INFORMATION TECHNOLOGY DEPARTMENT PLAN

June 2015

Enhancing student learning through the use of technology

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Executive Summary

The Information Technology Department plan outlines a road map that informs all School District stakeholders of the initiatives by the Information Technology Department that support and enhance student learning and engagement for every student in the Greater Victoria School District.

The process of developing the Information Technology Department plan included reviewing the significant technology-related accomplishments over the last few years, assessing the current state of technology, reviewing the needs of schools (students, staff and parents) and the vision and goals of the BC Education plan, identifying the initiatives required to fulfill those goals, preparing the plan and using it as a roadmap in moving forward.

This plan details a number of initiatives that the Information Technology Department will be implementing over the next few years. Enhancing parent communication, providing students with online storage collaboration / productivity tools and replacing the current student information system are the current priorities for the School District.

There are a number of other initiatives in this plan that also focus on enhancing communications such as improving district and school websites and implementing classroom websites and blogs. Improving the support systems and infrastructure are a major focus for the Information Technology Department with initiatives such as the Technology Purchase Centre, TEC packages and technology bundles and the Evergreen Computer Refresh Program.

Access and connectivity improvements are addressed through initiatives to the local area network, the next generation network, the enterprise wireless network and through video conferencing. Some of the department's initiatives target the operation of the School District such as business improvement and disaster recovery. All of these initiatives have a direct connection in creating value for our students, teachers, staff and parents through the application of technology.

While continuing to create an environment where technology is reliable and access is ubiquitous, the Information Technology Department is always labouring to minimize costs while simultaneously increasing value. While leveraging current technologies in the School District, the Information Technology Department frequently evaluates emerging technologies and assesses how they might add value to enhancing student learning. Technology is an integral part of personalized learning and will continue to impact all aspects of the educational environment.

BC EDUCATION PLAN & DIGITAL LITERACY CHARACTERISTICS

The Information Technology Department's vision for student learning and instructional technology is based in the context of the BC Education Plan and the Digital Literacy Characteristics which states that students should possess the following digital literacy characteristics:

- Research and Information Literacy - Students apply digital tools to gather, evaluate and use information
- Critical Thinking, Problem Solving, and Decision Making - Students use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using appropriate digital tools and resources
- Creativity and Innovation - Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology
- Digital Citizenship - Students understand human, cultural and societal issues related to technology and practice legal and ethical behavior
- Communication and Collaboration - Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others
- Technology Operations and Concepts - Students demonstrate a sound understanding of technology concepts, systems and operations

IT ORGANIZATION

The Information Technology Department provides technology planning, implementation, support and integration for administrative and instructional sites. Reporting to the Deputy Superintendent, the Information Technology Department is located in the Tolmie Building at 556 Boleskine Road and is divided into five functional areas:

1. Help Desk – Main point of contact for all technology support
2. Onsite Technology Support – School Technologists provide onsite technology support to all schools. They work in concert with the Help Desk and assist schools in their use and planning of technology
3. Technology Infrastructure – Comprised of network, server and data centre operations. Designs and supports wired and wireless networks, servers and systems that support the infrastructure

4. Application Development & Systems Support – Supports and maintains the District's web presence and portal environments, develops web-based solutions for district requirements, implements and maintains administrative systems and integrates existing and legacy applications with new technology solutions

5. Data Support – Includes managing the District's Data Warehouse, BCeSIS and MyEducation BC and supports data collection and reporting to the Board of Education and Ministry of Education

The Information Technology Department is committed to:

- making technology more accessible, reliable and relevant for students in their learning activities
- supporting staff with their use of technology to amplify student learning
- supporting the District with relevant information and data to ensure effective decision making
- designing and maintaining the necessary technical infrastructure
- maintaining a level of service that is cost effective, timely in delivery and superior in quality

Governance for the Information Technology Department is maintained through the District Leadership Team (DLT) which oversees IT strategy within the School District. DLT is comprised of senior leaders, department coordinators/directors and school principals and ensures IT initiatives closely align to the overall goals of the School District and the BC Education Plan.

INITIATIVES

1 - District and School Websites

GOAL: To enhance the School District's ability to effectively communicate with students, parents, staff and the community through modern websites that are responsive in design, well structured, customizable and easy for staff to publish content.

In 2013, the Information Technology Department set to enhance the School District's websites. The initial focus was to create a standard template-based school website that all schools would use which would add a level of consistency across all schools for the viewers.

The websites were designed to include language translation and to be responsive and automatically adjust to the viewer's screen size to accommodate tablet computers and smart phones. The site is managed through role-based user accounts and has a user-friendly interface for easy content management. The website is hosted and fully supported by the Information Technology Department.

In addition to the school websites and for those teachers that would like to publish their own class website and blog, the Information Technology Department is working to develop a teacher's component of the school websites. This will enable teachers to easily share information with students and parents. The class websites will be template-based and easy for teachers to setup and publish information and fully supported by the Information Technology Department.

The School District's main website was updated in 2014. It has the same characteristics as the school websites and includes integration between the district and school websites. The new District website also includes top-drawer functionality to accommodate unique user-centric views. The District website continues to undergo further improvements in 2015.

2 - Communicating with Parents

GOAL: To provide parents with stronger connections to their child's learning through online services for greater visibility and interactions with the School District.

Since children tend to enjoy and stay in school longer and do better in school when students, teachers and parents work together to support learning, the Information Technology Department is working to implement systems that enhance better communications with parents. These systems currently include teacher, school and district websites, MyEducation BC, FreshGrade, and Synrevoice School Connects.

Online web services designed for parents will include:

- Viewing and reporting student attendance
- Viewing student progress
- Enhancing communication between teachers and parents
- Providing online approvals and consent
- Making online payments

3 - Student Information System

GOAL: To ensure that information is readily available to stakeholders in order to efficiently and effectively manage the education system.

The School District is currently replacing BCeSIS with MyEducation BC. All of the schools in the Greater Victoria School District are scheduled to be converted to MyEducation BC by December 2015. The initial focus of the project is to replace BCeSIS core functionality with similar functionality from MyEducation BC.

Following implementation, the new functionality and features of MyEducation BC, including teacher, student and parent portals and services will be reviewed and made available.

4 - Business Improvement

GOAL: To improve the efficiency and operational effectiveness in the performance of the business functions of the School District.

As part of the regular business lifecycle, data is collected from schools and the information is used to report on provincial and district requirements. Examples of data collections include the Student Data Collection (1701), Student Achievement Data Exchange (SADE) and the Employment Data and Analysis System (EDAS). Historically, these collection processes have been performed through spreadsheets which can be inefficient. The Information Technology Department is working to improve these processes by removing the dependencies on legacy spreadsheets and replacing them with online collection forms and services. The Information Technology Department is making improvements to other business needs as identified.

5 - Systems and Infrastructure Improvements for the Classroom

GOAL: To improve the reliability, accessibility and cost effectiveness of technology for student-centred learning.

Putting technology in the hands of students is critical in helping them acquire the skills they need to be successful in a complex, highly technological knowledge-based economy. The Information Technology Department supports teachers, administrators and support staff by implementing an improved systems approach for the selection, purchase and implementation of technology devices and tools. As a result of these improvements, schools can expect:

- additional cost savings in purchasing technology
- devices purchased meet student and teacher expectations
- simplified process for purchasing technology
- all of the various departments and stakeholders are informed and working together to efficiently implement the technology

5.1 - Technology Purchase Centre

The Information Technology Department, in conjunction with the Facilities and Purchasing Departments are working to develop a centralized Technology Purchase Centre where schools can easily express their intent to purchase technology devices. The school will be provided with

assistance in the selection, options and cost of the devices and the departments affected by the purchase will receive adequate notice and updated relevant information to assist them with their planning and installation.

5.2 - TEC Packages and Hardware Bundles

The Information Technology Department is working to establish standard technology packages of various tools and devices that meet student and classroom purposes. These packages will integrate with the schools existing technology infrastructure, will be offered as a set price that includes installation so it is easy for school budgeting purposes and will include all the necessary supports to ensure it is used successfully and expectations are met.

The Information Technology Department established the TEC (Technology Enabled Classroom) Package in 2013. It incorporated a wall-mounted ultra-short throw projector with a screen and sound system. Benefits of the TEC package include:

- a rich multimedia learning environment
- reduces teacher preparation time
- consistency across classrooms
- easy integration with technology devices such as iPads and desktop computers

5.3 - Evergreen Computer Refresh Program

The Evergreen Computer Refresh Program was launched in 2014 for student and teacher computers. Approximately 6,000 computers were enrolled into the Evergreen program and are funded from school budgets. The goal of the program is to ensure that students and teachers use computers that are reliable, perform well and are purchased at the lowest cost to the schools.

The Information Technology Department has developed a student and teacher desktop computer standard utilizing refurbished computers with new solid state hard drives. The District continues to find high value in purchasing refurbished computers as they are:

- significantly less expensive than the cost of new computers
- meeting established performance levels set by the Information Technology Department
- supporting the School District's values of reduce, reuse and recycle
- meeting expectations from students and staff
- significantly improving performance through solid state hard drives

Schools pay an annual subscription cost for every computer enrolled in the program and in return, the Information Technology Department ensures that the computers continue to perform as expected and will be replaced when required. Replacement schedules are developed in advance of replacement lifecycles and costs can be closely planned for, managed and controlled.

6 - Access and Connectivity

GOAL: To provide students sufficient and reliable access to the internet and to online digital tools.

It is an exciting time for learning and teaching as the School District is working to equip students with the skills necessary to thrive in an increasingly digital world, as critical thinkers, researchers, innovators, global communicators, collaborators and life-long learners. To that end, the Information Technology Department recognizes the importance of student access to online tools for learning.

"If they have access, our kids now have an easy connection between an individual's passion to learn and the people and resources to learn it." [1]

6.1 - Local Area Network

Ensuring a robust Local Area Network (LAN) is critical in meeting the computing needs of students and staff. In 2012, the Information Technology Department developed a new district LAN architecture standard and began replacing legacy network switches (2000 era) with managed switches. All remaining legacy network switches are scheduled to be replaced by August 2015.

6.2 - Next Generation Network

In 2014, the BC Government established the Next Generation Network (NGN) as the replacement for the Provincial Learning Network (PLNet). A key objective was to ensure that every school district was provided the underlying technology, connectivity and services to support delivery of personalized learning.

The School District was fortunate to be an early adopter of the NGN and all schools were migrated from PLNet to the NGN in early 2015. By 2016, bandwidth capabilities are expected to increase by 30% and then increase again every two years in order to keep with the expected demand.

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[1] Thomas, Douglas, and John Seely Brown. *A New Culture of Learning: Cultivating the Imagination for a World of Constant Change*. 1st ed. CreateSpace Independent Publishing Platform, 2011.

The NGN provides:

- faster internet connections
- greater bandwidth capacity
- commercial-level reliability
- improved network security

6.3 - Enterprise Wireless Network

A centralized enterprise wireless network was implemented in 2011 for secondary and middle schools and elementary schools were added to the wireless network in 2014. As a school district, we were behind most other BC school districts in this area. While this has delayed our deployment of wireless devices, it allowed us the opportunity to carefully review safety concerns and to implement the latest in wireless infrastructure according to federal and global health guidelines. All schools utilizing the wireless network went through a consultation process with their stakeholders. The wireless network enables:

- students the freedom to move about with technology and work collaboratively
- students with special-needs access to the digital tools that are the most helpful for them
- students to be able to effectively use wireless-only devices such as iPads and tablets
- students to be able to use their own technology devices in schools

6.4 - Video Conferencing

The Information Technology Department is working to develop a classroom video standard where teachers and students can easily utilize video to remotely connect to special guests and other students outside of the School District. The department will also be developing a video conferencing standard that can be used across the School District for point-to-point video conferencing, group video conferencing as well as video recording and streaming for school and district events.

6.5 - Online Data Storage and Collaboration / Productivity Tools

The Information Technology Department will be enabling a powerful collection of online collaboration and productivity tools for students, as well as unlimited online file storage to be used for educational purposes. These tools are accessible from any network that is connected to the internet and offer tremendous opportunities for students to extend learning beyond their school

and into their home and community. Participation will be a school decision and parent consent will be required for participating students.

Some of the benefits of online data storage and collaboration / productivity tools include:

- personal and collaborative online workspaces and productivity tools for students that can be accessed from any device and from anywhere
- the ability for students to develop and participate in different social networks
- direct online communication with teachers and students
- no cost to schools or students and the solutions are commercial-free

6.6 - Personal Information and Privacy

The School District is committed to meeting its obligations under the Freedom of Information and Protection of Privacy Act (FOIPPA). Each student will have their own secure login and password and all students and teachers using the system will receive instruction on how to appropriately use it in ways that protect personal student information.

7 - Disaster Recovery

GOAL: To ensure that IT risks are minimized and to develop a structured disaster recovery process to efficiently recover and protect the School District's interests in the event of a disaster.

The Information Technology Department maintains regular data backups and ensures that data can be quickly recovered when necessary. All data is backed up at least nightly, with higher priority data being backed up numerous times at different points throughout the day. Data is also replicated to an off-site facility in the event of a disaster that affects the data centre. The Information Technology Department is working to formalize a disaster recovery plan that would be used in the event of an actual disaster.

In conjunction with the disaster recovery planning, the Information Technology Department will be performing an IT risk management assessment. The assessment will identify and prioritize the IT risks and associated impacts, building a risk profile that provides both the strategic basis and the operational framework for handling potential crisis within the Information Technology Department. The assessment will be completed by June 2015.

CONCLUSION

All of the initiatives in this plan work together to enhance and amplify student learning through:

- empowering students with the knowledge and competencies required to be successful in the 21st century
- providing students reliable access to the internet and to current and emerging technologies
- empowering teachers in their use of technology as teaching and learning tools
- empowering administrators with the information and tools needed to guide student learning
- providing parents with stronger connections to their child's learning through online tools for greater visibility and interactions with the School District

With the support of the Board of Education and the District Leadership Team, the expertise of the Information Technology Department staff ensure that the technology initiatives outlined in this plan are effectively implemented throughout the School District and that they meet the needs of students, staff and parents in an effective, timely and cost-efficient manner.

KEY CONTRIBUTING DOCUMENTS

- 2014-2015 Achievement Contract

- 2014-2015 Superintendent's Report on Student Achievement

- 2012-2013 Aboriginal Education Enhancement Agreement Annual Report

- 2013–2014 District / Community Literacy Plan

- SD #61 Policies and Regulations Relating to Technology

- BC Education Plan

- BC's Digital Literacy Framework

- BC's Digital Literacy Characteristics

- BC's Student Profiles for Technology Literate Students (draft)
    - Grades K-2
    - Grades 3-5
    - Grades 6-9
    - Grades 10-12