



TECHNOLOGY SERVICES MONITORING REPORT

Presented to the Board of Trustees by Kandace Jordan, Associate Superintendent of
Schools

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REPORTING PERIOD: November 30, 2012

OVERVIEW:

The Board's investment in technology to support learning is notable and has been greatly appreciated by teachers and students. To meet the demands of technology, additional staff have been added to the team.

Technology in the Classroom

We continue to add technology to our classrooms at a very brisk pace. Our teachers and students are now used to have interactive whiteboards in each room. They are becoming accustomed to using mobile devices (netbooks, cell phones) and all kinds of technology in virtually every class. Assistive Technology continues to grow far beyond just those students who have a specific need to all students, as we discover this makes a difference for everyone, not just a select few. Our inventory has grown from approximately 1,500 computers in the Spring of 2011, to over 3,700 Division-owned computers as of this report.

An absolute essential key is ensuring as much access as possible for teachers and students, and this is continuing to be a priority. During school year 2012/2013 there will be an enhanced focus on 21st Century Learning skills, as was begun in 2011/2012.

Assistive Technology

Projects were designed to address the Alberta Education Inclusive Education initiative. There were 3 Projects to build independence and develop academic skills in struggling learners as an endeavour to remove barriers to learning in the classroom.

Projects 1 and 2 involved 1 to 1 netbooks with WordQ, a word predictor software that also had text to speech abilities. Such technology was introduced to all students so all could learn how it could be used to meet their individual needs in the classroom. Writing quality and quantity and survey data was collected to measure the impact that such technology had on the writing performance of all students. Separate data was collected for struggling readers and writers as well. Students who had significant difficulty with writing and typing were trained in SpeakQ, an addition to WordQ that has speech to text abilities. Twenty teachers in sixteen schools used the technology daily and collected the pre and post data in both projects. Control group data was collected as well.

Summary of Results of the Data Collection

Quantity Measurements: Word Counts for Pre and Post Writing Samples

Groups	Percentage of Students Who Wrote More After One Year of Using the Assistive Technology
Project 1 (No special designation)	91%
Project 2 (coded with targeted supports)	92%
Control	53%
ELL in regular classroom	57%
Code 51 in regular classroom	50%
Code 54 in regular classroom	66%
Code 53 in regular classroom	75%
FMNI in regular classroom	30%

Other data collected in the surveys completed by students and teachers were also very positive. Project 3 is the use of ipods/ipads to develop independence and academic and life skills learning in children who experience severe challenges. Clearly, this is a project that addresses the Alberta Education Inclusive Education initiative as the goals integrated them into other classrooms and into mainstream society beyond the expectations at the beginning of the year. Goals were set and worked on throughout the year with support from technology instructional coaches and surveys were completed at the beginning and end of the year with very positive feedback. Ten teachers in five schools participated.

Student Goals	Percentage of the Student Goals
Achieved	80%
Skill Developing	16%
Skill Not Achieved	4%

The interest in Assistive Technology has grown exponentially this year and the Projects include numerous teachers in each school in the Division as well as teachers making requests of the Assistive Technology Lending Library. The Assistive Technology Projects are now embedded in the Technology Instructional Coaching Model that uses the AISI strands as its structure and finds technology to support the AISI strands of Strategic Instruction, Powerful Learning Design, Engaging Learning Environments and Meaningful Communication of Student Outcomes.

School Moves

One of the major challenges of this past school year was moving two of our schools. Late in the Spring, in collaboration with our Facilities department, we planned the move of Trochu Valley School to what is now known as Campus 1 and Campus 2. This was a tonne of work. The move required taking down all of the ActivBoards, and infrastructure (computers, telephones, photocopiers, wireless access points, networks, video conferencing) and moving them to new facilities. The new sites is actually seven different buildings, that needed to be wired, the infrastructure setup, and made to work for our staff and students. However, just as the planning was finishing on this move, we had an opportunity to move Prairie Christian Academy Jr/Sr High as well. ActivBoard removal and installation alone tied up two staff members for more than a month during the Summer. The difficult part with moves is that the last thing that can/has to be done is the technology piece. All other parts - construction, wiring, electrical, painting, flooring, everything has to happen before the technology piece. These two school moves pushed our department to the very edge of what we are capable of in the short Summer months. Even after the first week of school, there were still a number of weeks before we could be fully operational. Prairie Christian Academy held their first week of school without any computers at all! Bugs in the network connectivity at Trochu Campus 1 and 2 dragged on until late October until we were able to resolve to our satisfaction.

Evergreen

In 2011/2012 we rolled out new or upgraded almost 3,600 computers. All computers in Golden Hills schools are now running Windows 7 on either upgraded hardware or brand new computers. All teachers and multimedia (intensive) labs received new computers, while all other existing computers were upgraded with more memory, new keyboards/monitors/mice, and Windows 7. In addition we put out well over 1,200 Netbooks in carts to our schools. During 2012/2013 we will finish evergreen in Division Office, and also for our Facilities and Transportation staff. It has been a long haul to complete this work, but it has been worth it, and our staff and students are benefiting from much more reliable and up to date systems.

Wireless

We have also updated the wireless access in all of our schools this past year. We are now using Ruckus wireless access points in every school, and we were able to enhance the coverage in some schools where we found it to be lacking. By having everyone on one platform has really helped in managing, updating, and monitoring the wireless access use. In Golden Hills we have a unique approach to providing student access, in that our system is open, and does not require the use of secret passwords,

or complex authentications in order to use it. As a result, we are seeing incredible usage of our network by non-Division owned devices. At any given point in the day, we typically have between 1,200 and 1,400 wireless devices on our network that are brought in by students and staff. And it has been reliable, and usage continues to grow. We routinely receive extremely positive comments about access to the Internet and online resources in our schools, and how easy it is. We have become a bit of a lighthouse school division in Alberta, where many look at our system as an example of what is possible.

Photocopiers

In December of 2012 we initiated a large scale project to look at replacing our school's photocopier and printer fleet. We discovered that each of our schools was negotiating their own individual contracts, and costs and feature sets varied widely. In some cases schools were paying more for a service contract alone, than others were paying for their capital costs and the service contract combined. Further as there were no standards in the hardware, it was difficult to provide similar functionality across the Division. A committee was struck who looked at a number of possible solutions, posted a formal Request for Proposals, and then held a lengthy selection process. In April a decision was made to partner with RICOH to replace our copier and printer fleet, add electronic document management, and standardize features and functions across all schools. The only difference from school to school might be the quantity and speed of their devices. The roll-out began in June, and carried on throughout August. Now all schools are on the same contract, as part of our five year agreement. There have been some bumps in the road, but so far it has gone much more smoothly than anticipated. We are still working on logistics with our former partners to clear up old contracts and remove the old equipment.

Student Information Systems (School Logic/StudentsAchieve/PASI)

School Logic and StudentsAchieve continues to move forward. Major enhancements and improvements have been made to both products to the point that they are very much useable, and are able to fulfill most of our needs, and throughout this year we suspect that they will only continue to improve. During 2011/2012, we had significant issues with the implementation of these products, but were able to resolve most of them over time. We continue to run into some training issues, and balancing the needs of schools to keep doing things the same way, vs. improvements to internal systems in order to better facilitate the management of student information. StudentsAchieve is now integrated with School Logic and is being used for reporting assessment for learning both online and in a printed format for students in grades K-6. We are also now able to provide access to parents of all of our students to online information about their (child/children)'s attendance and marks. We are in the early stages of this particular facet and so far it is going very well. The Province is moving to full PASI (Provincial Approach to Student Information) in September 2013, and we are well-positioned to make that transition smoothly. This will involve live communication of our student information with the Province, removing the barriers of exporting our data to other software packages and sending on a monthly basis.

Bandwidth/Internet

We continue to update and enhance the bandwidth available to schools. In the beginning of 2011/2012 most of our schools were operating with a 5 Mb SuperNet connection. In January 2012 the Province increased our funding which allowed us to move many of them to a 26 Mb connection, and recently an announcement of increased funding and additional services will allow us to move to 100 Mb connections in our sites. This is a 20x increase from what we had less than a year ago. This is really facilitating all kinds of new technologies that will allow us to provide even more access to resources by our students and teachers. We are currently in a number of pilot projects which will help us lead our students and teachers into even better and newer technologies. We have also made some strategic changes to our Internet service. We were sitting at a 30 Mb connection for the entire division in September 2011, this has since been increased to 80 Mb, and working with our partner Axia, we've enabled a service called Internet Peering which gives us essentially an additional 50 Mb of traffic over and above our Internet access. This has opened a world of resources like Discovery Education, Learn 360, and Access, not to mention YouTube to all computers!

Bring Your Own Device (BYOD)

We are currently working on a BYOD pilot project with Crowther Memorial Junior High where all students in Grades seven and eight were provided a netbook in September 2012. While this may not seem like a typical BYOD project, the netbooks are treated as if they were owned by the students, and we are currently seeing a huge impact in the school as a result of the students and teachers having access to technology virtually 100% of the time. It is still early, and we will report on this in more detail towards the end of the 2012/2013 school year.

Portal

We made the difficult decision to discontinue the "portal" project during the Summer of 2012. The ultimate goals of the system were not being met by the vendor providing the solution, and we weren't seeing the buy-in and benefit that we had hoped for. Therefore we made the decision to cancel this project and move the resources into other areas. We are starting to see the fruit of this decision in the 2012/2013 school year.

School Websites

One of the goals of the "portal" project was to have consistent school websites in all of our schools that were easy to update, access, and maintain. This didn't work out as we had planned. We began a project with DreamsTalk Studios in April and May. Working with our schools they have helped us build a consistent look and feel to all of our school websites. Now they are all managed as a "cloud" service - the servers are out on the Internet, and staff have a very easy time updating their pages. Almost all of our schools new websites are now active, and we are working closely with the handful remaining so they can get up to the same standard. One of the features of our new websites, besides being very easy to use, is the ability to send out information to all school sites with the touch of a button. Recently when we experienced massive power failures in many of our communities, we were able to post a note on

each school website with information for parents about what was happening, and what they could expect. This was not possible in the past. Moving to this system has brought substantial savings in licensing costs, and in server maintenance - we've been able to reduce our server management by four.

Digital Signage

Our schools have asked for the ability to mount a television in their schools with running announcements and pictures. We evaluated a number of solutions and installed the OneLAN digital signage system in a number of our schools. This allows web-based access by the staff to update pictures and announcements in a friendly, easy to use interface. Additionally, all of the school digital signage systems are linked to a division "publisher" unit, so that announcements, and information can be broadcast and managed centrally. So the schools have full control of managing their individual units, but some division-wide functions can be setup too! We have units in Westmount, Wheatland, Brentwood, and DVSS, with more going into other schools this year.

Learning Commons

A really exciting new project was just started this Fall, whereby we are building a "Learning Commons" system. This will be a place where all staff and students start from when accessing online content. The committee is hard at work, and the initial prototype is already online, and will bring together NorthStar Academy, Golden Hills Learning Academy, and our community schools into a single ubiquitous Learning Commons. The first stages will include a collaboration site, blogging, coursework, a wiki, and access to files.

ActivBoard Lifespan

All teaching spaces within Golden Hills are outfitted with Promethean ActivBoards. This technology is used all day every day by our teachers. They have proven to be an incredible tool that allows teachers to engage students at a totally different level. Our tech staff have prioritized ActivBoard and projector issues, hoping to minimize any potential downtime for our teachers. We are starting to notice some of the projectors are becoming worn out, and we are starting to go through ActivBoard pens faster than before, and some ActivBoards are starting to malfunction. So far it has been manageable, but we are a little concerned at the long term future. We were the fortunate recipients of Provincial funding which paid for the initial installation which has gotten us to this point. We are now beginning to look at long term plans to replace the boards as it becomes necessary.

Infrastructure Upgrades

The underlying infrastructure that ensures staff and students are able to access resources like files, printing, Internet, and online resources is slated for some substantial upgrades this year. We recently acquired new replacement switches (the technology that connects everything together) such that we can begin a massive overhaul and vastly improve the speed, and reliability of our network. Alongside the switches we are looking at a potential firewall upgrade, and a transition to a new Internet Service Provider. All of these will save substantial dollars, and will increase the effective lifespan of our network.

We are expecting to save over \$10,000 per year just in Internet costs as a result of these changes! It's not a very interesting (to the average person) system, but it is a very critical piece of infrastructure.

Pilot Projects: (Equella, Web Peering, Discovery Streaming, Cloud Storage)

Golden Hills has a history and a reputation for being willing to try new projects that will have a positive impact on student learning, engagement, and use of technology. This year we are participating in four pilot projects specifically with technology, and a couple more are planned for 2012/2013.

- **Equella CORE** is a project we are working on with CBE, Rocky View, Calgary Separate, and Canadian Rockies. This project is very, very big, and the intent is to provide a single source of online access to resources - like Discovery, Learn 360, and Access, AND a place where staff and students can post video resources to share with their counterparts across the Province. This is the largest scale project that has happened between school jurisdictions in recent years, and has just gone live this Fall, and we are in the middle of implementation at this point in time. It has been challenging to work with such a diverse group, but the results are most excellent and positive indeed.
- **Web Peering** is a project where some Internet traffic, most notably YouTube, Google, and other mainstream services are offloaded from our Internet connection, and sent to Axia who can get to these services from another direction. This allows us some incredible access and speed. We used to throttle YouTube traffic so that it wouldn't impede other Internet use, but this prevented a lot of great use of this resource. Now with the Web Peering, we don't throttle it at all, and both YouTube and the Internet are working much better. We were the first school division in the Province to set this up with Axia, and became the case example on how to make it work. Axia has been an incredible partner in this project.
- **Discovery Streaming** has been in use for a number years in Golden Hills. Discovery, along with others provides some excellent access to streaming video resources for teachers and students. However the drawback has been this bandwidth intensive service can strain our Internet feed - to the point where it became slow enough to not be useable. Again, working with Axia, a mechanism was setup where our schools can access Discovery streaming services on a SuperNet connected data centre, allowing schools direct access without sending traffic back to our division office, or on our Internet feed. It took a few weeks of testing in the Summer, but it is up and running now, and it is very fast.
- **Cloud Storage** has been a buzzword for sometime in the industry. The underlying theory is that files are stored "in the cloud" or off site, accessible when necessary. But having them offsite can eliminate the need for local file server storage. We have recently found a couple of willing partners to do a pilot project with us. Axia and RackForce (a hosting company in Kelowna) are able to setup this technology so that staff and students can store their active files online, in a secure facility, and access anytime from home or school, on any device. We will be the first school division to pilot this unique setup, and we hope to see it in production early in 2013.

Technical Support Workload

Our workload continues to increase in our department. Not only do we manage and take care of over 3,700 computers, we also take care of:

- Video conferencing equipment
- Voice over IP Telephones in almost every site
- Servers and Division office Data Centre
- ActivBoards
- Projectors
- Underlying Network Infrastructure including SuperNet and Internet access
- Student Information Systems, finance systems, online library systems
- Photocopiers
- Electronic Document Management

This vast array of technology does require maintenance and support. We provide this along with technical support to our schools. We have implemented an online ticketing system in late 2010, and here are some of the statistics we're seeing:

	Sept '10 - Aug '11	Sep '11 - Aug '12	Sep 12 - Present
# of tickets	1,168	2,654	1,054

We are not quite three months into this school year, yet we are just a little short of half way to the number of tickets we had in all of last year. If we continue at this rate, we will pass 4,200 tickets in the 2012/2013 school year - an almost four times increase from 2010/2011.

SUMMARY & IMPLICATIONS:

- Technology continues to evolve and improve in Golden Hills.
- Access to technology by students is better and better every year, and has never been as good as it is currently.
- Workload continues to be a concern in the technology department.
- Golden Hills while still catching up in some areas, is leading the Province in other areas of technology.

RECOMMENDATION: That the Board of Trustees receives the Technology Report for information and for the record.