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TechSmart Initiative for Student Success
SY 16-17 Evaluation Executive Summary

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Executive Summary

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

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

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

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

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

Although the initial TechSmart grant investments took place during School Year 14-15 (SY 14-15), formal program evaluation did not begin until School Year 2015-16 (SY 15-16) when PRE was contracted by the MHCRC to lead this evaluation. After multiple years of implementation for three of five districts, the evaluation has shown that promising instructional practices are emerging and initial recommendations can be made to guide future TechSmart grant investments. These promising practices are highlighted below followed by a summary of the SY 16-17 evaluation organized by the seven factors identified as essential for schools to effectively transform into technology-rich teaching and learning environments. The factors do not stand in isolation from each other; many are linked and substantially overlap. Additional evaluation findings from the School Year 2016-17 (SY 16-17) evaluation are summarized as well.

Promising Instructional Practices and Outcomes

Results from two school years of data collection are beginning to reveal promising instructional practices that have emerged from TechSmart grant project implementation.

Differentiating for Student Subgroups

The use of technology to differentiate instruction for student subgroups is emerging as a promising instructional practice. Teachers reported using technology to differentiate for all students but the use with student subgroups appears to be particularly impactful. Teachers in all districts highlighted using technology to differentiate for student subgroups and commented on how the technology has provided teachers access to more books and resources that they can use with subgroups. Several examples were specific to Special Education (SPED) and English Language Learner (ELL) subgroups. For example, one 4th grade teacher at Earl Boyles Elementary School in the David Douglas School District (DDSD) commented on the use of technology to support SPED students with Individual Education Plans (IEP), “I have a handful of students with IEP and specifically I have two students who are autistic and are at a 2nd or 1st grade level. They were nonverbal at the beginning of the school year and I have differentiated through Chromebooks and seen massive growth in both students.” Parkrose High School teachers also emphasized how the technology can be used as a resource for differentiating with ELL students, and Gresham Barlow School District (GBSD) provided several examples of differentiating for both SPED and ELL subgroups as noted by one GBSD teacher, “I have two students who only come into the classroom to learn from their peers. They are able to get on their computers and listen to stories and look like a normal third grader. The capability to listen, because they are not strong readers, and still be able to complete their word work is beneficial. The differentiation has been helpful. I have ELL students who are high in academics who just need language help and even my TAG students can extend their knowledge too.” Although Portland Public Schools (PPS) provided examples of how Lexia is being used to differentiate instruction for student subgroups, teachers mentioned the difficulties of using both Lexia and myON for Spanish immersion. This is an area for improvement for PPS during SY 17-18 as the district works towards the identification of Spanish language equivalents of Lexia/myON.

Increased Access to Resources

Another promising practice is the use of technology to communicate with and provide resources to students. This is particularly relevant for the grants in higher grade levels where students are accessing curriculum materials independently. Reynolds School District (RSD) and Parkrose HS teachers commented about students getting notes and class materials online, which allows teachers to spend more time in class focusing on instruction and supporting students who need extra support. One RSD teacher commented, “I have every lesson from the year recorded and archived so students can access them anywhere/anytime. They are required to take notes for 'homework' on these videos. I can spend more time in class targeting students who need further instruction, and they have become used to using each other as resources through collaborative assignments and tasks. I have a very technology dependent classroom, and it is a simple, yet effective method of organizing and maintaining balance in the room.” Although not directly related to teacher instruction, this promising practice manifests itself as parent access to classroom resources in the younger grades. Teachers and leaders at both GBSD and Earl Boyles Elementary School offered specific examples of how the technology has allowed parents access to their students’ information in a way that provides support to students and nourishes development.

Student Academic Outcomes

The TechSmart Initiative evaluation logic model includes common criteria for identifying instructional practices and strategies as “promising” or “effective.” One such criteria is that the practice indicates evidence of reducing the achievement gap among student subgroups. The student subgroups considered

for TechSmart are Special Education (SPED), English Language Learners (ELL), students of color and low-income students. Student achievement data were examined for the DDS, RSD, and Parkrose HS grants (those with at least one year or more of grant implementation in SY 15-16). Although the student achievement data are not yet showing consistent quantitative evidence that the new instructional practices are improving academic outcomes over and above their comparison groups, there were a few noteworthy findings from the SY 16-17 evaluation.

At Earl Boyles Elementary School for Cohort 1 (students who were kindergartners in SY 14-15), overall achievement is trending up and another year of data will determine whether this trend is sustained. Although Cohort 2 students (those who were kindergartners in SY 15-16) appear to be declining in achievement, the percentage of ELL and students of color performing at benchmark on the assessment for the acquisition of early literacy skills (DIBELS) were higher in kindergarten and 1st grade than outcomes for those students who do not fall into these at-risk subgroups.

Although Parkrose HS students in Cohorts 1 and 2 are not performing better than their historical Comparison Group, an analysis for SY 15-16 of 9th grade credit attainment broken down by teacher's level of technology integration showed that students of high technology integrating teachers earned a significantly higher number of credits in 9th grade than students of medium integrating teachers. In addition, the percentage of students who were on track to graduate in 9th grade was significantly higher for high integrating teachers. These results suggest teachers using technology with high fidelity to support instruction may lead to improved student academic outcomes. These results will continue to be explored for Grant Year 3 and Year 4 but will be limited by the low teacher survey response rate in SY 16-17.

Preliminary results from RSD's first year of implementation showed that Cohort 1 TechSmart students earned a significantly higher number of credits than their historical Comparison Group in 7th grade (6th grade credit attainment data were not available for the historical Comparison Group due to a change in the student information system). For average math credits attained during 7th grade, after two years of grant implementation, Cohort 1 students were showing higher math credit attainment across all subgroups (ELL, SPED, low income, students of color) relative to the historical Comparison Group.

School Year 2016-17 Summary

Technology Transformation Factors

Teaching Effectiveness

Teaching effectiveness is characterized by a district that supports regular, inclusive, and shared professional development (PD) among teachers. PD for teachers continued to be a key aspect of project implementation for each of the five districts included in the SY 16-17 evaluation. However, the format of this PD varied across districts as described below.

The PD provided at Earl Boyles Elementary School in David Douglas School District (DDS) continued to be a mix of group and individualized opportunities. During Grant Year 3, the technology integration coach offered two group PD sessions in summer 2016. One group session was geared towards returning teachers and the other towards new hires as well as 4th and 5th grade teachers who were part of the school's effort to scale the technology at Earl Boyles. Similar to the previous two grant years, individualized PD took the form of an onsite technology integration coach offering support throughout

SY 16-17. However, unlike the previous two years, the coach was onsite at Earl Boyles only half time (as opposed to full time) and supported other district schools half time. Through this coaching at Earl Boyles, teachers received pedagogical development as they learned new ways of teaching using technology. Earl Boyles teachers continued to emphasize the importance of the onsite technology integration coach. Although some teachers expressed a desire to have the coach onsite full time, other teachers explained how they have started to support one another as described by one teacher: “We are all about our technology at Earl Boyles. There are people who are designated experts for specific pieces of technology. For example, we have someone who is good at the Smart Board who we can go to with questions because even though we have the training, if you don’t use it you lose it.”

Teachers at Parkrose High School described the PD they received during SY 16-17 as group training focused on the use of iPads for instruction. The grant mid-year status report stated that the district was emphasizing individualized “push-in” training by the Information Technology (IT) administrators offered to teachers in their classrooms. Similar to last school year, teacher survey results showed that individual PD was preferred over group PD; however, while all teachers received group PD, close to 40% of survey respondents indicated they did not take advantage of any individual PD. Reasons expressed for this included some teachers resisting change, scheduling conflicts, and some teachers using technology only a moderate amount in the classroom, which seems to be at least partially tied to the issue of students not bringing their iPads to class. IT administrators continue to focus on conducting individualized “push-in” trainings in the classroom and they pointed out the importance of continuing to offer different forms of PD as well to meet teachers where they are in their technology integration skills.

The PD for the Reynolds School District (RSD) grant project for middle school and 9th grade math in SY 16-17 had the same three components as the first year of grant implementation in SY 15-16. First, teachers met for instructional lab cycles where teachers collaborated to develop a math lesson that incorporated student use of technology, and nurtured students’ learning of the English language. The teachers observed one another delivering the co-constructed lesson and convened afterwards to reflect on its effectiveness. In the second PD component, teachers who began the grant in SY 15-16 (Cohort 1) and those beginning in SY 16-17 (Cohort 2) convened for school-based meetings. These one-hour, monthly meetings took place before students arrived on late-start Mondays. These meetings were led by the technology integration coach, were less structured, and built on the features of the lab cycle process. Teachers focused more on the nuts and bolts of technology implementation in their instruction. Teachers shared what worked well when using technology in their lesson plans (i.e. functions and processes of the learning management system, formative assessments, educational applications, Office365, etc.). The final PD component was the half-time technology integration coach (dedicated to supporting the TechSmart teachers) providing individualized mentoring sessions. These were utilized as demonstration sessions for the coach to guide the teachers into deeper application of the concepts. RSD’s PD design for its TechSmart grant project included a shift in PD responsibility from the district technology integration coach to teacher-led activities. Several RSD teachers described how they have received PD from other teachers. Specifically, many Cohort 2 teachers commented on how Cohort 1 teachers were a source of mentoring support for the technology integration. The grant year-end status report reiterated that intended shift with plans for the monthly late-start meetings to become more teacher-led as the grant progresses: “Teachers collaborated across grade levels and buildings. As we grow into the project, there is a gradual release of leadership of the monthly meetings from the technology integration coach to the participating teachers who are encouraged to add items directly to the agenda.”

Portland Public Schools (PPS) offered a combination of group and individualized PD opportunities to the five elementary schools involved in the first year of grant implementation. During summer 2016, teachers were provided with two days of TechSmart training led by teachers and technology vendors. The training focused on creating a foundation for successful technology implementation including background on the grant and the connection to Equity Based Balanced Literacy, basics of using Chrome and Chromebooks, and setting student expectations and routines about devices. This training also included breakout sessions on creating blogs using Symbaloo, embedding html, and using myOn, Lexia, and Hapara. In addition to the summer training, school-based, after-school PD was offered at each school 1-2 times throughout SY 16-17. Teachers were surveyed to assess needs and differentiated mini-lessons were built accordingly for each school. School-based sessions were led by teachers, a librarian, a technology integration coach, and the district level IT coach. Finally, PPS supported teachers through a half-time, onsite technology integration coach at each school. Teachers emphasized the importance of the onsite coaches in making progress towards technology integration.

In Gresham Barlow School District (GBSD), teachers and leaders from the two TechSmart elementary schools described PD as a mix of group and individualized opportunities in their first year of grant implementation. Specifically, all teachers involved in the grant participated in group training for using Smart Boards, which took place in October. Individualized PD was provided by a fulltime, onsite technology integration coach at each school who offered a significant amount of support throughout the year. Teachers made positive comments about the informal PD and specifically noted the benefits of having an onsite coach, such as the coach's willingness to help teachers become more comfortable with technology and easy availability.

Summary Findings – Teaching Effectiveness

The SY 16-17 evaluation has confirmed the importance of the individualized PD. In most districts, teachers rated individualized PD as considerably more useful than group PD. The presence of the dedicated onsite technology integration coaches in PPS and GBSD was noted by teachers and administrators as a key driver of technology integration and the adoption of new instructional practices among teachers who had significantly increased their use of technology for instruction by the end of SY 2016-17. In RSD, Cohort 2 teachers rated the group PD as more useful than the individualized PD. This is likely because Cohort 2 teachers are learning from Cohort 1 teachers during the lab cycle, monthly meetings, and informal mentoring. At DDS, the full-time status of the technology integration coach was mentioned by teachers as something they wish could have continued for one more year (SY 16-17) but at the same time, teachers acknowledged they have begun to rely on each other for coaching which lends itself more to a sustainable technology culture. Parkrose HS teachers commented that the individualized push-in support from the IT department was useful when taken advantage of but few teachers were making the request for this type of support.

Two years of evaluation data provide solid evidence that dedicated technology integration coaches are crucial to successfully supporting teachers' transition to technology-rich learning environments. Therefore, PRE identifies this as a high impact area for grant investments moving forward. Beyond the technology coach, evaluation results from DDS and RSD support the idea that teachers can begin to become technology integration coaches for one another. However, this is likely to occur following a couple years of support from a dedicated coach resource for individualized PD and as the years of implementation increase and the designated coaching hours decrease.

One unique element of RSD's PD model worth exploring is that teachers voluntarily opted into the TechSmart grant in the first two years of implementation. This means that teachers who were interested and willing to use technology to support instruction began implementation before those who may be more reticent or leery of making these types of changes to their instruction. The evaluation showed that Cohort 1 teachers were a great source of support for Cohort 2 teachers, which is not surprising since Cohort 1 teachers were the earliest adopters. The question to explore further is whether implementation is more successful when districts onboard those willing and motivated prior to those who are more hesitant. In RSD, teachers in Cohort 3 are likely to gain an added level of support from fellow teachers in Cohort 1 and 2, which may be exactly what they need for successful adoption.

A new element of SY 16-17 evaluation included the teacher self-report and leadership "observation" rubric. PRE partnered with the technology integration coach at Earl Boyles in DDS and MHCRC staff 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 Framework¹. Teachers were asked to self-assess using the rubric on the year-end survey and leaders (coaches and principals) were asked to complete the rubric "thinking about their TechSmart teachers as a whole" following their leadership interview in the spring. The instructional areas with the highest teacher self-ratings across all districts were "engaging students through the use of technology" and "using technology to support planning and preparation". Parkrose HS was the exception to this finding with "communicating with students through technology" rated higher than engaging students. Aggregate ratings for leaders across all districts showed that leaders felt the areas of instruction in which TechSmart teachers were most often using technology were 1) engaging students, and 2) communicating with students.

Digital Age Learning Culture

Digital age learning culture is defined as districts embracing a cultural shift and viewing technology as a positive support in teaching and learning. SY 16-17 evaluation results show that digital culture is beginning to emerge in PPS and GBSD in the same way that it emerged for other districts in their first year of implementation. Specifically, PPS and GBSD teachers reported increased use of technology in the classroom by the end of their first implementation year. This is specifically appearing through the adoption of new digital tools. Trends in the evaluation findings show that most teachers are adopting digital tools during the first year of implementation and taking more time to use these tools to support instructional change. PPS teachers discussed the use of the Lexia and myOn programs to support the districtwide literacy adoption, but it does not appear that new instructional practices have emerged as a result of the technology. Similarly, GBSD provided examples of digital tools they are using in their classrooms such as Smartboards, Google Classroom, iPad applications, and online applications. GBSD appears to have made more progress towards instructional change as teachers also provided several examples of how technology is being used to differentiate instruction for student subgroups and to showcase student work. The difference between these two districts could be due to the focus of the grant being on two schools in GBSD versus five schools at PPS or the full-time versus part-time technology integration coaches. PPS also faced complexities of introducing the technology as a component of the new literacy framework. PPS teachers reported being overwhelmed with the literacy adoption and unable

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

to focus on using technology to go much further than the beginning level of the SAMR model used to gauge progress of technology use in instruction. The four progressive levels are: Substitution, Augmentation, Modification, and Redefinition.

For those districts in their second or third year of implementation, the conversation around emerging instructional strategies has shifted in two of three districts. Specifically, in DDS and RSD, the SY 16-17 evaluation revealed a shift from teachers' discussion about technology devices to the use of different resources, applications, and instructional strategies. Teachers in the previous year's evaluation commented mostly on the use of Chromebooks, iPads, and Smart Boards when asked about new instructional strategies. In SY 16-17, this discussion focused on using online applications and resources to differentiate instruction with student subgroups, data to inform instruction, and technology to engage parents in student work. This provides evidence of a change in the way teachers are thinking about how technology can be used to support instruction. The evaluation did not reveal evidence of this change at Parkrose HS.

It is clear from the evaluation that Earl Boyles Elementary School and the two GBSD schools have made the most progress towards creating a digital age learning culture within the TechSmart schools. Teachers and leaders reported sharing best practices and new ideas with one another and providing support to one another around technology needs. In RSD, teachers are creating digital culture with their fellow math teachers but there is not yet evidence of a school-wide or district-wide culture change. Finally, due to the inconsistent technology integration at Parkrose HS, the school is still making progress towards a digital age learning culture but many teachers have not adopted tools or increased technology integration in their classrooms.

Last year's evaluation suggested that projects targeting smaller, close-knit groups of teachers (as has been done in DDS and GBSD) may be more successful in creating a digital age learning culture than projects targeting large groups of teachers (like Parkrose HS) or teachers who are spread over multiple schools (like RSD). The evaluation results from the first year of implementation in GBSD support the idea of targeting smaller, close knit groups of teachers. Another similarity between DDS and GBSD is the presence of a full-time technology integration coach during the first couple years of implementation as opposed to a part-time coach, which was the case at RSD and PPS.

Visible Leadership

Visible leadership exists when district leaders are actively working with key internal and external communities to accomplish change; using data to guide change; and sharing and seeking out learnings from within and outside of the district.

In interviews with leaders, most provided examples of sharing best practices related to grant implementation among TechSmart districts and within their own districts. However, they had minimal experiences working with external communities to accomplish change.

The evaluation collected data regarding the teachers' views about the level of leadership support within districts to learn more about the effect of visible leadership on technology integration efforts. A common theme emerged around the administration showing commitment and support of the technology integration efforts by providing the technology integration coaches. This was mentioned in DDS, RSD, PPS, and

GBSD. Teachers in RSD and Parkrose HS also identified dedicated technical support as an example of visible leadership.

Following three years of project implementation, evaluation results showed that 100% of teachers at Earl Boyles Elementary School rated their administrators as supportive of technology integration efforts. Teachers continued to comment on the support received from the onsite technology integration coach, “I definitely feel supported by the district. We have had Luan as our coach for the last couple years and that has shifted the culture of the whole school.” Similarly, by the end of the second implementation year, 100% of RSD Cohort 1 and Cohort 2 teachers agreed that administrators supported technology integration efforts. Specific examples pointed to the IT Department technical support and the technology integration coach provided to math teachers. At Parkrose HS, 85.7% of teachers who responded to the survey indicated administrators had been generally supportive of technology integration efforts. Parkrose HS teachers identified the iPad technical support staff at the school as a source of support from administration, but voiced a desire for more technology use-specific PD opportunities.

For the two districts completing their first year of implementation, 100% of GBSD teachers and 91.9% of PPS teachers who completed the survey felt supported by administration in technology integration efforts. One of the GBSD technology integration coaches emphasized this administrative support, “Our new superintendent is really forward thinking. I’m feeling positive about the way leadership is taking this on...I know that any time I go to my principal, they are here. I feel like leadership has been really supportive.”

The SY 15-16 evaluation report highlighted that teacher views of supportive leadership were high in DDSD and RSD even though the districts have different leadership models in place for their grants. Specifically, RSD is focused on a teacher-led model of support as opposed to the typical top-down model of support offered in DDSD. SY 16-17 evaluation results showed that teacher perceptions of support continue to be high in these districts despite the different leadership models. GBSD appears to have a strong top-down leadership model with the principals at each school actively engaged in the technology integration efforts. The leadership model at PPS is still developing with the literacy adoption issues noted in the previous section.

Data Driven Improvement

Districts engage in data driven improvement efforts when current, relevant, and high-quality data from multiple sources are used to improve schools, instruction, PD, and other systems. DDSD, RSD, and GBSD showed good progress in terms of data driven improvement. All districts reported increased confidence in their teachers’ abilities to differentiate instruction using student data. Similar to the SY 15-16 evaluation, an area for continuing development is in teachers’ use of formative assessment data from technology to identify effective instructional practices. These districts provided specific examples of how teachers are using data collected through technology to differentiate instruction. The year-end DDSD status report provided an example of how a teacher is using the online resource Reflex to differentiate instruction: “I use the data I receive from reflex to help motivate students as well as to develop small math groups that focus on the level of the student.” PPS also provided examples of how the Lexia program is providing student data that can be used to differentiate instruction. Although Parkrose HS teacher survey results showed high levels of confidence for data driven instruction, it was not clear that technology is being used to support this aspect of instruction based on other data points of the evaluation.

Another source of current, relevant, and high-quality data for districts is the TechSmart evaluation itself. All districts have committed to participating in the TechSmart evaluation efforts to provide data for iterative assessment and improvements. DDS, GBS, and PPS were extremely accessible in terms of working with the PRE evaluation team to support high teacher survey response rates and schedule teacher and leadership interviews. Although not relevant for GBS in its first year of evaluation, both DDS and PPS also provided student outcome to PRE in a timely manner. RSD had a very high response rate on the student survey, although the response rate on the Cohort 1 teacher year-end survey was low and impacted PRE's ability to reliably assess change over time. PRE also experienced barriers gaining access to student outcome data from RSD in a timely manner. Student outcome data requests were filled quickly by Parkrose School District, but the very low response rates on both the teacher and student surveys at Parkrose HS impacted the reliability of the evaluation findings for this district.

Funding & Budget

This factor of successful technology integration is characterized by a district that repurposes budget resources and seeks outside funding to focus on promising instructional practices and technology supports. All five districts provided examples of repurposing resources to support technology. For example, both RSD and PPS have redistributed devices once used in TechSmart classrooms to other grade levels or departments not impacted by the grant. One RSD administrator commented, "We've been able to repurpose devices for other departments towards that goal of one-to-one technology. We're much closer to that now because of the TechSmart grant than we were before." DDS discussed how the computer lab assistant role has evolved over the course of the grant as the district's view of technology has become more robust. Computer lab assistants now deliver lectures using technology and receive training from the technology integration coach on using google docs and google tools so that they can share that knowledge with teachers.

In terms of pursuing outside funding to focus on promising practices, one GBS technology integration coach provided an idea for moving in this direction by trying to shift how the school's parent group is utilizing its funds to support technology integration efforts.

Strategic Planning

Strategic planning refers to the idea that a district's strategic plan reflects shared commitment to improving outcomes for students. In interviews, district leaders talked about this in relation to technology efforts. Leaders across most districts provided examples of how technology is part of their strategic efforts to improve student outcomes. For example, both RSD and GBS commented on their district's plan to prepare students for the future and that technology use is a big piece of the strategy. One RSD administrator described the district's goal of "a world yet to be imagined" and sub goals related to integrating technology in the classroom and in the hands of every student. Similar to the SY 15-16 evaluation, DDS leadership identified the district's STEAM initiative (Science, Technology, Engineering, Arts, and Math) as a part of its strategic plan and explained how technology is interwoven into the four main plan components: "In our overall student achievement and growth goals, there are four main supports or initiatives and one is STEAM. Technology fits under STEAM and it is called out in our initiative posters." Although DDS's strategic plan is committed to technology integration, DDS has not prioritized funding for a district technology integration coach for newly implementing schools. This seems to communicate a continuing disconnect between funding technology tools and funding teachers'

PD supports needed to successfully use the tools for technology-supported instruction. The PPS evaluation did not reveal a strong link between technology integration and the district's strategic plan.

Engaged Communities & Partners

As mentioned above in the Visible Leadership section, the districts have not provided much evidence of work towards engaging external communities and partners but many identified efforts to engage parents in technology integration. Teachers in multiple districts are engaging parents through classroom blogs, student-led conferences, and the use of applications, such as Seesaw and Classroom Dojo, where parents can view and comment on student work. Leaders at PPS, RSD, and PSD gave examples of how staff involved in the TechSmart grant are involved in professional networks to stay up to speed on complementary initiatives. As noted last year, these examples provide evidence that districts are working to engage communities and partners in their efforts, but more evidence is necessary to understand whether engaging other external communities is a critical element for successful technology integration in instructional practices.

Additional Findings

- After two years of evaluation, PRE has continued to learn about the different models for rolling out technology implementation efforts across districts and whether these models have stimulated progress towards the MHCRC goal to identify effective instructional practices that use technology to foster improvement in student outcomes.
 - The SY 15-16 evaluation closely evaluated three grants: one district focused on all K-3 teachers within a single elementary school; one district focused on all teachers from an entire high school; and one district targeted teachers within a specific content area across multiple schools, including both middle and high schools. The SY 16-17 evaluation added one district focused on all K-3 teachers at two elementary schools, and one district focused on all K-3 teachers at five elementary schools.
 - Results from the SY 15-16 evaluation suggest that technology integration efforts at Parkrose HS may have been less effective due to the large number of teachers targeted for the change efforts. The administration at Parkrose HS commented that it has been more difficult to influence technology integration in the higher grades as compared to other efforts they are making in the district middle and elementary schools. This finding continues to be supported in the SY 16-17 evaluation.
 - Adding two new districts allows for further examination of effectiveness of technology integration models. GBSD's model is similar that of Earl Boyles Elementary School and after one year of evaluation, GBSD appears to have had similar levels of success as Earl Boyles in the implementation of the technology project. From an evaluation perspective, this is due to the focus on two schools, a full-time technology integration coach at each school, and organized, engaged leadership. The use of technology to support new instructional practices was less prevalent in Year 1 at PPS than GBSD. This may be due to the fact that technology coaches at PPS are only part time or could be related to the complexities of the literacy adoption at PPS.

- The SY 16-17 evaluation provided an opportunity to examine efforts to scale the technology integration and instructional practices to 4th and 5th grades within Earl Boyles Elementary School. The survey data broke down by newly implementing and veteran teachers. Newly implementing teachers appear to be making good progress towards increasing the frequency of technology integration and adopting new instructional practices. These teachers were making progress despite the technology coach only being on-site half time, which is encouraging as districts think about sustainability efforts related to progressing toward a digital age culture and technology-rich teaching and learning environments. One question to consider moving forward is the optimal number of school years a dedicated technology integration coach is needed for the teacher-to-teacher coaching model to take hold.
- Another question to explore further is whether technology integration is more successful when districts onboard those willing and motivated prior to those who are more hesitant. This model is a unique element of RSD's PD implementation among the five TechSmart grant projects (discussed more in the "Teaching Effectiveness" section).
- Suggestions for improving evaluation efforts in SY 17-18 include:
 - Increasing data collection efforts around data-driven instruction. SY 17-18 will include a teacher interview question about using formative assessment data from the technology to drive instruction in order to increase understanding of a district's and its teachers' growth in this area.
 - PRE will also work with the MHCRC staff to revise the project status reports in order to gather more detailed information related to the number of teachers involved in the grant projects and the details of the PD in each district.
 - In terms of shared learnings, PRE will partner with the MHCRC staff to lead an event during the second half of the SY 17-18 school year to facilitate discussion and learning opportunities across TechSmart districts.