

Chapter 27

St. Paul's Roman Catholic Separate School Division No. 20—Adapting Technology for Learning in Elementary Schools

1.0 MAIN POINTS

By January 2022, St. Paul's Roman Catholic Separate School Division No. 20 improved its processes to adapt technology for learning in elementary schools. The Division implemented five recommendations, and partially implemented one recommendation we originally made in our 2019 audit.

The Division:

- Collected information from key stakeholders (e.g., teachers, parents) to determine the extent of technology use in the classroom, and plans to continue to collect information on future technology integration periodically through its technology refresh process. It also shared its mission and belief statements for technology integration with key stakeholders, and provided guidance and resources to support these statements.

Knowing both the current level of technology integration in the classroom, and determining the desired level of integration helps the Division determine how much effort it needs to make in supporting and encouraging teachers to use technology in classroom instruction. It also helps the Division assess whether its current efforts are helping teachers use technology in meaningful ways.

- Completed a cost-benefit analysis for student devices, and provided a listing to schools going through the technology refresh process showing which devices are most suited for education, at the best cost.

Periodically performing cost-benefit analysis helps ensure the Division uses resources efficiently.

- Improved its technology refresh process to link purchasing decisions to its Educational Technology Handbook, considered current technology in use, and collected insights from school staff.

The Division is working toward periodically verifying the existence and location of its educational IT assets. This includes a comprehensive IT asset count at all schools in 2022, and counting IT assets at certain schools every four years during their technology refresh process.

Technology serves as a significant aspect of modern education. Having strong processes to support and encourage its use in classroom instruction helps students develop essential competencies to succeed.



2.0 INTRODUCTION

2.1 Background

The Education Act, 1995, assigns Boards of Education (school boards) responsibility for administration and management of schools, with oversight from the Ministry of Education.¹ The Act makes school boards responsible for exercising general supervision and control over the schools in the school division. School boards approve administrative procedures pertaining to the internal organization, management, and supervision of schools.

St. Paul's Roman Catholic Separate School Division No. 20 (with 43 elementary schools located in Saskatoon, Martensville, Warman, Humboldt, and Biggar) recognizes that technology is a significant aspect of modern education. Its educational technology mission is to be a faith-based community adapting technology to enrich learning and promote excellence in education.²

Each year, the Division spends about \$480,000 on student technology devices used in schools (i.e., devices like computers, iPads, tablets for student use).³ As shown, in **Figure 1**, at January 2022, it supplied schools with a variety of devices for student use.

Figure 1—Number of Division's Technology Devices by Type at January 2022

Device Type	Device Quantity
Classroom iPads	3,641
Laptops	3,391
Chromebooks	2,989
Computers	1,653
Smartboards	639
Tablets	30
3D Printers	9

Source: Based on data provided by St. Paul's Roman Catholic Separate School Division.

2.2 Focus of Follow-Up Audit

This chapter describes our follow-up audit of management's actions on the recommendations we made in 2019.

In 2019, we assessed St. Paul's Roman Catholic Separate School Division No. 20's processes to adapt technology for learning in elementary schools. Our *2019 Report – Volume 2*, Chapter 25, concluded that for the 16-month period ended June 30, 2019, St. Paul's Roman Catholic Separate School Division No. 20 had, except for the areas of our recommendations, effective processes to adapt technology for learning in elementary schools.⁴ We made six recommendations.

¹ *The Education Act, 1995*, s. 85(1).

² Greater Saskatoon Catholic Schools *2021/22 Learning Services Educational Technology Plan*.

³ This cost figure does not include costs of internet, agreements with Microsoft, software, parts needed to fix devices, or human resources.

⁴ *2019 Report – Volume 2, Chapter 25*, pp. 223–236.

To conduct this audit engagement, we followed the standards for assurance engagements published in the *CPA Canada Handbook—Assurance* (CSAE 3001). To evaluate the Division’s progress toward meeting our recommendations, we used the relevant criteria from the original audit. The Division’s management agreed with the criteria in the original audit.

To perform our follow-up audit, we discussed actions taken with Division staff and reviewed key documents, such as the *Educational Technology Plan* and *Educational Technology Handbook*, surveys conducted by the Division, and documentation supporting purchases of new devices. We tested a sample of schools that received refreshed technology during the year to assess the operating effectiveness of the Division’s processes.

3.0 STATUS OF RECOMMENDATIONS

This section sets out each recommendation including the date on which the Standing Committee on Public Accounts agreed to the recommendation, the status of the recommendation at January 31, 2022, and St. Paul’s Roman Catholic Separate School Division’s actions up to that date.

3.1 Current State of Technology Use in Classrooms Determined

We recommended St. Paul’s Roman Catholic Separate School Division No. 20 periodically determine the extent it has integrated technology use into its elementary school classroom instruction. (2019 Report – Volume 2, p. 231, Recommendation 1; Public Accounts Committee agreement January 12, 2022)

Status—Implemented

St. Paul’s Roman Catholic Separate School Division No. 20 developed a process to periodically collect information from key stakeholders (e.g., school staff, parents) to determine the extent of technology use in classrooms.

In June 2020, the Division surveyed school staff on technology in education. We found teachers at the schools we tested completed the survey. The Division received 655 responses to the survey. Key topics in the staff survey related to integration of technology in learning, availability of supports, and student engagement in the online environment.

The Division also surveyed parents/students in June 2020. The parent survey focused on their experience with online learning during the COVID-19 pandemic. Approximately 75% of survey responses showed a positive experience with online learning.

Going forward, the Division plans to survey teachers at the schools due for a technology update (rotationally every four years), to help inform planning and purchasing decisions for new technology at those schools. As a result, the Division will survey and provide new technology to approximately 13 schools each year.

By completing a comprehensive survey in 2020, and periodically surveying school staff going forward, the Division will remain informed of the extent of technology use and future needs in elementary school classroom instruction.



3.2 Supporting Technology Use in Classrooms

We recommended St. Paul's Roman Catholic Separate School Division No. 20 determine the extent it wants to integrate technology use in its elementary schools' classroom instruction and by when. (2019 Report – Volume 2, p. 231, Recommendation 2; Public Accounts Committee agreement January 12, 2022)

Status—Intent of Recommendation Implemented

Due to the COVID-19 pandemic shifting education to an online learning environment, St. Paul's Roman Catholic Separate School Division No. 20 needed to increase the integration of technology into its elementary schools' classroom instruction since March 2020. It did this by creating and sharing guidance with staff outlining how to effectively instruct students virtually. The Division also developed a new technology-sharing program that supports teachers in integrating technology in classrooms. Also, in its *2021–22 Education Technology Handbook*, the Division states it wants increased access to technology resources for students.

In March 2020, the Division needed to move to an online learning model because of the pandemic. As a result, Division staff had to quickly adopt technology integration into their classroom instruction within a short timeframe. The Division's Educational Technology team created and distributed two guidelines, one for online learning and one for blended learning, to help staff manage this change.^{5,6}

These guidelines outlined the need for teachers to create an environment for learning, how to ensure teachers still followed the curriculum, and outlined how teachers should assess (i.e., grade) students. We found these documents also addressed the use of technology, as they required teachers to provide online tools to students not only to support learning, but also to allow students to share, present and publish their learning.

In order for Division staff to effectively provide online instruction to students, the Division had to ensure teachers knew how to operate the available technology. The Division did this by creating an online resource centre for teachers to access training and instructional videos on how to use available technology (e.g., YouTube tutorials). We found the Division appropriately tracked how many users (i.e., staff) accessed the information on its online resource centre. The Division's YouTube tutorials received over 70,000 views and its teacher resource centre had over 1,700 viewers since March 2020.

During the 2021–22 school year, the Division also deployed a new program (ConnectEd), which gave teachers access to technology for use in classroom learning. The program allows teachers to sign up for one, six-week block of time where a technology cart (i.e., a portable cart that contains iPads or Chromebooks) is available for the teacher's use in lessons that involve technology. It purchased six technology carts for distribution throughout the Division; the Division moves carts between schools.

⁵ The Division defines online learning as a school-based, formal education where the learning group is separated, and where interactive systems are used to connect learners, resources and instructors.

⁶ The Division defines blended learning as at least in part through online learning, with some element of student control over time, place, path and/or pace; at least in part in a supervised bricks-and-mortar location (i.e., school) away from home.

We found the Division issued a survey to teachers asking what their preferred devices were (i.e., tablets, laptops), which weeks the teacher wanted access to the cart, what the teacher intended to use the technology for in the classroom, and what support the teacher required to operate the technology. The Division noted it has seen a positive response to this program and that teacher demand for ConnectEd exceeded their available supply of resources.

Determining the current state of technology use in schools means the Division can reasonably assess whether its current actions are sufficient and appropriate.

We recommended St. Paul's Roman Catholic Separate School Division No. 20 communicate its future vision of integrating technology in the classroom to its teachers. (2019 Report – Volume 2, p. 232, Recommendation 3; Public Accounts Committee agreement January 12, 2022)

Status—Implemented

St. Paul's Roman Catholic Separate School Division No. 20 developed mission and belief statements related to how it wants to integrate technology use in its elementary schools' classroom instruction and communicated these to staff in its *2021–22 Education Technology Handbook*.

The Division set five belief statements in its Technology Handbook. Its belief statements are:

- Technology is an integral part of education
- All stakeholders are invited to have a voice
- Students and teachers work to achieve curricular outcomes by adapting technology
- Professional development opportunities for teachers/staff are critical for the effective integration of technology⁷
- Technology must be student-centered and used to empower students by developing skills to meet their diverse needs as global and digital citizens⁸

We compared the Division's key actions to integrate technology in the classroom (e.g., surveying teachers on planned technology use, establishing guidelines for online learning) to the belief statements. We found the Division took appropriate action to address each one of its belief statements.

Establishing and communicating a clear vision helps engage teachers in meaningful use of technology in classrooms.

⁷ The Division offered Division-wide professional development on such topics as how to make the most of iPad use and how to perform student assessments using its online assessment system, and also provided professional development (e.g., Tech on Tap) after school.

⁸ Greater Saskatoon Catholic Schools *2021/22 Education Technology Handbook*, p. 1.



3.3 Existence of Devices Not Periodically Confirmed

We recommended St. Paul's Roman Catholic Separate School Division No. 20 periodically verify the existence and location of educational technology devices available in its elementary schools. (2019 Report – Volume 2, p. 233, Recommendation 4; Public Accounts Committee agreement January 12, 2022)

Status—Partially Implemented

By January 2022, St. Paul's Roman Catholic Separate School Division No. 20 developed a process to verify the existence and location of educational technology devices, but had not yet implemented it.

The Division identified its prior IT system used to track educational technology devices' locations was outdated and needed replacement. In 2021, the Division found a replacement IT system to track these devices. As the Division purchases new educational technology devices, Division staff enter these devices' details into its new IT system. See **Figure 1** for number of technology devices at January 2022.

The Division updates educational technology devices provided to schools on a four-year rotational cycle.⁹ Every four years, it allocates a budget to each school to buy some new technology devices for classroom use. We found the Division developed a listing of all schools, and assigned each school a year in which their technology update will occur.

In addition, the Division scheduled all schools to have their educational technology devices counted (i.e., asset counts). It planned to conduct these initial asset counts between January and May 2022. However, the Division delayed these counts because of COVID-19 restrictions.

It is important to periodically verify the accuracy of the listing of devices to decrease the risk of not detecting missing devices, or not knowing the location of devices. This could result in devices being unavailable for teachers and students to use in the classroom.

3.4 Cost-Benefit Analysis Conducted for Purchases

We recommended St. Paul's Roman Catholic Separate School Division No. 20 periodically assess the cost-benefit of its decision for using differing device brands and IT platforms for classroom use in its elementary schools. (2019 Report – Volume 2, p. 234, Recommendation 5; Public Accounts Committee agreement January 12, 2022)

Status—Implemented

St. Paul's Roman Catholic Separate School Division No. 20 analyzed the cost versus benefit for its decisions to purchase and support different brands and IT platforms for its elementary schools.¹⁰ The Division initiated research in this area in late 2019 and finalized its analysis in January 2022.

⁹ Some schools also receive technology donations or have the ability to use in-school funds to purchase additional technology for the school (e.g., through their school community councils)—this varies from school-to-school.

¹⁰ An IT platform is software (operating system) on which to run software applications.

The Division performed an assessment to determine whether it could reduce the number of brands it allowed schools to purchase. Based on the responses to surveys issued to teachers (see **Section 3.1**) the Division noted technology use activities could be grouped into three categories:

- **Consumption:** devices used for internet research purposes
- **Creativity:** devices used for artistic purposes (e.g., editing photography, video production, animation)
- **Content specific:** devices used for technical learning (e.g., computer programming, robotics)

The Division created a standard listing of one or two devices determined to be most suitable for each technology use activity. The Division allocated \$400,000 for 2021–22 (2020–21: \$360,000) for new student devices as part of the refresh process.

Periodically and formally analyzing the cost-benefit of its decisions to both purchase and support multiple brands of devices using different platforms allows the Division to use its limited resources efficiently. As a result, the Division can reduce the risk of paying more for devices and decrease technology support costs.

3.5 Technology Usage Information Collected to Support Purchasing Decisions

We recommended St. Paul’s Roman Catholic Separate School Division No. 20 better link technology purchasing decisions to its Educational Technology Plan (or equivalent documents). (2019 Report – Volume 2, p. 236,

Recommendation 6; Public Accounts Committee agreement January 12, 2022)

Status—Implemented

St. Paul’s Roman Catholic Separate School Division No. 20 linked purchasing decisions to its Educational Technology Handbook. The Handbook contains the Technology Integration Matrix, which is a tool to help teachers examine their level of technology integration into the curriculum to support quality student instruction, which the Division incorporated in the technology refresh survey in fall 2020.

As noted in **Section 3.3**, every four years the Division updates educational technology devices provided to schools. The Division’s process to update these devices includes:

- Update current device inventory listings for hardware (computers, laptops, Chromebooks, iPads) considering the age and current performance of the devices
- Survey staff at affected schools to understand current practices, goals and determine future technology needs
- Educational Technology Team works with the school to select devices and order them by making purchases through tendering processes¹¹

¹¹ Greater Saskatoon Catholic Schools *Technology Refresh Process*.



The survey sent to teachers during the technology update process, starting in fall 2020, provides the Division with insight into where the teacher is now, where the teacher wants to go, and how the Educational Technology Team can support the teacher going forward. It also appropriately includes a direct link to the Division's Technology Integration Matrix (see **Section 4.0**). It asks teachers to consider where they currently are on the Technology Integration Matrix in relation to the learning environment, curriculum, student assessments, and teacher instruction.

For the two schools we tested going through the technology update process, we found the Division documented consultation with the school, received survey results, reviewed existing technology, and ordered devices that aligned with the school's identified needs. For the schools tested, teachers also provided their self-assessment of where they were on the Technology Integration Matrix.

Effectively using assessment information from schools when purchasing technology provides the Division with valuable information about where schools are at in technology integration and helps support purchasing decisions.

4.0 DIVISION TECHNOLOGY INTEGRATION MATRIX

	Entry	Adoption	Adaptation	Infusion	Transformation
Environment	Students primarily work alone in highly structured activities using technology. 21 st Century Skills are not explicitly taught.	Students are allowed the opportunities to utilize collaborative tools in conventional ways. Digital citizenship is encouraged.	Students have opportunities to choose or modify the technology-related tools most appropriate to facilitate and enhance collaborative work.	Students select technology tools to facilitate and enhance collaboration in all aspects of their learning while modeling 21 st Century Skills and Digital Citizenship.	Students work seamlessly through projects fully aware of 21 st Century Skills and Digital Citizenship using any appropriate technologies available.
Curriculum	Technology used to deliver information to students.	Students begin to choose technology tools based on curricular outcomes that they know.	Students have opportunities to choose and manipulate technology tools to assist them in their understanding based on their progress towards curricular outcomes.	Students focus on learning tasks, and purposefully combine technology tools to design desired outcomes based on their own ideas.	Students use technology to construct, share, and publish new knowledge to an appropriate audience.
Assessment	Students receive directions, guidance, and feedback from technology, rather than using technology tools to set goals, plan activities, monitor progress and evaluate results.	From time to time, students have the opportunity to use technology to either plan, monitor, or evaluate an activity.	Students have opportunities to select and modify the use of technology tools to facilitate goal-setting, planning, monitoring, and/or evaluating specific activities.	Students use technology tools to set goals, plan activities, monitor progress, redo work based on self, peer and teacher feedback and evaluate results based on their understanding of the curricular outcomes.	Students are taught to think about their thinking and their learning (metacognition) supported by technology tools.
Instruction	Students use technology in substitution of other tools to complete assigned activities that are generally unrelated to real world problems.	Students are allowed opportunities to employ technology tools to connect content-specific activities that are based on real-world problems.	Students have opportunities to select and utilize the appropriate technology tools and digital resources to solve problems based on real world problems.	Students select appropriate technology tools to complete authentic tasks across disciplines.	Students participate in meaningful projects that require problem solving strategies, and facilitate global awareness, through the utilization of technology tools.

Source: Adapted from Greater Saskatoon Catholic Schools 2021-2022 Education Technology Handbook.