A needs assessment of technology-related professional development (PD) was conducted from February 1 to February 5, 2021 with the certificated staff at Overton Public School. Eighteen respondents completed an anonymous online survey which asked them to self-assess their competencies, report challenges they have faced, and suggest improvements to the PD opportunities available to them.

Section 1: Participant Demographics and Survey Items

The eighteen teachers represented nearly all grade levels Pre-K through 12. Overall, the vast majority agreed or strongly agreed with the following statements:

A. "I personally feel comfortable using the technology I am expected to incorporate into my instruction."
B. "My use of technology in the classroom is helping my students achieve learning goals."
C. "I regularly seek out new apps, websites, and ideas to incorporate into my instruction."
D. "I can effectively manage my classroom when we are using technology."
E. "If I am given a new piece of technology, I can generally figure out how it works by myself."
F. "If I am given a new piece of technology, I can generally figure out how to incorporate it into my instruction by myself."

Each statement was disagreed with by at least one respondent, but only three statements were disagreed with by more than one respondent (C: 4, E: 2, F: 5).

Teachers were then asked, "What are some problems you have encountered when using technology in your classroom that have resulted in the lesson going poorly or students not achieving learning targets?" Answers given included:

A. "The technology my students were trying to use was not functional." (n=9)
B. "Too much class time was spent trying to get logged in or set up to begin the activity." (n=8)
C. "I had difficulty managing the behaviors of my students while we were using the technology / Students were not engaged." (n=4)
D. "My students didn't know how to use the technology that the lesson required." (n=2)
E. "I was ineffective at adapting my learning goals/instructional strategies to plugged-in learning." (n=2)

Next, teachers were asked how often they participated in some form of technology PD:

< 1 time per school year: n=12 n=6	1-3 times per school year: > 3 times per school year: n=0

Teachers were given the option to expound upon any particularly valuable and/or not valuable experiences they have had with technology-related professional development (see Section 2).

Teachers were then asked to self-reflect on the formats of professional development to which they respond best as a learner:

A. In-person, interactive/collaborative (n=15) B. Self-teaching/independent study (n=10) C. Learning from a peer/colleague (n=9) D. Small group/PLC (n=9) E. Online webinar, pre-recorded (watch on your own time) (n=7)	F. In-person, non-interactive/non-collaborative (n=6) G. Learning from an expert (n=5) H. Large group/conference (n=2) I. Online webinar, live (n=0)

Again, teachers were given the option to expound upon this reflection with more information about the strengths/weaknesses they perceive about the different formats and how they may relate to their specific school and teaching context (see Section 2).

Section 2: Suggestions for Improvements

The final survey item required all respondents to answer the question, "What do you believe can be done to make your current professional development experience better?" Some responses to this question and the other two open-ended items are collected below:

> "[At a previous school, every Thursday] the ENTIRE staff was in a 15 minute morning meeting for tech boot-camp. We were divided by skill level to go over various apps or strategies. The 'advanced' group and 'middle' group both got 'homework' to try a new app/idea and implement it in the classroom (one class period, one day) for that week. It was a pain that it was a morning meeting [...] but it really helped to apply what we learned."
>
> "When I have attended workshops for my content area that have described specifically how they have used technology, I find that the most beneficial. [...] One year we had a training on how to use the updated

Microsoft Office Suite and we sat in a room and watched the trainer show us things on the screen. It would have been much better had we all been sitting at computers to try things as she taught us about them."

"Sometimes I feel like we have presenters talk about different things at in-services but then we are left thinking… 'okay, now what?' We don't always go beyond what we do at the in-service. Perhaps getting other staff members involved to show what they are doing or how they are using an app, a resource, etc."

"I would like more training in effective uses of technology with younger students. It seems most technology focuses on independent learning [...] but some students are not quite to that level for some of the apps we use."

"Maybe more information on trainings that are available for staff. I'm open to doing more technology focused professional development, I just don't really know where to find such trainings."

"We have a variety of willingness, creativity, and skill levels in our school that are not being met. The high flyers are taking tech to amazing places. I feel that I know HOW to use the tech, but applying it is my weakness. I'm not sure that a large everyone-at-once approach would be appropriate. Small, small groups (7 max) would be more ideal to addressing our tech gaps. [...] I would also LOVE to serve as a group leader in teaching/showing tech."

"Always like to hear how teachers use this themselves in the classroom, especially in content areas similar to mine."

"I really like learning new things but having the time is always the biggest issue for me."

"I think if we had short, 15-minute break-out groups at teacher work days to show how you use Schoology (beginner, emerging, advanced) OR 'I use this app in this unique way," we can learn a LOT from each other. [...] [This gives] the new learners a safe place to ask as many questions as they wanted, it gave permission to the emerging level to make mistakes, and it gave the motivation to the advanced group to try it out on our student guinea pigs but also to come back and collaborate."

"More interactive with hands-on, knowledge of cost of implementation, lesson plans or ideas associated with training."

"If I try something, I like to have a person I can ask questions to while implementing, either by email or in person. This follow-up assures me that even if something didn't work, I can try it again."

"To have the SMART Board and Apple TV consistently work. I would love training on the SMART Board so that it can be incorporated into lessons more, but unsure how to even hook my computer to it or if it is able to."

"I would like to do some hands-on learning, I will remember better and use something more if I have actually done it myself."

"I just need to take the time to explore more apps, etc. For example, I know all about the cool things an FCS colleague does with Pear Deck, but I just haven't taken the time to figure it out and use it myself. I am really interested in doing the Apple Educator training, now I just need to make the time for myself to do it!"

"I think the most important thing for me is to get comfortable with the tech (knowing how to use it) and then be able to garner ideas about how specifically to incorporate it into my classroom effectively and efficiently. Understanding how to use it and how to make it of value are important to me in professional development."

Section 3: Conclusions

Given the depth of many of the open-ended responses, it is clear that teachers have a lot of opinions about professional development and are candid about their needs. Teachers appear to view *effective* PD as a valuable use of their time, and fortunately they are clear about what they consider to be effective PD: namely, collaborative, hands-on, and peer-led activities that are particularly geared toward the teacher's own subject area. A more dedicated investment of time and resources into technology-related professional development would be viewed by the staff as a productive use of inservice time more than a time-wasting burden. Teachers also trust school technology decisionmakers to decide what the specific content of this PD would be, provided it follows the effective formats suggested.

The preference for peer teaching over outside experts indicates that (1) teachers want a safe space to be able to experiment, ask questions, and make mistakes; (2) teachers appreciate the ongoing access to the trainer for follow-ups and informal coaching/mentoring relationships; and (3) teachers trust that ideas shared by a colleague are more likely to be relevant to their specific teaching contexts and successfully implemented with their own students. It is possible that a successful PD program in this context would be decentralized, highly customized, and centered on peer relationships. The survey results also suggest that for at least some teachers, their classroom technology may not support high quality teaching and learning, either because it is not fully functional or the teachers themselves do no understand how to operate it. Identifying these individuals and providing support is necessary. Some teachers also feel that though they have adequate tools at their disposal, devoting time to exploring/implementing them has not been

a high priority. Decisionmakers could explore motivational/incentivizing efforts in response. The

low teacher participation in technology PD suggests an environment ripe for experimentation.