With November upon us, it is once again time for our Fall/Winter newsletter edition. We are excited to share with you stories from school divisions across Canada that continue to invest in both the effective use of technology to change the learning experience for their students and staff and the infrastructure necessary to support this direction.

School districts are working to build the capacity of all staff in terms of being able to “tuck” technology resources seamlessly into the learning experience to make it more engaging, relevant and authentic. As a result, districts are also shoring up their networks to ensure they are capable of meeting the demands being placed on them by students, teachers, principals and staff.

Join us as we highlight the work you and your peers are doing in these areas across Canada. As you read the articles, we are confident that you will connect with stories that support the work your district is either already doing or planning to do and that these examples provide additional innovative ideas that will help you move forward.

We invite you to sit back and catch up on all of our latest news and follow our Twitter handle @IBMK12Education (and mention or DM if you would like to comment on an article or ask us for more details). To join the conversation, use #IBMk12ed in your tweets! If you would prefer email, send your questions or comments to me, Anne Saftich, at asaftich@ca.ibm.com

In This Issue

- Highlights .........................................................pg. 2
- SchoolConnect ID Provisioning  ...................pg. 6
- Engaging the middle years student .............pg. 8
- Breaking down district barriers .................pg. 10
- Looking for a student portfolio web application? .....................................................pg. 12
- In 5 years the classroom will learn you ......pg. 13
- BC schools ready to embrace benefits of Next Generation Network ........................pg. 14
- IBM EX.I.T.E. camps for girls......................pg. 16
- IBM Canada K-12 Education partners with Learning Upgrade ..............................pg. 17
- Apple and IBM forge global partnership to transform enterprise mobility ..........pg. 18
- IBM in Canada: Putting progress into practice .................................................................pg. 19
British Columbia

SCCM successes for BC school districts

Southeast Kootenay School District 5 – Cranbrook, BC

Since the latest release of Microsoft’s SCCM 2012 (System Center Configuration Manager), and through BC ERAC (Educational Resource Acquisition Consortium) and the ongoing Microsoft provincial licensing agreement, school districts are beginning to leverage the capabilities and resources of SCCM.

Southeast Kootenay School District (SKSD) was one of the early adopters of SCCM 2012 and worked with the IBM K-12 technical team to implement Windows 7 image deployment, application management, Endpoint Protection antivirus, Windows updates, and inventory and reporting SCCM roles and feature sets.

Lead technician, Joanne Lees from SKSD presented their experience and early benefits with SCCM 2012 along with IBM K-12 technical team leader architect Chris King at the recent IT4K12 conference in Vancouver. Chris and the IBM team have also assisted with implementations in Delta, Abbotsford, Central Okanagan, Comox Valley and Sea to Sky school districts.

Chris King states, “Since the release and subsequent maturity of SCCM 2012, districts can realize a unified management infrastructure in key areas where previously a separate solution was required for each area.”

Chris further elaborates by saying, “Some features of SCCM represent a good starting point for school district IT teams to begin working with and understanding SCCM with minimum investment. As an example, being able to provide on-demand access to new or updated curriculum applications results in a highly positive outcome for the teaching and learning process as well as easing the administrative burden on IT departments.”

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Alberta / Saskatchewan / Manitoba

IBM K-12 education and technical consultants help define future needs and solutions

Alberta Education School Technology Branch – Edmonton, AB

The IBM K-12 Education consulting team is assisting the Alberta Education School Technology Branch with their Baseline Technology Assessment. A province-wide online survey was conducted, followed by interviews with each school authority to provide detailed information for use with the recently developed Learning & Technology Policy Framework. This provincial technology initiative will provide leadership and strategic direction for Alberta Education and school authorities in support of Alberta’s Inspiring Education vision.

Chinook School Division – Swift Current, SK

Chinook School Division has been working with the IBM technical team on a complete infrastructure overhaul. This project involves a rebuild of the network infrastructure, data centre, SAN and backup solution. IBM’s SchoolConnect network management solution will assist the IT team with user management and all users will be engaging with the new Scholantis MS SharePoint portal.

Good Spirit School Division (GSSD) – Yorkton, SK

GSSD is working with IBM on the design, development and implementation of their Scholantis MS SharePoint portal. This solution is both an internal portal and public-facing presence that went live in September 2014.

River East Transcona School Division (RETS) – Winnipeg, MB

RETS has been involved in an extensive device selection process for the past 12 months. During that time, IBM Education consultants have partnered with many stakeholders across the division to develop a Teaching and Learning Plan designed to support and drive effective use of technology at the point of instruction in support of division identified student outcomes.

For more information contact: Joanne Jackson, IBM K-12 Education Client Manager, at jjackson@ca.ibm.com.
Central/Eastern/Northern Ontario

Standardization and teamwork: rolling out 12000 devices over 9 weeks

Durham District School Board (DDSB) – Whitby, ON

For the past two summers, DDSB TIS staff has worked tremendously hard to refresh all the academic technology throughout this large district around specific, standardized models of technology for classrooms, labs, libraries and mobile devices. DDSB deployed 7000 general access devices in the summer of 2013 in just over 5 weeks, and 5000 more in just under 4 weeks in 2014. DDSB was assisted by Conpute, a very experienced regional solution provider that specializes in technical support, 3rd party warranty, and large rollouts of technology in school districts. The project included unboxing and imaging all devices, plus removal of older technology in preparation for return at the end of the lease with IBM Global Finance. Together, DDSB staff and Conpute achieved a significant milestone of over 12000 devices (desktop and laptops for students and 1:1 laptops for teachers) in an aggregated 9 week period. Congratulations to an excellent team and teamwork!

Creating the perfect image on a tight deadline

Simcoe Muskoka Catholic District School Board (SMCDSB) – Barrie, ON

April 2014 was Microsoft’s sunset date for support for Windows XP and for many organizations, moving off Windows XP posed a huge challenge. The SMCDSB IT department was already under pressure because of other critical projects so they teamed up with the IBM K-12 image experts for the creation of their Windows 7 image which included development of some unique App-V enabled software titles. From start to finish, the project took only 6 weeks and the IBM team, well supported by SMCDSB, delivered a fully tested Win 7 image to meet the challenging deadline.

Leveraging new tape and backup technologies

Peterborough Victoria Northumberland Clarington Catholic District School Board (PVNCCDSB) – Peterborough, ON

Data centre needs have changed greatly with the tremendous growth of technology in school districts. For PVNCCDSB, it was time to re-think the role of tape, to leverage current de-duplication technologies and design a system which could provide a more dynamic, multi-site, replicated backup environment. After a competitive RFP process, PVNCCDSB chose IBM’s ProtecTier technology which provides an affordable, multi-site virtual tape library (VTL) that accommodates all of the district’s existing needs, and paves the way to a more dynamic backup approach for virtual environments. Even better, PVNCCDSB was able to acquire an enhanced set of tools from the Tivoli family (including TSM for Virtual Environments), and still stay within their current budget. The district not only has increased redundancy and recovery options in the event of a failure/restore situation but now saves significant time and effort with backup and storage.

For more information contact: Tyler Sparks-Austin, IBM K-12 Education Client Manager, at tylers@ca.ibm.com.

continued on page 4
Greater Toronto
User account provisioning with Microsoft’s Forefront Identity Manager (FIM)

York Catholic District School Board (YCDSB) – Aurora, ON

YCDSB deployed IBM’s SchoolConnect network management solution many years ago to manage their Active Directory (AD) infrastructure in a simple and systematic way. With AD being the backbone of the infrastructure and point of integration for all applications and cloud services, YCDSB wanted to automate user account provisioning using Microsoft’s Forefront Identity Manager (FIM). YCDSB commissioned the IBM K-12 services team to implement FIM for AD Synchronization. This enabled YCDSB to automatically provision, update and delete student user IDs by extracting information from its student information system on a daily basis and updating AD accordingly. Once AD is updated, the SchoolConnect AD Sync tool then reads AD, updates SchoolConnect and moves user data as required.

This service eliminated the need to manually provision and update user accounts and resulted in significantly improved efficiencies for the IT Operations team.

Packaging experience required for 220 education applications

Peel District School Board (PDSB) – Mississauga, ON

PDSB started a major technology transformation two years ago and partnered with IBM K-12 Education to implement a new Enterprise Active Directory System and IBM’s SchoolConnect classroom management solution to support the 21st Century classroom and student. One year ago, PDSB implemented a key component of the new infrastructure – an application virtualization solution.

The IBM K-12 services team architected a new virtual application backend infrastructure based on Microsoft App-V and packaged over 220 applications. Part of the project involved providing the PDSB IT team with current skills in packaging including packaging theory, best practices, application repackaging, customizing packaged applications, testing and troubleshooting. Finally, IBM partnered with PDSB staff to deploy the solution in three schools and assisted in planning for the deployment in all schools.

The implementation of the application virtualization infrastructure provides the PDSB Technical Services team with greater ability and flexibility to respond to requests for deploying new software applications or deploying the latest upgrades within a shorter deployment window. Overall infrastructure security is improved due to the ability to respond faster with critical security updates to software applications. Curriculum and teachers are pleased because they receive the software tools required for new education initiatives within a shortened implementation cycle.

For more information contact: George Antoun, IBM K-12 Education Client Manager, at gantoun@ca.ibm.com.
**Southwestern Ontario**

**Are you ready for Learning Commons?**

The District School Board of Niagara (DSBN) – St. Catherines, ON

DSBN has been working to transform their libraries into Learning Commons as the hub of learning for every school. These hubs will be staffed and accessible all day and will be an inviting, common area where rich learning can be experienced, both face-to-face and virtually, through collaborative co-planning, co-learning and co-teaching opportunities. The Learning Commons will facilitate learning with quality resources available in multiple formats, including print and digital, that are engaging, mobile and easily accessible.

In this effort, DSBN has partnered with IBM’s K-12 Teaching and Learning Consulting team to conduct an analysis of where their schools are in their transition to a Learning Commons. They began by working with IBM to co-construct the Vision and Indicators of Success for their Learning Commons. IBM then developed a comprehensive survey, to be taken by all library staff as well as Principals and Vice Principals to build a gap analysis for this transition. This gap analysis will provide recommendations that will move all schools along the Learning Commons continuum, including the percentage of schools that have a ‘traditional’ library; those that have begun to implement a Learning Commons; and those that have a fully functioning Learning Commons as evidenced by both the cultural and instructional practices and the physical makeup.

*For more information contact: Frank Grano, IBM K-12 Education Client Manager, at fgrano@ca.ibm.com.*

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**London/Windsor**

**IT optimization plan: moving from Novell to MS Active Directory and more**

Lambton Kent District School Board (LKDSB) – Chatham, ON

LKDSB has embarked on phase 1 of their ambitious multi-phased IT strategic plan designed to provide their students and teachers a better classroom experience when using technology for engagement and learning. This initial phase includes a move from the Novell platform to Microsoft Active Directory, a redesign of their image management process using Microsoft SCCM, migration to Windows 7, centralized file and print services, SchoolConnect network management software deployment to the pilot schools plus a training needs analysis for the IT department. Chris Marvell, IT Manager for LKDSB, commented on the project. “We are very pleased to partner with IBM K-12 on this important initiative to update our infrastructure. The IBM K-12 team has the depth and breadth of technical expertise in the education sector to enable us to succeed.”

*For more information contact: Julie Parkyn, IBM K-12 Education Client Manager, at jparkyn@ca.ibm.com.*
One of the distinguishing characteristics of companies that are moving toward a more strategic approach to IT is the use of automation. And nowhere is automation more necessary than in school districts that manage thousands of teacher and student IDs.

With today’s time constraints in education, users expect access to systems and resources within 24 hours. IT managers are questioning having skilled technicians setting up and linking ids or trying to figure out other ID problems such as duplicate ids, typing mistakes, or students and teachers in the wrong schools.

To respond to these needs, IBM K-12’s lead developer of SchoolConnect, John Jennings, has created an ID Provisioning solution that automatically links IDs in the SIS or HR systems to every other system that requires IDs. In short, he has automated the ID process with a timely, cost effective two week service engagement.

Abbotsford School District, located in BC’s Fraser Valley with 46 schools and over 19,000 students, deployed IBM K-12’s ID Provisioning solution earlier this year. Shelley Wilcox, Director of Information Technology at Abbotsford, wanted to have fully integrated systems so that anyone new to the district would automatically get access to all communication systems and networks.

Several times a day extracts are done from the HR and SIS systems. For teachers, the ID automation solution checks user IDs and creates network and email accounts. On premises Exchange accounts are created for staff to meet privacy requirements, and ID provisioning processes add the appropriate groups to enable required access to SharePoint and other services.

On the student side, it shows what school they attend and moves all their credentials and data automatically when needed. For cloud access, Abbotsford has deployed Microsoft Office 365 which is a two part process. An account is created for each student, but it cannot be activated because of privacy and permission forms. The parent permission form is scanned and the scanned copy goes into SharePoint. A message is then sent back to Active Directory that allows the synchronization to turn on the O365 account for the student.

Huge reduction in IT workload

For Wilcox and the district, the benefits are numerous. “From the IT perspective, this solution has reduced my department’s workload by 40 hours a week. Before, everything was done manually. Now the program can be run whenever. This has massively reduced the IT workload.

What’s new in SchoolConnect 6.2

New operating system support
- Server 2012 R2, Windows 8.1 Update, iOS 7.x and Android 4.4

New features
- User ID and Group provisioning from source systems (SIS / HR)
- WebDav Drive Mapping for home drives
- BYOD Landing Page Extensions and Enhancements
- Password Self Service Portal’s new ID unlock, email confirmation & encryption
- ID Federation and Synchronization management enhancements for Google & Azure Active Directory
- Modify user type when moving ID (i.e. Teacher to VP)
- Group names in Active Directory show with the school code now (For integration with firewall and better NTFS permission specificity)
- Enhanced search for users / workstations within SC Interface
- User grouping by grade
- Modern Interface control via XML files versus custom applications
- Security enhancements

LanSchool 7.8
- Chrome Browser & Chromebook Enhancements
- Security enhancements

WebDAV Protocol from Apple Pages Application

Source: iPad Creative - http://www.ipadcreative.com/blog/tag/pages
From the district perspective, we have significantly increased user satisfaction because the users get the access they need – it is seamless. There is no longer constant intervention by IT staff and we have a much better user experience which is one of our strategic goals.”

Key to Wilcox was the ability to work with an individual who understands systems and also responds very quickly. “John was extremely responsive, very experienced, personable, and easy to deal with. As issues came up that were specific to Abbotsford, he was able to design a solution that worked with our system. He met with Finance and HR to understand how our group structure operated. School districts tend to have more generalists who do not have the same level of granular understanding of how systems work. John could customize to our needs and once up and running – ID management is now seamless and everything runs smoothly in the background.”

Another benefit to the IT department was John’s expertise with SchoolConnect. Being the lead developer, he was able to design a tool to work with SchoolConnect and Active Directory to assign privileges and rights according to groups for a variety of systems and services (e.g. printing).

Because IBM K-12’s ID Provisioning solution takes on average two weeks to implement, it can help districts avoid expensive licenses and other Active Directory integration solutions that may take considerable time and expertise to implement.

From John’s point of view, he’s delighted to be working closely with our customers and helping them increase the strategic use of technology. He’s excited about the ID provisioning solution and says “It’s pretty cool. Now if the information is correct in the HR and SIS systems, it is correct in AD and all the other systems”.

In the fall Abbotsford is implementing BC’s new Student Information System and will continue to automate. They can adapt quickly on the fly for changes to infrastructure because they have solid development in an interoperable environment.

Wilcox summarizes with “ID provisioning is key. It’s making sure that we improve the quality of the user experience. We are always introducing new systems and now this solution reduces ongoing maintenance. My people need to be out in the schools interacting with the teachers. Now the systems are doing the work for us.”

For more information contact: John Jennings, IBM K-12 SchoolConnect Lead Developer, at jjenning@ca.ibm.com.
Engaging the middle years student

Digital learning through 1:1 mobile technology

The strategic plan for the St. James-Assiniboia School Division (SJASD) in Winnipeg states: Students are active learners able to demonstrate a high level of academic, intellectual and social engagement in order to be successful in an ever-changing world. With the strong belief that technology can play an integral role in realizing this goal, the division embarked upon an exciting Digital Learning Initiative (DLI). The goal of the DLI is:

St. James-Assiniboia School Division’s Digital Learning Initiative will provide mobile learning platforms for students and immerse both teachers and students in digital learning environments to improve student learning and facilitate the 5Cs (communication, collaboration, creativity, critical thinking and global citizenship) in all classrooms across the division.

The DLI focus areas were defined as:

- Middle Years: 1:1 iPad Minis for all students in grades 6-8
- Senior Years: Comprehensive Bring Your Own Device (BYOD) initiative
- Early Years: iPad pods in every classroom.

Student Engagement Needed in Grades 6, 7 and 8

This article focuses on the Middle Years 1:1 initiative. So, why Middle Years? The Canadian Education Association’s (CEA) most recent findings from their “What Did You Do In School Today” survey identifies a serious trend regarding the loss of enthusiasm for school as students move through the system, grade level by grade level. From a high of 95% in Kindergarten, student interest in school continues on a yearly downward spiral until grade 9 where engagement bottoms out at 37%. This troubling statistic illuminates the need to improve student enthusiasm and engagement. As indicated by this chart, Grades 6, 7 and 8 are the three years that precede the lowest point in student enthusiasm. The 1:1 iPad initiative targets these three grades.

SJASD selected the iPad mini as the device for Middle Years students and set about to carefully choose a standardized offering of software resources and applications to promote the use of the 5 Cs and other Indicators of Success.

3 Ideas Critical to Success

SJASD recognized that the implementation process would require rich opportunities for reflections, learning and assessment. SJASD also realized the need to provide strong evidence that technology has a positive impact on student achievement in order...
to support ongoing budget commitments. And finally, they saw the need for a partner to collect data and objectively analyze it to identify whether (or not) the initiative was achieving the goals of the strategic plan.

As a result, SJASD requested guidance in shaping the components of the DLI and the important associated assessments. IBM Canada K-12 Education Division was awarded the RFP and immediately began to work with Ron Weston (Chief Superintendent), Tanis Pshebniski (Assistant Superintendent of Program and Curriculum), and Rob Carnegie (Director of Information Technology) on a three year assessment plan for the Middle Years 1:1 initiative, as well as guidance and assessment of both the Senior Years BYOD and the Early Years initiative.

The first order of business was to co-create success criteria. For each success criterion, measurements were identified to be used as main or supporting data sources and included:

- Surveys for student, staff, administrator and parents
- Focus groups with students, staff, administrators and divisional support staff
- Specific report card data including achievement, learning behaviour, and attendance
- CEA’s Tell Them from Me survey data

As these instruments were developed and executed throughout the school year, key challenges and opportunities were identified. As IBM continued to analyze data, they made recommendations which were immediately addressed through changes in implementation and professional development (PD) to increase the success of the initiative.

**Exciting, Informative and Engaging**

It has been an exciting, informative and engaging journey for all participants. Teachers received their iPads in the spring of 2013 along with rich PD. Students received their iPad Mini’s in the fall and were given 24/7 access to the iPad and the digital resources. Students and teachers had the freedom to install applications of their choosing in addition to the ones the division provided.

So what have we learned? 95% of the focus group participants resoundingly supported continuation of the 1:1 iPad project. Survey data from 1600 middle year students, 200 staff and 600 parents showed that over 80% of respondents indicated their support of the DLI.

- Students reported the “Best Thing” about the program was the anytime, anywhere access to information and resources to support their learning and the increased options they now had to demonstrate their knowledge through using blogs, videos, presentations, storyboards, etc.
- Teachers reported a positive impact on their teaching practices, increased collaboration both in and outside of the classroom and their students were now spontaneously driving their own learning.
- Principals were excited to see teachers reflecting on the impact of these technology based resources on learning and their role in that process.

**Challenging Too**

Success did not come without some “bumps” along the way. The IBM team, from their extensive experience, provided insights into addressing these challenges which is helping to refine the initiative for the 2014-2015 school year.

- Students, staff and parents reported the challenges that students were having managing the distractions that can come from having unfettered access to games and social media. One suggestion from many staff and students was to eliminate access to games and social media during school hours.
- Teachers, principals, parents and divisional staff reported concerns related to damage that mostly occurred when the iPads were either at home or being transported to and from home. The costs related to this damage posed a threat to the ongoing sustainability of the program. In the coming school year, the iPads will no longer be available to take home. Students will use their devices throughout the school day and thought is being given to ensuring after-hours access at the school to support student learning. Digital resources that have been selected are mostly cloud based and run across platforms so students will continue to access these resources from the devices they have at home. The assessment plan for year 2 will need to monitor the impact of this change in terms of all of the success criteria.

Given the early stage of implementation, significant achievement gains would not be expected as both teachers and students have just begun this transformative journey. Achievement data will be monitored and based on change theory, that impact will be seen a little further down this road!

*For more information contact: Leta Potter, IBM K-12 Education Consultant, at lpotter@ca.ibm.com.*
**Breaking down district barriers**

**Forging a strong relationship between IT and program**

Many school districts in Canada struggle with getting value from their technology investment, and directly relating this investment to 21st learning requirements and existing curriculum initiatives.

In a nutshell, the problems are:

- **High turnover of district leadership which leads to frequent changes in priorities and strategies**
- **Schools treated as autonomous entities rather than part of the whole, often as a result of amalgamations or legacy IT decision making at the principal level**
- **Technology used to engage students but not linking the engagement to key district goals**
- **IT departments trying to react to perceived system needs but are in fact planning in isolation**
- **Program does not view IT as a primary partner to move teaching and learning into the 21st century**
- **Too many technical problems exacerbated by “never enough” support**
- **IT creates its own budget rather than having one which is aligned to organizational requirements**

Jody DiRocco, Director of Education at Algonquin and Lakeshore Catholic District School Board (ALCDSB) would say that the above description is very typical of mid-size, geographically dispersed school districts. His own district mirrors this description with 41 schools, 12,800 students and includes urban sites such as Napanee, Kingston, Belleville, Quinte West and their rural surroundings.

**First things first – fix the infrastructure – the Director challenges IBM**

The first order of business was to create an infrastructure that met district needs and was supportable. In 2010, ALCDSB had completed an IT Optimization and Organizational Assessment with IBM K-12 but due to changes in leadership, the resulting recommendations were put on hold.

In May, 2013, the Director issued IBM the following challenge. “Take a group of 6 schools, make the infrastructure stable, easily supportable and working to the satisfaction of the principals and teachers and re-establish trust with IT.” This is exactly the type of challenge that we love!

**Simplify and standardize**

The two guiding principles, simplify and standardize, agreed upon up front by ALCDSB IT and IBM, resulted in maximizing end user satisfaction and minimizing support. Simplifying and standardizing led to significant new opportunities to automate low level, time consuming activities such as password resets. These principles also resulted in reliable endpoint management and remediation which further enhanced support to the schools.

Working hand-in-hand, Nathan McCready, ALCDSB’s IT manager, and IBM K-12 technical consultants accomplished the following during a very busy 3 month period:

- Redesigned a centralized Active Directory with defined roles and processes
- Simplified and standardized user management with IBM’s SchoolConnect network management middleware
- Remediated the existing network design with extensive wired equipment configuration work to increase reliability and consistency
- Enhanced the robustness and reliability of the wireless networks supporting greater mobility for teachers and students as well as building for future BYOD capabilities

**School principals voice their frustration**

In the fall of 2012, the Director held discussions with some dissatisfied and vocal school principals. They had just experienced several key outages that showed the creaky nature of an aging infrastructure. Upon further investigation, the Director also discovered a defensive and isolated IT department that had been trying to respond to perceived district needs. Buffeted by constant changing leadership and underfunding, the department felt that they were asked to make decisions in a vacuum which resulted in them having to say “no” to many requests from their users.

IT was desperately trying to support the schools but due to historical amalgamation, the infrastructure was not standardized and infrastructure decisions were not centralized, resulting in many technical problems. The technicians spent their time putting out fires rather than working toward a systemic technology strategy.
• Centralized services for user files, backups and home drives which increased usability while lowering the risk and support associated with their previously distributed environments at the schools

• Unlocked value and optimized enterprise support tools (Microsoft SCCM and App-V) which had not been fully deployed in a sustainable fashion

This process created a standardized, supportable environment which leverages the enhanced capacity and skills of the IT staff.

Learning through listening to the system

Although IBM was able to help ALCDSB update and stabilize their infrastructure, which resulted in more effective and efficient use of IT resources, the IBM client executive, Tyler Sparks-Austin, knew that this was only the first important step to maximizing the use of technology for learning. He started discussions with Jody DiRocco on some tough questions around district vision, goals, leadership, accountability, new technologies, BYOD, sustainability and many others.

The Director believed that technology had to be integral to learning in the 21st century. In fact, just by looking at the students, it is obvious that technology is a key engagement tool for students today and clearly an inescapable fact of life. The challenge is how to make it an inescapable support for learning. He engaged the IBM Education Consulting team to help him, in his words, “Let the system tell itself what it needs.”

The leadership team met with IBM to re-affirm district priorities, discuss best practices in educational technology and build a high level plan for key framework areas. The engagement objective was to translate the district’s vision and mission into how resources, including educational technology’s capabilities, are deployed to generate maximum value for students and educators.

The “tucked into” principle is born

After an intensive 4 day session with senior leaders, elementary and secondary focus groups and meetings with Program and IT, the indicators of success and strategic direction became clear. One of the main challenges that also became evident was that the IT department’s efforts were not aligned with Program and that educational technology was considered supplemental to the curriculum rather than a fundamental resource. This led to the senior leaders creating the principles for the “tucked into” use of technology throughout ALCDSB.

Guiding principles for the “tucked into” use of technology

• Aligns with the district key educational priorities – MYSP & BIPSA
• Implemented within existing budget & sustainable
• Requires robust, reliable & stable network infrastructure
• Reflects point of instruction accessibility
• Recognizes mobile access & subject specific requirements
• Focus is narrow – Do Less & Do it Right
• Maximum & efficient resource allocation
• Standardization (Hardware, Software)
• Centralization (Resources, Budget)
• Includes comprehensive PD plan
• Creates opportunities for innovation

From these principles, a new vision and role for IT emerged with a focus on student learning which created a strong link with Program. And through close alignment of decision makers and key departments, decision-making is more focused and is happening faster. ALCDSB’s Technology Embedded Learning Plan has provided guiding principles and an educational technology roadmap to help ensure that their technology decisions are aligned with their education priorities in order to improve student achievement and build teacher capacity.

Director DiRocco concludes with, “As we begin to implement our Technology Embedded Learning Plan, Erin Walker, Assistant to the Director, has assumed a lead role, coordinating the work required to strengthen the relationship between Program and IT staff. Through Erin’s leadership, a new structure is developing in the Board that is connecting the work of Special Assignment Teachers, Principals and IT staff. We view the strength of this relationship as critical if we are going to successfully embrace the opportunities that technology can bring to our efforts to reshape learning and teaching, ensuring that our classrooms are compelling, innovative and engaging places to learn.”

For more information contact: Tyler Sparks-Austin, IBM K-12 Education Client Manager, at tylers@ca.ibm.com.
Scholantis has been in partnership with IBM K-12 for the last 3 years and together we have helped school districts across Canada get the best out of their SharePoint investment by delivering public websites as well as internal collaboration tools.

One of the advantages we bring to our customers is a continuous development and share model – we work with school districts to identify functionality requirements, develop the tools, and then share those tools with our community of users across Canada.

One example is Student Portfolio which is now available to all our clients using the Portal edition. With a blog template as its root, the Student Portfolio can display documents, photos, videos and links to external resources. Parents, teachers and family members can log on, browse the student’s work and leave comments. Teachers can also manage content and permissions as needed.

Campbell River School District on beautiful Vancouver Island wanted a place for students to display their work and share it in a secure, collaborative environment. SharePoint, of course, provided the platform on which to quickly develop the environment needed to achieve this.

Campbell River teachers are also posting rubrics onto student portfolios and encouraging parents to log on and comment. In doing so, parents in the school district are becoming much more engaged in the teaching process. There’s more development work to be done, but the project is officially a success with more and more schools activating Student Portfolio and working to integrate it into their teaching practice.

Another application of the continuous development and share model is the recently added functionality that help districts become compliant with new spam legislation (CASL) by adding safeguards to make sure that subscriber lists are compliant with a double-opt-in.

Because Scholantis and IBM K-12 Education are solely focused on the K-12 education sector, we have a unique understanding of sector needs and the best approaches to project management and delivery. We are consistently able to deliver on time and on budget, giving schools a solution that is continually being improved to meet the needs of educators and those working to support them. And by using SharePoint - a proven tool with Enterprise roots – we can offer reliable and adaptable tools to support changing customer needs.

For more information contact: Linda Tranter, IBM K-12 Education Project Manager, at ltranter@ca.ibm.com.
Launched in 2006, IBM’s 5 in 5 has become a hallmark event as the calendar flips from one year to the next. Each December, IBM unveils the 5 in 5 -- five predictions about how technology innovations will change the way we work, live, learn and play within the next five years. The 5 in 5 is based on market and societal trends, and the ideas that come from the thousands of biologists, engineers, mathematicians and medical physicians in our Research labs around the world.

This year, IBM researchers are exploring the idea that everything will learn – driven by a new era of cognitive systems where machines will learn, reason and engage with us in a more natural and personalized way. These innovations are beginning to emerge enabled by cloud computing, big data analytics and learning technologies all coming together.

Cognitive systems will provide decision support for teachers

Since the days of the one room schoolhouse, K-12 classrooms have been focused on a one-to-many interaction between a teacher and a group of students. Providing individual attention for 30 or more is nearly impossible. But IBM and its education partners think the classroom of the future will shift from a one-size-fits-all model to a truly personalized environment. The rapid digitization of the education industry and the emergence of cognitive systems that can learn, reason and understand natural language, is already happening in parallel. Over the next 5 years, the two concepts will link, and personalized classrooms will motivate and engage learners at all levels.

The rise of the smart classroom

Publishers are making content more engaging and adaptive for classroom use, while mobile devices make it possible to learn anytime and anywhere. All of this digital education creates a tremendous amount of data about all aspects of teaching and learning. And it’s not only test scores, but also information about student behavior on digital learning platforms, attendance, and more.

IBM envisions educational institutions adopting cloud based cognitive systems to collect and analyze all of this data over a long period of time — creating longitudinal student records that would give teachers the information they need to provide personalized learning experiences for their students. These systems would also help teachers identify which students are struggling and why, as well as provide insight into the interventions needed to overcome those challenges.

The system could also couple a student’s goals and interests with data on their learning styles so that teachers can determine what type of content to give the student, and the best way to present it. Imagine an eighth grader who dreams of working in finance but struggles with quadratic and linear equations. The teacher would use this cognitive system to find out the student’s learning style and develop a plan that addresses their knowledge gaps.

In addition to the personalized curriculum, content would be interactive with deep question and answering capability. Depending on how the student is motivated, gamification elements could be incorporated so that the student has a deep understanding of the concepts they are being taught, and have fun doing it. If the student wants to work in finance, the teacher could seek input from partnering financial services companies to ensure the student is developing skills that would be relevant in the workforce.

Testing the theory

IBM is working with clients in K-12 to use big data analytics and cognitive technologies for population analysis of longitudinal student records. By identifying similarities in how students learn and predicting performance and learning needs, specific content and teaching techniques can be aligned to each student to ensure the best learning experience.

For more information contact: Anne Saftich, Chief Education Officer, at asaftich@ca.ibm.com
One question that is top of mind for school district executives and IT directors in Canada is, “How can we enable teachers, students, and staff to use technology and mobile devices to improve educational outcomes?”

Currently, schools in many jurisdictions in Canada are missing out on some of the educational benefits of the digital age because existing provincial and independent networks have outgrown their utility. They’ve become too slow and unreliable at times for effective use of teaching, learning, and administrative applications that are now critical to schools and school district offices.

School districts in BC are preparing for the Next Generation Network (NGN), which will replace the existing Provincial Learning Network (PLNet). PLNet has been in use for 23 years and has become bandwidth-constrained. It was not built to meet the demands of teachers and students streaming content from modern applications like Google, YouTube, social media, and interactive digital resources. Nor was it built to handle the bandwidth demands caused by the recent proliferation of mobile devices.

**Building on success even before NGN**

Network access, reliability, security, and operational efficiency are major challenges for schools that use aged network environments. This is why so many district executives and IT directors are looking forward to the results from the pilot programs in BC, which are establishing the benefits of NGN for the schools. “NGN has the potential to assist in transforming educational environments in BC,” says Shelley Wilcox, Director of Technology Services at Abbotsford School District, which is participating in the pilot. “It will enable new modes of learning by bringing faster and more responsive Internet and resources into the classroom.” Still, limited bandwidth, and the ability to secure data, applications, and users may stand in the way of realizing the potential benefits of any new network, including NGN.

One of the key objectives of the education sector in BC is to ensure that the Ministry and all school districts have the underlying technology, connectivity, and services to support the efficient and effective delivery of personalized learning embodied in the provincial K-12 BC EdPlan. The good news is that the province is building upon the success of several districts that have increased bandwidth, improved security, and reduced operational complexity by using Palo Alto Networks enterprise security platform with PLNet.

“We implemented Palo Alto Networks next-generation firewalls with the existing network and realized immediate benefits across many of our schools,” says Jon Rever, Director of Instruction and Technology, Central Okanagan School District. “The implementation of cutting-edge network technologies provided through Palo Alto Networks hardware and software removes...
traditional network access barriers for teachers and students. This creates opportunities to leverage mobile technologies that enhance teaching and deepen learning. Our team is currently participating in proof of concepts that will connect the firewalls to the NGN. We’re looking forward to seeing how much further they will help when line speeds improve with NGN.”

**Giving educators priority**

Over the last three years, IBM Canada’s K-12 Consulting team and X-10 Networks, have implemented the Palo Alto Networks enterprise security platform in more than 100 schools in nine districts in BC. Next-generation firewalls from Palo Alto Networks identify the specific online activities of individuals. They act as bandwidth traffic cops, prioritizing access by user and/or group according to school policies, which frees up bandwidth. For example, lower priority is given to online access for students doing general surfing in favor of mission-critical activities such as principals and educators using Student Information Systems, or teachers using online educational tools and resources for classroom learning. Because the network is more reliable and manageable, it facilitates and improves the learning experience. As a result, the BC school districts using Palo Alto Networks next-generation firewall in advance of NGN going live, are better prepared to reap its benefits.

**Increasing network security**

The increase and mounting sophistication of online threats is also a big concern for schools because some students download movies, music, and content that could harbour malware and expose their networks to attacks. The IBM-Palo Alto Networks collaboration addresses these issues by enabling school IT staff to see and proactively block modern malware and viruses from entering the network. Using this visibility, schools can be proactive, instead of reactive, when combating threats. It also reduces the time, effort, and resources that school districts have to spend on security.

The IBM Canada K-12 Consulting and X-10 Networks teams’ implementation of Palo Alto Networks also helps schools secure the printing of confidential documents using public IP addresses on school printers, scanners, and other devices. This will assist schools to more easily comply with rules for protecting information when they migrate to the NGN.

**Simplifying IT management results in savings**

While solving one of the most pressing current problems – network reliability and bandwidth availability – IBM Canada’s K-12 Consulting team and Palo Alto Networks are also reducing the number of devices that IT staff have to manage and maintain, centralizing IT management and preparing school networks for the NGN. In some cases, school districts that currently have up to 100 authentication servers will only need two or three, which they can centrally locate and manage in a datacenter. Panorama from Palo Alto Networks centrally manages all of a school district’s devices. With just a click of the mouse, Panorama updates all content and application access policies across all devices, saving time and money, and standardizing usage policies for every school.

GlobalProtect™ from Palo Alto Networks solves the concern about students using mobile devices to work remotely. It seamlessly extends the same content and application access policies available inside school walls to activities on iPads, laptops, or other devices – regardless of their location – just as if they were on school grounds.

**Supporting the classroom**

With Palo Alto Networks as its cornerstone, IBM Canada K-12 and X-10 Networks are successfully introducing a standard set of appliances for every school that will improve teacher, student, and overall classroom experiences across British Columbia, and prepare schools to take optimal advantage of the NGN.

All of this advance work means that when NGN is ready and goes live over the next three years, connecting and switching from PLNet to NGN should be much simpler. For school district teams concerned that their district may not be prepared to realize the benefits that NGN envisions, IBM Canada K-12, X-10 Networks, and Palo Alto Networks are working closely with each district to assist them in preparing for a smooth transition from PLNet to NGN.

For more information contact: Steve Cuccione, IBM K-12 Education Client Manager, at scuccione@ca.ibm.com.
For female students to consider a STEM career, they need personal encouragement and mentoring. Witnessing professional women being successful in these male dominated careers inspires the students to see themselves in these roles. Inspiring young girls to set goals and pursue careers involving science, technology, and math, is another highlight of IBM’s focus on education.

For more information contact: Eliza Popescu, IBM K-12 Marketing Support Specialist, at elizapop@ca.ibm.com.

IBM EX.I.T.E. camps for girls

EXploring Interests in Technology and Engineering

Exciting girls about science and technology is increasingly important as women are considerably under-represented globally in technology careers. Recent statistics show that in the United States, women make up about 50% of all workers, but less than a quarter of workers in STEM careers. In Canada, only 25 percent of undergraduate students in mathematics, computer and information sciences are female, with even fewer, only 17%, working toward a degree in engineering. That number decreases further after graduation: women account for only 9% of registered professional engineers.

To encourage middle school age girls to take their place among future innovators by helping them develop and keep an interest in science, technology, engineering, and math (STEM), IBM has conducted EX.I.T.E. camps since 1999. This hands-on program is designed to inspire interest in pursuing a career in technology; hopefully one day with IBM.

On May 3rd and 4th, IBM volunteers from the Greater Toronto Area led by Rukhsana Syed, engaged in the 3rd annual Niagara EX.I.T.E. Camp in partnership with the District School Board of Niagara. During the two day camp, the girls learned about science and the world of information technology via presentations and unique workshops developed by IBM. The girls worked on special hands-on projects in small groups, such as computer programming and robotics, and had the opportunity to meet members of Team DAVE from the University of Waterloo Robotics Program.

Julia Janzen, a grade 7 French Immersion student and a CNIB client, was delighted to be able to create a water alarm system using the Snap Circuits Kit. With the help of her peers and the IBMers who made the kit accessible for her, Julia was able to work on fascinating new projects.

For female students to consider a STEM career, they need personal encouragement and mentoring. Witnessing professional women being successful in these male dominated careers inspires the students to see themselves in these roles. Inspiring young girls to set goals and pursue careers involving science, technology, and math, is another highlight of IBM’s focus on education.

For more information contact: Eliza Popescu, IBM K-12 Marketing Support Specialist, at elizapop@ca.ibm.com.
IBM Canada K-12 Education partners with Learning Upgrade to give away 1,000 complimentary student licenses

IBM Canada K-12 Education is offering 1,000 complimentary student licenses to Canadian schools nationwide. Administrators and teachers can enroll each licensed student into any of Learning Upgrade’s courses. Through engaging songs, video, and games, the interactive lessons help struggling students catch up on previous years’ content and master current grade level standards.

“Going back to school can be a stressful time for students, teachers and even parents,” says Vinod Lobo, the founder of Learning Upgrade. “We are partnering with IBM to make sure every student in Canada is equipped for success, and we feel that offering complimentary access to our full curriculum is a step in the right direction.”

The Learning Upgrade program consists of online math and literacy courses for students to complete at school and at home. These highly interesting, interactive courses feature songs, video, and games to motivate students and increase learning. Teachers track student progress to mastery, which is a gold certificate, through web-based reports and a graphical student monitor.

The courses have been successful moving students achieving at levels far below expectations, including special needs and English language learners, to proficiency in reading and math within one school year. A recent literacy implementation of Learning Upgrade with 71 students in the Brant Haldimand Norfolk Catholic District School Board showed significant progress in one school year in reading. Every student in the program made gains from their pre-test to their post-test score. The difference between pre-test and post-test showed an average increase of 26.1%.

Educators from Canadian schools who would like to take advantage of this offer should visit http://blog.learningupgrade.com/canada/, click Free Trial and then click Sign Up for a school trial. Qualifying schools will receive a 20-student license for the 2014-15 school year at no cost.

For more information contact: Leta Potter, IBM Education Consultant, at lpotter@ca.ibm.com.
Mobile devices have transformed our personal lives. And they are starting to transform organizations in both the private and public sector. IBM and Apple are joining forces to bring organizations the devices, services, security, and integration they need to realize the full potential of mobile devices.

By combining the analytics and enterprise-scale support and services of IBM with the elegant user experience of iPhone and iPad, this partnership will deliver a new level of value for businesses and education.

Right now, engineers, designers, and developers from both organizations are working on more than 100 end-to-end mobile solutions, including a new category of mobile apps, which are designed from the ground up with an enterprise-view. Each will address a specific industry need and is being designed to include cloud software services for analytics, data security, and device management native to Apple’s iOS.

The landmark partnership aims to redefine the way organizations operate, address key industry mobility challenges and spark true mobile-led changes – grounded in four core capabilities:

- a new class of industry-specific enterprise solutions including native apps, developed exclusively for iPhone and iPad;
- unique IBM cloud services optimized for iOS, including device management, security, analytics and mobile integration;
- new AppleCare® service and support offering tailored to the needs of the enterprise;
- and new packaged offerings from IBM for device activation, rollouts and management.

The new offerings from IBM, which will be known as MobileFirst for iOS, will be built using an exclusive collaboration that draws on the distinct strengths of each company: IBM’s big data and analytics capabilities, with the power of more than 100,000 IBM industry and domain consultants and software developers behind it, fused with Apple’s legendary consumer experience, hardware and software integration and developer platform. The combination will create apps that can transform specific aspects of how organizations and employees work using iPhone and iPad, allowing organizations to achieve new levels of efficiency and effectiveness - faster and easier than ever before.

“iPhone and iPad are the best mobile devices in the world and have transformed the way people work with over 98 percent of the Fortune 500 and over 92 percent of the Global 500 using iOS devices in their business today,” said Tim Cook, Apple’s CEO. “For the first time ever we’re putting IBM’s renowned big data analytics at iOS users’ fingertips, which opens up a large market opportunity for Apple. This is a radical step for enterprise and something that only Apple and IBM can deliver.”

“Mobility - combined with the phenomena of data and cloud - is transforming organizations and our industry in historic ways, allowing people to re-imagine work, industries and professions,” said Ginni Rometty, IBM Chairman, President and CEO. “This alliance with Apple will build on our momentum in bringing these innovations to our clients globally, and leverages IBM’s leadership in analytics, cloud, software and services. We are delighted to be teaming with Apple, whose innovations have transformed our lives in ways we take for granted, but can’t imagine living without. Our alliance will bring the same kind of transformation to the way people work, industries operate and organizations perform.”

For more information contact: Anne Saftich, Chief Education Officer, at asaftich@ca.ibm.com or Peter McKay, Manager, K-12 Education Services and Solutions, at pmckay@ca.ibm.com.
IBM in Canada: Putting progress into practice

For over a century, IBM has led the way with business and technology innovation. We are part of the fabric of everyday life. We are focused on building a smarter planet. We stand for progress.

IBM in Canada has played an important role in the corporation’s history. We were one of IBM’s first foreign subsidiaries and the first to use the name International Business Machines and the initials IBM.

Today, we make significant contributions to our nation’s economy as one of the country’s largest research and development investors and IT exporters. We attract, develop and retain highly-skilled Canadians, engaging them in meaningful work that impacts not just Canada, but the world. And we make significant investments in new offerings for the Canadian market, such as the more than $165 million we invested in datacentre expansion in 2012.

Investing in applied innovation

Did you know that Canada is home to the largest team of IBM software professionals outside of the U.S.? The IBM Canada Lab is also the largest software development organization in Canada with locations in Toronto, London, Ottawa, Fredericton, Saint John, Vancouver and Victoria. The team is responsible for delivering software solutions that are used worldwide. Canada is also the worldwide hub for IBM business analytics and optimization, with the majority of leadership and development for analytics software taking place in Ottawa.

Nestled in the hills of Bromont, Quebec, is another hub of global innovation: IBM’s largest semiconductor packaging and test facility in the world. Bromont is where highly-skilled IBMers transform the world’s most advanced semiconductors into state-of-the-art microelectronic components, including IBM’s POWER 7, the chip behind Jeopardy-champ Watson.

IBM in Canada at a glance*

$492M+ in R&D spending
$1.5B in exports
$3.5M+ in charitable giving
(corporate and employee giving, including cash, technology and gifts of service)
100K+ hours of employee volunteerism

*All statistics are for the year ending Dec. 31, 2013 and dollar figures are CDN

A model corporate citizen

While our products and services have driven progress over a century, so has our commitment to make a difference on a social level. We support the communities in which we work and live through activities such as corporate grant programs, volunteerism, education initiatives and our annual employees’ charitable fund campaign.

Our commitment to diversity and inclusion, which internally ensures an understanding, respectful and accommodating workplace, also extends into the community.

And from an environmental perspective, we strive to minimize the potential impact of our own operations, while applying our capabilities to help our clients and partners do the same.

As a company, IBM’s actions are driven by three core values: Dedication to every client’s success; Innovation that matters, for our company and for the world; and, Trust and personal responsibility in all relationships. These values, which were determined by IBM employees globally, shape everything we do as we strive to make Canada and the world work better.
# IBM Canada K-12 Education

## Your team for educational solutions

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If you have suggestions or comments about this newsletter, please send an email to Anne Saftich, IBM K-12 Chief Educational Officer, at asaftich@ca.ibm.com.

We look forward to hearing from you!

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