Technology Modernization - 1:1 Device Program

To: Program and School Services Committee

Date: 9 June, 2021

Report No.: 06-21-4116

Strategic Directions

- Transform Student Learning
- Provide Equity of Access to Learning Opportunities for All Students
- Allocate Human and Financial Resources Strategically to Support Student Needs

Recommendation

It is recommended that the report be received.

Context

Creating and executing a strategic plan for the distribution of a 1:1 model supported by digital learning tools and content resources to all TDSB learners, now and in the future, is pressing and imperative. The pandemic, recent global economic and social changes have illustrated the importance of equipping students with digital learning skills, experiences, and opportunities. Now is an opportune time for action.

This digital learning strategy honours the TDSB's commitment to student success for all as put forward in *A Vision for Learning* (2016) and it responds to the recommendations found in the Office of the Auditor General of Ontario's *Value-for-Money* audit (2018). It will lay the foundation for a consistent learning experience that supports improved achievement levels for all students. This strategy addresses the following critical goals: fostering deep learning through the use of pervasive technology and providing equitable access to current digital resources for all students at every TDSB school.

In *A Vision for Learning*, the TDSB committed to enabling "all students to reach high levels of achievement and to acquire the knowledge, skills, and values they need to become responsible members of a democratic society." Moreover, to attain high levels of achievement, our students must become "deep thinkers, problem solvers, creators, collaborators, leaders, global citizens, entrepreneurs, and communicators." To meet these goals, our students and teachers require expanded pedagogical capacity and pervasive technology.

In *A Rich Seam: How New Pedagogies Find Deep Learning* (2016), Fullan and Langworthy propose "a new model of learning partnerships between and among students and teachers, aiming towards deep learning goals and enabled by pervasive digital access." Within this deep learning partnership, the focus is shifted from passive content mastery by students to active creation and use of new knowledge in the world beyond the classroom.

The ubiquitous presence of technology is background but crucial. When technology is introduced sporadically or haphazardly, the focus can be on the technology rather than the learning. When technology is pervasive, routinized and seamless, it facilitates and amplifies deep learning.

"Technology is not just a tool. It can give learners a voice they may not have had before." - George Couros

In the provincial *Value-for-Money* audit, the auditors acknowledged that "Ontario does not have an IT strategic plan for its schools" and issued a series of recommendations to address this gap. The auditors noted that the TDSB "did not have a policy on the ratio of students to computers. At some schools, eight students shared one computer, whereas in other schools, each student was assigned an individual computer." Given that the TDSB is committed to honouring all student voices, we must support that commitment by funding the technology to amplify student voices.

Currently, there are pockets of excellence in the TDSB, but digital tools and resources are not systematically distributed. The auditors note that "classroom IT equipment ranged from new and modern, to outdated hardware… older technology could also adversely affect the learning experience and was more vulnerable to cybersecurity threats because vendors were no longer providing regular security updates." To address these issues, the board is assessing the technological needs for their schools with a goal of completion by March 2021. The assessment was expected to address "computer-to-student ratios, types of technologies to use in the classroom, the optimal age of technology systems and devices, as well as the refresh cycle of classroom technology."

Action Plan and Associated Timeline

Implementing a district-wide digital learning strategy, including a student laptop program will enable the TDSB to provide students with the learning experiences and opportunities to prepare them to be competent & capable responsible citizens.

Student Device Program

The student laptop program will consist of two phases, implementation, and sustainment. The implementation phase will take place over a four-year period allocating devices to students in grade five and grade nine simultaneously. Spreading the activity over four years will allow for balancing of the financial and human resource demands of the program and allow adjustments to be made annually as required. Grade five has been selected as an elementary entry point due to a balance of student maturity and ability to utilize the device consistently for educational purposes as well as providing a minimum of two grades worth of support for elementary schools from a device allocation perspective. Grade nine has been selected as the entry point for secondary students due to support student learning as they begin high school. It will also support secondary schools with devices over a four-year implementation period.

After four years all students in grades five to twelve will have a device assigned to them. At this time the maintenance phase of the program will begin. Students entering grade five will continue to receive a new device. The device will be refreshed when students enter grade nine with a new device. At the end of grades eight and twelve devices will be collected from students. These will be used as replacements for damaged devices and for parts to perform repairs.

Feedback from teachers, students and parents has indicated the laptop format is preferable for the physical keyboard and ability for the screen to be upright without a case or human intervention. Chromebooks are the recommended device for the student laptop program. Chromebooks are cost effective laptops running the Chrome Operating System and are the devices purchased most often by TDSB schools. They are designed to provide quick start up times and fast performance when accessing online sites and resources such as Google Workspace for Education, the Brightspace Learning Platform and TDSB's Virtual Library. Chromebooks can also be used without an internet connection. Chromebooks have been used in TDSB for over six years with approximately 106 000 in our schools today. The devices have been very reliable and provided an excellent return on investment based on the amount of student use and reliability. Chromebooks are the number one selling educational device in North America.

The student laptop program will be implemented over a four-year period balancing the financial and human resource demands of the program. Staff from IT Services and Leadership and Learning will be required to support a student laptop program.

Resource Implications

The digital learning strategy will carry both human and financial annual costs.

The student laptop program will cost approximately $10.4 million dollars annually for devices. This amount will be required for the first four years of implementation and then maintenance and refresh ongoing. The cost of an individual Chromebook is approximately $307.

- Year 1: 34 000 students ($10,438,000)
- Year 2: 34 000 students ($10,438,000)
- Year 3: 34 000 students ($10,438,000)
- Year 4: 34 000 students ($10,438,000)

The program is subject to funding availability.

One option is to centrally fund schools in a certain position on the Learning Opportunities Index and to implement a sliding scale cost sharing model for other schools.

A team of people will be required to support schools, teachers, students and their families. These people could be an addition to the people who currently support the Digital Lead Learner Program. It is anticipated two full time people will be needed to support the student laptop programs in addition to existing staff from IT Services and Leadership & Learning.

Prior to launch of the student device program resources will need to be created and curated to assist teachers, students and families on topics including but not limited to

Digital Citizenship, Privacy and Safety, Curricular Connections and Acceptable Use. This work will be completed in the summer of 2021. Professional learning will be provided for teachers of grades five and nine to support the purposeful use of technology for deep learning.

Communications Considerations

There will be communication requirements for students and families, teachers, classroom staff, principals, and school support staff.

Board Policy and Procedure Reference(s)

P088 - Acceptable Use of IT Resources

Appendices

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From

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