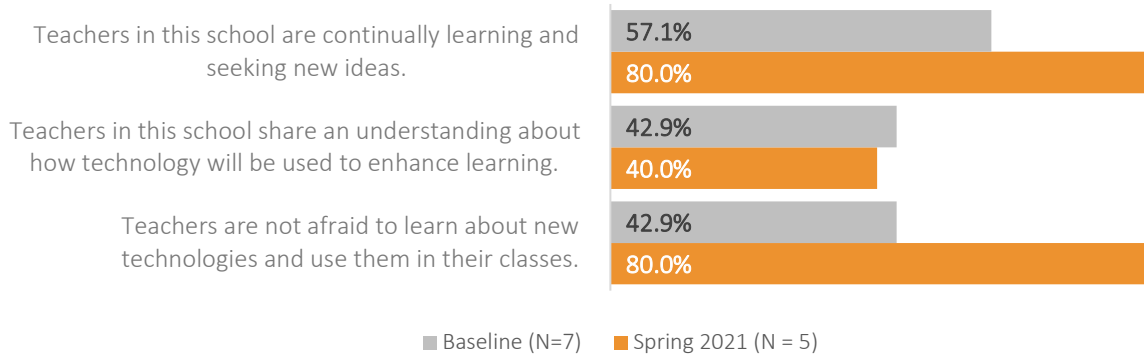


Figure 12. CSD Teacher perceptions of culture of care support for technology integration (% Agree/Strongly Agree)

KEY FINDINGS	Do parents have an increased understanding and utilization of districts' technology assets?
	Parent engagement increased during CDL in SY 20-21 through the use of different methods for contacting parents and more time for these interactions.

Interviewed teachers discussed parent engagement during CDL and noted that the format allowed for more variation in the type of interactions with parents, as well as more time to interact with them. Teachers could contact parents using Remind, emails through Google Classroom, Synergy, regular emails,

and phone calls. Although, one teacher added that it would have been helpful if they could have contacted parents through Clever. Further, an interviewed teacher had more time for interacting with parents because that time would have normally been used for setting up a lab in the classroom, which was not possible during CDL. As a result, parent engagement was up during SY 20-21.

KEY FINDINGS	How has TechSmart impacted the shift to distance learning?
	One teacher highlighted that the grant provided students with Chromebooks, which was beneficial during distance learning; however, two other teachers did not believe the TechSmart grant impacted instruction during the past year of remote learning.
	When classroom-based teaching resumes, teachers anticipated making classroom materials accessible to students online, as well as creating differentiated assignments and utilizing technology tools such as EdPuzzle, Google Classroom, and WeVideo.

The Spring 2021 survey asked teachers to write in comments about how the TechSmart grant impacted their instruction during the past school year with remote instruction. One teacher acknowledged the huge impact that providing Chromebooks has had on the student body; however, the other two commentators were not as pleased with TechSmart. They indicated that they had no idea what TechSmart has provided during distance learning and that there was little communication regarding the grant.

The Spring 2021 survey invited teachers to share one new technology-related instructional practice developed in the past year of remote instruction that they wanted to continue using when classroom-based teaching resumes. A couple of teachers noted that they intend to make the classroom materials accessible to students by posting them online. Furthermore, one teacher acknowledged the utility of creating more differentiated assignments. Technology programs such as EdPuzzle, Google Classroom, and WeVideo will continue to be used when in-person learning resumes.

VISIBLE LEADERSHIP

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

KEY FINDINGS	Are districts identifying effective instructional practices and disseminating information and results to other districts?
	Due to the difficulty in interviewing CSD TechSmart leadership, this research question was not explored in SY 20-21.

KEY FINDINGS	Do teachers feel increased support from district leaders regarding technology integration?
	School administrators at CSD are generally supportive of technology integration efforts, according to surveyed teachers; however, support from leadership at the district level was lacking.

During the teacher survey, teachers were asked to rate their agreement with a statement regarding school culture of support for technology integration. Figure 13 shows a slight decrease in administrator support of technology integration; however, at both timepoints agreement rates are high.

At both timepoints, 80% or more of surveyed teachers agreed that administrators are generally supportive of technology integration efforts.

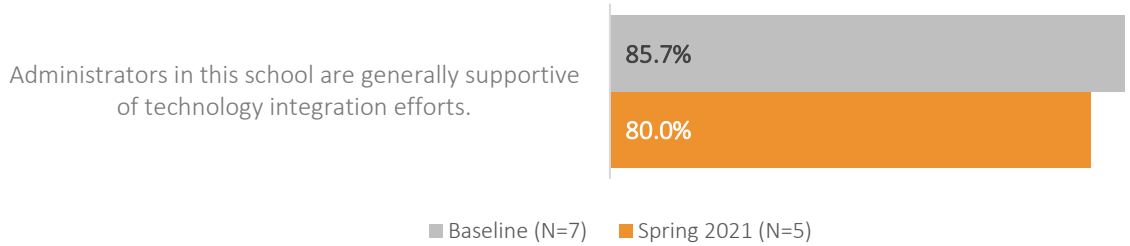


Figure 13. CSD Teachers' perceptions of a culture of support for technology integration (% Agree/Strongly Agree)

At this district level, however, teacher and leadership interviewees reported that there was little support for technology integration. Once the TechSmart coach left her position early in the school year, teachers had little support or communication related to the grant. One teacher explained that when their principal reached out to the district requesting support for teachers

through the grants, these requests went unanswered. There also was not a lot of clarity from the district level regarding what activities and objectives were part of the TechSmart grant. Despite this, one interviewed teacher acknowledged that when they had technical difficulties, the district tech support was responsive.

DATA-DRIVEN IMPROVEMENT

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

KEY FINDINGS	How are schools using data to improve instruction, Professional Development (PD), and student performance?
	A majority of teachers surveyed in Spring 2021 said that they use technology for evidence-based instruction, to analyze data about student learning, and to differentiate instruction.
	All surveyed teachers use formative assessments to identify effective instructional practices and are comfortable integrating technology into their instruction.
	Eighty percent of surveyed teachers are confident in their ability to differentiate instruction and to assess students' progress and provide feedback.

The survey asked teachers to describe how frequently they use technology for evidence-based instruction, differentiating instruction, and analyzing and using data about student learning. Sixty percent of survey respondents reported using evidence-based instruction, differentiating instruction, and analyzing and using data about student learning by the end of Spring 2021 (Figure 14). This was an increase from baseline.

Over half of Spring 2021 survey respondents use technology for evidence-based instruction, differentiating instruction, and analyzing and using data about student learning.

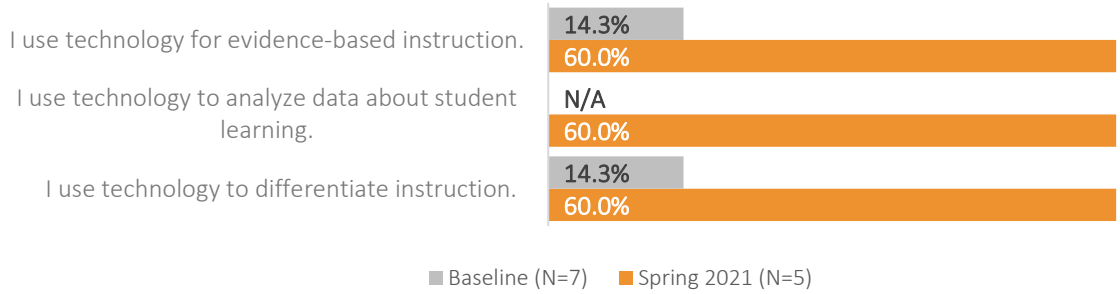


Figure 14. CSD Teachers' Instructional Technology Usage (% A Moderate Amount/A Great Deal)

Teachers were also asked to provide a self-report on how frequently they use formative assessments to identify effective instructional practices. All surveyed teachers indicated moderate or great use of this approach (Figure 15).

All teachers surveyed in Spring 2021 reported that they use formative assessments to identify effective instructional practices.

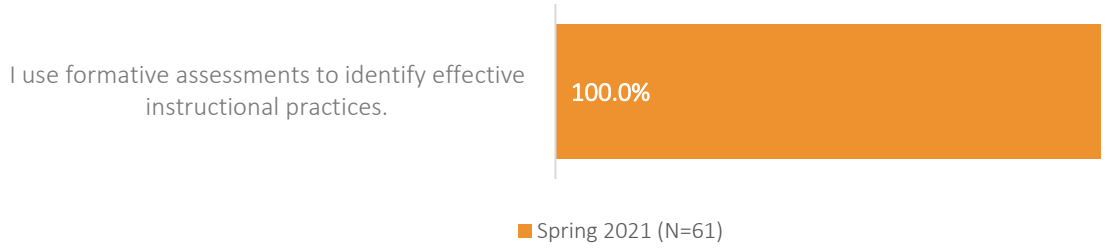


Figure 15. CSD Teachers' Formative Assessments Usage (% A Moderate Amount/A Great Deal)

Teacher interview feedback confirmed that teachers were using formative assessments to identify effective instructional practices. Both teachers cited the use of Google Forms to create short quizzes for this practice. As one of these teachers stated, "using Google Forms helped me know what I needed to focus on in a lesson."

Figure 16 below shows that 80.0% of teachers in Spring 2021 agree that they are confident in their ability to differentiate instruction using student data and in their ability to assess students' progress and provide feedback.

Nearly all surveyed teachers in Spring 2021 reported they are confident in their ability to differentiate instruction using student data and in their ability to assess students' progress and provide feedback.

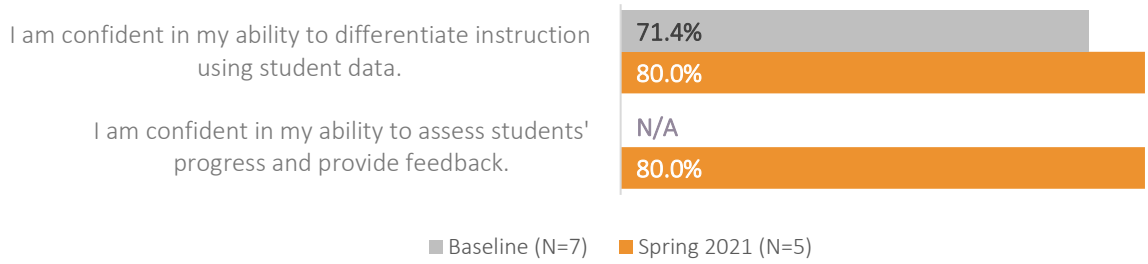


Figure 16. CSD Teachers' Agreement with Statements Describing Remote Teaching (% Agree/Strongly Agree)

As illustrated in Figure 17, teachers reported on the Spring 2021 survey that they are comfortable integrating technology into their instruction, and they have identified effective instructional practices that use technology.

All surveyed teachers in Spring 2021 are comfortable integrating technology into their instruction.

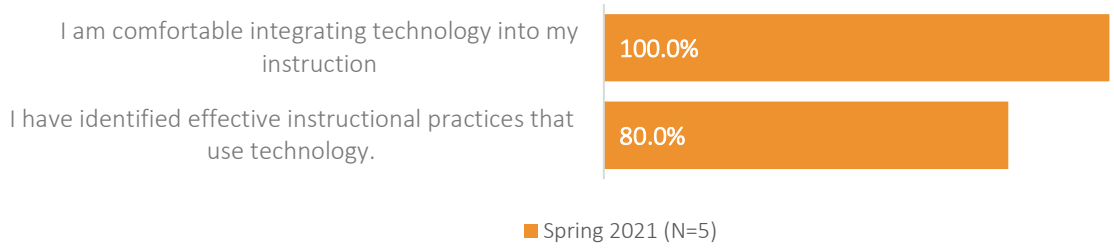


Figure 17. CSD Teachers' Agreement with Statements Describing Comfort and Competence with Technology (% Agree/Strongly Agree)

FUNDING & BUDGET

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

The district leadership interviewee noted that CSD received a bond to support activities similar in nature to TechSmart. The district was interested in understanding how the grant and bond could collaborate, so they were not purchasing the same things with each; however, the administrator had not received communication from the district on this topic.

STRATEGIC PLANNING

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

Due to difficulties connecting with TechSmart leadership, this evaluation question was not addressed in SY 20-21.

EVALUATION INSIGHTS

The SY 20-21 evaluation at CSD produced the following insights:

- Much of the planned CSD TechSmart activities were hindered due to the COVID-19 pandemic and the transition to CDL, as well as the open coach position. In particular, the district offered little PD during SY 20-21. Despite this, previous iterations of this PD may have impacted teacher instruction with 100% of teacher survey respondents rating themselves at the two highest technology skill levels and other gains from baseline to Spring 2021. It is also interesting to reflect on the change that occurred in skill level from baseline to Spring of 2021 and consider other variables that may have been responsible for this change, such as the forced transition to CDL.
- Teachers reported that they were using technology to differentiate instruction and were confident in their ability to do so. Those using this instructional strategy rated it as effective. Further, teachers indicated that differentiating instruction was a useful technique for supporting students from at-risk subgroups.
- The grant allowed CSD to provide students with Chromebooks, which was particularly useful when transitioning to CDL. Further, access to Chromebooks and Wi-Fi helped reduce barriers for at-risk subgroups during online instruction. Although, these students still faced obstacles in finding a quiet place to work.
- Teachers and school administrators did not feel supported by district leadership for TechSmart grant implementation. There was a lack of support for technology integration once the coaching position opened in October 2020 and school leadership had a difficult time getting information from district leadership regarding anything related to the TechSmart grant.

APPENDICES

TechSmart Initiative 2020-2021 Evaluation Report

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 *What are the key elements of the districts' project plans?*	OUTPUTS *What are the direct results of our activities?*	SHORT TERM OUTCOMES – Y1-2 (TEACHING OUTCOMES) *What changes do we expect to occur within the short term?*	INTERMEDIATE OUTCOMES – Y3-5 (STUDENT OUTCOMES) *What changes do we want to occur within the scope of the project?*	LONG TERM OUTCOMES --Y6+ *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	• 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.	• 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.	• Instructional practices are transferable to varied classrooms or academic settings. • Longitudinal data show sustained and/or ongoing progress in relevant AHR outcomes.

instructional practices using the Common Criteria*.		• Instructional practices show promise for improving student academic outcomes.	• The positive correlation between teacher implementation of instructional practices and 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		• Each district identifies one or more effective instructional practices and		• Districts actively exchange data and information about effective instructional practices, so that those practices can be

effective instructional practices. • Leaders provide clear communication about the district's vision for instructional technology.		disseminates information and results to other districts. • 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 mechanisms for scaling programs. • Districts identify long range plans to fund technology and PD supports.		• Diverse stakeholders are involved in developing the technology components of strategic plans.	• Evaluation data inform active strategic planning over time.	
<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

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.
We recognize that this year has been different due to distance learning and that your use technology to support instruction has inherently increased. Our goal is to capture your experience with technology during this unique year.

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 your instruction (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 your instruction (1 = Not at all useful; 5 = Extremely Useful)

7. Has the professional development you have received through TechSmart been different from what others are receiving to support distance learning in the COVID 19 pandemic? (Y/N/IDK). If yes, how?

8. How effective has your districts' professional development model been in terms of helping you provide instruction in a distance learning format? Do you have suggestions for improvement?

<u>Technology Skill Level</u>

9. Choose the statement that best describes the CURRENT 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)

<u>Technology Integration</u>

Thinking about your classroom instruction, rate the extent to which the following statements are true or untrue of you. (• 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)

10. I alter my instructional use of technology based upon the newest applications and research on teaching, learning, and standards-based curriculum.
11. I integrate the most current research on teaching and learning when using the classroom technology.
12. I seek out activities that promote increased problem-solving and critical thinking using classroom technology

<u>Teacher Support (Innovative Culture):</u>

Please indicate the extent of your agreement with each of the following statements. 5-point agreement scale. (1 = Strongly Disagree; 5 = Strongly Agree)

13. Teachers in this school share an understanding about how technology can be used to enhance learning.
14. Teachers in this school are continually learning and seeking new ideas.
15. Teachers are not afraid to learn about new technologies and use them with their classes
16. Administrators in this school are generally supportive of technology integration efforts.

Frequency of Technology Use:

Please rate the frequency in which the following took place in your instruction this year (1 – Never, 2 – Rarely, 3 – Occasionally, 4 – A moderate amount, 5 – A great deal)

17. How often did you adapt an activity to students' individual needs using technology?
18. During class, how often did students work individually using technology?
19. During class, how often did students work in groups using technology?

Logic Model Outcomes

Please rate your agreement on the following items at this point in time. (1 = Strongly Disagree; 5 = Strongly Agree)

20. I am confident in my ability to assess students' progress and provide feedback
21. I am comfortable integrating technology into my instruction
22. I am confident in my ability to differentiate instruction using student data
23. I am confident in my ability to engage students through the use of technology
24. I have identified effective instructional practices that use technology (Post Only)

During the 2020-21 school year, how frequently were you doing each of the following. (1 – Never, 2 – Rarely, 3 – Occasionally, 4 – A moderate amount, 5 – A great deal)

25. I use technology for evidence-based instruction
26. I use technology to differentiate instruction
27. I use formative assessments to identify effective instructional practices
28. I use technology to analyze data about student learning
29. I use digital content and resources in my instruction
30. Please list and rate the effectiveness of new technology related instructional practices that you have integrated into your instruction 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 2019-20 school year. (POST Only)

31. My students are more comfortable using digital tools for learning.
32. My students are more able to choose the right tool for their task.
33. My students are more able to work independently.
34. Please provide examples of how you have used technology to support instruction for at-risk subgroups (students of color, ELL, SPED, low SES) during distance learning. (POST Only)

Questions to add specific to Covid

(Strongly Disagree-Strongly Agree)

35. I am more confident in my ability to integrate technology into my instruction as a result of the distance learning experience.
36. The use of online instruction during this pandemic has not been convenient for me.
37. I have adopted new strategies during distance learning that I plan to take back to the classroom.
38. What is one new technology related instructional practice that you acquired during distance learning that you anticipate taking back to the classroom?
39. What has your school/district done to minimize barriers to online instruction for at-risk subgroups (students of color, ELL, SPED, low SES)?
40. Do you have any comments about how your experience with the TechSmart grant impacted your instruction during distance learning?

APPENDIX C. TECHSMART TEACHER FOCUS GROUP PROTOCOL (SY 2020-21)

My name is _____ and I am a research consultant with Pacific Research and Evaluation. We are talking with you today because you have participated in professional development or training as part of your school's TechSmart grant and are integrating new technology into your classroom. We understand that your school has been in distance learning for the majority of this school year and that technology has become a necessity rather than an instructional tool!

We are conducting an evaluation of the TechSmart initiative across all 6 funded school districts and a key element of this evaluation is to hear directly from teachers so we greatly appreciate your time today. The findings from these focus groups will be reported in themes, nothing you say will be associated with your name, so feel free to be open and honest with your feedback. We do like to record our interviews for our own internal note-taking purposes. Are you okay with a recording?

Do you have any questions for me before we get started?

1. Let's start by going around and sharing:
    a. What grade you teach and how many years you have been involved in the grant?
    b. If the district has cohorts, confirm cohort with teacher. [NOTE: Ask teachers to rename themselves on Zoom with their cohort # (or if they don't know that ask for school name), so that we can report on themes by cohort and link back to who said what in the video recording.]
2. Please tell me more about the professional development you have received as part of the TechSmart grant this year? (Coaching vs. Group PD)
    a. How has this been the same or different from what was offered to all teachers for distance learning?
    b. Are there supports or resources being provided to you through TechSmart?
3. To what extent were you integrating technology into your classroom instruction prior to distance learning?
    a. What technology supported instructional strategies have transferred well to distance learning? Which have not?
4. What new instructional strategies emerged during distance learning this year?
    a. Are there strategies that have emerged during distance learning that will be useful once full time in-person instruction resumes?
5. Can you talk a little about what student engagement has looked like this year?
6. A focus of the TechSmart grants is closing the achievement gap. How has the use of technology in the classroom historically been used to support learning for students of color, English language learners or those with an IEP?
    a. How has the use of technology during distance learning impacted the equity divide at your school? How has your school/district responded to this?

7. Have you adopted any new practices this year that show promise for improving student academic outcomes?
8. Are you using formative data from the technology to guide classroom instruction?
9. What type of support have you received at the district level for using technology to support instructional change?
    a. Has there historically been a culture of support around technology at your school? How do you think this will look when full time in-person instruction resumes?
10. Can you talk about the use of technology to engage with parents this year?
    a. How do you envision parents engaging through technology moving forward?
11. Do you have any other comments about TechSmart you would like to share with me today?

APPENDIX D. DISTRICT LEADER INTERVIEW PROTOCOL

My name is _____ and I am a research consultant with Pacific Research and Evaluation. PRE is working with the Mt. Hood Cable Regulatory Commission to conduct an evaluation of the TechSmart grants across all six of the Multnomah County School Districts. A key piece of this evaluation is speaking with coaches, principals, and administrators that have been part of the TechSmart implementation efforts. We greatly appreciate your time in input for our research efforts.

We are conducting interviews with individuals from your district and will be reporting in aggregate so feel free to be open with your feedback. We do like to record our interviews for accuracy purposes. Are you okay with this? Do you have any questions for me before we get started?

As we go through these questions, feel free to discuss how TechSmart has impacted your school both before and after the shift to distance learning.

1. What are the primary ways that you have seen the TechSmart grant funding impact your district this year?

2. Can you talk about how the grant funding has impacted teachers' instructional strategies?
    a. What technology supported instructional strategies have transferred well to distance learning? Which have not?
    b. What new instructional strategies did you see this year during distance learning?
        i. Are there strategies that have emerged during distance learning that will be useful once full time in-person instruction resumes?
3. A focus of the TechSmart grants is closing the achievement gap. How has the use of technology in the classroom historically been used to support learning for students of color, English language learners or those with an IEP?
    a. How has the use of technology during distance learning impacted the equity divide at your school? How has your school/district responded to this?

4. How do you envision district leadership supporting technology integration efforts moving forward?

5. 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?

6. The MHCRC is interested in whether districts have repurposed resources to support technology integration in classroom learning. For example, changing a staff position role or shifting budget expenditures. Has your district repurposed resources in any way this year?

7. How does technology fit into your districts' strategic plan?

8. What are your thoughts about the sustainability of the TechSmart efforts in your district?

9. Do you have any other comments about the TechSmart grant and the impact within your district?