

Bismarck Public School District #1

Technology Plan 2010-2013

**Respectfully Submitted by
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Overview:

Bismarck Public Schools initiated a planning process in October of 2009 for the period from 2010 – 2013. This plan outlines the vision for technology integration as well as specific technology infrastructure and budget needs associated with the plan. The plan was developed by Technology Department staff with input from the Strategic Planning and Advisory Committee for Educational Technology (Appendix A), interviews with principals (Appendix B), PTO/PAC groups (Appendix C), and members of the Young Professionals Network (Appendix D). The plan was presented to the Executive Team and school board in March 2010. Plan initiatives and accomplishments are communicated annually through Intercom Articles (see Appendix E), presentations at principal meetings and during school Tech Talks, as well as posting of the plan to the website.

The plan is revised on an annual basis and evaluated by the Strategic Planning and Advisory Committee for Educational Technology.

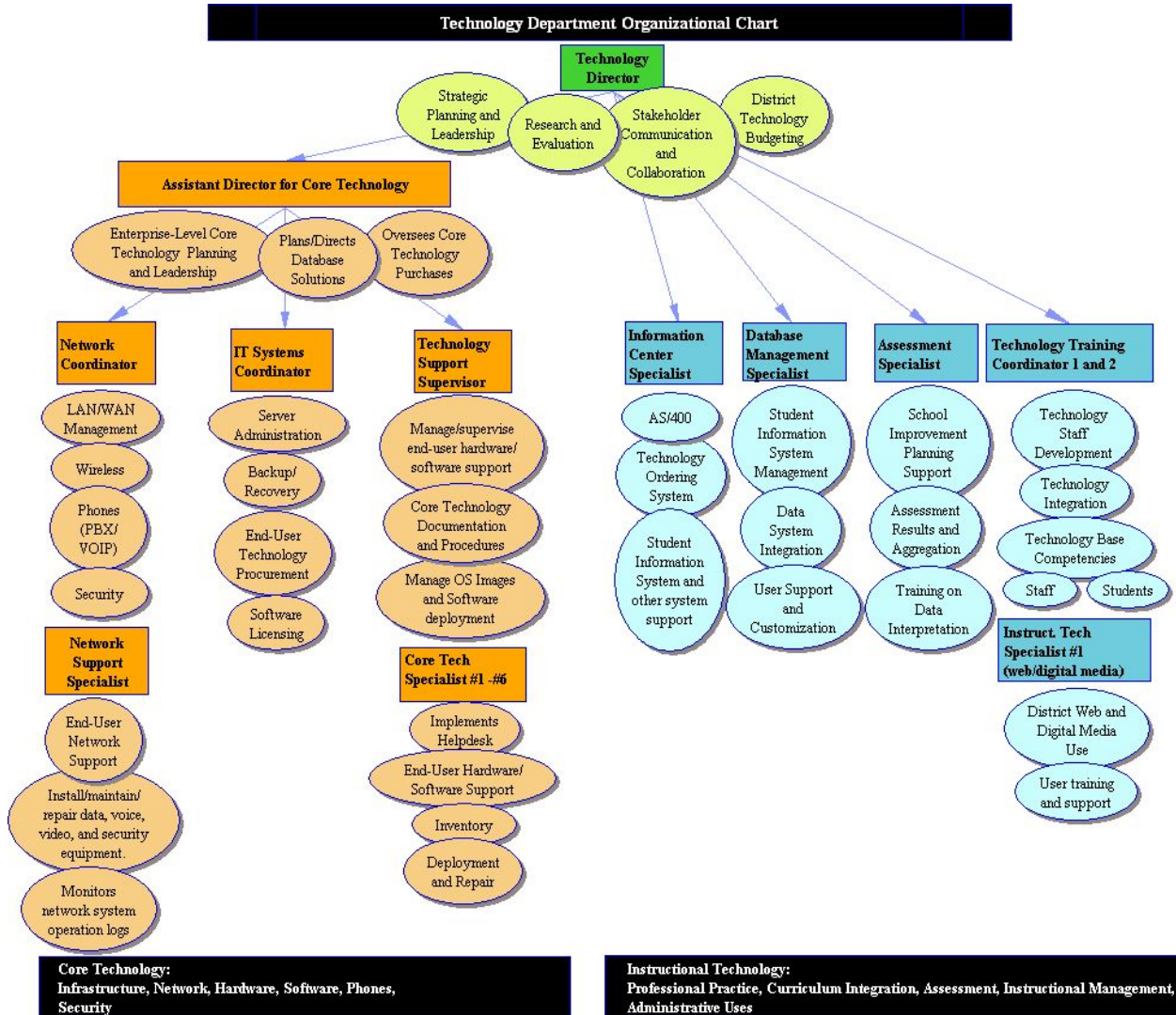
Vision:

Our vision encompasses students, parents, community and staff. Our philosophy centers on preparing students for post-secondary education and the workplace while being fiscally responsible. Our job is to discern those technology resources that will result in the biggest return on investment in terms of student achievement from those that fall short. To achieve this we ask questions such as, “What technology resources will have the most significant impact on student learning?” and “What technology is needed for good teaching, learning, and decision making?” Although our primary vision relates to technology integration for the benefit of teaching and learning, we also strive to utilize technology as a tool to effectively manage the business of running an organization.

- All BPS employees will be proficient in the use of technology at whatever level necessary to do their jobs effectively in the 21st Century.
- All BPS students will produce technology integrated products that illustrate their knowledge in various content areas.

Organization and Staffing:

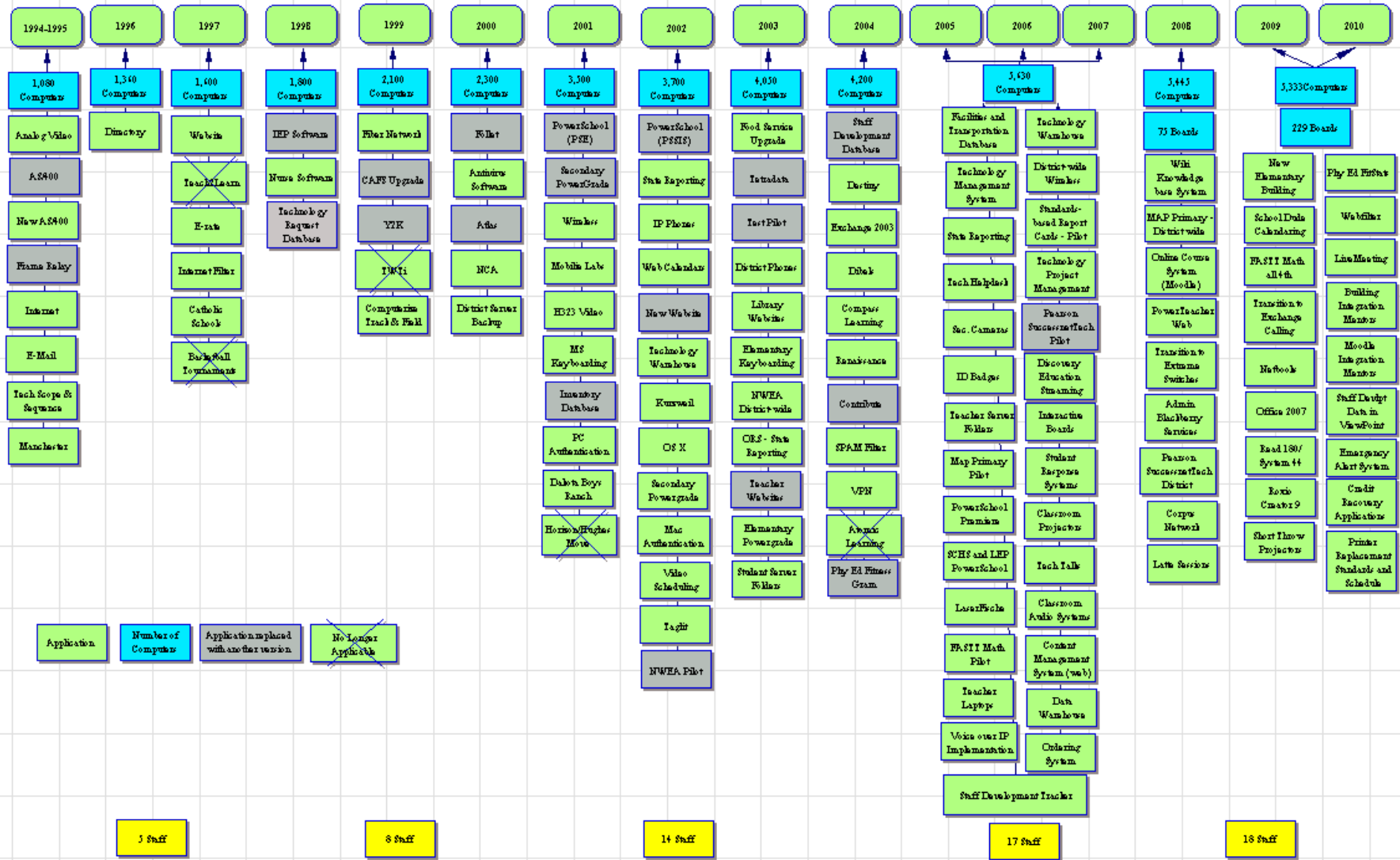
The Technology Director is a member of the school district executive team and reports to an Assistant Superintendent. The Technology Department includes those responsible for the core technologies within the district (network, hardware, software), those responsible for technology use and integration by staff and students, and those working primarily with student information systems, assessment, and evaluation. The organizational chart in Figure 1 below illustrates the current Technology Department positions and primary position responsibilities.



Staffing goals:

As more and more basic curricula have technology components that are not purely optional but a necessary part of reaching students the demands for increased hardware and the level of concern and priority regarding technology functioning continues to increase. This, combined with the 2010-2011 addition of two buildings point to the need for additional positions to support classroom level technology. The desire for increased support comes from all stakeholders within the district. The timeline below (Figure 2) shows the progression and additions of technology tools and applications within BPS as well as the staffing timeline.

Bismarck Public Schools Technology Department Timeline



Infrastructure (Core Technology):

Efforts in the area of core technology are addressed in three main sections: Network, Hardware (backend and end-user), and Software. The overall goal in all areas is to standardize in order to save money and gain efficiency.

Network Overview

Network connectivity and Internet access have become a crucial part of our everyday needs. The State of North Dakota provides us with Internet access, web filtering and several other services.

STAGEnet upgrade Project

The State of North Dakota's Information Technology Department along with STAGEnet partners will continue to develop and enhance a statewide network to service its educational facilities. STAGEnet exists to provide a secure, reliable, and cost-effective network that has the scale and flexibility to support the convergence of data, voice, and video to meet and surpass the objectives of education.

The STAGEnet upgrade project will deliver a much needed equipment refresh to the schools and update some of the core network equipment.

This upgrade will allow us to significantly increase the bandwidth available to the schools (minimum of 10mb) and have a minimal impact to cost. The initial upgrade for the educational sites should be completed for the 2009-2010 school year.

The district leases two strands of fiber optic cable from Midcontinent Communications. The two strands of fiber are run from each building back to the head-end site at Bismarck High School. This allows us to achieve a gigabit data transfer rate. The fiber lease costs are eligible for E-rate discounts. The district typically receives 45% reimbursement of its network costs each year as a result of E-rate.

Our network infrastructure is switch driven with the minimum throughput of 100 Mbps. There are more than 7,750 network ports within 25 locations in the district. All ports are capable of supporting voice, video, and data. In 2010 two new sites will be added: a new elementary and a Career Academy site.

The demand for wireless connectivity has increased significantly over the past few years. Currently each building in the district has wireless access points and many computers, especially teacher computers, are wireless capable. We anticipate the addition of student netbooks adding to the wireless load. A controller working together with access points provides effective centralized management. Plans for 2010-2013 include upgrades to wireless to provide stronger coverage as well as security enhancements. We are currently purchasing equipment that is wireless-N capable and will implement N as funding allows and replacement is necessary.

We have a network replacement schedule to provide upgrades to the network infrastructure. Network management and Internet filtering is supported from a centralized server at the data center.

Backend Hardware Overview -Server, Storage, and Backup

Servers Consolidation

Through the continued development of the server infrastructure the district will be able to utilize present and future computing technologies. The district has planned a server consolidation schedule to support these technological needs while considering total cost of ownership to minimize the costs of equipment and the time required to maintain the server infrastructure.

The technologies that the district will continue to utilize in the future include virtualization and blade servers. By using blade technologies combined with virtualization the district can decrease the quantity of physical servers while still providing ample availability, flexibility, and scalability to address the district's future needs.

These technologies will also further the efforts of the district to be "greener" by conserving electricity and reducing cooling costs.

Data Backup / Recovery and Emergency Planning

- **Server Backups:** All district level servers are backed up at regularly specified intervals for disaster recovery purposes. The tapes are rotated to a secure, off-site, location.
- **Storage:** Each teacher and student has their own home folder for storage. The district currently has approximately 15 terabytes of systems storage.
- **Backup:** Current database servers (active directory, SQL, and exchange) have full backups on a nightly basis. Data storage is backed up in full once per week with differential backups nightly. Currently the backups are backed-up to disk at night and then off-loaded to tape during idol time.

End-User Hardware Overview- Computer Replacement & Peripherals

Inventory results from May of 2008 and November 2009 indicate the following end-user hardware reported below.

	2008	2009
Computers	5673	5,333
Digital Cameras/Video Cameras		551
Document Cameras		53
Multimedia Projectors	386	523
Interactive Boards	137	229
Student Response Systems		21
Classroom Audio		25
Printers	593	569

One of the issues with end-user computers is transitioning to a single platform. As we get closer to a standard platform it becomes more difficult and costly to continue keeping the Macs performing at the same level – particularly staff computers. We currently have 390 staff Mac computers left to replace.

Another important consideration with end-user hardware is age and equity from building to building. Below are some charts and a table illustrating the buildings along with the student to computer ratios and inventory of other classroom technologies.

Figure 3: Staff and Student Computers by Age

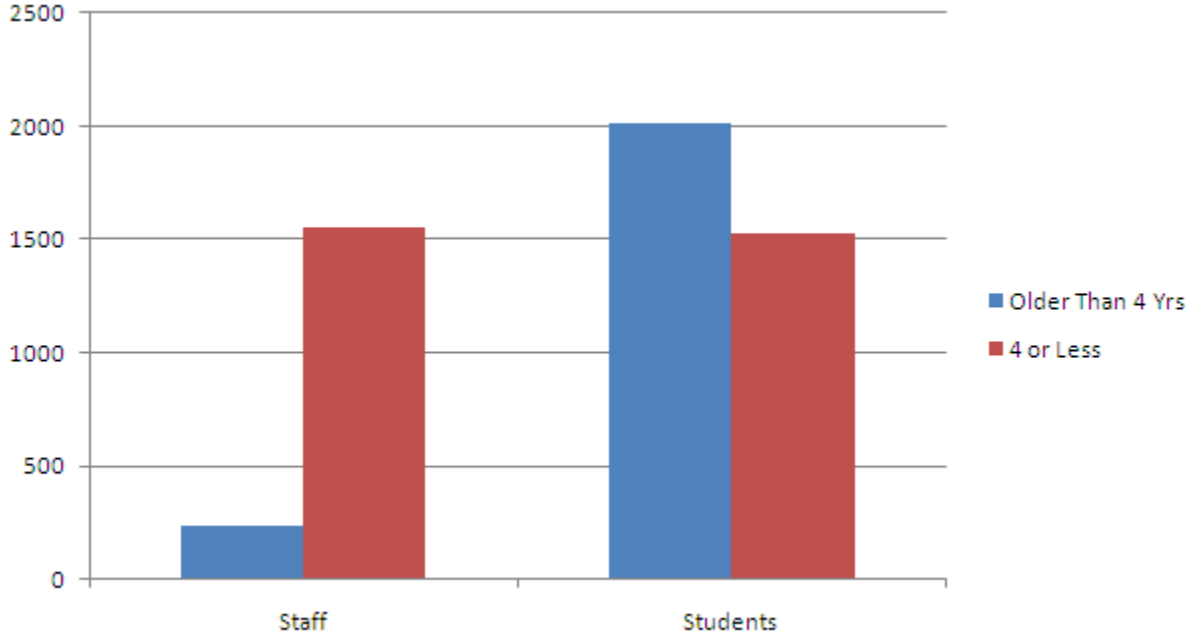


Figure 4: Student Computers by Age

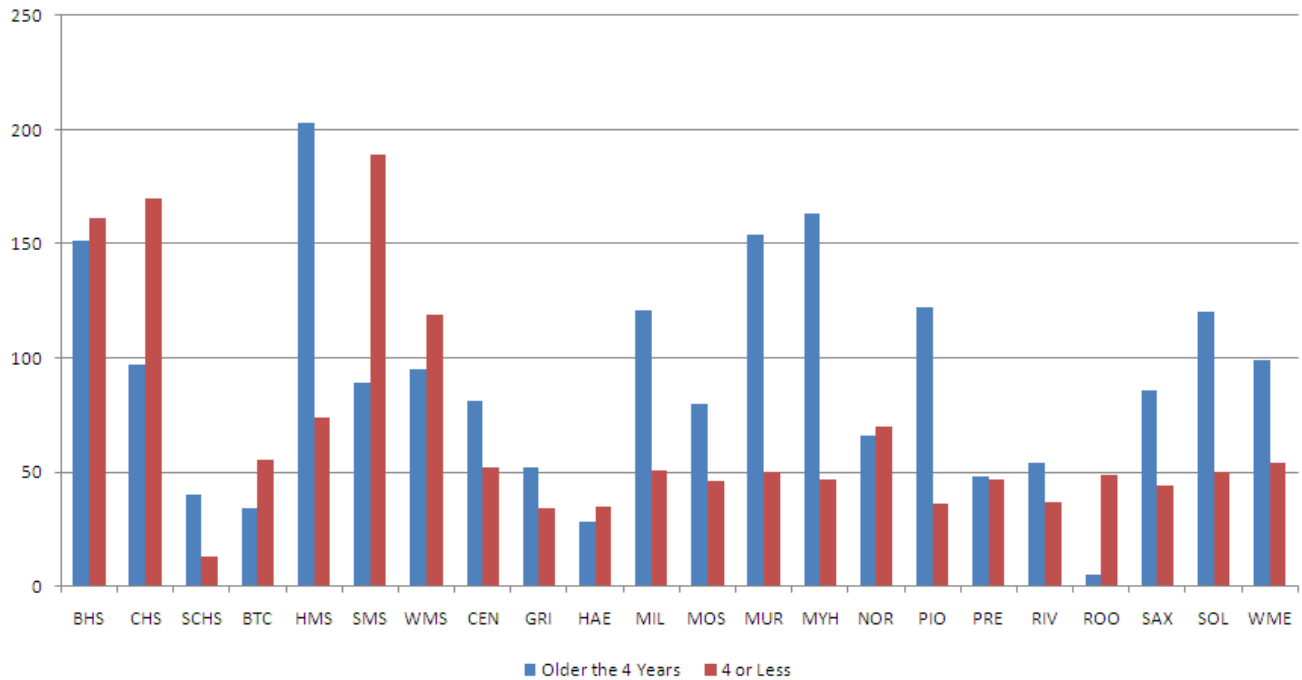


Table 1: Building Technology Inventory

School	# of Students	# staff Macs left	Student Computers	Student to Computer Ratio	Student Computer 4 or Less Yrs Old	Student to Computer 4 or less years old	Digital Camera/ Video Camera	Document Camera	Interactive White Boards	Projectors	Student Response	Printers
BEC	358	1	21	17.05	4	89.50	29	0	0	0	0	27
BHS	1326	4	312	4.25	161	8.24	41	0	15	51	4	66
BTC	170	2	89	1.91	55	3.09	16	5	3	13	0	26
CEN	528	31	133	3.97	52	10.15	23	0	5	16	1	13
CHS	1074	15	267	4.02	170	6.32	46	0	20	64	0	57
GRI	312	11	76	4.11	34	9.18	4	0	11	14	0	4
HAE	147	7	63	2.33	35	4.20	9	1	3	6	0	8
HMS	865	62	277	3.12	74	11.69	29	0	20	50	3	34
MIL	542	30	172	3.15	51	10.63	29	3	5	34	1	37
MOS	412	27	126	3.27	46	8.96	27	1	13	19	0	20
MUR	730	40	204	3.58	50	14.60	26	1	15	22	2	13
MYH	292	9	210	1.39	47	6.21	35	3	11	21	2	9
NOR	715	44	136	5.26	70	10.21	47	1	8	17	0	14
PIO	297	4	158	1.88	36	8.25	13	3	6	13	0	8
PRE	210	2	95	2.21	47	4.47	4	2	3	7	1	9
RIV	128	12	91	1.41	37	3.46	18	0	5	14	0	7
ROO	158	3	54	2.93	49	3.22	13	1	4	5	2	9
SAX	261	9	130	2.01	44	5.93	8	16	16	21	0	16
SCH	92	1	53	1.74	13	7.08	3	0	3	3	0	11
SMS	843	23	278	3.03	189	4.46	15	2	7	46	0	28
SOL	517	11	170	3.04	50	10.34	22	11	13	26	1	13
WME	379	23	153	2.48	54	7.02	42	1	2	9	0	14
WMS	843	19	214	3.94	119	7.08	52	2	41	52	4	43
TOTAL	11199	390	3482	3.22	1487	7.53	551	53	229	523	21	486

Computer Replacement:

Computer technology for staff and students is not a short-term or special project enhancement. The use of computers by staff for everyday work functions is an absolute requirement. Whether one is a teacher, administrator, secretary, or other staff member, accessing and inputting information on the computer is a way of business. For teachers and students the requirement is even more critical to our core mission. Teachers use computers on a daily basis for attendance, grades, and communication but are also responsible for engaging students through the use of 21st Century tools. Expecting students to be resourceful in their use of today's tools cannot be a reality without reliable student-ready technology and prepared teachers. A replacement schedule results in the ability to plan for the ordering, preparation, rotation, dissemination, and recycling of computers. It also aligns technology staff development and allows for standardization by building or, in some cases, function. It has been recommended that a four-year computer replacement schedule for staff and an equitable portion of student computers be instituted as part of the base technology equipment line-item. See Table 2.

Most BPS employees are issued laptops instead of desktops so that they can work more efficiently in the classroom, in meetings, and at home. The Laptop Agreement and Care guidelines as well as administrative rules regarding staff computers are available in Appendix F.

Benefits of a Replacement Plan:

The benefits of a replacement schedule are numerous including (1) better planning for and support of technology and technology integration, (2) equitable distribution of technology, (3) building consistencies in staff and student computers, (4) leveraging of technology investments by establishing a foundation for use as an instructional and learning tool, and (5) increasing efficiencies and lowering end-user frustration and downtime. A replacement schedule does not mean replacing every computer every schedule. We recognize that not all learning tasks require multimedia computers. There are many educational endeavors that are served by a simple word processor and basic Internet research. This distinction is taken into consideration with the proposal of a four-year computer replacement schedule consisting of approximately ½ of the computers in the district. The remaining ½ would be replacement "hand-me downs." Adhering to this replacement schedule would result in efficiency with computer purchases, dissemination, equity, training, rotation and recycling.

For the year 2010-2011 the minimum hardware standards are:

Mac: OS.X version 10.3.9

PC: Windows XP with at least 256 MB of RAM

While the adoption of the replacement schedule has not been approved by the School Board, they awarded enhancement funds to replace teacher and student computers during 2009-2010. Funding was provided for the replacement of computers listed in the 2008-2009 column (which were not replaced their scheduled year) and for the computer replacement listed in the 2009-2010 column. The current proposed computer replacement schedule is presented in Table 2. A more detailed version that includes teacher, student, and lab numbers is available upon request.

Table 2: Computer Replacement Schedule

The computer count includes all staff for whom the school listed is their primary building. It also includes critical multimedia labs at secondary and 30 student computers per elementary.	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Centennial Elementary	36	34*				70			
Grimsrud Elementary		55				59			
Highland Acres Elementary			→	45			51		
Miller Elementary	39	33*				73			
Moses Elementary			→	67			69		
Murphy Elementary		84					87		
Myhre Elementary			→	67			69		
Northridge Elementary	42	34*				86			
Pioneer Elementary			→	57			58		
Prairie Rose Elementary			→	53			57		
Riverside Elementary			→	48			54		
Roosevelt Elementary		49				53			
Saxvik Elementary	24	39*				59			
Solheim Elementary			→	72			76		
Will Moore Elementary		62				72			
<i>New Northeast Elementary</i>					40 → (staff)	**			
Horizon Middle School	85	4			165				165
Simle Middle School	145	15			197				197
Wachter Middle School	122	10			172				172
Bismarck High School	107	24		304				307	
Century High School	184	4		209				262	
South Central High School	13			15				34	
Adult Learning Center	5			5				5	
Bismarck Technical Center	16			16				68	
BECEP				20				20	
Administrative	33	8			105				105
TOTAL	846	455	0	973	679	472	521	696	639

* indicates additional computers not replaced in 2006 but necessary to establish the replacement schedule (student computers, secretary computers, etc.)

Peripherals:

While the Technology Department typically secures funding for computer technology, other technologies are derived through building funds, grants, PTOs, and other sources. At this time most printers, multimedia projectors, scanners, digital cameras, digital video cameras, interactive boards, student response systems, and other peripheral technologies are ordered and supported by the Technology Department but purchased through other funds.

Discussions are currently underway to determine base of peripheral technologies recommended as a minimum to provide for a 21st Century educational environment. Providing classroom access to multimedia projectors has really moved over the line from being nice to being necessary. Virtually every curricular area and grade-level have rich multimedia content that connects directly to their critical student goals. It is an obligation of staff to connect with students and to differentiate instruction through access to current content and resources. Without a projector the access to important resources is jeopardized and equity of instruction from classroom to classroom becomes an issue. Below is the estimated percentage of coverage of multimedia projectors in a building to classrooms. The buildings with over 100% have projectors in regular classrooms as well as specialist areas, conference rooms, libraries, etc. Coverage over 100% is desirable to provide just-in-time access for all instructional and professional development purposes.

Table 3: Percentage of Projector Coverage by Building

Building	% Classrooms Covered by Projectors
SCH	38%
NOR	44%
MUR	45%
WME	47%
BHS	57%
PRE	64%
CEN	67%
ROO	71%
SMS	77%
HMS	80%
BTC	83%
HAE	86%
MOS	86%
WMS	88%
CHS	92%
PIO	93%
GRI	100%
SOL	100%
MYH	100%
MIL	112%
SAX	140%
RIV	140%

Another peripheral study is strategies for lowering the Total Cost of Ownership regarding printing. Of the 569 printers in inventory, there are 111 models by 14 manufacturers. Separate from this are an unknown number of copiers and fax machines that are not inventoried by the Technology Department. Audits of the district have shown that a majority of printers are small workgroup size, are largely underutilized, and many are nearing 10 years in age. The cost per page of printing on small workgroup size printers is significantly higher than on a larger printer, and as our current fleet of printers continues to age, the Total Cost of Ownership is far offsetting any perceived conveniences.

A centralized print solution, making use of large workgroup printers and multifunction machines, can considerably reduce the quantity of printers, eliminate the need for separate fax machines and copiers, reduce the annual consumable parts expenditure, and reduce the time spent managing printing, supplies, and repairs.

In 2009-2010, the Technology Department standardized the available printer fleet with five HP machines in a range of sizes to fulfill the needs of a school, with the focus on front offices, libraries, labs, and department or pod areas. A software management solution from HP has also been implemented. This solution provides reports to administrators detailing usage, sends email notifications for errors or consumable warnings, and provides for remote maintenance of machine configurations.

Copier/Printer replacement has been put on a five-year replacement cycle and will be presented to the Bismarck School Board for approval and funding. This schedule would allow for the replacement of mission critical copier/printer/fax by building.

Software and Standardized Electronic Resources:

In addition to the base image of software that is standard district-wide on both student and staff computers, the Technology Department, in conjunction with the Strategic Planning and Advisory Committee for Educational Technology, has been to looking at a next level of standardized software for elementary, secondary, and curricular areas.

At this time there are over 156 different types of software with many requiring multiple versions or platforms. During this planning period, the Technology Department and other stakeholders will review existing software and work to trim software titles to reflect those with the most beneficial impact for students. To assist in making certain that software and subscriptions align and can be supported there is a process for proposing new programs and a software application form. They are located at:

- <http://www.bismarckschools.org/district/curriculum/>
- <http://www.bismarckschools.org/technology/purchasing/software/software-evaluation-form//>

Team members are currently looking at student assessment data to determine gaps and identify specific intervention software. Below is a list of standards for software and a schedule for determining additional grade-level and subject specific standard software.

Basic Computer Image Software Standards:

- Productivity Suite: Microsoft Office
- Electronic Mail: Outlook, Outlook Webmail, Entourage
- Internet Browser: Internet Explorer, Firefox, Safari
- Database: Access
- Desktop Publishing: Adobe Suite Products, Microsoft Publisher
- Gradebook: PowerTeacher Gradebook
- Media Packages: Java, QuickTime, Flash, Shockwave, RealPlayer, Windows Media Player, Windows Movie Maker
- Anti-Virus: Symantec
- Remoting Software: LANDesk and Apple Remote Desktop (ARD)

Software Standardization Timeline:

- 2007-2008 Elementary Cross-Curricular
(possibly Inspiration, United Streaming, etc.)
- 2007-2009 Elementary Math
(FASTT Math at 4th grade and for intervention)
- 2010-2011 Literacy/Writing
- 2011-2012 Science, Social Studies

Current Software and Online Subscriptions at BPS:

The district has moved toward implementing more online administrative, assessment, and software intervention systems. Some of these systems require direct support from the Technology Department and others indicate the increased reliance of staff on technology for day-to-day activities. An overview of both the standardized software and the online systems is presented below.

AESOP – Online substitute teaching software allows staff to input absences and substitute teachers to receive teaching assignments.

Cell Phones/Blackberries and PDAs – The district provides cell phones to district employees on an as needed basis. Several users have a PDA which allows them to communicate and track appointments. Most recently cell and data services have been combined. Administrative staff and staff who travel have been utilizing cell phones with data plans so they can keep in better communication throughout the day, resulting in high quality work and service.

CIMS – This software is used to maintain financial records, employee records, inventory, and warehouse.

Compass Learning – An online computer assisted instruction product that is used with struggling students to identify individual learning paths, deliver content, and assess progress.

Data Warehouse/ViewPoint – We have contracted with CmERDC for our data warehouse needs. The warehouse was loaded with data and piloted in spring and summer of 2007. The warehouse (Viewpoint) is now fully implemented and being used district wide.

Discovery Education - (Formerly UnitedStreaming) Discovery Education is a subscription service that is paid for jointly by the district library and technology departments. This resource provides digital video, image, and other media databases. The content is educational reviewed. Many resources include lesson plans, black-lined masters, student activities, etc.

Email – Every district employee is provided with an email address on the bismarckschools.org domain. The email server (Exchange 2007) is maintained by the Technology Department.

FasttMath –Fluency and Automaticity through Systematic Teaching with Technology (FasttMath) is a client and server based math software program. It continuously adapts to increase math fluency in addition, subtraction, multiplication, and division. We started the pilot of this software in the spring of 2008 and implemented with all of 4th grade and for intervention during the 2009-2010 school year.

Fitness Gram – A client and server based software program. It is a tool that facilitates communicating fitness testing results to students and parents. The assessment measures three components of health-related physical fitness that have been identified as important to overall health and function: aerobic capacity; body composition; and muscular strength, endurance, and flexibility. We will be transitioning from FitnessGram to FitStates for 2010-2011.

Follett Destiny – Web-accessible database of library listings within the district. The system links into the local library system (Info*Lynx) and the state library network (ODIN) where users can view card catalogs and reserve materials from out-of-district libraries.

Google Docs - A web-based office environment and it is currently being tested.

Horizon Food Service Software – This software is being used to computerize the food service program. This software links to PowerSchool. Parents can login to Powerschool and check the balance of their children's lunch account.

IEPs – The Special Education department maintains Individualized Education Programs for students using software specifically designed for Bismarck Public Schools. This IEP software has been replaced and is being transitioned over to TieNet. As of November 2009 it is still in the process of being transitioned over. See TieNet below.

Internet Safety - The district utilizes nationally recognized curricula to teach students about Internet safety. The curriculum is delivered by school counselors, teachers, library/media specialists, and local police representatives.

Intellitools Classroom Suite - Provides technology to help struggling students learn to their fullest potential: serving students in PreK-8 who use assistive technology, have IEPs, have limited English proficiency, or need additional instructional support for any reason. This is a client and server based program for PC and Mac.

Kurzweil - is a scaffolded reading, writing, and study skills solution for struggling learners, including ELL students and students with special needs. It enables educators to provide differentiated instruction without having to differentiate the curriculum. This is a client and server based program.

Microsoft Office –Microsoft Office has been the standard office suite loaded on district computers since the summer of 2007. No other client-based office suite is supported, however, Google Docs is becoming a common web 2.0 application.

Miscellaneous Online Databases – The Technology Department maintains a variety of searchable online databases including the technology inventory, technology management system (TMS), employee directory, and student directory.

Moodle - An open source software course management system (CMS) designed using sound pedagogical principles, to help educators create effective online learning communities. Moodle is currently being used as a collaborative environment for grade level and subject area teachers. Each separate “course” houses curriculum deliverable expectations and resources. Moodle is also being tested for the delivery of content to students. In the future we anticipate teachers being able to request Moodle online course environments as a component to their face-to-face classes with an eventual use as full online course offerings.

NWEA Online Assessment – State math and reading standards are assessed for students in grades 3-11 using NWEA Measures of Academic Progress (MAP). Client software is installed on student machines and allows administration to maintain student information, upload data, and acquire results through the NWEA web portal. NWEA will allow our district to track longitudinal progress in math and reading.

PowerSchool – A district-wide student information system used for attendance, grades, demographics, test scores, and other data. It is used by teachers as an online gradebook (PowerTeacher Gradebook) and accessed by parents to review their child’s grades and attendance over the Internet.

Pearson SuccessNet (Scott Foresman Reading Street & Investigations) Online Environment – The district K-6 Literacy curriculum includes access to an online portal of additional resources for student assessment and for differentiated activities. It is an online environment that houses both Reading Street and now some Math Investigations resources. It provides the ability for teachers, students, and parents to login to the online environment for assessments, leveled reader access, textbook access, and more.

SchoolDude – Calendaring of Hughes conference rooms, athletics, professional development events, and fine arts events scheduling using a web-based system by SchoolDude is being considered. Individual schools also maintain a calendar of school events that can be accessed through the individual school websites.

Staff Development Tracking System – iNet is the contractor for the online staff development tracking system. The system was rolled out in May 2007 and now staff members register for all professional development opportunities through the system. This system includes tracking of personnel development (graduate credit classes) for lane changes.

Technology Management System (TMS) – This is a home grown system that is used primarily by the technology department to track service requests and inventory. District staff can login through the Intranet to submit an online request using this system. Research is currently underway to determine if transitioning to a outsourced technology ticketing system would be beneficial.

Telephones - The district is progressively replacing the aging telephone systems with new CISCO IP telephones. The advantage of IP telephony is the ability to share the fiber optic network resulting in cost savings. We currently have a four-year plan for moving all building phones to VoIP with the possibility of integrating IP Intercom.

TieNet - A web-based instructional management solution for the Individual Education Plan. It organizes the instructional process and monitors its impact on achieving mandated educational standards and it fulfills compliance regulations related to Special Education. Educators can focus instruction, manage resources, measure performance, and participate in professional development based on student performance data. This is a statewide web-based program that was implemented April 1st, 2008.

Web Server – The district currently maintains a website on the World Wide Web at www.bismarckschools.org. We are continually training staff to use a content management system for their website pages that is hosted by Odney. Integration of web 2.0 tools to enhance the pages will be a large part of our 2010-2013 activities.

WIKI – This is our means for documenting technology within the district such as a model of computer we have or how to do something in Microsoft Outlook 2007. District staff can search the wiki for answers to their technology questions. At this time the wiki can only be accessed internally on the Intranet at <http://wiki.bismarckschools.org>. In the future it may be accessible externally. Technology department staff has access to create and modify the pages where as the rest of the district has read-only access.

X-Cal – This is a calendaring system that has been used to schedule meeting rooms and gyms. It is currently being replaced by the SchoolDude application.

Video conferencing – The district has used interactive video conferencing since 1991 and is continually upgrading the systems to provide added functionality. In cooperation with the Great Western Network, studios are maintained at BHS and CHS. In addition to daily student use, these studios are widely used by the local educational community to provide additional coursework for teachers and administrators.

Web Filtering – The district’s Internet access is filtered by a Barracuda Web Filter. The Barracuda Web Filter enables us to comply with student and safety guidelines mandated by the Children’s Internet Protection Act (CIPA) by seamlessly managing Web usage policies for both Windows and Macintosh users. The Network Coordinator and the Technology Director manage the filter for the district.

Core Technology Support:

Overview

A Technology Support Supervisor and six Technology Support Specialists are currently responsible for the infrastructure, hardware, software, and peripherals at 15 elementary schools, three middle schools, three high schools, BECEP, the Career and Technical Center, Hughes Educational Center departments, Facilities and Transportation, Adult Learning Center, and Manchester House, along with supporting Title I BPS staff at St.Anne’s, Charles Hall and Martin Luther as well as Special Education staff at St.Alexius’ Partial Care. In the fall of 2010 there will be an additional elementary school and another building for the Career and Technical Center. At this time the six support specialists each support approximately 888 computers and 278 staff. They also support an increasing number of peripheral and other technology tools/resources.

The first line of support for all district staff is the Technology Helpdesk. The centralized technology helpdesk was established in January of 2006. The purpose is to use remote access tools and online support to try to solve many of the problems users’ experience. This saves the support specialists’ time to focus face-to-face visits on challenges that require hands-on work. Given the call demand, the Helpdesk is staffed by one or two support specialist on a rotating schedule. All service requests are to be directed either to the Helpdesk *telephone* line at 323-4040 or entered in the online Technology Management System (TMS) at <http://intranet.bismarckschools.org>

In addition to the Helpdesk, support specialists are assigned and serve specific buildings within the district. If a support issue requires an onsite visit the support specialist assigned to that building will be assigned the service request and will follow-up on the issue in accordance with set procedures and timelines. The following table shows the statistics of the service requests.

Table 4: Support Reports from the Technology Management System:

January 2006 – December of 2009

Technology Management System (Quick Stats)		
Total Tasks Received:	32959	Start: 1/30/2006 7:10:29 AM End: 12/7/2009 4:19:02 PM
Total Tasks in Progress:	701	2.13% in progress
Total Tasks Completed:	32258	97.87% complete of total received

Priorities (Quick Stats)		
Priority Level:	Total (s):	% of Total:
Now (1 Hr)	585	1.77%
Urgent (2 Days)	4206	12.76%
Important (4 Days)	5930	17.99%
Routine (Next Visit)	9051	27.46%
Time Permitting	2131	6.47%

Category:	Total (s):	% of Total:
Assessment	37	0.11%
Audio Enhancement	3	0.01%
E-Mail/Accounts	2185	6.63%
Hardware	4981	15.11%
Improvements	158	0.48%
Inventory	203	0.62%
Lab	163	0.49%
Network	892	2.71%
OS	1559	4.73%
Phone	424	1.29%
PowerSchool	1681	5.10%
Printing	2947	8.94%
Request for Services	76	0.23%
Server	325	0.99%
Software/Apps	5808	17.62%
Staff Tracker	29	0.09%
ViewPoint	85	0.26%
Website	347	1.05%

Below are also the results from a customer survey put into place in January of 2008. The survey is offered to every individual using the Technology Support Help Desk via telephone or online ticketing system upon completion of their request.

Table 5: Survey of Technology Support Help Desk

If you called the Helpdesk for this issue/question did you get voicemail?		
Yes	109	9.77%
No	405	36.29%
I did not call the Helpdesk	602	53.94%
	1116	

If you were to call the Helpdesk in the future and the Technician is busy, which would be the most preferable?		
Leave a voicemail	674	60.39%
Wait in a holding queue	38	3.41%
Wait in a holding queue with the option of going to voicemail	404	36.20%
	1116	

Time to Resolve: The resolution to my issue/question was identified in a reasonable amount of time.		
Strongly Agree	788	70.61%
Agree	281	25.18%
Disagree	39	3.49%
Strongly Disagree	8	0.72%
	1116	

My question/issue required a repeat resolution because it was not resolved completely the first time.		
Yes	154	13.80%
No	962	86.20%
	1116	

Explanation: The technology staff member helped me understand the causes/solutions to my issue/question.		
Strongly Agree	664	59.50%
Agree	400	35.84%
Disagree	48	4.30%
Strongly Disagree	4	0.36%
	1116	

Professionalism: The technology staff member who assisted me was courteous and professional.		
Strongly Agree	944	84.59%
Agree	168	15.05%
Disagree	3	0.27%
Strongly Disagree	1	0.09%
	1116	

Communication: There was ample communication and follow-up regarding the resolution to my issue/question.		
Strongly Agree	782	70.07%
Agree	295	26.43%
Disagree	35	3.14%
Strongly Disagree	4	0.36%
	1116	
Staff Ability: The technology staff member who assisted me appeared knowledgeable and competent in their troubleshooting and resolution abilities.		
Strongly Agree	920	82.44%
Agree	187	16.76%
Disagree	6	0.54%
Strongly Disagree	3	0.27%
	1116	
Was there anything about the courteousness of the service that stands out as being superior (select all that apply as being superior - above and beyond)?		
Nothing was superior	47	1.37%
Patient	507	14.73%
Enthusiastic	232	6.74%
Listened Carefully	538	15.63%
Explained things thoroughly so they were understood	477	13.86%
Friendly	778	22.61%
Responsive	697	20.26%
Other (specify)	165	4.80%
	3441	
How did this interaction with the Technology Department impact your "good will" feelings and motivation for technology?		
It had no impact on my feelings/motivation for technology	336	30.68%
It made me feel worse about technology and technology use	5	0.46%
My feelings/motivation for technology and technology use increased	754	68.86%
	1095	

Data Security, Confidentiality, Privacy, Safety, and Acceptable Use:

Security

Any attempt to circumvent, disable, or misuse district security systems, including video, voice, or data is prohibited. All issues or potential threats to the security systems are reported to the Technology Director or the Assistant Director for Core Technology.

Confidential Technical Information Requirements

All Bismarck Public School District Technology Department employees are required to hold technical information in the strictest of confidence. Confidential information includes, but is not limited to the following:

- Administrator or user passwords
- User data files
- Student information
- Software media
- Software key codes
- Network addresses
- Firewall information and/or configuration
- System configuration parameters
- System logs and backups

Revealing confidential technical information to unauthorized parties constitutes a breach of this requirement and will result in sanctions as determined by the Technology Director or Assistant Director for Core Technology.

Privacy and District Technology Resources

Individual privacy is not guaranteed when using district technology resources. Files and communications may be reviewed to maintain system integrity and ensure that users are adhering to the acceptable use policy and guidelines. Individuals should respect the privacy of other users and not intentionally seek private information. The district will cooperate with local, state, and federal authorities when necessary.

Internet Safety and Use of Filters

The Internet provides a lot of value to education through access to information and collaboration tools. That said, there are also safety considerations that users must attend to in order to maintain personal and data security. These considerations include:

- *Protection of Personal Information.* Do not give anyone your name, address, phone numbers, passwords, financial information, etc. when online.
- *Email and Email Attachments and Links within Email coming from Unknown Entities.* Do not read email, download attachments or click on links from people or sources you do not know.
- *Internet Activity is Never Private.* Understand that nothing that is done on the Internet is private. Records exist that document everything that is done while online.
- *Notify the Appropriate Authority if you receive something Inappropriate.* Students should tell an instructor or principal and staff should notify their supervisor or the technology department if they are sent something that is inappropriate. Never respond to the person or entity.

- *Never meet online-only friends in person.* The people you meet online may be very different people in person. You have no way to confirm the real identity of someone you meet online.
- *Practice proper etiquette while online.* Avoid conflicts with other users.

Acceptable use of Technology

The district expects users to exhibit professional/responsible behaviors when using district technology resources. The Staff and Student Acceptable use of Technology Policy was presented and approved at the July 14, 2008 School Board meeting. A message reminding staff and students of the acceptable uses of technology is sent twice a year. The Staff and Student Acceptable Use Policy is provided online at: <http://www.bismarckschools.org/uploads/resources/880/policygamc.pdf>

These expectations include:

- Use of technology to support the educational mission of the district in an ethical and professional manner. Bismarck Public Schools does not condone the use of defamatory, inaccurate, abusive, obscene, profane, sexually oriented, threatening, racially offensive, or illegal material and does not permit usage of such material at any time in the school environment or with school equipment.
- Adherence to other district policies as they apply to technology.
- Compliance with all local, state, and federal laws. This includes software piracy, copyright, and other legal issues.

Data Backup/Recovery and Emergency Planning

Server Backups: All district level servers are backed up at regularly specified intervals for disaster recovery purposes. The tapes are rotated to a secure, off-site, location.

Telephone Emergency Procedures:

In the event of an emergency evacuation of any building other than Hughes Education Center, the main phone line is to be forwarded to 323-4100. This will transfer calls to trained district representatives or to a voice message with updated information. Phones can be forwarded from outside the buildings by contacting the district Network Coordinator.

Emergency Notification System:

Bismarck Public Schools is currently contracting for rapid communication capability from AlertNow. This system will only be used in the case of emergencies during the 2009-2010 school year. The benefits and costs will be re-evaluated in the spring/summer of 2010 and a decision made as to next steps.

Phone and Security Camera Services

Telephone Systems:

We began installing Cisco Voice over IP in the fall of 2002. Since then we have completed 18 locations including Hughes Education Center, Bismarck High School, Century High School, South Central High School, Simle Middle School, Wachter Middle School, Facilities and Transportation, BECEP, Miller Elementary, Murphy Elementary, Prairie Rose Elementary, Centennial Elementary, Highland Acres Elementary, Jeannette Myhre Elementary, Riverside Elementary, Horizon Middle School, Pioneer Elementary, and Saxvik Elementary. With the capabilities of our fiber network and the use of Voice

over IP we have eliminated 270 outside lines with the use of three T1 PRI circuits. With the VOIP system we are saving over \$95,000 a year on line charges.

We currently have 6 PBX systems that are 12-18 years old. Several are experiencing problems and many locations don't have expansion capabilities. Given our current budget the replacement plan will take two years to complete.

The remaining sites are: Solheim, Roosevelt, Grimsrud, Northridge, Moses, and the Bismarck Technical Center

Security Cameras:

We help secure all district buildings with the use of video security systems. We began installation the fall of 2005 and phase one was completed in the summer of 2007. The project was made possible with a Secure Our Schools grant. The Bismarck Public School District Board of Education also committed funds. We currently have 280 cameras covering our 25 locations. All building closed circuit cameras are connected to digital video recorders that are remotely accessible. Incidents can be recovered and reviewed by administrators and law enforcement.

Student Assessment, Information Systems, Data Management, & Evaluation:

Student Assessment

The district's student management system (PowerSchool) and formative assessment program (Measures of Academic Performance), as well as the ND State Assessment (NDSA), provide important data for measuring academic success. Students in grade 3-8 and 11 participate in the NDSA each fall. Reading, language and math are assessed in grade 3-8 and 11 and science is assessed in grades 4, 8, and 11. Students in grades 1-9 are assessed in both math and reading using the MAP in the fall and students in grade K-11 are assessed in both math and reading in the spring. A winter MAP testing window is also used extensively. In addition, the MAP Language Usage assessment is available, but not required in all three testing windows.

Other important district-wide student assessments include the PLAN (College Readiness Test for 10th Graders), ACT College Entrance Exam, Kindergarten Indicators, and Dynamic Indicators of Basic Early Literacy Skills (DIBELS). ACCESS is used for students considered English Language Learners. PSAT/NMMQST is optionally available for high schools students who wish to qualify as National Merit finalists. At the kindergarten level, the Kindergarten Initial Assessment (KIA) is given prior to the school year. The KIA gives baseline data on student kindergarten readiness that include letter, number and color recognition, and assists in identifying any special needs the student may require.

Data Management and Dissemination

Student data is entered into PowerSchool. Data from PowerSchool that is used to determine student progress and appropriate placement of students includes report card grades, attendance, scores on district-wide and state assessments (NDSA, NDAA, PLAN, MAP, LEP). PowerSchool is also used to track student demographic data such as ethnicity, special programs such as LEP, and Special Education enrollment. This allows for desegregation of assessment data by NCLB subgroups.

NWEA Dynamic Reporting Suite, an online service through Northwest Evaluation Association (NWEA), allows teachers and administrators to view students' current and past MAP scores. This service includes analytical tools that present information regarding the status of students (individually, by class, by grade, or by school) relative to growth, predicted NDSA proficiency, and national norms. Student scores are available within 24 hours of completing an assessment. This provides timely data for all stakeholders.

All students in K-12 are rostered with NWEA and can be tested using MAP at anytime additional information is needed (eg. gifted and talented programming). For example, students who enter a BPS school outside of a MAP testing window often take a 20-question survey (MAP) that provides a beginning point for instruction and/or referral for further testing or placement in special programming.

MAP Primary Assessment is a formative assessment and progress monitoring tool that was piloted in seven elementary schools for three years and adopted district-wide for K-2 in the 2009-2010 school year.

Triangulation of data and timely data are key to accurately assessing student progress and planning for instruction. Professional development in using data to guide instruction continues to be provided to educators in the BPS district.

The current process for gathering, managing, and distributing data/information begins with technology staff working with key stakeholders to create and distribute reports and information for decision making such as modifications to classroom instruction, continuous school improvement, Adequate Yearly Progress, ND State Reports, and program evaluations. Many times this information leads to additional questions/details. The technology department then works with stakeholders to create a report representing the information requested. District staff also have access to data systems which provide ad hoc searching and reporting capabilities such as, but not limited to, PowerSchool, Viewpoint, DIBELS, and NWEA.

Viewpoint (data warehouse) provides additional tools which allows for more robust reporting with greater efficiency. Staff have been trained on the use of Viewpoint and now have a greater opportunity to create reports at their respective level. Viewpoint allows for the analysis/comparison of data across multiple years (longitudinally). The implementation of Viewpoint promotes timely data-driven decision-making at the district, school, classroom, and program levels.

Viewpoint implementation in spring 2008 was successful, and the Viewpoint system has quickly been adopted district wide by staff who have need for quick access to a variety of student data for data driven decision making. Automation of the data exporting and importing processes through scripting to remove the need for an individual to do them manually was one goal for the 2008-09 school year that has been accomplished. This has enabled the district to update Viewpoint student data on a daily basis. MAP and DIBELS data is loaded weekly during the testing windows and finalized at the end of the window.

Data integration is occurring between systems in various ways. A future goal for data integration is to research, document, consolidate, procure, and implement a more robust and standardized system to integrate data across systems with a focus on data quality, timeliness, and security.

Program Evaluation:

To begin the process of intervention evaluation, student enrollment in special programs is documented within the student information system (PowerSchool). This allows the data (tests, grades, attendance, etc) for all students to be extracted for analysis and academic progress for students enrolled in specific programs/classes to be determined.

As new, innovative programs/methods are planned and piloted, an evaluation plan is included. Data is then collected and used to determine the effectiveness of the program and make decisions regarding further implementation. One program that was evaluated was FASTT Math. This program is designed to increase fluency with basic math facts. Because growth data from the MAP Math testing indicated that there was a positive effect on students, this program was implemented in grade 4 district-wide during the 2009-10 school year (See Appendix G for pilot results).

Technology Integration (Professional Use):

In the end, no matter how efficiently and intelligently the core technology is maintained, it fails to reach full potential if not applied in the classroom with students. Professional use efforts for 2010-2013 fall into three main areas:

- (1) establishing a process through which all staff meet technology competencies.
- (2) implementing a collaborative model for supporting and showcasing technology integration.
- (3) identifying technology integrated student products for each grade.

The foundation that Bismarck Public Schools uses for preparing and assessment educator technology use is the NETS-T and NETS-S.

Measuring Technology Use and Integration:

One of our 2010-2013 strategies for measuring technology use and integration includes the implementation of a base technology competency assessment with the deployment of all computers. In addition to certifying that one possesses the base technology competencies necessary to function as an employee in the Bismarck Public School district, classrooms will be observed for technology integration. Bestpractices will be identified and shared on the website. Examples of submitted bestpractices are located at: <http://www.bismarckschools.org/technology/21st-century-learning>.

Technology Base Competencies for Students:

Bismarck Public Schools recognizes the North Dakota Library Technology Literacy standards and the National Educational Technology Standards for Students as the foundation for assessing student competency with technology. There are three primary means in place to ensure that students are exposed to technology integration within their curriculum. These include, (1) 4th - 8th grade technology integration projects program (Scope and Sequence); (2) 9th grade Career Education requirement for all students; and (3) building based Integration Mentors.

Starting in 2008, the BPS Technology Department formed a Professional Learning Community with a representative group of teachers from grades 4 through 8 within the district. This PLC worked to develop a scope and sequence of web 2.0 tools that aim to enhance creativity, information sharing, collaboration, and technology skills of students. The scope and sequence of technology projects was implemented across numerous classrooms, and included hundreds of students in grades 4 through 8. The final scope and sequence has been posted to a Technology Scope and Sequence Projects Moodle, and implementation of these projects within classrooms across the district is continual.

Plans for the future include updating the scope and sequence and working with Career Education to institute a technology skill assessment and a series of course projects that will illustrate student competency. Every student is required to take Career Education in 9th grade. The assessment would be validation of the technological literacy requirement of NCLB and provide opportunities for the integrated use of those skills throughout 9th grade.

During the fall of 2009, Title IID monies were approved for the formation of a team of teachers who will act as integration mentors in each school in the district. These staff were selected through a process of recommendations from building administrators and technology staff, as well as the interview process. An extra duty contract was awarded to each selected teacher. Each building has 1 to 3 mentors, based on school size. Mentors will act as coaches and role models in the schools and assist staff with the identification and implementation of technologies in the classroom. See Appendix H for a draft of the deliverables for these positions.

Technology Base Competencies for Staff:

During 2007-2010, an initial technology competency requirement was worked toward. The base competency requirements are expectations for all staff members and include foundational computer knowledge such as folder and file management, basic productivity software, knowledge of peripheral devices such as digital cameras and USB drives, Internet searching, email, and ethical use guidelines. The specific requirements are dynamic in the sense that technology, as we know it, is ever changing. Efforts will be made to update the skills requirements so that they reflect those critical to function as an effective Bismarck Public Schools employee.

In July 2009, the first round of assessment of staff technology competencies was conducted as part of district floating staff development days. While the initial assessments went well and were informative to staff development needs, we will continue to refine the core competencies assessment process in 2010-2013.

Training opportunities will be associated with each expectation and staff will be given timeframes within which the skills must be gained.

Technology Training and Support:

There are several options staff have for increasing their core technology skills and their ability to integrate technology in the classroom. These opportunities will continue throughout the 2010-2013 planning period.

In Moodle there has been a Grade Level PLC created for each grade that contains resources quicklinks and that help support the integration of technology with curriculum. For example, there are flipchart resources created from the curriculum that each teacher has access to download and use in their classrooms. As these Moodle Grade Levels PLCs evolve there is the potential for teachers to be able to collaborate using the skills necessary for 21st century.

Tech Talks:

Tech Talks are an opportunity to communicate about technology tools and advancements. There are typically 5-6 Tech Talks per year. The talks are limited to 10 minutes and are presented face-to-face at each building, typically during a monthly staff meeting.

In the future we plan to utilize LiveMeeting to share the tech talk at each building. LiveMeeting will allow us to present to multiple schools at the same time. It will also allow schools to collaborate across the district. We will utilize the Building Integration Mentors (BIM's) to facilitate at individual buildings.

Latte Hours:

Latte Hours provide an informal learning opportunity for small groups of staff (typically 10-15). The sessions are offered every couple weeks and span many different topics from core technology to technology integration tools. Individual question and answer is a large part of the Latte Hours along with a 20 minute formal presentation. The availability of lattes and Italian sodas make this learning environment a unique and relaxed experience.

In Spring 2009, the opportunity was added for staff to earn graduate credit for Latte sessions. Part of the requirement for the credit included their attendance of ten Latte Hours and submission of a written reflection and student sample of technology use in their classroom.

Training-on-Demand:

Training-on-Demand encompasses all technology training done at the request of buildings, departments, and other school or district staff. These presentations are custom fit to the requesting group in terms of topic and time. Every effort is made to conduct these training sessions at a time that is least disruptive to the classroom teacher's schedule (before school, after school, teacher teaming time), and training initiated by the Technology Department is scheduled in such a way that it places the least possible need for substitute teachers.

EduTech:

EduTech Courses for Credit are four-hour sessions on a variety of Windows applications that are contracted through EduTech.

- Sessions are scheduled by the Technology Staff Developers, and topics are chosen based on current needs as established by newly adopted applications, as well as the data provided by the staff core technology skills assessment.
- All sessions are advertised to staff through the district website, staff tracker, and the weekly district Intercom publication.
- A staff member who chooses to attend these workshops for continuing education credit, can receive a credit through NDSU once they have completed four workshops within a two year period.
- The registration process is maintained and monitored by the Technology Staff Developers through the use of the Staff Tracker system.
- Registration for credit is conducted through EduTech/NDSU.

Core Skill Workshops for Credit (under development):

Core Skill Workshops will be available to help staff meet the minimum technology competencies. Core skills are considered to be those skills necessary for staff to function effectively in their everyday work lives.

- Identification of necessary core skills will be ongoing, and will include but not be limited to those topics and skills identified by technology staff, administrators, staff, and teachers in the district.
- Core skills are considered to be the basic skills necessary to function effectively on the job, for instance, cut-and-paste; folder organization; saving and converting files, etc.
- All core skills workshops will typically be limited to two hours in length. Workshop curriculum will be developed by the Technology Staff Developers.
- Technology Staff Developers will utilize the district staff development database to register and track attendance for Core Skill Workshops.
- Workshops will be offered during after school hours to eliminate the need for release time and cost for substitute teachers.

Technology Staff Development Funding

Technology professional development is often scheduled as part of existing, required, staff development days (e.g. floating staff development). These are days that are part of the teacher contract. Other funding for technology staff development is limited to training staff salaries (there are two Technology Staff Developers).

School principals work with EduTech to bring EduTech courses to their schools. BPS participants in these courses have their registration fees paid by the money that the technology department gives each school. Each school principal can decide on the time and content of the EduTech Workshop course for their school.

Assistive Technology Interventions for High Needs Students:

Bismarck Public Schools has an Assistive Technology Department. Two FTEs work to identify technology solutions that help students with hearing, vision, mobility, communication, and learning impairments.

Digital Video and Distance Education:

We have one digital videoconferencing classroom for two-way interactive video in the Hughes Education Building. We also have digital video codecs at Riverside and Jeannette Myhre for two way classroom distance education. By utilizing videoconferencing, educators are successfully facilitating connections between their students and educational resources located anywhere in the world. This technology also provides continuing education capabilities to teachers and administrators.

Bismarck Public Schools is a member of the Great Western Network. We cooperate to send courses to other member schools. Our plan is to continue as a member school and to assist with course planning and scheduling. Plans beyond the established K-12 digital video network include a focus on the use of digital media and streaming for home access. We currently use digital media to provide better options for both synchronous and asynchronous communication and information access to home-bound students.

Communicating through the District Content Management System (Website)

District Synopsis of Current State of the Website

The Bismarck Public School District including each individual school has a core website template. The technology department works with a local vendor on a full content management system that allows for easy creation and sharing of content. Everyone, regardless of their technical skill level, will be able to focus on the quality of the content on our websites for the district, buildings, schools, departments and classrooms. Sites are cohesive and consistent in look and feel all the way from district, to building, to department, to teacher and to classroom pages.

Technology Website Portal

The technology website provides continuous online content and solutions that add value for students, parents, staff and the community. Below is a list of services and support provided on the technology website:

Announcements: Area where technology articles and information are showcased.

Best Practice Examples: Contains a collection of student projects showcasing 21st century learning throughout the Bismarck Public School district that were created using technology tools.

Contact Information: Contains ways to contact the technology department including help desk support, all building phone numbers and a directory.

Current Projects: This area is intended to provide a communication point for new projects and deployments.

Equipment Checkout: District staff can reserve equipment through the technology equipment checkout.

Events: A calendar of events hosted by the technology department.

Grant Opportunities: A list of technology grants available for teachers through a number of different resources.

Helpdesk: The first line of contact for technical support is through the Helpdesk where all district staff can either call, request assistance by submitting an online request or walk in. This area contains contact information for the building technology support specialists, troubleshooting tools and email security information on SPAM and email hoaxes.

Login Portal: A central location for staff, students and parents to access appropriate applications, services and information where a username and password is required.

Network/Security/Phone: This area summarizes network, security and phone information including updates on the deployment of projects in these areas.

Policies and Plans: This is where policies relating to technology, the technology balanced scorecard and plan are found.

Purchasing: District staff must order technology supplies through the technology ordering warehouse. This area includes information on both hardware and software standards for purchasing district items and information on how staff can receive discounts for personal technology purchases.

Related Departments: Contains contact information and descriptions of other district administrative departments that are related to technology use and implementation.

Tech Talks: Presentations which focus on current technology initiatives or commonly reported problems. These talks are conducted face-to-face at each building and available in digital format.

Training Resources/Links: This area includes the monthly Tech Talk presentations, EduTech email services procedures, web links and educator resources for technology integration into curriculum.

A question and answer database will provide easy access to answers regarding common problems. An extensive professional development area will be organized and populated to include just-in-time modules, streamed videos, tip sheets, and best practices postings on topics such as PowerSchool, data warehouse, specific software, interactive whiteboards, technology integration ideas, etc.

Overview of Website Portals

District Website Portal

The district website is an online solution that provides two-way communication and gained efficiencies for students, parents, staff and the community. As of November 2009 there are 288 users (users include staff, students & community members) maintaining content for a website page within our district sites.

Building Website Portal

Each school has a base template. Base information for each building site includes (but is not limited to) news, contact information, continuous improvement, academics, athletics, student/parent organizations and staff and parent information. Each school/department template is not only designed to be consistent and cohesive from site to site, but also allows for individuality in school spirit and pride through school colors, an area to showcase photos that rotate and events and announcements that are specific to the school/department.

Classroom/Student Website Portals

Staff members are encouraged to have a page on their building website and supported through setup and training. As of November 2009 there are 288 users (users include staff, students & community members) maintaining either an academic or athletic website page within our district sites. On-going support is provided on an as needed basis through professional development courses, latte hours, online documentation and one on one training. Staff can obtain a site on the building template for which their course(es) or activity is held. Students, parent volunteers and community members can also be responsible for the maintenance of site with approved access. Students can edit and maintain sites where publishing rights are with the approval of a teacher or advisor that must approve content.

Staff Development Tracker

The Staff Development Tracker is an extensive professional development area used for entering courses one wishes to offer to others, entering private courses for documentation and lane change purposes, and where all staff register for district approved learning opportunities. Our staff development strategy recognizes a variety of modes for learning while at the same time focuses group and individual efforts toward the accomplishment of our district continuous improvement plan (Balanced Scorecard). See Appendix I for an illustration showing how the Balanced Scorecard themes and objectives help provide an organizational structure for staff development tracks, subtracks, and sample opportunities.

EduTech Blogs

Blogs@EduTech provides anyone with an EduTech e-mail account to request blogging service to blog and podcast. Currently we have 73 staff with a blog site through EduTech.

Instructional Technology Blog and twitter

A blog site and twitter account is now available for just in time information and resources relating to instructional technology and the content management system for the district.

<http://blogs.edutech.nodak.edu/meochsne/> and http://twitter.com/BPSD_Web

Continuous Promotion Timeline:

2009 +: continue to encourage and support needs/desires for web content and services through staff, students, and community member and/or parent volunteers.

2009-2010: Online forms and other registrations such as camp edventure and in-district transfer requests.

2010-2011: Continue to encourage and support users with a website page to infuse other web 2.0 tools and enhancements.

Budget:

Overview

Studies on investments made by those schools that most exemplify transformational technology use indicate budgets between 3.2% to 8% of the total per student expenditure (RAND, 1996). The most plausible number was suggested at 5.4% of the total cost per student. The approximate split should be hardware and telecommunications infrastructure at 50%, software and digital media resources 25% and staff development and support 25%. Bismarck’s 2007-2008 per student expenditure was \$8,654. Using the 3% figure and an estimated 10,740 students, the total suggested technology investment for Bismarck Public Schools is \$2,788,318.

Funding for technology in the district comes from a variety of sources:

District Funds – The majority of departmental funding comes directly from district funds allocated in the annual budget process. This includes funding for personnel, a replacement schedule for back-end equipment including network switches, wireless, servers and backup, maintenance of existing equipment, district software purchases and renewals, and minimal supplies.

2010-2013 Technology Department Budget and Projected Expenditures					
OBJECT CODE	DESCRIPTION	2009- 2010 Budget	2010- 2011 Budget	2011- 2012 Budget	2012- 2013 Budget
TOTALS		1,786,210	1,855,749	1,928,465	2,006,930
Technology Enhancements for computer replacement, VOIP, Software		2,328,186			

Educational Technology Council – ETC provides services statewide to K-12 institutions through EduTech. Currently, antivirus software, Internet filtering, and training are provided.

Title IID Stimulus – For 2009-2011 we received \$108,295 for technology staff development and resources. See Appendix J for the Title IID Stimulus Application.

E-Rate – Federal E-Rate monies provide reimbursement, at 49% of cost, for telephone and cellular phone service, broadband network and Internet service.

Item	Function	Estimated Cost	Funding Sources
STAGEnet/Internet Access	Digital Transmission Services	\$35,541	\$16,126 ERate \$19,415 State
Telecommunications Service – Micontinent Communications	Digital Transmission Services	\$77,910	\$38,176 ERate \$39,734 District
Telecommunications Service – AllTel Corporation	Telephone Service (cell phones)	\$90,000	\$44,100 ERate \$45,900 District
Telecommunications Service – Qwest Corporation	Telephone Service	\$60,000	\$29,400 ERate \$30,600 District
Telecommunications Service – USLink, Inc	Telephone Service (long distance)	\$3,600	\$1,764 ERate \$1,836 District
WebHosting - INET	Web Hosting	\$5,000	\$5,000 District

Career and Technical Education – State Career and Technical Education Department monies fund a portion of the equipment in CTE programs in middle, high, and at the Career and Technical Center in Bismarck.

Special Education – Special Education monies are used to fund assistive technology programs and personnel in the district.

Donations – Occasionally, equipment donations from local businesses are received. Items donated are put into the schools or departments where they are determined to be most functional.

PTO/PAC – Parent groups often provide funding for additional hardware and software requested at the individual buildings. The Technology Department publishes a suggested list of purchases for PTO/PAC consideration. This list is posted on the Technology website at:

<http://www.bismarckschools.org/technology/purchasing/>

Purchasing:

All technology and technology supply purchases by departments or schools are currently submitted through the Tech Warehouse. The list of technology related items that can be purchased is listed on our Technology website.

For purchases that are not in the TMS ordering system the requester must submit a specialized request using the same system. This request must include specifications of the desired product as well as information on its use in the district. The specialized request will be researched to find the most reliable product and price and added to the TMS for final processing. **Any equipment purchases that are not initiated through this process risk delayed implementation or denied support.**

2009-2010 Accomplishments

Core Infrastructure

- Increased telecommunication & Internet bandwidth - (*ND School Net*).
- Implemented new server chassis with blade servers and virtualization.
- Continued telephone replacement schedule moving to VOIP.
- Upgraded wireless and improved wireless security.
- Deployed 1000 new computers along with training of new PCs to 12 buildings.
- Planned for technologies that result in energy conservation.
- Implemented wiki for technology knowledgebase.
- Implemented Moodle courseware and collaboration system in server environment.

Hardware and Software/Online Services

- Finalized plans to transition to single end-user platform.
- Completed evaluation of the FASTT Math and Pearson SuccessNet pilots.
- Researched and implemented netbooks.

Technology Integration and Staff Development

- Identified base technology staff competencies.
- Created a base technology competencies checklist/assessment.
- Planned and implemented training on base competency requirements.
- Developed a sequence of student technology integrated products for 4th through 8th grade.

Internal and External Communication

- Evaluated website implementation and identified improvement areas.
- Increased focus on training and development for classroom websites.
- Customize digital portal with the @bismarckschools logo.

Data and Assessment

- Implemented MAP Primary district-wide.
- Completed phase one of getting staff development data for loading into data warehouse.
- Planned for & implemented necessary infrastructure changes and training to transition the district to PowerTeacher by fall 2009.
- Completed automated STARS student enrollment reporting.
- Completed Active Directory authentication with PowerSchool and ViewPoint for staff accounts.

2010-2011 Goals

Goals, Strategies, and Timelines:

The Technology Department uses the district adopted Balanced Scorecard process for strategic planning. This process helps ensure that departments and buildings are aligned and contributing to the strategic goals of the district. The most recent Technology Department Balanced Scorecard is posted on the website at: <http://www.bismarckschools.org/technology/policies/>

Core Infrastructure

- Fully secure wireless.
- Customize filtering options to optimize access needs and maximize bandwidth.
- Implement wireless-N.
- Continue telephone replacement schedule moving to VOIP.

Hardware and Software/Online Services

- Follow Marzano's work on Interactive Technologies and student achievement and establish models in Bismarck.
- Research and implement a printer/copier standardization and replacement schedule.
- Plan and implement technology at two new buildings.
- Implement FitStats system for physical education assessments.

Technology Integration and Staff Development

- Finalize and implement base technology competency assessment, training and accountability process.
- Build technology integration capacity K-12 through the facilitation of the Building Integration Mentor group.
- Build and extend capacity to implement Moodle for collaboration and as an online course system.

Internal and External Communication

- Evaluated website implementation and identified improvement areas.
- Developed a technology literacy assessment to incorporate with 9th grade Career Education.

Data and Assessment

- Plan for and implement new web-based MAP testing system.
- Coordinate with vendor and other districts to determine, test, and load staff development information in the warehouse.
- Finalize and implement student account authentication with Active Directory from PowerSchool.
- Coordinate with ITD and DPI to establish vertical student reporting for ndSLEDs and STARS state reporting.
- Plan and implement updated process for ETL for district systems integration.

Appendix A:

2010-2013 Technology Planning Committee Members

Input on this plan was gathered in the following ways:

- student interviews (see <http://vimeo.com/7670164>)
- principal interviews regarding educational technology at 10 schools (Appendix B).
- attendance at 7 PTO/PAC meetings to gather input (Appendix C)
- survey of business leaders (see Appendix D)
- meeting with the BPS Technology Planning Committee (see Appendix F)

Technology Department Staff	BPS Elem Staff	BPS Secondary and Other	Parents
Tanna Kincaid	Andrea Edstrom	Benjamin Lervick	Deborah Mantz
Casey Mueller	Bernelda Lehmann	Dan Houston	Bill Prokopyk
Jodi Keison	Beth Romfo	Dawn Sauer	Brian Gale
Ward Knudson	Vivian Meiers	Joe Kalvoda	Julie Lawyer
Jen Messer	Brandi Trom-Anderson	Lee Gullingsrud	Kory Hagler
Shawn Stelter	Darlene Bondley	Mike McHugh	Renae Smith
Jennifer Weber	Debbie Job	Jen Anderson	Dan Durke
David Sherwin	Elise Freier	Jessica DeVaal	Frank Kraft
Melissa Ochsner	Janel Spaeth	Mark Sheldon	Don Walz
Junella Feickert	Kirsten Baesler	Mary Haunson	Dan Wanek
	Marcia Patrie		Lynne Anderson
Administrators	Mary Beth Swenson	Specialists	Mariah Wipperling
Linnett Schmidkunz	Peggy Kopp	Diane Dyk	Jessica Paulsen
Lynn Wolf	Renae Orstad	Jenny Wills	
Steve Madler	Tracy Wolf	Jerry Zimprich	Students
Russ Riehl	Barb Sandstrom	Mary Christianson	Muneeb Hyder
Doug Vanderpan	Jenifer Porter	Peggy Lutovsky	Jenna Duttenhefner
Beth Jeide		Diane Dyk	Kristian Paulsen
Shawn Oban		Jenny Wills	Jessica Duttenhefner
Wilda Lu Nelson		LMO	Naomi Norris
		Melanie Nunberg	Tatum Paasch
		Rhonda Bothwell	Logan Vedquam
		Mary Miller	Demi Lorinser
		Bonnie Kettleison	Christopher Perkins
			Sean Davis

Technology Advisory Committee Meeting Minutes

Thank you to those who took the time from your busy schedules to learn about and discuss technology integration at BPS. I am just returning from a technology conference in Minneapolis where I had the pleasure of listening to Bob Marzano, a very respected educational researcher who has written many books on “what works” in education. Marzano’s recent research endeavors have been in classrooms with interactive boards and student response system technologies. His initial results indicate that interactive board technology, when used by experienced teachers using student-centric strategies, resulted in a 17% increase in student achievement. I mention this because it is very significant that Marzano is making statements that he believes *interactive technologies are what are finally changing the educational classroom to something that is dramatically different than the 1900s*. Marzano is not a technology person, he is an educational researcher and his focus on technology integration is credible affirmation regarding the importance of classrooms having 21st Century tools.

As a summary for everyone the things we discussed included:

- (1) Review of the reason for technology.** We talked about the importance of engaging students in the use of 21st Century tools to solve problems and advance their learning. We reconnected with the National Educational Technology Standards for Students (NETS-S) to point out that our focus is much more than skills on running technology. It is about using digital tools to collaborate, problem solve, produce, etc. The NETS-S are located at: <http://bit.ly/YSttP>
- (2) Summary of Feedback from PTO/PACs and the Young Business Leaders Association membership.**
 - a. We attended 7 PTO/PAC meetings and received feedback from over 100 parents.
 - b. We surveyed the Young Business Leaders membership using an online form (see table below). We had received 18 responses by the time of the December 7th meeting. We also asked an open ended question about what characteristics would “WOW” them in a new hire. A summary of the “Wow Factor” is posted on our blog at: <http://blogs.edutech.nodak.edu/bpstech/>
- (3) 6 teacher/student teams showcased what they are currently doing with a variety of engaging technologies.**
 - a. Brenda Beiswenger (Myhre) – ActivBoard and ActivExpression
 - b. Mike McHugh (BTC) – Netbooks
 - c. Marilyn Schlobohm (Moses) – Wordle and Visual Thesaurus
 - d. Desire Johnson (Myhre) – Document Cameras and Discovery Education
 - e. Ben Lervick (Wachter) – Web 2.0 tools and Flip video cameras
 - f. Jodi Sullivan (Centennial) – FASTT Math
- (4) Gathered Feedback from Committee Members:** Committee Members used ActivExpression (response systems) to provide quantitative feedback and had an opportunity to use a netbook and online form to respond to questions about what is working, what is not working, and what should be considered for the future. Responses are summarized below.
 - a. Suggested Computer Replacement Schedule: most responders selected between 3-4 years.

- b. Priority for classroom technologies: following is the order of classroom technologies priorities calculated by averaging responses and organizing them by the technologies the most people strongly agreed were important to classrooms. (1) Mounted Projectors, (2) Pods of Computers, (3) Interactive Whiteboards, (4) Sound Enhancement
- c. Student use of technology. Overwhelmingly it was felt that students do not use technology enough in their learning processes.
- d. Open Responses:
 - i. What is good about BPS Technology Access and Use?
 - It is becoming more accessible.
 - Getting new computers on the replacement schedule... we received them this year and it is fantastic to use equipment that works with all the available tools.
 - Technician group
 - Helpdesk
 - ii. What is not working?
 - Inequities in access from school to school.
 - Lack of focus on learning and talking about technology integration as professional teaching staff.
 - Having one piece of the puzzle but not having avenues to get the full package that will really make it work (ActivBoard but no response systems or document camera).
 - Need technology integration classes as part regular staff days or during school. Everything on your own time.
 - iii. What should be on the radar (3-5 years)
 - Equity of tools from building to building and classroom to classroom.
 - Netbooks for increased access.
 - Integration partners at the building-level so we can really leverage the investment.
 - Keeping up with the latest technology and providing teacher training.

Thank you for reading to this point and please do not hesitate to email me with any suggestions regarding technology at BPS.

Appendix B: Interview Summary from Principals Meetings

November 2009

(schools interviewed: BTC, CEN, HMS, ROO, WME, PIO, SAX, GRI, HAE, MIL)

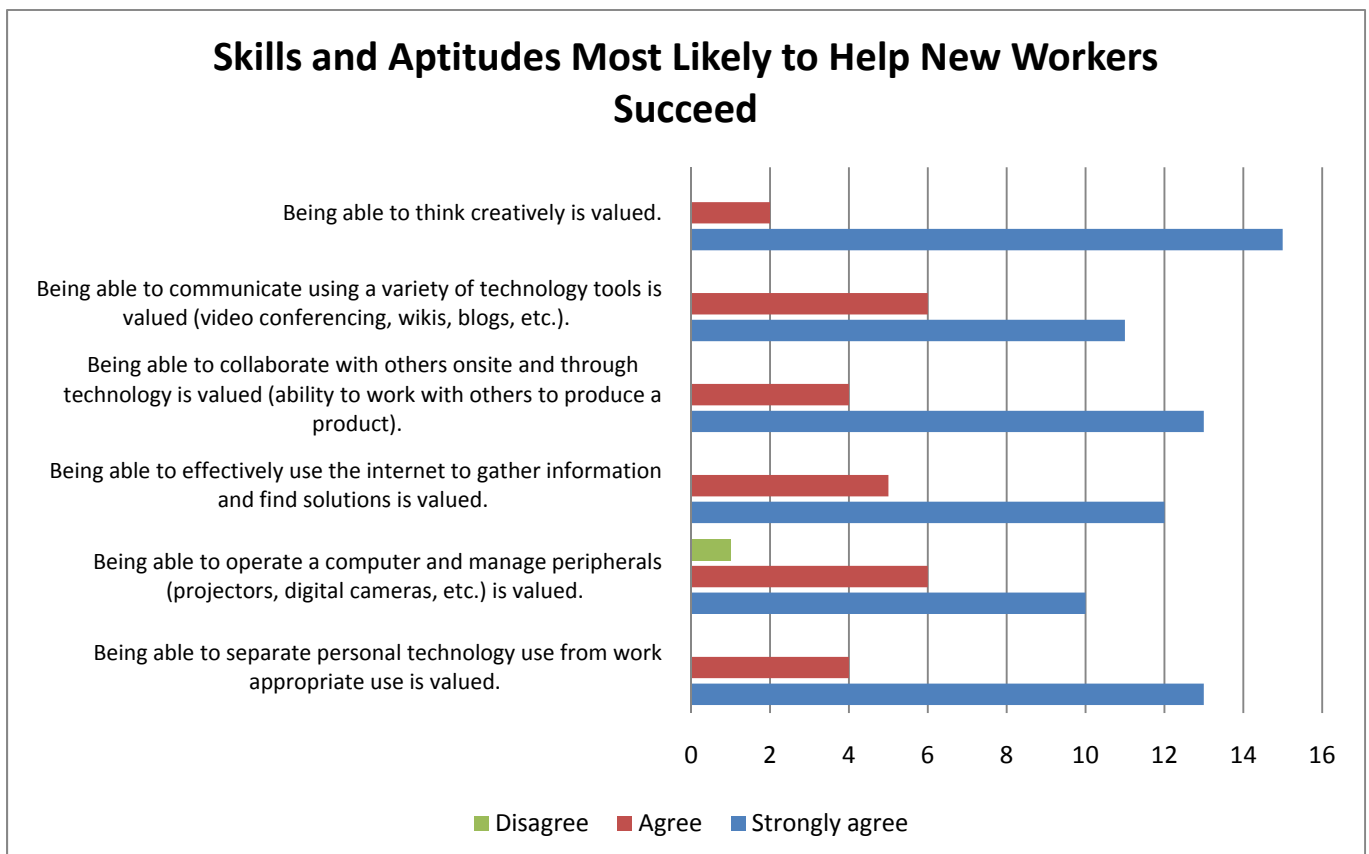
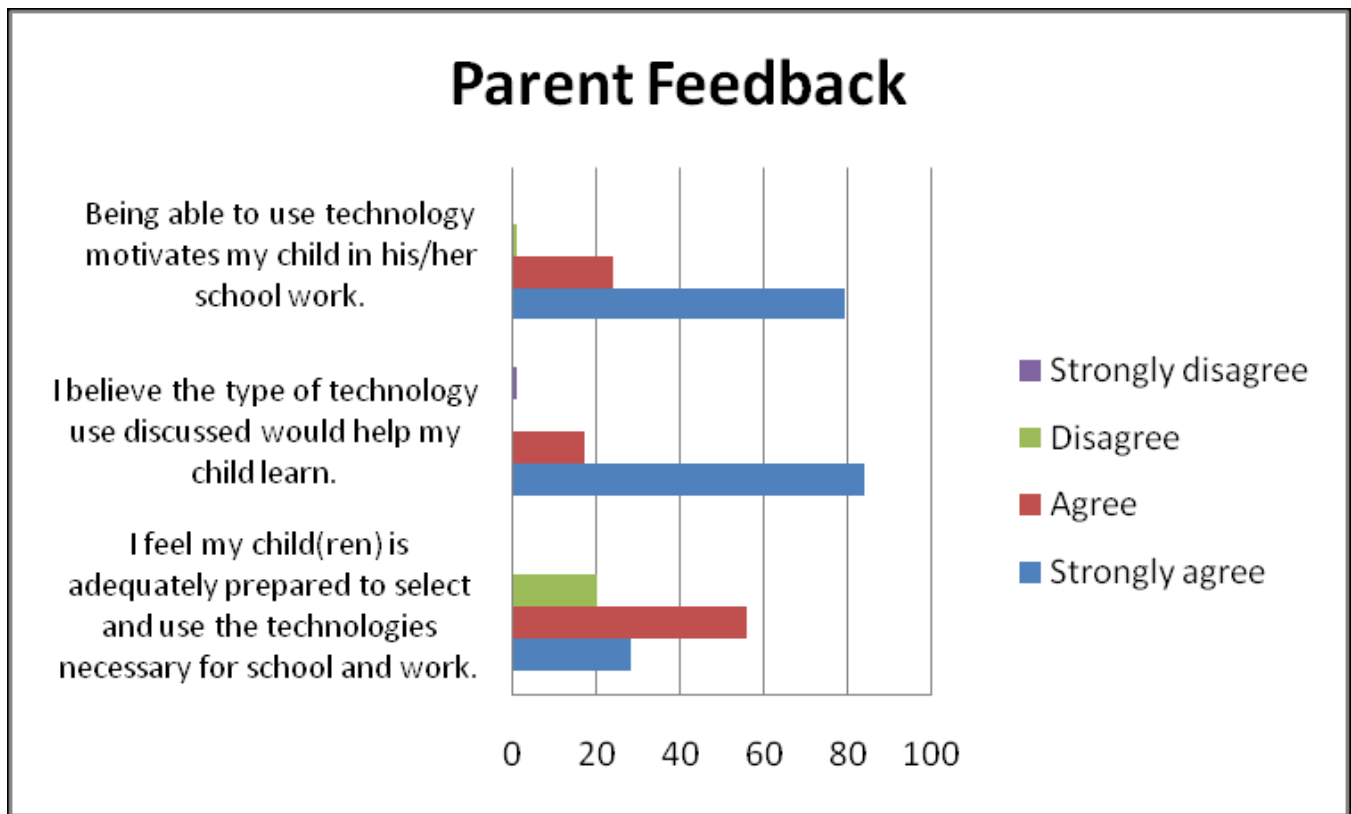
Question	Response
<p>What percentage of your staff are...</p> <ul style="list-style-type: none"> • Technology integration pioneers – teacher and students using technology weekly in a variety of ways. • Teacher technology users - teacher is proficient and uses technology regularly but hasn't extended to a lot of student use. • Use by necessity – only use technology for necessary tasks required of the job (email, PowerSchool, etc.) 	<p>Averaging the responses from the 10 schools resulted in the feeling that approximately...</p> <ul style="list-style-type: none"> • 22% of staff are pioneers. • 46% of staff are teacher users. • 32% of staff are “by necessity” users.
<p>If you were to hire a new teacher tomorrow what technology skills would you expect? (what hardware? what software? what level of independence or trouble-shooting?)</p>	<ul style="list-style-type: none"> • Would look for them to be current on all productivity technologies and new technologies. It is important for them to understand the need and have an interest but in all likelihood, many positions will require that new people receive training on using the technology tools. • Would ask them about projects they have done with students using technology. Would expect them to know the vocabulary of technology integration. Would ask them to talk about the training they have had in technology. • Technology would have to be a consideration. Would ask about the software and programs the person is familiar with. • Would ask...”What have you done with technology with students.” • It would be an absolute priority that they be high-tech people. • People skills, instructional strategies, flexibility and open to learning new things.

	<ul style="list-style-type: none"> • Would really like to see them have up-to-date skills... use web 2.0 and integrate into classroom with kids. • Understanding of the big picture and interest and ability to take it and go.
<p>What are your buildings hardware gaps?</p>	<ul style="list-style-type: none"> • Projectors (6) • ActivBoards (3) • Student Response Systems (2) • Document Cameras (3) • Digital video camera for the classroom • Sound Enhancement (2) <p>Comments:</p> <ul style="list-style-type: none"> • I really feel mounted projectors with quick continuous access is important... Trying to share leads to less use because of lost instructional time. • Digital video for the classroom for things like Readers Theater motivate kids to read and read fluently. • Projectors are a necessity not an enhancement... they provide a way to build background knowledge. • Projectors... I really think we need district supplied technology. • All grades need projectors that are mounted and available for continuous use. There are too many online resources and other subscriptions to not have them. Students are losing out on experiences and content access. • We are pretty good with hardware... thanks to PTO. People divided in what they want... Audio Enhancement, Document Cameras, ActivBoards. • I receive questions from PTO on why they are expected to buy classroom technology. Aren't some things just becoming necessary to prepare students?
<p>What are your buildings software gaps?</p>	<ul style="list-style-type: none"> • Would like the MS Office overlay software from Scholastic. • AIMS Web and Read Naturally. • So much is webbased and free so don't hear a lot about it.

<p>How can we provide better technological support?</p>	<ul style="list-style-type: none"> • Getting a response more quickly.... need help right now. • Tech support is good. Having people available when we switched computers was good. • Like the ticketing system and the helpdesk. • Make the tech talks more personalize and relevant.
<p>How can we provide better training/coaching support?</p>	<ul style="list-style-type: none"> • Assign one person to stay with a building for Tech Talks. Stick with one topic across multiple talks and give people an activity to try. • Interested in the Building Integration Leader concept. • We need time and to see good examples/models. • We need all the coaches (RTI, Math, Technology, Reading) to be versed in integrating technologies. • Need to pick integration or tech skills that have “staying power” ... things that can be repeated
<p>Feedback on the possibility of the printing/copying lease/support program</p>	<ul style="list-style-type: none"> • Very interested in going greener. Instead of printing everything – show on projector or have students access online. Have more student submissions be electronic. Need more efficient and cost effective printing. • Very interested in copier/printer lease program. Would support fewer but better/more efficient printers. • Believes that as the technology increases the cost of printing goes down because there are other methods for accessing information. • \$2,100 just for copies... plus machine cost... The more technology we have the less printing... • Always felt the district should go on a plan for printing and copying. • Not sure about limiting printers... and walking and inefficiencies of access. • Would really like printing at the building level to be at the cost of printshop and be able to manage locally.

<p>What obstacles exist to increasing the use of technology as an integrated part of classroom practice?</p>	<ul style="list-style-type: none"> • Time to collaborate and work together. • Willingness to pursue technology as a strategy for engaging kids.
<p>General</p>	<ul style="list-style-type: none"> • Desire for instructors to provide more things online. More classes online and more resources and assignment submissions online. • Concerns about those in portables and their ability to access technology. • Liked getting redeployed laptops but now they are 7-8 years old, can't be updated, and will not work for many internet sites. • Helpline is great.

Appendix C: PTO/PAC Meetings Feedback Results



Appendix D: Survey of the Young Professionals Network

In an effort to gather input on the types of 21st Century skills our students need to be successful, a survey request was made to the Young Professionals Network. This group was chosen because they are or many will be the future business leaders who will be hiring BPS students. Eighteen members responded and they represented a variety of local businesses. These responding individuals were very diligent and specific in their feedback to my open-ended questions – a rarity in surveying. One of the questions that was asked was about the characteristics that would be most likely to “WOW” them in terms of making a new hire. I found it intriguing how closely their responses matched the National Educational Technology Standards for students (NET-S). As an educational technology person I am very motivated by planning and implementing classroom practices that encourage and support student creativity, innovation, collaboration, research, and problem-solving through the selection and use of a variety of technologies. It turns out that, at least from the perspective of the 18 respondents, efforts to help students gain these kinds of 21st Century skills will result in success for them as future employees. Below are just some of the characteristics that will likely make all of us more successful in our careers.

- Out of the box thinking
- Problem solving, communication, and teamwork skills
- Having ideas and sharing them – constant focus on continuous improvement
- Interest and ability to learn new things – particularly on the computer
- Ability to learn quickly and to adapt to change with ease and with a positive attitude
- Attitude and a servant leadership focus (demonstrated unselfishness – people who have mentored, coached, helped at shelters, in addition to having their “own” things)
- Self-starting ability and having a take charge attitude regarding your own destiny
- Having a positive attitude and the ability to inspire others
- Willingness to take on new responsibilities... specifically seeing a need and offering to take it on – not waiting to be told
- Being flexible and hard working
- Ability to write
- Interpersonal skills and public speaking ability
- Ability to select the technological medium best suited for a job/function/purpose
- Knowing internet/technology etiquette
- Being technological literate beyond the “wordprocessor” level

Results regarding the other questions asked of this group are presented below:

Thinking about the skills and aptitudes most likely to help new workers succeed, please rate your level of agreement with the following statements.

Being able to think creatively is valued.

Select One...		0%
Strongly Agree	██████████	88.2%
Agree	██	11.8%
Disagree		0%
Strongly Disagree		0%

Being able to communicate using a variety of technology tools is valued (video conferencing, wikis, blogs, etc.).

Select One...		0%
Strongly Agree	██████████	64.7%
Agree	████	35.3%
Disagree		0%
Strongly Disagree		0%

Being able to collaborate with others onsite and through technology is valued (ability to work with others to produce a product).

Select One...		0%
Strongly Agree	██████████	76.5%
Agree	████	23.5%
Disagree		0%
Strongly Disagree		0%

Being able to effectively use the internet to gather information and find solutions is valued.

Select One...		0%
Strongly Agree	██████████	70.6%
Agree	████	29.4%
Disagree		0%
Strongly Disagree		0%

Being able to operate a computer and manage peripherals (projectors, digital cameras, etc.) is valued.

Select One...		0%
Strongly Agree	██████████	58.8%
Agree	████	35.3%
Disagree	█	5.9%
Strongly Disagree		0%

Being able to separate personal technology use from work appropriate use is valued.

Select One...		0%
Strongly Agree	██████████	76.5%
Agree	████	23.5%
Disagree		0%
Strongly Disagree		0%

Appendix E: Intercom Articles

Intellectual Capital: How we come to “know”

May 14th, 2009

My 14 year old daughter thinks she “knows” things. It seems every time I try to explain something to her or remind her of a commitment she says, “I know. I know.” Similarly, as a child, my dad and I did some fishing and I was almost always successful. I thought I “knew” how to fish. I was shocked when I grew up and discovered that I couldn’t find a trout to save my life. My dad knew where to fish and what bait to use. I had just followed his instruction.

This idea of how one comes to really “know” things has made me think more deeply about the continuum of knowing technology. What do we, as professionals in an education environment, need to know about technology to be successful? How do we become more agile and adaptable; moving more effortlessly with the constant changes in technology?

Becoming a successful technology user is similar to our expectations that students become critical thinkers. Our goal with technology staff development is to encourage thought about technology as a system and how that system works outside of specific tools and products. While teaching step-by-step instructions is often necessary in the short-term it must not be the primary focus. With step-by-step, users survive as long as the technology variables do not change. Of course we all know that technology variables change all the time and that we really need to problem solve and adapt. To really “know” anything to the point that one is able to think about it and apply the knowledge outside of a defined box requires what some might see as a struggle. “Struggle” often involves research, critical thought, experimentation, and time. Contrast this with the notion of knowing because one can follow steps. Tony Wagner writes about seven work survival skills in his book, *The Global Achievement Gap*. These skills all relate to knowing and the 21st Century Workplace.

Survival skill #1: critical thinking and problem solving: work is moving from specialty jobs to cross-functional teams. There are problems and challenges that teams must work to solve – the solution is not prescribed; no one is telling you exactly what to do. Technology in the workplace is a great example of why being skilled at critical thought and problem solving are important. The rapid change in technology requires “knowing” and thinking about the technological tool, what it can do, and how to make it help you accomplish the end goal. The ability to use technology tools in this way is fun and exciting; opening up many possibilities for you and your students.

Survival skill #2: collaboration across networks and leading by influence: The internet, with digital video and social networks, has opened up a whole world of diverse team members and experts. Computers are used for more than researching and typing. Your BPS teacher computer is becoming a life-line to information beyond your classroom. In a few months we will be officially unveiling a collaborative online environment which will serve a space for curriculum, resources, and discussion about teaching and learning. Our sphere of influence has moved from our isolated classrooms, to our buildings, and now to our district and beyond.

Survival skill #3: agility and adaptability: All professions are facing continuous changes in tools and processes. Survival as a professional in the 21st Century requires flexibility, adaptability, lifelong learning. We are a technological society and technology will continue to advance and change. The key is to become more agile and adaptable. Agility when it comes to technology is built upon use and experimentation. One can’t become agile by learning a “technological recipe.”

Survival skill #4: **initiative and entrepreneurialism:** Self-direction and the ability to find creative solutions to challenging problems are valuable skills. I had the great pleasure of working with students on several technology integrated products this year. At one point I remember thinking, “Oh my, I don’t think I am up for this today.” That thought lasted about 3 minutes. Once the student teams had their computers and project rubrics, they were so completely focused and determined it was inspiring.

Survival skill #5: **effective oral and written communication:** Writing in the world of technology has taken on a whole new twist. Electronic communication, whether email, websites, or via a social network, is used professionally and personally - whatever you post it is very public. I was struck by the “publicness” of my electronic communications when local newspapers started following my Twitter posts.

Survival skill #6: **accessing and analyzing information:** As workers and citizens we have access to an astronomical amount of information and data. The idea of memorizing isolated facts is an outdated skill stemming from years past when print resources and experts were scarce. Value today is in the ability to synthesize, evaluate, and connect information. There are many implications, particularly research and reading, that relate to online information access.

Survival skill #7: **curiosity and imagination:** In his book, *A Whole New Mind*, Daniel Pink wrote, “it is no longer enough to create a product that’s reasonably priced and adequately functional. It must also be beautiful, unique, and meaningful.” This year at BPS we have an incredible opportunity to purchase new computers and to upgrade some of our productivity software. With this opportunity we will recondition computers to provide more student access. My hope is that we can help staff and students leverage technology in a way that sparks imagination and curiosity about world.

Technological Classrooms at Bismarck Public Schools

November, 2009

It's technology planning time! So, I made my way out of my basement office, on some really nice fall days, and interviewed students, spoke to PTO/PAC groups, and met with building principals and staff.

Students Interviews: The three student interviews were an absolute highlight. These students reflected on technology integrated projects from the past year. Visit the Technology Blog site to see the student products and interviews.

PTO/PAC Representatives: While they may not know all the ins and outs of technology and what is happening in our schools, they have a strong desire for their kids to be able to use technology as a value-added tool and for them to be engaged and excited about learning. These parent groups have dedicated a tremendous amount of financial resources toward the purchase of school technology – we need to make certain those and the other technology investments are fully utilized.

Building-Level Discussions: Building discussions were a shift from conversations I have had in the past that focused on frustrations with access and unreliable equipment to conversations on how teachers are integrating technology in ways that excites students and increases learning. For many teachers technology is not an extra thing but an integral part of their teaching strategies. One teacher spoke of recently moving from a technological classroom environment to a classroom with little technology. This teacher expressed her desperate need to have the technology environment she had before. Her reasons were not self-

serving. She is not a technology geek. She is a teacher trying to connect to her students and help them learn and love learning. One of her most important observations was that the technological environment she had before led to increased instructional time. Her

explanation was that her students were so engaged through media such as Discovery Education videos and the ability to interact on the ActivBoard that **they became proficient quicker allowing the class to dig deeper**. Another observation was that her technology classroom was much more “green.” Through technology access, particularly her classroom projector and interactive board, she and her students printed far fewer handouts and worksheets.

Through technology integration classrooms are becoming communities that collaborate, communicate, innovate, and contribute. While there are some gaps in technology access there are many resources available. No one can do everything but everyone can grab onto one new possibility and give it a try. As you periodically add a tool/resource to your strategies, you will quickly become versatile and flexible with technology in your classroom. Need help? Email or call us – we would love to work with you.

View on our blog: www.bismarckschools.org/technology

The logo for the Technology Blog at Bismarck Schools. It features the text "technology blog" in a lowercase, sans-serif font, followed by a stylized globe icon, and then "bismarckschools" in a larger, bold, lowercase, sans-serif font. The entire logo is set against a light blue background with a subtle reflection effect below it, and is enclosed in a thin blue rectangular border.

Technology Possibilities:

District Sponsored Subscriptions: Two carefully screened 21st Century tools we have are Discovery Education Streaming and Visual Thesaurus.



Discovery Education: Through video, students are engaged and are able to grasp and solidify concepts more quickly. Use video to reinforce difficult concepts/topics, to connect students to primary source images, speeches, and video, to quickly introduce and excite students about a topic, and to capitalize on impromptu teachable moments. www.discoveryeducation.com



Visual Thesaurus: This is a new subscription with the power to increase vocabulary, reading comprehension, and writing. Our brains are pattern detectors. The visual thesaurus encourages language exploration in a way that is engaging. www.visualthesaurus.com

Web 2.0: These webbased applications range from simple to fully integrated multimedia options. Most are free and many have an area specific to education; providing increased security and management. Here are some BPS favorites...

■ BPSD_Science

Astronomy AtomicPhys
balancing_equations biographies bi
Chemistry climate Cor
Earthquakes
ElectricityAndMagnetism
EnergyTransfer en
ForceAndMotion forensic

DELICIOUS - use the BPSD teacher screened interactive websites on or create your own. Why reinvent the wheel – checkout the BPSD sites first.

- **ELA:** delicious.com/BPSD_LangArts
- **Math:** delicious.com/BPSD_Math
- **Science:** delicious.com/BPSD_Science
- **Social Studies:** delicious.com/BPSD_SocialStudies
- **Technology:** delicious.com/BPSD_Tech



Wordle - use word clouds to analyze writing (main idea, adjective use, etc.). www.wordle.net

Animoto – students create multimedia shows by selecting images representing their topic, arranging them according to a timeline, writing notations/references, adding original audio or background music to match the project subject and publishing. Signup at animoto for education animoto.com/education

Glogster – create an interactive multimedia poster. One of the easiest ways for studies to integrate digital images, text, video, and voice into a final product. Signup at GlogsterEDU edu.glogster.com

Communication and Collaboration Tools:

- **Classroom websites:** get a teacher website page linked from your school site. Use the basic website development tools provided and integrate many other dynamic web 2.0 tools to communicate learning goals, assignments, and classroom events to both parents and students. www.bismarckschools.org/technology/projects/web/
- Engage students as writers and reviewers through classroom and project **blogs** and other collaborative environments such as **Google Docs**. A blog is an online post intended to spark thought and comment from others.
 - wiki.bismarckschools.org/index.php/Blog (only available within the BPS network)
 - wiki.bismarckschools.org/index.php/Google_Docs (only available within the BPS network)
- **Moodle:** access, learn, and dream about the possibilities of Moodle. Currently used to support PLCs the Moodle environment is versatile and powerful with a whole range of future possibilities. moodle.bismarckschools.org
- **Hardware:** most schools now have the ability to access or checkout interactive tools such as Interactive Boards, document cameras, digital video cameras, student response systems, and more. Try one of these tools. When it comes to technology, demand is often the predecessor to supply.

Appendix F: Laptop Agreement and Care Guidelines

Teacher/Staff Laptop Agreement of Understanding

I understand that I am being issued a laptop computer to help me better perform all functions of my job including administrative, communicative, and instructional; it will be in my possession for use at and away from work. I understand I am responsible for the laptop computer issued to me and I will care for the equipment in such a manner as to prevent loss or damage. I further understand and agree to the following:

_____ All district technology use must be in compliance with the Bismarck Public Schools Acceptable Use of Technology Policies (GAMC).

_____ The use of the computer covered by this agreement is restricted to certified teachers, staff or enrolled students of Bismarck Public Schools. Use by others is prohibited.

_____ The user understands that laptops must remain free of any writing, drawing, stickers, or labels that are not the property of the Bismarck Public School District.

_____ The user understands he/she has no expectation of privacy regarding the use of any district owned technology or technology service, including the laptop indicated above.

_____ The user understands he/she is responsible for backing up all user created data stored on the local hard drive of the laptop computer. Data corruption or configuration errors may result in a loss of local hard drive data on the laptop and/or system due to the need for a complete reload. The District is not liable for lost data.

_____ All software must be legally licensed. The district will not support user installed software and may request licensing documentation to establish the legality of the installed software.

_____ The user will take reasonable steps to insure the security and operability of the laptop computer while it is in his/her possession (click here for laptop care tips). If the laptop becomes lost, damaged or stolen the user will file an incident report with the technology department within three work days.

I understand and agree that I am responsible to the District for the cost of repair or replacement of a unit that is damaged, lost or stolen as a result of my intentional act, neglect, or abuse of the laptop or because of my failure to follow Board Policies, District Rules and guidelines, including this agreement. **I agree to the above terms and conditions and agree to fully cooperate with property loss reporting requirements.**

Laptop Care Guidelines

Teachers and Staff are responsible for the general care of the laptop they have been issued by the district.

General Precautions

- Food or drink should not be stored/consumed next to your laptop.
- Do not use your laptop where it will get dirty or wet (beach, pool, etc.).
- Make certain the fan and vents for the laptop are clear of clutter. Do not put the laptop in a bag, on a pillow, etc. while it is running. It may overheat.
- Cords, cables, and removable storage devices must be inserted and removed carefully from the laptop.

Carrying Laptops

The protective cases provided with laptops have sufficient padding to protect the laptop from normal treatment and provide a suitable means for carrying the computer within the school. The guidelines below should be followed:

- Laptops should always be within the protective case when carried.
- When moving a laptop a short distance never pick it up or hold it by the display (always hold the bottom).
- Some carrying cases can hold other objects (such as folders and books), but these must be kept to a minimum to avoid placing too much pressure and weight on the laptop screen.

Screen Care

The laptop screens can be damaged if subjected to rough treatment. The screens are particularly sensitive to damage from excessive pressure on the screen. The guidelines below should be followed:

- Do not lean on the top of the laptop when it is closed.
- Do not place anything near the laptop that could put pressure on the screen.
- Do not place anything in the carrying case that will press against the cover.
- Do not touch the screen.
- Do not place anything on the keyboard before closing the lid (e.g. pens, paper, staples, disks).
- Clean the screen with a soft, dry cloth or anti-static cloth.

Security/Safety

- Do NOT leave your laptop unattended. Not even for a few minutes. (Never leave your laptop in an unsecured office, classroom, or automobile).
- Do not store or use your laptop where temperatures reach below 41 or above 95 degrees.
- Back up important data onto the network, flashdrives, and/or CDs. Store your back-ups separately from the laptop. Assume that only you can back up the data on your laptop. Back up as often as necessary.
- Make hard copies of important files and documents.
- Never allow friends or family members to use your school laptop. Your laptop has access to specific sensitive BPSD resources. If your laptop is used to inappropriately access those resources, or those of another network, you are responsible.

Appendix G: FASTT Math Pilot Analysis

February 2009

What is the Background and Instructional Need?

Starting in 2007 we began analyzing the longitudinal math data and our curriculum. Math fact fluency was identified a need and there were concerns that it be attained using research-based practices. Developing automatic recall of basic math facts enables students to focus on higher-order math skills such as advanced computation, problem solving, and algebra.

FASTT Math provides a technology-based solution for fluency in addition, subtraction, multiplication, and division and can individualize the process of student fluency in a way that would not be possible without the technology.

Why Fluency and Why Technology?

The challenge of trying to build fluency without technology is in isolating facts for individual students so you are using an expanding recall technique. This is hard to manage for 25 students with different entry points. The FASTT Math program is a continuously adaptive program that increases math fluency. Students have an individual login and are presented with new facts in manageable chunks based on their own current knowledge. A maximum of 3 new facts are presented during any one session so that students are able to move newly acquired facts from their working memory to long-term memory. Successful implementation of the product requires that students use the software 3-5 times a week for a 10 minute session each use.

What is the Research Base?

FASTT Math is based on over 20 years of research on the development of mathematical fluency in math-delayed and non-math-delayed children. The underlying theory-base comes from discoveries regarding human attention and memory capacities. The program was developed by Dr. Ted Hasselbring, a professor in the Department of Special Education at Vanderbilt University.

What is the Status of the Pilot?

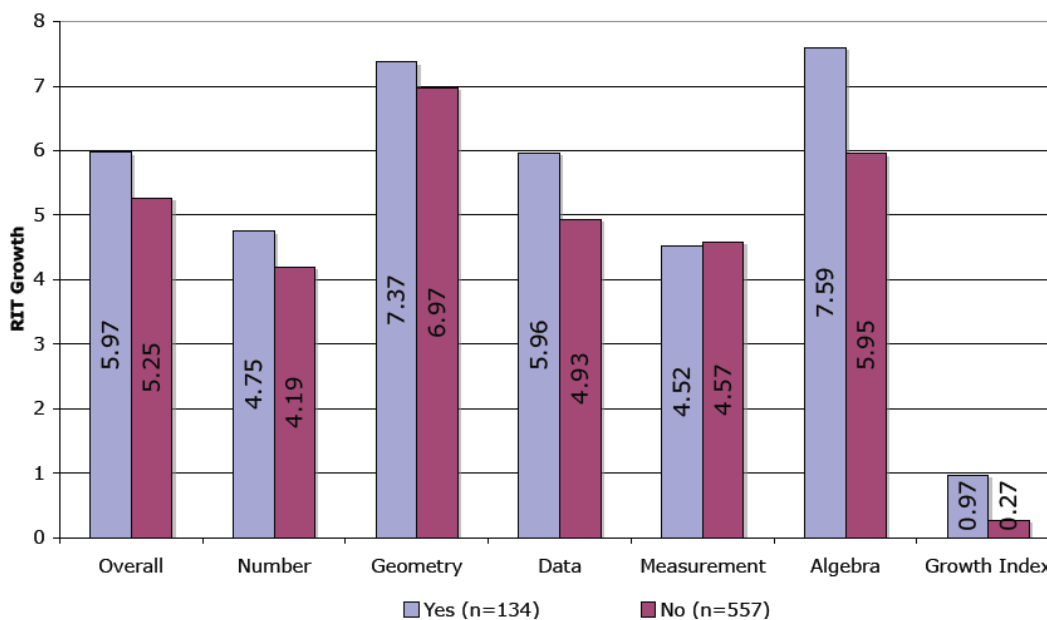
We have 450 student licenses for the pilot. There are students in grades 2 through 6 and as well as secondary piloting the program. Fourteen elementary schools have at least one pilot teacher. The largest concentrations of students are in 4th grade. FASTT Math began second semester of 2007-2008 but due to technical glitches that caused implementation issues the data analysis was not pursued. All the FASTT Math licenses were used during Camp Edventure and Summer School. The licenses were then reallocated to the pilot teachers for full implementation in 2008-2009.

What Data is being Collected/Analyzed?

Through the pilot we are collecting information on the logistics of implementing and how well students grow in fluency, retain their fluency, and grow in the regular math strands.

1. At the beginning of the year the pilot classrooms were matched with a “control” classroom and both sets of students were given a paper/pencil fluency assessment. We have the pre-test results and will compare with the post-test results in the spring.
2. MAP data were analyzed; comparing the fall 2008 math results with the winter 2009 results. Due to small sample sizes in all grades but 4th, only the 4th grade results are shown. All results are preliminary and simply illustrate a possible trend. It is important to remember that MAP does not assess fluency. The potential trend is the positive impact of fact fluency on other math capability (see chart on next page).

Fall 08 to Winter 09 MAP Growth
Grade 4
FASTT Math Pilot



- In January 2009, pilot teachers were asked to reflect on their FASTT Math implementation. Reflection comments are below.

FASTT Math Teacher Reflections from January 2009

A message was sent to FASTT Math pilot teachers asking them to respond to provide qualitative comments/testimony regarding their FASTT Math implementation. They were asked, “Are you finding it useful for students? Do you feel you see more progress and extension to other math ability than in past years? Do you like how it implements or is implementation difficult? etc.”

Responses included:

- The implementation of FASTT Math has been great. The students enjoy FASTT Math and some students become disgruntled if a situation arises to where we can't do FASTT Math. One benefit I witness to the students using FASTT Math is that they are much faster and more accurate when reducing fractions or finding equivalent fractions. When they are multiplying and dividing problems with multiple digits the students don't seem to have as many errors in their computation. There seems to be less think time when they are using their multiplication facts to solve problems.
- I am in the fraction unit and the kids who know their multiplication are doing a lot better as they don't have to figure out how many 4's are in 32 to figure out fourths. One of my kids bolted out the answer and another student asked him how he knew and he said “because $4 \times 8 = 32$ ” and the other student had to ponder a few minutes to make the connection.
- It is helping with mathematical understanding. We are working on the premise that in order to solve a hard problem do an easier on first. They are beginning to see what the easier problem answer is--- the basic fact. We have not started fractions yet but I'm pretty sure it will make working with lowest common denominator and lowest terms that much easier.

- My students are doing GREAT in long multiplication. Just about all my students are doing “A” work once they understand the steps. This has never happened before even when I taught 5th grade.
- I definitely see the value of the program. I can see how their math processing has improved – they are able to answer questions so much easier. Knowing facts makes it easier for them to understand problems – they don’t get so hung up on the basics. It was so easy to implement and continue using. My students still enjoy doing the program and definitely challenge themselves to improve. I definitely see the value in applying for more licenses. I would like to continue to use the program next year!
- I found it is much easier to implement since Fastt Math was put on all our new lab computers. Now I can check out the computers 3 times a week for sure and get everyone on. Just realized this and already it is much easier. I do feel it is beneficial.
- Some of my kids get discouraged because they feel the program keeps giving them the same facts over and over. They report that they know that fact but the program won’t let them move past it. Some of my kids come in everyday and look forward to Fastt Math. Others will try to get out of doing it....but that could be because it is difficult for some of my more severely learning disabled students.
- My student teacher was in another 4th grade classroom and commented that MY students know their multiplication much quicker than students in the other class. I believe or feel that they are much better with their facts. Is there another way?? Certainly there is, but this puts the element of speed there which causes them to intentionally work at it. Implementation is EASY and the majority of students love it. It is easy to differentiate.
- FASTT Math has been an excellent program for my students this year and last year! They know their facts and enjoy learning them. They are excited to see the progress that they make and are challenged to do more when they see others moving forward. There is definite carry through into their work with math problems in the classroom. Their knowledge of facts makes them able to work faster and they are more accurate in their work.

The fifth grade teachers this year have said that they know which students come from my fourth grade classroom because they know their facts. I like the program and find it a must have for the students to learn their facts. The two years I have used the program have proven that to me. The program does take a commitment to time for me and the students. I spend almost every day in the lab with the students having them use the program. I think that if it is used in the district it needs to be limited to fourth grade for learning the multiplication and division facts. There isn't enough computer lab time for the entire school to use the program. I also feel that the teachers who use the program need to be committed to putting in the time necessary for the program to work for their students. The information for students, teachers and parents to see the progress that is made is excellent. It also is a perfect tool to be used in math interventions.

- I have found the FASTT Math to be very easy to use and convenient; however I haven’t seen much growth. I know there have been a few weeks when the students don’t get on as often as they should (testing weeks, short weeks, special weeks), so maybe I haven’t used the program to the best of my abilities, but I see more growth when I teach the facts and strategies myself.

Appendix H: Building Integration Mentors

Category	Deliverable Description
BIM Initiation Training	Attend a 1.5 hour initiation training. During this training you will... <ul style="list-style-type: none"> • learn to use the collaboration tools necessary to connect to others. • receive an integration “tool kit.” • discuss your role and strategies with other BIMs.
BIM Content Train-the-Trainer (Elementary)	Attend a 3 hour train-the-trainer to fully understand the focus on literacy and math through technology integrated strategies. <ul style="list-style-type: none"> • Pearson Successnet • Visual Thesaurus • Discovery Education • BPS DELICIOUS
BIM Content Train-the-Trainer (Secondary)	Attend a 3 hour train-the-trainer to fully understand technology integrated strategies. <ul style="list-style-type: none"> • Discovery Education • BPS DELICIOUS • Blogging • Google Docs • Glogster
BIM Reflection and Planning	Plan to get a sub for ½ day to so that you can thoroughly reflect on and identify your specific role in your building.
BIM Practice with Peer Collaboration and Support	Team with another BIM and schedule a 1/2 day when you will implement the strategies and tools you are supporting within your own classroom.
SchoolLatte Sessions	SchoolLattes are school-based latte sessions that support the priorities from the content training. These sessions are facilitated by the BIM. Each BIM must lead one SchoolLatte prior to the end of the year. The BIM is responsible for entering the SchoolLatte in Tracker according to the instructions. These sessions are 1.5 hours in length and will count toward the Latte Graduate Credit.
MooLatte Sessions	MooLatte sessions are sessions coordinated via District personnel but broadcast remotely to individual buildings using Moodle, Desktop Video, and conference phone technology. Each BIM must organize, promote, and “host” at least one MooLatte prior to the end of the school year.
Classroom Support	Each BIM will have the flexibility to secure a sub for one day during 2009-2010. This day should be at a time when they can be of most assistance to other teachers in helping them plan/implement new strategies.
Integrated Technology Tier I support (ongoing)	Provide basic account setup and/or student rostering support for the technology applications on which we are focused in Reading and Math (Moodle, Successnet, Discovery Education, Key Math, and DELICIOUS). (Obligation is limited to the classroom use “how tos” in terms of setup and implementation and does NOT require troubleshooting equipment or software that is not working).
District-wide BIM Committee	<ul style="list-style-type: none"> • Serve as a knowledge leader and communication conduit at Professional Learning Community meetings and other staff collaboration events. • Use electronic tools effectively to collaborate with other building-based leaders and district staff.

Appendix I: Balanced Scorecard Themes and Objectives

Staff Development Alignment and Priorities

BSC Themes	Teaching and Learning			Relationship Management		Operational Excellence		
District Strategic Objectives (from the Balanced Scorecard)	All levels of the organization are accountable for continuous improvement in instruction and assessment leading to achievement for all students.		Standards-based curriculum is communicated, aligned, and flexible to adapt for challenge and relevancy.	Promote a Positive Working and Learning Environment.		Attract and Retain Highly Qualified and Effective Teachers, Administrators, and Support Staff.	Promote the Safety and Wellness of Student and Staff.	
Staff Development Themes	1. Data, Assessment, & Evaluation	2. Instructional Strategies & Student Engagement	3. Academic Standards & Curricula	4. Culture & Climate	5. Communication & Service	6. Personnel Mgmt.	7. Skill Development, & Individual Growth	8. Safety & Wellness
Staff Development Course Priorities (sub-categories)	<p>a. Student Assessment: administration, data extract, aggregation</p> <p>1.a.1. Data Warehouse-Train the Trainer (Adv)</p> <p>b. Student Assessment: Interpretation & Communication</p> <p>1.b.1. Interpreting student test results (Intermediate)</p> <p>c. Data-Driven Instructional Decisions</p> <p>1.c.1. FSDD Centennial Data Day (Basic)</p> <p>1.c.2. Response to Intervention</p> <p>d. Continuous Improvement / Program Evaluation</p> <p>1.d.1. Data Warehouse-Leader Training (Adv)</p>	<p>a. Student Learning Profiles</p> <p>b. Differentiated Content</p> <p>2.b.1. FSDD - Levels of Service (Adv)</p> <p>c. Instructional Delivery & Tech Integration</p> <p>2.c.1. Scott Foresman Tech Resources Pilot</p> <p>2.c.2. Integrating the ActivBoard for instruction</p> <p>d. Authentic Assessment</p> <p>2.d.1. Worksheets Don't Grow Dendrites</p> <p>2.d.2. Classroom Assessment Strategies</p>	<p>a. Standards, Rigor, & Design</p> <p>3.a.1. Preparing for a standards-based report card (Basic)</p> <p>3.a.2. Writing Essential Questions (Intern)</p> <p>b. Math</p> <p>3.b.1. Fostering Geometric Thinking (Intern)</p> <p>c. Literacy (English, Reading/Lang Arts)</p> <p>3.c.1. Reading Street Support Group 1(Basic)</p> <p>d. Writing</p> <p>3.d.1. 6+1 Writing (Adv)</p> <p>e. Science</p> <p>f. Social Studies</p> <p>g. Fine Arts</p> <p>h. Health/PE</p> <p>i. Foreign Language</p> <p>3.i.1. FSDD - Century Foreign Language / Spanish (Intern)</p> <p>j. Career and Technical</p> <p>k. Special Education</p> <p>l. Library Media/Infor Lit</p>	<p>a. Positive Work Env. (Teamwork)</p> <p>b. Responsible Decision-Making and Classroom Mgmt</p> <p>4.b.1. FSDD Moses Responsible Decision Making (RDM/Restitution)</p>	<p>a. Internal & External Communication</p> <p>5.a.1. Writing effective newsletters (Basic)</p> <p>5.a.2. FSDD- Strategies for Comm with Parents & the Media (Basic)</p> <p>b. Publications & Digital Media</p> <p>c. Customer Service</p> <p>5.d.1. Technology Book Study - Raving Fans (Basic)</p>	<p>a. Personnel Management</p> <p>6.a.1. Effective Hiring & Supervision Practices (Intern)</p> <p>b. Leadership Development</p> <p>6.b.1. Administrative Internship (Adv)</p> <p>6.b.2. Mentor/Mentee Protoge (Adv)</p> <p>c. Coaching/Mentoring</p> <p>6.b.1. New Teacher Orientation (Basic)</p> <p>6.b.2. Mentor Skill Training (Intern)</p> <p>4.c.1. Model Teaching Week - Stage 1 (Basic)</p> <p>4.c.2. Model Teaching Week - Stage 2 (Intern)</p>	<p>a. Technology Competency</p> <p>7.a.1. Excel Training for Secretaries (Basic)</p> <p>b. Finance, law, & policy</p> <p>c. Individual Growth</p> <p>7.c.1. Masters Degree</p> <p>d. School Board Development</p>	<p>a. Anti-Bullying</p> <p>b. Fitness, Nutrition, Wellness</p> <p>8.b.1. Wellness (Basic)</p> <p>8.b.2. FSDD - ND Roughrider Conf (Basic)</p> <p>c. Emergency preparation</p> <p>d. Alcohol, Tobacco, & Drugs</p> <p>8.d.1. Gangs, School Violence, and Drugs (Basic)</p>



Appendix J: Title IID Stimulus Application

2009-2010

Conditions:

25% set aside for ongoing, sustained, intensive and high quality technology related professional development.

On September 30, 2010, each LEA will be allowed to carryover 50% of the allocation until September 30, 2011.

Goal:

- Increase the skills of Technology Department Team members to manage and lead the use of technology systems for instruction.
- Increase building capacity to use curriculum-based technology tools to improve student engagement and achievement.
- Provide increased access to classroom sets of current multimedia tools and web 2.0 applications (VoiceTread, digital video, GPS, student computers, multimedia projectors, document cameras, etc.)

Integrated Activity #1: Increase the skills of Technology Department Team members to manage and lead the use of technology systems for instruction and learning.

District-level technology support team members currently serve as the direct contacts for technology integration and use by administrators and teachers. Team members support (1) technology-based assessment systems and data driven instructional decision-making; (2) curriculum-based technology tools including online environments such as FASTT Math, READ 180, System 44, Pearson Successnet, etc.; (3) Integration software and peripherals such as ActivBoards and ActivStudio, Smartboards, document cameras, digital video, GPS, Web 2.0, etc.; and (4) back-end management systems to insure the that the network functions efficiently and that computers technology is standardized and reliable.

Title II D funds will provide some department professional development opportunities to focus and motivate staff around the common vision of technologies primary role for learning and teaching. The funds will provide skill update training for select staff so they can use back-end tools to make technology operate as seamless as possible for end-users.

Professional development options include:

- ISTE 2010 (June 27-30, 2009) & the School Board Association T&L Conference
- Core Technology Infrastructure Training (team members will attend training to certify on software that will help the provide remote services to schools to keep teacher and student technology working and up-to-date).
- Network security and filtering (team members will attend training on network security and filtering to increase capacity to manage bandwidth).

Integrated Activity #2: Increase building capacity to use curriculum-based technology tools to improve student engagement and achievement.

Moving from awareness to the application of technology-integrated instructional practices requires job-embedded support and coaching. Just-in-time access to expertise and support provides the mechanism necessary for teachers to use effective strategies and multiple technologies for differentiation, student motivation, and increased achievement. While many students are versed in entertainment technologies they are falling behind in the effective use of office and collaboration software to perform desired tasks and the ability to choose and use innovative technologies to produce multimedia products. Building-based teacher leaders will provide the liaison between the district vision for technology integration and the knowledge and ability to use the tools necessary to accomplish the vision within the classroom. They will model good instructional practices for others in their building, they will help insure that staff are technologically competent and inspire and support the use of technology with students.

Title II D funds will provide an opportunity strengthen the alignment and communication from the district to buildings and then to classrooms. Building-based teacher leaders will be identified and will receive professional development and support throughout their efforts to provide more “just-in-time” collegial assistance in their local buildings. Building-based teacher leaders will provide afterschool workshops, mini Tech Talks at staff meetings, expertise and coaching during Professional Learning Community times, and one-on-one assistance. They will also model best-practices and communicate unsolved problems to the district staff.

Title II D funds will also provide a student worker to support training efforts, increase teacher access to a person to lend a hand in the classroom, and assist with teacher and student accounts on the many curriculum-based system the district supports.

Integrated Activity #3: Provide increased access to classroom sets of current multimedia tools and web 2.0 applications (VoiceTread, digital video, GPS, student computers, multimedia projectors, document cameras, etc.). Improve the professional development environmental circumstances by supplying materials and other supplies for training sessions (copies, pens, sticky notes, CDs/DVDs, flashdrives, water, snacks).