

DR. STIRLING MCDOWELL
Foundation
FOR
RESEARCH INTO TEACHING



**TEACHING AND LEARNING
RESEARCH EXCHANGE**

**Valuable People
Valuable Knowledge**

Keith Harkness
Dale Eurich
Dave Howie
Dale Issel
Jim Swan
Pat Vigneron
Mike Weaver

Project #116
June 2004

This research was partially funded through a grant from the McDowell Foundation. However, the points of view and opinions expressed in project documents are those of the authors and do not necessarily reflect the views of the Foundation.

The purpose of the Dr. Stirling McDowell Foundation for Research into Teaching is to fund research, inquiry and dissemination of information focusing on instruction (both teaching and learning) in the context of the public elementary and secondary education system. Specifically, it will:

- 1) contribute to knowledge about teaching and learning;
- 2) encourage educational inquiry through a wide range of methodologies;
- 3) support the involvement of practising teachers in active research projects;
- 4) encourage organizations as well as individuals to determine and act in areas of research and inquiry; and
- 5) encourage experimentation with innovative ideas and methodologies related to teaching and learning.

The Foundation is an independent charitable organization formed by the Saskatchewan Teachers' Federation in 1991. It is governed by a Board of Directors with the assistance of an Advisory Committee of representatives from the educational and business communities. The selection and evaluation of projects funded by the Foundation is carried out by a teacher-led Project Review Committee. Inquiries concerning research supported by the McDowell Foundation may be directed to the following address:

Research Coordinator
Dr. Stirling McDowell Foundation
2317 Arlington Avenue
Saskatoon SK S7J 2H8
Telephone: 1-800-667-7762 or (306) 373-1660

Table of Contents

Foreword	1
Introduction	2
Defining the Focus and Questions.....	3
Pundit Data	4
Collecting and Analyzing Data.....	7
Assessing Achievements	10
Conclusions	11
Future Action	12
Bibliography	13
Appendices	
A. First Symposium Evaluations	14
B. Survey 2.....	24
C. School Division Technology Coordinator Interviews	35

Foreword

This project, entitled Valuable People Valuable Knowledge, began in the fall of 2003. The project's main objectives pertained to the roles of Technology Coordinators, who are most often teachers with specialized training and experience.

A partnership with the Saskatchewan Educational Technology Consortium was established in conjunction with this project. The Dr. Stirling McDowell project provided the "process" for establishing vision and objectives for Technology Coordinators. These processes were carried out in the form of two provincial symposiums which were funded entirely by the Saskatchewan Educational Technology Consortium.

This project has concluded. The information in the following pages describes the project's goals, processes, and outcomes. The project members, who are teachers, will continue to work together as a committee with the responsibility of organizing, coordinating, and supporting professional development for Technology Coordinators in Saskatchewan. The committee, formerly known as "Valuable People Valuable Knowledge", has changed its title to SaskETC Professional Development.

This provincial committee will be funded by the Saskatchewan Educational Technology Consortium. The processes and outcomes of this Dr. Stirling McDowell project have contributed to future recognition and funding of this provincial committee.

Not only has the committee and this project attained provincial recognition, but as a consequence of its work, the individual members of the project group have capitalized on the opportunity to reflect and grow as professionals. The collaboration involved with this project has created an increased self-awareness of one's own role as well as provided an avenue for collegiality with other Technology Coordinators.

Introduction

Computers have become an integral part of today's society. People are finding uses for computers in a variety of environments. Noticeably, business and industry have incorporated the use of computers into everyday activities such as banking, shopping, and record-keeping. Within education, schools are placing an emphasis on computers. Schools are increasing the number of computers within the buildings. Students are allocated more school time for honing their keyboarding skills and mastering their internet searches. As aspirations for computers in schools increase, teachers are given more responsibilities as the catalyst among teachers, students, computers, and learning.

In particular, many teachers have assumed the leadership role of the Technology Coordinator at the school or school division level. As technology changes at a rapid pace, teachers are often expected to keep up in order to adequately provide a modern learning environment for students. By exploring the roles of Technology Coordinators, we intended to shed some light on successful coordination models, barriers to success, areas of expertise, and the wide range of support provided for the integration of computers into the curriculum.

The foundation of research for this project focused on:

1. Identifying PD needs of Technology Coordinators in Saskatchewan schools;
2. Researching and identifying ways to meet those PD needs;
3. Performing regular scans of what is happening across the province with respect to technology;
4. Coordinating communication and sharing of information with Technology Coordinators;
5. Examining options for regional and/or provincial support centres; and
6. Identifying and defining the role(s) of coordinators across the province.

Defining the Focus and Questions

As Technology Coordinators in Saskatchewan, we have encountered a variety of challenges. Day-to-day challenges vary from attaining technical skills to sharing information with other Technology Coordinators. We assumed that these basic challenges were universal to all Technology Coordinators. Therefore, we took it upon ourselves to investigate ways in which some of these challenges could be resolved. The following questions were pursued:

1. WHAT IS THE ROLE OF THE TECHNOLOGY COORDINATOR?

It has proven difficult to define the role of the Technology Coordinator. The Technology Coordinator is apparently an “evolving” position. In some cases, the position may have been occupied in the beginning by a teacher who devoted some of his or her spare time to it. In other cases, technology coordination has been outsourced to private industry. In order to identify the needs of Technology Coordinators, some consistencies among the various positions in the province needed to be identified.

2. WHAT ARE THE PROFESSIONAL DEVELOPMENT NEEDS OF TECHNOLOGY COORDINATORS?

After establishing who Technology Coordinators are, we turned to the identification of their professional development needs. Technology changes at a rapid pace. Consequently, technology skills require continual renewal. Unfortunately, there is very little support for Technology Coordinators in general. There are very few provincial bodies that support Technology Coordinators in the same way that organizations exist to support principals or special education teachers, for example. As technology gains importance in our schools, the skills of Technology Coordinators, who directly or indirectly affect instruction, become crucial. For the most part, we assumed that Technology Coordinators have been “going at it on their own.” For example, they have each found their own ways to learn on-the-job skills, find professional development, or learn from each other.

3. WHAT ARE THE COMMUNICATION AND COORDINATION NEEDS OF TECHNOLOGY COORDINATORS?

As in any profession, there is value in continued professional growth, which may include formal professional development, informal networking, or structured communication. As mentioned earlier, there is little support for Technology Coordinators at the provincial level and a corresponding lack of coordination of communication and sharing of information among the Technology Coordinators in the province. Isolation and lack of support appear to be the predominant issues for Technology Coordinators in Saskatchewan.

4. HOW MIGHT A PROVINCIAL BODY ATTEND TO THE NEEDS OF TECHNOLOGY COORDINATORS?

Finally, there is no official provincial body that attends to the needs of Technology Coordinators.

Assessing the role of the Technology Coordinator (TC) has important implications for the types of training necessary for this position, the personality and temperament of the individuals involved, the expectations of Technology Coordinators, and the remuneration paid to them. A survey of the literature relating to Educational Technology Coordinators revealed that Saskatchewan is certainly not unique or alone in seeking to identify the diverse demands placed on these individuals. Several authors have identified a variety of roles for educational Technology Coordinators (Hawkes, Halverson, and Brockmueller 2002; Marcovitz, 2000; Reilly, 1999).

Dr. Sheila Kieran-Greenbush from Teachers' College at Columbia University in New York City suggests that one person is being asked to "teach, design courses, keep up with technology, fix microcomputer(s), fix LAN networks, monitor and fix WANs, be a network administrator, be a WWW administrator, be an Internet guru, be a help desk, evaluate software and hardware, find and get grants, and generally do what an academic computing department in a small college would do" (as quoted by Reilly 1999, p. 1).

Marcovitz (2000) also recognizes that TCs serve multiple roles, but he identifies their most dominant role as "meeting the immediate needs of teachers" (p.260). By this, he generally means dealing with the "nuts and bolts" of technical support, which ranges from answering questions about how to do something, to solving problems with hardware and software that isn't working, to procuring hardware and software resources. He also identifies integration of technology into the curricula as part of the role of the CT. He observed that the integration of the computer into the teachers' curricula "was better achieved when the computer coordinator became involved in the curriculum of the classroom and helped the teachers see the value of the computer" (p 261).

Hawkes, Halverson, and Brockmueller (2002) break the potential roles down into three distinct categories: (1) Maintaining the operation of the technology, (2) Assisting those applying the technology toward learning outcomes, and (3) Macro-managing to fully integrate technology into the school system. Each of these categories involves several functions, as indicated below.

- (1) Maintaining the operation of the technology involving:
 - (a) Network system management
 - (b) Hardware/software installation and maintenance
 - (c) Servicing potentially hundreds of email accounts
 - (d) Responding to other local area and wide area network issues
 - (e) System backup
 - (f) Repairs and upgrades on serviceable items
 - (g) Satellite downlinking
 - (h) Interactive video system bridging and video production
 - (i) Help desk support
 - (j) Instructional design
 - (k) Professional development
 - (l) Grant writing.

- (2) Assisting those applying the technology toward learning outcomes
 - (a) Assistance to those applying the technology toward learning outcomes
 - (b) One-on-one consultation
 - (c) Planned and ongoing professional development for technology use
 - (d) Identify training needs of the school staff
 - (e) Develop programs and/or expertise required to address those needs

- (3) Macro management to fully integrate technology into the school system
 - (a) Working with administrators and boards to advance the use of technology in the school or division
 - (b) Keeping records for networking accountability
 - (c) Evaluating the outcomes of technology use
 - (d) Development of Policy

Reilly (1999) provides the following quotation from Ted Nellen, Technology Coordinator of a school in New York City: "One of the major problems is that schools either don't know what they want in a Technology Coordinator, or they expect a single Technology Coordinator with a limited budget to take care of everything related to technology." Reilly goes on to quote P.A. Gantt, a Computer Science Technology Instructor, who advises us not to "confuse technical support with tech specialist/supervisor. These are two different skill sets that rarely exist as one." With this realization, several authors are advising that schools be served by a team of at least three: 1) a Technology Coordinator to run the whole department and oversee the budget, research and keep up with the changes in technology, ordering of equipment, etc.; 2) a technical person to install everything, trouble-shoot problems, and keep it running; and 3) a technology integrator to deal with training and, more significantly, the integration of technology into the curriculum (Reilly, 1999; Hawkes, Halverson, and Brockmueller, 2002).

Many divisions in Saskatchewan hire individuals to be their Technology Coordinators who have had training and experience as educators first. Other divisions look to individuals whose initial training has been in the field of technology. Whether one of these approaches is more desirable than another is likely to depend largely on the role envisioned for the TC. Marcovitz (2000) encourages the use of educators as TCs, rather than technicians, because he believes many activities, including staff development, are enhanced by someone who understands the classroom, the needs of the classroom teacher, and the context of the larger curriculum. He also suggests that the TC is in touch with issues in the school that make him/her an ideal person to be involved in school-wide policy issues related to technology. Moursand (1985) suggests that TCs be selected with an emphasis on managerial skills, especially good communication skills, and knowledge of educational systems. Berg, Benz, and Lasley, and Raisch (1997), as quoted by Hawkes, Halverson, and Brockmueller (2002, p. 168), note that if TCs are to be policy makers and change agents, as suggested by Marcovitz (2000), then it would seem to be most appropriate that they also be educators. However, this view of the TC may simply stem from the fact that "at one time, whoever knew the most about computers was tabbed for the technology facilitation tasks in the school" (Hawkes, Halverson, and Brockmueller 2002, p. 163). This tendency naturally led to an identification of Technology Coordinator roles with educators (Northwest Educational Technology Consortium (2000) as quoted in Hawkes, Halverson, and Brockmueller (2002, p. 163). TCs primarily trained in technology may provide excellent service; however, Estep (2002) notes a backlash against non-educators when they move into training teachers. She also points out that in an ideal world,

“divisions would hire two people to head the technology team, one from the education field and one from a technology field, with supervisory authority given to the educational administrator” (p. 1).

Several authors recognize the need for ongoing training for TCs, which helps to prevent investments in technology from becoming passé (Estep 2002). Ongoing training is especially important for TCs who started as educators because they need it to supplement their technological skills (Hawkes, Halverson, and Brockmueller 2002). These authors stress the point that, in order to satisfy the requirements expected of the rural technology coordinator, “a focused but relevant program of study is necessary that includes but is not limited to network administration, computer hardware characteristics, multimedia production, instructional design, and leadership for school change and growth” (p. 169).

Few resources can be found that identify the effects of isolation on TCs. However, the need for networking with others at state and national conferences has been noted (Estep 2002) as well as the need for support from school administration (Marcovitz 2000).

In conclusion, Ted Nellen, Technology Coordinator of a school in New York City, points out, “The Technology Coordinator is a new position integrating a larger part of the school than any other position and requires a more community-based plan and articulation of it. It should not be created by folks who don’t even use technology, have not had to do some of the problem solving, and who will not be doing any” (as quoted by Reilly 1999).

Collecting and Analyzing Data

The data collection process evolved as the committee progressed through determining the role and definition of the Technology Coordinator in Saskatchewan. The initial approach was to determine first who we needed to contact, then bring these individuals together to facilitate discussion and professional development, and to meet some of the intangible needs of the Tech Coordinators (TCs). The best way to implement this approach was to first survey the TCs in Saskatchewan, then based on the results of the survey, establish the framework for a 2-day symposium for TCs. Next, we wanted to gather more detail to make a second symposium more valuable than the first. We accomplished this gathering of more detailed information with a second survey, using the survey results and the feedback from the first symposium to put together the second symposium. A timeline and description of the data-gathering is summarized in the chart below.

Process for collection	Outcome of collection
Meeting 1- Regina & Saskatoon, all tech coordinators	General information, initial areas of concerns
Meeting 2 – Saskatoon – representative tech coordinators	Selection of committees (including professional development), need for provincial help desk
PD Committee – survey #1	Topics for symposium - requests for areas of professional development, who can help
Symposium #1 - Mapping Technology Across Sask. September 15th and 16th, 2003 – survey #2	Informational and instructional sessions, Symposium feedback, and more requests for future areas of professional development
Symposium #2 - You're IT – Tools for Tomorrow Today, May 3,4 - 2004	Day long hands-on workshops, informational and instructional sessions, Symposium feedback, and more requests for areas of professional development
PD Committee Tech Coordinator Profile Questionnaire	Collection of responses from various school divisions throughout the province

SURVEY PROCESSES AND OUTCOMES

Survey #1 was undertaken in early September 2003 and had three purposes:

1. to obtain a list of Technology Coordinators (contacts) in each school division;
2. to obtain a list of skill set(s) each person would be comfortable sharing; and
3. to obtain a list of learning needs and wants.

The primary areas for learning identified through the survey were Linux and Microsoft Server training, firewalls, and security.

In Survey #2, the Educational Technology Consortium surveyed school divisions with the thought in mind of creating an online profile containing information about the following:

1. increasing cost efficiencies of technology purposes;
2. facilitating aspects of knowledge-sharing and self-help between similarly equipped school divisions;
3. determining areas of greatest need for professional development for IT staff;
4. discovering innovative ideas in school division technology application;
5. assisting in provincial network management, help desk, and security functions; and
6. helping school divisions to remedy any shortcomings, in such areas as network management and security.

Part of the survey dealt specifically with Technology Coordinators. It addressed the area of Technology Coordinators' backgrounds and professional development needs. The following data were obtained regarding their backgrounds:

Type of Training	# (%) of Respondents
Classroom with some formal training	22 (37.3%)
Classroom with on-the-job training	21 (35.6%)
Technical training	16 (27.1%)

Needed areas of professional development identified in this survey were:

1. Linux server (web and email)
2. VPN's (Virtual Private Networks)
3. Windows 2003 Server
4. Security Issues
5. Firewalls
6. Wireless

The survey also reported that 73% of school divisions have set money aside for Professional Development, while 27% of school divisions have not.

SYMPOSIUM PROCESSES AND OUTCOMES

To address the needs for professional development that had been identified, two symposia were sponsored by the Educational Technology Consortium. Both were held in Saskatoon, the first on September 15-16, 2003 and the second on May 3-4, 2004.

Attendees at both symposia were asked to provide feedback regarding the valuable aspects of the symposium, areas for improvement, and future topics. The following are the results:

SYMPOSIUM #1

Valuable Aspects

1. Networking
2. Forming support groups with others in the same setting
3. Opportunity to get relevant information

Improvement Areas

1. More hands-on
2. Spring would be a better time
3. More vendor displays

Suggested Topics

1. Linux workshop – hands-on
2. Blackboard – hands-on
3. More security discussion

SYMPOSIUM #2

Valuable Aspects

1. Networking
2. Hands-on sessions
3. Security issues and policy development

Improvement Areas

1. More interactive sessions
2. Duplicate sessions to allow for easier attendance
3. More detail on session content

Suggested Topics

1. Hands-on deployment
2. Linux server utilities
3. XP utilities

TECH COORDINATOR PROFILE QUESTIONNAIRE

To fulfill our project objective to define the role(s) of Technology Coordinators across the province, we developed a questionnaire to gather information from school divisions throughout Saskatchewan. In response, we received a variety of models of the role. See Appendix for all responses.

Assessing Achievements

Given the objectives of this project, we were able to accomplish the following:

1. IDENTIFY PROFESSIONAL DEVELOPMENT NEEDS OF TECHNICAL COORDINATORS IN SASKATCHEWAN SCHOOLS

This was accomplished by surveying the Technology Coordinators in the province and meeting with them, library coordinators, and First Nations schools at two symposia. From these contacts, we identified a number of the concerns and needs that exist for Technology Coordinators. Evaluations of symposia also provided insight into these needs.

2. RESEARCH WAYS TO MEET THOSE PROFESSIONAL DEVELOPMENT NEEDS

We confirmed the value of the Professional Development Committee of the Educational Technology Consortium (ETC) in finding solutions to the PD needs of Technology Coordinators. In addition, we explored online video conferencing and online surveys as means of reducing isolation and improving communication between Technology Coordinators. Our activities led to recognition of the value of the discussion forums created by the ETC and encouraged their use. The value of regional and content specific workshops in meeting the PD needs of TCs was also recognized.

3. PERFORM REGULAR SCANS OF WHAT IS HAPPENING ACROSS THE PROVINCE WITH RESPECT TO TECHNOLOGY

Two surveys of Technology Coordinators were carried out, and the committee maintained involvement with Infrastructure and eBusiness committees of the ETC.

4. COORDINATE COMMUNICATION AND SHARING OF INFORMATION WITH TECHNOLOGY COORDINATORS

To facilitate communication, the following were established: a provincial List Serv, discussion areas on Blackboard at Central i School, a long-term Professional Development Committee, and an on-going annual symposium for Technology Coordinators. The project also established the visibility, viability, and value of the Prof Dev Committee of the ETC.

5. EXAMINE OPTIONS FOR REGIONAL AND/OR PROVINCIAL SUPPORT CENTRES

It was proposed that an on-going provincial help desk be established and also tasked with maintaining a web site with moderated active discussions in either Blackboard or the web site.

6. IDENTIFY AND DEFINE THE ROLE(S) OF TECHNOLOGY COORDINATORS ACROSS THE PROVINCE

We were able to identify the great variation that exists in this role. Further work needs to be done in this area.

Conclusions

The findings of this project are of particular importance to those directly involved with technology – the Technology Coordinators. The role of the Technology Coordinator varies from location to location. There is no “correct” or “incorrect” model of technology support. Each support model has evolved and continues to evolve to meet the demands of its environment in isolation from other models.

The development of technology coordination within an isolated environment contributes to deficiencies – deficiencies that are common across the province. Most Technology Coordinators are teachers by trade, and they usually take on solitary roles with little immediate support or guidance. Teachers and other professionals are accustomed to continued professional growth and life-long learning; therefore, structures of support and communication are valuable. Structured “content-oriented” training sessions and access to colleagues with similar roles are critical to the success of Technology Coordinators in the ever-changing world of technology.

In order to achieve adequate levels of support and access to a network of colleagues, provincial-level coordination is necessary. Until recently, there has been no provincial body representative of Technology Coordinators. In the past year, in conjunction with this project, a provincial committee responsible for professional development for Technology Coordinators has been established. A need for networking has been identified as the most valuable benefit to attending centralized professional development for Technology Coordinators.

As supports for Technology Coordinators improve, those indirectly affected – teachers and students – will reap the benefits of more effective and efficient ways of utilizing information and communication technologies within the classroom.

Future Action

As a result of the research conducted in this project, a provincial committee representative of the needs of Technology Coordinators has been established. The committee, consisting of the same individuals involved with this project, will coordinate communication and plan future professional development opportunities. Long-term funding for this committee and future symposiums will be provided by the Saskatchewan Educational Technology Consortium.

With regards to professional development, the committee will plan and organize annual centralized symposiums and various de-centralized workshops focusing on areas of need. The committee will facilitate various means of communication among Technology Coordinators, such as a dedicated website, E-flyer, listserv, help desk, discussion forum, and video-conferencing solutions.

There is evidence that school division boards and educational policy-makers need to be further educated on the role of Technology Coordinators and hiring of “technology teams”. This team approach could potentially reduce Technology Coordinator burnout, conflict, and the unrealistic expectations that presently dominate the field. Redefinition of the role from “Mr. Fix It” to technology motivator, coordinator, leader, and curriculum facilitator needs to occur.

Finally, there is very little research conducted in the area of technology coordination in Saskatchewan. Unlike other roles in education, there is no “defined” role for Technology Coordinators. Further gathering of information pertinent to the role of technology coordination, facilitation, and administration would assist to provide a baseline of data about the position. More research and investigation into standardizing roles may benefit the profession. However, rather than prescribe roles, we need to provide support for the variety of roles. Regular communication with Saskatchewan Learning and Saskatchewan Educational Technology Consortium will provide the avenues for proactive achievements in the areas of communication, collaboration, and professional development.

Bibliography

Estep, Sandi. "Help wanted: Hiring your tech team." *Technology & Learning* 22, 11 (June, 2002).

Hawkes, Mark; Pamela Halverson, and Bradley Brockmueller. "Technology Facilitation in the Rural School: An analysis of Options." *Journal of Research in Rural Education* 17, 3 (Winter, 2002): 162-170.

Marcovitz, David M. "The roles of computer coordinators in supporting technology in schools." *Journal of Technology and Teacher Education* 8, 3 (2000).

Reilly, Rob. "The Technology Coordinator: Curriculum leader or electronic janitor?" *Multimedia Schools* 6, 3 (May/June, 1999): 38-41.

Solomon, Gwen. "Great Expectations, Limited Resources." *Technology & Learning* 23, 11 (June 2003).

Appendix A – First Symposium Evaluations

e-ED: MAPPING TECHNOLOGY ACROSS SASKATCHEWAN SEPTEMBER 15TH AND 16TH, 2003

EVALUATIONS

WHAT DID YOU FIND MOST VALUABLE ABOUT THIS SYMPOSIUM?

- Networking with other IT people around the province
- We are not alone. Moose Jaw needs to share the wealth.
- Including regional colleges and libraries
- Getting together with other college techs and with libraries and K-12 techs – we are not alone
- Networking with other techs
- That it happened!
- Meeting people from other sectors, especially from same area, who can help me
- Contacts with others in related areas – school/community college & libraries
- Good environment, food; good opportunity to network
- Everything was easy to find; lots of room for discussion
- The security system; and hearing other experiences and solutions
- Networking with other coordinators – ideas, how to's, issues
- Relevant information
- The way the information was delivered in a straight forward, easy to understand format
- Learning about new initiatives: SIS, iSchool, AUP
- Networking with other techies
- Talking to others
- Learning about what others are doing; getting new ideas; making contacts
- Big picture – seeing how everyone needs to work together
- Excellent source of information in a wide variety of areas
- Opportunity to gauge what others are doing versus what we are doing (compare and contrast)
- Networking, learning about issues others have with CNET; new solutions that are being proposed
- Getting together with colleagues and being informed on upcoming situations
- Meeting others in same situation. Good to know what is going on within the EDU VPN partners. Need to do more of this – where all the partners in the VPN can get together.
- Opportunity to interact with others. Background material presented.
- The general level of knowledge available to be tapped
- Updates on Educational Consortium initiatives – Linux session – info on security – wireless
- Networking with others from the education sector
- Firewalling; talking to others
- Supportiveness and willingness of personnel to answer questions and to direct to access sites for information
- Networking with other techs

- New info on Consortium projects; info on new SIS rollout; info on new Help Desk; the Network Management project
- General information and updates (QCC particularly)
- That there are other people with the same problems as you; and that we got to see lots of new ideas that we didn't think of
- Security talk; sessions
- Caching
- Updates on opportunities
- Networking with others; Linux sessions; Blackboard; WebTrain

HOW WOULD YOU SUGGEST WE IMPROVE THE NEXT SYMPOSIUM?

- May for next conference
- Evening entertainment after Terry Roebuck (3)
- Real vendors (D-Link, Cisco, etc); better dividers between rooms; more time for networking
- Ask the same people to come back and explain what's new and wonderful
- Separate sessions offered to address two levels of techs: general and advanced
- Invite us back!
- Nothing – it was great
- Balance things for regional colleges and libraries – broader view of issues
- More hands-on activities
- Include all system operators
- Timing – spring is better (unless you're planning more than one)
- Involve more vendors (5)
- Have more repeat sessions
- Three days, so much more can be added
- Larger conference rooms sometimes needed?
- First one I've been at. Seemed to be well organized
- More technical, group discussions, etc.
- Handouts – more available, or available for printing prior to the session
- Have handouts of slides used in presentations
- More detailed handouts
- More prizes
- It was good
- Balanced/parallel session for participants who are not “tech oriented”
- More specific sessions
- More specific hands-on sessions based on CNET requirements and ITC mandates – e.g. now we need a firewall in each school. A 2-hour session on setting up a firewall with a chance to bring a box and set it up would be great. Best practices is nice, but practical set-up time with experts is better.
- More hands-on
- More visioning focus – we need to standardized more issues at the provincial level using web-based solutions to increase transparency and consistency of use province wide
- Repeat a few more sessions – I was unable to attend two.

WHAT TOPICS WOULD YOU BE INTERESTED IN FOR FUTURE INSERVICE OPPORTUNITIES?

- Hands-on firewall (2)
- Hands-on VPN
- Workshops on Linux/microsoft mixed systems
- Network administrator workshop – what to do when things go wrong?
- More hacker awareness (2)
- More spyware awareness
- How to get a budget like Moose Jaw; how do I get to Moose Jaw
- Actual workshop on firewalls (equipment to practice on) and other topics
- More on what people are doing
- Human resource software
- Hands-on workshops
- Firewall configurations
- Lock down stations
- Another library forum (F2)
- Spam management
- Some public library and community college topics
- Acceptable use for public libraries
- More topics applicable to libraries if possible
- Security – how to do it for those less technical
- Firewall set-up and more on monitoring traffic
- More internet info
- More security info
- Virus scanning methods
- Hands-on workshops for configuring firewalls, proxy and routers
- Training opportunities
- Courses for techies – what should we take?
- Continue this approach
- Dreamweaver
- Linux firewalls
- Imaging techniques and software solutions
- Spam e-mail filtering trial results
- Sharing of what partners of the VPN are doing in/on CNET, resources, functions, etc.
- More technical sessions
- Logging (tracking) Internet use by users in a Win 2000 environment. Tied in with proxy serving and software to use and specifics of use. (This may be too specific for one user, and may no longer be valid 6 or 8 months from now.)
- Hands-on Linux session
- Hands-on training
- Exposure to new technologies
- Online application forms
- CommunityNet – future; strategies to address issues raised today
- 5-year plan for online course development and delivery
- Hands-on training session on Blackboard
- Firewalls – hands-on – basic to complete setup
- In depth Linux – the one offered was only one hour and not hands-on
- Anti-virus software information (2)
- Spam filter/block
- Hands-on activities in web based solutions

GENERAL COMMENTS

- Excellent 2 days – great to meet and exchange ideas
- good symposium
- I really enjoyed attending
- On a whole, very well put together. Thanks!
- Good conference
- Thank you!
- Thank you for inviting libraries. It has been a great opportunity to share and develop linkages in the department's other areas.
- This has been very informative and helpful.
- Great snacks and meals gave a lot of energy for afternoon sessions
- Thank you for holding this
- Glad I came – very helpful in framing future goals
- Facility: find a facility that's prepared to host technical people.
- Hotel not prepared to allow wireless access to guest's own wireless, yet don't have enough of their own wireless cards
- No ethernet (Regina Travelodge does)
- And phone line so poor I couldn't connect by dial-up, so I went 2.5 days with NO Internet access
- Let people know that you will be serving breakfast
- Excellent organization
- Very good!
- Enjoyed the conference, food and facility – excellent; well organized
- Less flies
- Thank you – it was excellent
- Great sessions
- Chipped beef by any other name or in any other guise is still chipped beef!
- Excellent facilities; great speakers. Way to go
- Excellent way to spend two days – thank you.
- Great job! I really enjoyed this
- The facility was an excellent choice. The symposium was well set up.
- Well done!

RATINGS (scale 1 (very poor) to 5 (very good))

Areas:	1	2	3	4	5
Facility		1	4	23	13
Nutrition breaks		1	6	18	17
Monday lunch			6	17	19
Monday supper			1	10	24
Tuesday lunch			5	15	13

FEEDBACK ON INDIVIDUAL SESSIONS

Session	Rating	Comments
A1: Resolving Challenges around CommunityNet	1-1 2-1 3-7 3.5-1 4-10 5-4	<ul style="list-style-type: none"> • Too much time spent on generating feedback –more time on what’s happening & direction would be better. • Very good • Good introduction to the issues and challenges – nice starting point • I do NOT like activities where each table has to discuss issues. All that happened was we wrote down issues. Another group offered suggestions, then we stopped. No larger group follow-up. • Good background • Informative • Enjoyed the group discussions and breakout sessions • Lots of complaints, but minimal new ideas for resolution • No solutions only within groups = no consensus • Good discussion, but little substance • Nice to see solutions, not just problems • Nothing new here that isn’t being addressed by CNET infrastructure committee • Useful to learn how the VPN works and issues surrounding it • Didn’t discuss much that wasn’t already known • Excellent. Information on and how to access the new initiatives • Excellent comments and concerns
A2: Student Information Systems Updates	1- 2- 3-3 4-5 5-4	<ul style="list-style-type: none"> • Very informative • Needed more • Well presented and informative • Very informative; timely • Good info • Too much time spent for too little info • Further development of the product will lead to even better future sessions
B1: All About Linux	1- 2- 3-2 4-4 5-5	<ul style="list-style-type: none"> • Lots of good ideas • Session was only 1 hour – not as advertised, and not hands-on • Great overview of open source & Linux solutions • Jamie is doing some cool stuff. Good to learn about “Squirm” • Too broad of an overview – would have liked more specific topic • A different view – well presented • Interesting & informative • Very informative & interesting. Lots of good ideas • Good general presentation

B2: CommunityNet infrastructure and possible chokepoints	1- 2-2 3-2 4-5 5-1	<ul style="list-style-type: none"> • Tough time right after lunch (very sleepy!) • Great visuals – a little dark • Exactly what I needed! • Great background information • Information delivered was corrected by SaskTel. • Minor misinformation, but delivered exceptionally well. • The description of possible chokepoints was good
B3: CommunityNet Acceptable Use Policy	1- 2- 3-1 3.5 – 1 4- 8 5- 6	<ul style="list-style-type: none"> • Very good • Speaker had difficulty keeping discussions on target. • Good discussion. Generated discussion later with colleagues. • Excellent explanation/discussion. • Quite school oriented, but I like the concept and should be able to use what I learned. • Interesting • Very informative! Good presenter • Good information. Thank you! • Good. Library sector needs to work on with K-12 sector • Well done. Good feedback. • Not my area, but obviously something that was badly needed. • Good discussion • Good info. Good work by committee. • Lively discussion. • Excellent discussion – advance notice of “banned lists” welcome!
C1: On-Line Learning Using Blackboard	1- 2- 3- 4 4- 6 5- 13	<ul style="list-style-type: none"> • A good opportunity to try • Jim did an excellent job (as usual) • Great speaker – wish more hands-on session available • We’re doing similar things with “Manhattan Virtual Classroom” in our division • Excellent info • Jim is an excellent presenter – good ideas. Like the software • Good presenter – very dynamic • Just as good 2nd time through • Great presentation from Jim McLeod – school oriented • Great presentation • Should be interesting to try out • Excellent presenter! • Excellent! • Enlightening • Good info. Would like to have seen the actual site. • I really found this session to be excellent – every teacher needs to see this

<p>C2: Shared Facilities Access</p>	<p>1- 1 2- 2 3- 5 4- 3 5- 1</p>	<ul style="list-style-type: none"> • Not applicable • Good presenter • Learned info regarding issues that I hadn't explored in shared facilities • Unfortunately, a dry topic • Very, very dry • Oh shit, now I have to add negotiating a contract between the pLs and regional college to my work list! • Interesting • Very interesting • Interesting, but not applicable to me
<p>D1: Firewall Best Practices</p>	<p>1- 2- 1 3- 6 4- 11 5- 5</p>	<ul style="list-style-type: none"> • Interesting list of considerations • Could have explained a bit more – this needs to be a hands-on presentation • Useful; but practical set-up time with experts is better • Too many acronyms for a mixed group. Information was delivered at such a high technical level that it really did not mean much at all • Interesting session; good discussion on different firewalls • Could have more info – i.e. examples of setups • A little difficult to understand • A little above my head, but learned some • Good & informative • More detail/product recommendations would be useful • Excellent. Could have used more tech in setting up Cisco PX505 firewall re: CNET • Informative • A bit biased – expect end user to have lots of money • Good presenter! • The guy is a total nerd – perfect for this subject! • Good “basic” ideas
<p>D2: Videoconferencing</p>	<p>1- 2- 3- 2 4- 5 5- 5</p>	<ul style="list-style-type: none"> • Good highlights • Good summary – needed a demo. Lots of noise from outside • Good information! • Enjoyed the panel, and hearing from three different groups • Nice to see different viewpoints • The best! • Very good – liked the 3 points of view • Very good presentations. Gave real life experiences, which is a good thing • I was presenting at this session.

E1: Caching Technology Pilot	1- 2- 3- 3 4- 4 5- 5	<ul style="list-style-type: none"> • Possibly useful • Material presented too quickly • Need practical demo • A bit too technical • Very informative discussion • Learned a lot • Informative & insightful • Interesting & very informative • Excellent potential. Some discussion about caching architecture should be held • Good presentation
E2: CommunityNet Acceptable Use Policy (repeated)	1- 2- 3- 2 4- 4 5- 8	<ul style="list-style-type: none"> • Good job • Good general info • Interesting discussion – informative • What I needed about this topic was covered incredibly well by Terry Roebuck • Very important to share this type of thing with partners other than schools • I was assisting the presenter at this session • Very informative • Very valuable information • Great chance for clarification & questions
E3: CommunityNet infrastructure and possible chokepoints (repeat)	1- 2- 3- 1 3.5 – 1 4- 1 5- 5	<ul style="list-style-type: none"> • Good overview – more discussion of possible remedies • Good – areas to keep our eyes open • Good overview of CNET and its infrastructure problems • Excellent! (2) • Great topic, graphics, rationale. Vaughn laid out information well. • Needs to be put online for reference • Very informative.
F1: Student Information Systems Updates (repeat)	1- 1 2- 3- 1 4- 5- 1	<ul style="list-style-type: none"> • Joan refused to use the microphone – she was too quiet, and very dry. Charlene was good/better. • Good presentation of new system
F2: Networking – Libraries	1- 2- 1 3- 1 4- 3 5- 3 5.5 – 1	<ul style="list-style-type: none"> • Not long enough • Needed a moderator – someone had to volunteer • Sharing information good – need to do more • Very useful. Not enough time for all issues • Round table discussion – very informative • Needs to be done more often • Great • Need more like this • Thanks for this one!

F3: Networking – Regional Colleges	1- 2- 3- 4- 1 5- 2	<ul style="list-style-type: none"> • Very good chance to network • Again, what I needed
F4: Networking – K-12	1- 1 2- 1 3- 6 4- 4 5- 2	<ul style="list-style-type: none"> • Poorly organized. No apparent focus/point • Some complaints revisited over 2 days • Needs agenda • Good feedback • Timing May meeting – vendors for next? • Good opportunity to hear concerns of others. • Some interesting discussions concerning satellite connection • great
Networking – no group identified	1- 2- 3- 1 4- 1 5- 1	<ul style="list-style-type: none"> • Helpful to see that others have the same concerns as you • The best!
G1: Satellite Access	1- 2- 3- 4- 4 5- 2	<ul style="list-style-type: none"> • Very good • Long been a confusion • Good presentation • Hit all the important and relevant issues • Tailored for me – what can I say?
G2: Software Licensing	1- 1 2- 3- 2 4- 5 5- 1	<ul style="list-style-type: none"> • Good • Great information and excellent handouts • Good information. Thanks for support
G3: Wireless Networking in the school	1- 2- 3- 1 4- 3 5- 5	<ul style="list-style-type: none"> • Good info • A good look at present situation – gives thought of future problems • Informative • Good info on wireless opportunities
Microsoft Server 2003	1- 2- 3- 1 4- 1 5- 2 10	<ul style="list-style-type: none"> • Too short, too fast • Speaker was very knowledgeable; however, due to time constraints, he was unable to deliver his entire presentation • Very informative about new product. • Wow! • Too short. Well done, given time restrictions • Informative; interesting

After dinner: Internet security	1- 2- 3- 4- 5- 4	<ul style="list-style-type: none">• Great presenter! Very informative and professional.• Would recommend to anyone.• Excellent• Need more like this! Handout would be valuable• Enjoyed his presentation and his topic. Great examples and fun graphics!• Funny and terrifying• Excellent presentation.
---------------------------------	------------------------------	---

Appendix B – Survey 2

The reports below are generated using data from completed surveys.

PROVINCIAL SUMMARY REPORT

Total, All IT Budgets: **\$ 8,539,521.00**

Best Division Student to Computer Ratio: **2 students/computer**

Worst Division Student to Computer Ratio: **18 students/computer**

Computer to Student Ratio, Province Average: **5 students/computer**

Highest Division IT Dollar to Student Ratio: **\$ 588.24/student**

Lowest Division IT Dollar to Student Ratio: **\$ 48.4/student**

IT Dollar to Student Ratio, Average: **\$ 175.24/student**

Computers to IT Staff Ratio, Average: **224 computers/1 FTE**

Percent IT Dollar spent on Staffing, Average: **33.1 %**

Percent IT Dollar spent on IT Staff Professional Development, Average: **1.7 %**

Percent IT Budget spent on Software Purchase, Average: **8.2 %**

Percent IT Budget spent on Hardware Purchase, Average: **47.3 %**

Percent IT Budget spent on Software Maintenance, Average: **6 %**

Percent IT Budget spent on Hardware Maintenance, Average: **1.7 %**

Total, Province IT Support Staff: **54 FTE**

Highest Ratio, Students / IT Support Staff: **1315 students/1 FTE**

Lowest Ratio, Students / IT Support Staff: **50 students/1 FTE**

Student to IT Staff Ratio, Average: **695 students/1 FTE**

BEST PRACTICES LIST

This is a list of School Division/Library/College reported best practices with regards to using technology in teaching and learning.

- We have at least a half time Technology Lead Teacher in each of our schools. These people are used primarily as trainers for the rest of the staff and are the first contact for problems (hardware or software) in the schools. This percentage will be halved next year (2004/05).
- We do deploy using Altiris.
- Use of distance education through video conferencing, use of wireless laptops in one of our schools.
- We provide many online courses for our students including Entrepreneurship 30, Accounting 20, and Chemistry 30. We also publish a newspaper for our community called Contact. We use the computers to produce our own yearbooks. The Junior high is involved in digital video production, and produces videos for Grade 7 orientation Parent nights and for year-end activities. In all our schools we use a program called Altiris (Master Solution) to teach students. This program controls the entire lab from one main machine. It locks down the client machines so that teachers can do demonstrations, supervision, chat, etc. An excellent program especially in elementary to hold student attention.
- Remote access to all workstations from the Division Technology office.
- IP Videoconferencing (Polycom) On-Line Information Processing course, supplemented with Manhattan Virtual Classroom.
- Yes, several of our schools are involved in innovative uses of technology. Two of these schools have been nationally recognized by the Network of Innovative Schools of Canada. Only 5 schools in Saskatchewan have received this recognition.
- We purchase hardware/software for half our schools every second year - financing over the course of 2 years though. As a result, we have only 2 varieties. We hired 2 technicians to do the repairs, installations, network admin, etc...rather than having a teacher do it. A teacher still oversees the educational aspect of things (tech coordinator) and communicates with schools, principals, technicians, etc. We have a "repair fund" which is controlled centrally to repair (but not upgrade) computers. As a result, schools' decentralized budgets do not have to pay for the replacement of monitors, keyboards, etc. Creates a level field for large and small schools. We maintain all communication among technicians and schools online. A school computer teacher will post maintenance items online, the technicians will read them, address the issues, and respond online as well. Each school basically has an asynchronous online service list. We have "catalyst teachers" which assist in the integration of technology into classrooms within each school. Each catalyst has a percentage of FTE (anywhere from 10% to 100% depending on the size of the school). This way, the catalyst provides on-site assistance with planning and using computers in all teachers' classrooms - makes sure that the computers are being utilized effectively.
- We use a wireless network to distribute internet access and networking opportunities such as distance education.
- We are now into wireless connectivity. We do a lot of multimedia work with the students. Our division supports a half-time position designed as Multimedia Coordinator that assists teachers and students.
- Yes, Wireless Labs, Classroom Pods, SIRS, Central Library System, Curriculum Focused projects.

- Regina Catholic maintains a system standard Teaching and Learning with Computers (TLC) deployment and integration model. All K - 8 classrooms are equipped with 4 network connected workstations with full access to division software and CommunityNet, and a laser printer. High Schools are equipped with labs, minilabs, fixed and portable pods of computers, all capable of running network software and having access to CommunityNet. Regina Catholic provides email addresses for every student and staff member in the division.
- We employ a wireless network to connect our rural and urban schools throughout the province.
- Inschool class - CPT20 being taught out of Oxbow.
- Grassroots projects have enhanced web building and general proficiency. Yearbooks are completed in-school by teams of students/staff.
- Online Video Calculus all on TCP/IP (SCN Partnership) Libraries online and searchable from the Internet Online Weather Station - Viewable from any Internet Cxn. Online Division Maintenance Data System Training via Webcasts Remote Desktop logon from Internet Browser (SSL)
- Online Video Calculus all on TCP/IP (SCN Partnership) Libraries online and searchable from the Internet Online Weather Station - Viewable from any Internet Cxn. Online Division Maintenance Data System Training via Webcasts Remote Desktop logon from Internet Browser (SSL)
- We have implemented an iPrism Internet Content filter that monitors and blocks Internet traffic for 2 of our schools. It will be expanded in the future to filter for all schools. We have an extensive practical and applied arts program that covers a great deal of technological areas.
- Absolutely! - Migration from CommunityNet to LanSpan/CommunityNet (summer of 2003) - Migration from NetWare 6 to Windows 2000 Server in 2003. - Largest SUN Microsystems Sun Ray thin client pilot project in the world. - Automated Network Management, Help Desk, e-mail systems, etc. etc

EXPECTED HARDWARE PURCHASES

This is a list of School Division/Library/College reported expected quantity of purchases of certain types of hardware and consumables.

Hardware:

• Firewall/Routers	7
• VPN Device	0
• LaserJet Printer	58
• InkJet Printer	12
• USB On Key Drive	26
• CDR/W Drive	23
• DVDR/W Drive	24
• Scanner	29
• Digital Camera	24
• Digital Video Camera	16
• Servers	18
• Desktop PC	1092
• (Dumb) Terminal	3
• Notebook PC	54
• Tablet PC	1

- PDA 2
- CRT Monitor 915
- LCD Monitor 32
- Hub 28
- Wireless Hub 17
- Switch 40
- Router 0
- Projector 3
- Multifunction Printer/Copier 0
- Other Hardware 0

Consumables:

- Blank Tapes 1567
- Blank CDR(+/-)W 11500
- Blank DVDR(+/-)W 685
- Ink Cartridges 2056
- Toner Cartridges 6277

CURRENT HARDWARE INVENTORY

This is a list of School Division/Library/College reported quantity of certain types of hardware.

- Firewall/Routers 199
- VPN Device 67
- LaserJet Printer 1058
- InkJet Printer 380
- USB On Key Drive 26
- CDR/W Drive 827
- DVDR/W Drive 72
- Scanner 506
- Digital Camera 385
- Digital Video Camera 170
- Servers 429
- Desktop PC 15790
- (Dumb) Terminal 1280
- Notebook PC 495
- Tablet PC 8
- PDA 121
- CRT Monitor 16767
- LCD Monitor 149
- Hub 861
- Wireless Hub 82
- Switch 773
- Router 773
- Projector 84
- Multifunction Copier/Printer 69
- Other Hardware 435

EXPECTED SOFTWARE PURCHASES

This is a list of School Division/Library/College reported expected quantity of purchases of certain types of software.

Specific Software Titles:

Software Types:

- Spam Blocking 0
- Network Monitoring 0
- Internet (Inappropriate) Site Blocking 105
- Special Ed. Software 0
- Other Software, Titles 334

CURRENT SOFTWARE INVENTORY

This is a list of School Division/Library/College reported inventory of certain types of software.

Specific Software Titles:

- Microsoft Windows 98/98SE 7932
- MS Windows NT 4 Wks 636
- MS Windows Me 61
- MS Windows 2000 Pro 2223
- MS Windows XP Home 30
- MS Windows XP Pro 2996
- MS Windows NT 4 Server 50
- MS Windows 2000 Server 153
- MS Windows 2003 Server 20
- MacOS (3-9) 374
- MacOSX (10.x) 110
- MacOSX Server 5
- Linux 282
- Netware (4-6+) 82
- Solaris 23
- PCAnywhere 35
- Norton SystemWorks 46
- Macromedia Dreamweaver 1815
- Macromedia Flash 1322
- Macromedia Director 1078
- Macromedia Authorware 1019
- Macromedia Freehand 1111
- Macromedia Fireworks 1202
- Citrix MetaFrame 217
- Partition Magic 71
- Plato 1868
- AutoCAD 678
- Clarisworks/Appleworks 860

Software Types:

- Antivirus (Client) 10233
- Antivirus (Server) 3059
- VPN Client 97
- Typing Tutor 6953
- Programming Titles 1394
- Accounting Software (Classroom) 429
- Office Suites 17136
- Student Information Systems 777

• Human Resources	23
• Accounting Software (Admin)	31
• Payroll Software	24
• Desktop Imaging Software (ex. Ghost, Drive Image)	8675
• Desktop Lockdown Software (ex. Deep Freeze)	6812
• Image Editing Software	2915
• Video Editing Software	1029
• Spam Blocking	16
• Network Monitoring	1028
• Internet (Inappropriate) Site Blocking	1185
• Special Ed. Software	1051
• Other Software, Titles	6560

PROFESSIONAL DEVELOPMENT REPORT

The Tech Coordinator's Background:

- Classroom with some formal training: 22 respondents. (37.3% of all respondents)
- Classroom with on-the-job training: 21 respondents. (35.6% of all respondents)
- Technical Training: 16 respondents. (27.1% of all respondents)

Budget for IS Department Professional Development:

- School Divisions with an on-going budget for IS Dep't PD 73.4%
- School Divisions without an on-going budget for IS Dep't PD 26.6%

Provincially, an average of 1.7% of a school division's IT budget is spent on IT staff professional development.

Strategies for Provision of Teacher Professional Development on Technology:

- The technology coordinator provides and coordinates the PD. The teachers have access to someone anytime they choose. We have a booking procedure and the teachers can request one-on-one training. We work with them in their classrooms and also provide workshops during division PD days. In addition to the tech coordinator we have a full time technology assistant and a full time network admin. We are working to get teachers to use our services more, by developing a menu of projects and tech ideas that they could pick from. We are planning to put up the resources on the web.
- Nothing formal. Everything is handled at the school level by the technology lead teachers.
- Usually give one day sessions to 5 or so schools a year.
- We run a variety of PD, mostly after school, through inservice and mentoring programs. Most of the PD is offered by the Tech Leaders and monitored by the Principals.
- PD is provided on a needs basis from each school. We also provide division wide inservice on a variety of tech topics. This summer we organized a 3 day

- 10 workshop inservice to all division staff who were interested. We used local division staff to provide the inservices.
- PD committee and computer committee organizes, catalyst teachers, tech coordinator
- Ed. Tech coordinator is a half time position devoted to meeting these goals.
- We have a resource based facilitator who does technical inservicing with the staff on an on-going basis. Some of this inservice is formal after school, but much of it is informal as needed basis.
- None
- We are allowed to attend two workshops or conferences per year
- Our division uses Personal and Professional Growth Plans in which teachers can individualize what they wish to learn. I then provide assistance to them when required
- Each school typically takes one of their full day PD sessions to discuss computer resources. I am the individual who coordinates and runs this PD. Followup is informal, with a staff coordinator (knowledgeable with the system) to provide additional in-school support.
- 3 days per year or as needed
- online learning - on own time
- 2 full days per year and then daily on-site visits from assigned Edtechs.
- I help teachers with IT problems in conjunction with their class' use of the computer lab.
- We poll the teachers as to what they want to learn.
- We have RBL (Resource Based Learning Consultant) that deals with most of this. All schools have time & \$\$\$ allocated for PD.
- 2days/per staff School Division, Tech Coordinator, and outside sources

Professional Development Needs/Requests:

• Adobe	1
• Adobe Pagemaker	1
• Adv. Scanning for print and web, resolution/ dpi	1
• advanced networking	1
• advanced video and sound formats.	1
• Analysis Testing	1
• Cisco QoS for Voice	1
• Digital Imaging	1
• div 1/2/3 educational software	1
• Dreamweaver	1
• Dreamweaver MX	1
• Email	1
• Exchange 2000	1
• Final Cut Pro	1
• Firewalls	2
• Flash	1
• gateway monitoring	1
• Gradebook Plus	1
• Illustrator	1
• Integrating Computers into the Curriculum	1
• Internet safety virus/blocking	1
• Internet surveillance	1
• Internet use - school net	1
• Linux	5

• Linux / MicroSoft integration	1
• Linux / Samba	1
• linux administration/networking	2
• Linux servers	1
• Linux/Squid/Apache	1
• Macromedia	1
• Macromedia / Flash	1
• Math and English skills programs	1
• Microsoft office	1
• Microsoft servers	1
• Ms-Office	1
• Nat	1
• Network Analyzers	1
• network and server troubleshooting - Macintosh	1
• Novell 6.0	2
• Novell Netware	1
• Office XP	1
• Packet Shaping	1
• pagemaker	1
• Photoshop	2
• PHP and Apache	1
• powerpoint	1
• PXE Ghosting	1
• Security	3
• server/client issues	1
• SIRS	1
• SIS	1
• solaris administration/networking	1
• Spam and content filtering	1
• Squid proxy	1
• user policy setup	1
• Video Editing	1
• video editing software for PCs	1
• VPNs	3
• Web awareness	1
• Web Hosting	1
• WiFi security best practices.	1
• Windows 2000 Advanced Server	1
• Windows 2000 Server	1
• Windows 2000 Server setup	1
• Windows 2000 Server with XP workstations	2
• Windows IIS	1
• Windows Server 2003	1
• Windows XP	2
• Wireless	3
• Zenworks 4	1

SECURITY REPORT

Use of a Firewall:

School divisions reporting use of a firewall	48.4%
School divisions reporting no use of a firewall	51.6%

Current School Division Security Practices:

- Firewall, secure login, website blocking
- We have a no install policy prior to lead teacher approval this includes media brought into the environment. We are double firewalled and require specific authentication.
- We use Dlink boxes which sit between the Lan and the CNET routers.
- IPCop firewalls at each location, DansGuardian to block “dangerous” downloads, AVG antivirus on admin desktops, automatic download and install of OS updates (MS Win2k+)
- Symantec
- Norton anti virus, Firewalls with no open ports, web servers are not on school networks, no microsoft on outside network, smoothwall IDS, username and passwords, VNC, proxy logging with usernames
- Novell Zenworks
- Mandatory login, smoothwall, logging through smoothwall and win2000 server
- Security?
- Firewalls, Virus Protection Software
- All servers are in locked room with one school contact knowing the server password
- Firewalls, IDS systems, NMS systems, and virus scanning
- Each school has a firewall implementation of some sort.
- firewalled anti-virus on the servers deep freeze on desktops
- Nortons Internet Security. Lynksys Routers.
- Physical containment limited access Firewalls
- Windows 2003 Server and Mac OS X Server, along with firewalls, ensure no intrusion from outside the network. Windows 2003 Server and Mac OS X Server ensure “security” issues within network.
- ID and cabled
- SMC routers, Norton anti-virus software, monitoring
- All users must login with unique userid and password, SurfControl to monitor Internet traffic, DeepFreeze to stop changes to workstations by students, two virus checkers running on the servers and administrator workstations (AVG and Norton), server and administrator workstation automatic downloads of security patches. UPS with auto shutdown.
- Access rules on site router/firewalls. Security Log reports emailed from sensitive servers
- Just me doing updates, installs, firewalls, and whatever prudent things that are required to maintain integrity.
- Physical firewall, software firewall, corporate anti-virus, spam filtering, gateway email checking, Service Pack Manager software, Log file monitoring, AMS Alert Management Services. When required we employ SSL encrypted web pages, NTFS password protected web regions and IP access controls.
- External - CNet Firewall and security, our firewall blocks only what we specifically allow in. iPrism filter stops users from accessing web sites the division has deemed inappropriate. Internal - Windows Server 2003 strict

Password security policy. Scriptlogic locks permissions and privileges for all users. No unsupervised computer use by students. Each student has to abide by our Computer Use Policy and there are penalties for violations.

- We have routers at all the schools. We have Norton Corporate at all the schools as well. We have an antivirus filter on the email server as well. It does filter some spam. We preach on safe email use as well, not opening anything from someone you don't know, etc.
- MRTG, Firewalls/routers, SNMP with MIBS, physical security, smart cards, etc.
- We have a firewall at the internet gateway at each school, we lock down the machine so the students can only access their files and programs, we track the students internet activity, we implement website filtering and blocking.

Appendix C: School Division Technology Coordinator Interviews

I. QUESTIONS FOR A SCHOOL DIVISION – LARGE, RURAL

1. Organizational structure – a simple chart outlining the positions from the IT Director (technicians, contract support) to the school (teacher -> student)
2. Job descriptions – brief, point form describing the position and main function of the position (IT Director, tech support, School support – in and out of scope)

Technology Manager – servers, switches, users, software configuration, maintenance

EdTech Coordinator – core applications training, inservice, web ebusiness, tech newsletter, innovational project development

3. Everyday barriers for each of the above

Time – Distance-Training Resources

4. Success story – one thing that you feel your division has done that has made a major improvement in the way your tech department functions or has benefited

Last year we had no EdTech Coordinator

5. Average week

15% time Administration support
5% time hardware support
15% time teacher support
10% time software support
5% time miscellaneous (filling out stupid surveys!!)
50% time teaching (if applicable) (Admin/Principal)

II. QUESTIONS FOR A SCHOOL DIVISION

1. Organizational structure – a simple chart outlining the positions from the IT Director (technicians, contract support) to the school (teacher -> student)

Structure until June 2003

Director>Administrative Assistant (me >Inschool Computer coordinator>Teachers>Students

> Principals>Teachers>students

I performed the role of Tech support, Educational Consultant and Help Desk, I also did all networking and maintained the division email server and web site. I was also responsible for acting as the help desk for all office personnel, both at the Division Office level and in the schools. I also supported the Library software as well as the school Admin package. Within the Board Office I supported the School Division Admin package until a new Secretary Treasurer was hired who was very familiar with the software and was able to take it off my hands. I was also responsible for the development of a three year technology plan.

2. Everyday barriers for each of the above

Number of hours in the day: I normally started at 8:00 a.m.; worked through lunch and finished no earlier than 5:00 p.m. Our School Division is very spread out, it can take an hour and a half to drive between the two most distant points.

3. Success story

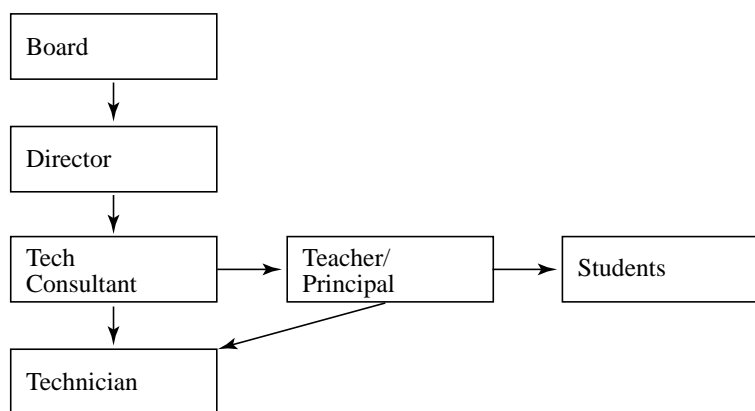
The development and implementation of a Three Year Technology Plan

4. Average week

*10% time Administration support
15% time hardware support
10% time teacher support
10% time software support
20% time miscellaneous (filling out stupid surveys!!)
35% time Curriculum Consultant*

III. QUESTIONS FOR A SCHOOL DIVISION – SMALL, RURAL

1. Organizational structure – a simple chart outlining the positions from the IT Director (technicians, contract support) to the school (teacher -> student)



2. Job descriptions

Tech Consultant – (in scope)

- i. training*
- ii. purchasing / budgetting*
- iii. visioning / planning*
- iv. user support – how to*

Technician – (out of scope)

- v. support (hardware)*
- vi. maintenance*
- vii. advisory to planning / visioning*

3. Everyday barriers for each of the above

Time and money are always barriers

4. Success story – one thing that you feel your division has done that has made a major improvement in the way your tech department functions or has benefited

Splitting the tech consultant & technician allowed us to focus on each position. As a result, our implementation & curriculum integration has increased greatly.

5. Average week

% time Administration support	C=5%	T=5%
% time hardware support	C=0%	T=20%
% time Teacher support	C=40%	T=5%
% time software support	C=20%	T=20%
% time misc	C=5%	T=0%
% time Teaching (if applicable)	C=30%	

C=Consultant T=Technician

IV. QUESTIONS FOR A SCHOOL DIVISION

1. Organizational structure

Technician (me) —> Lead Tech Teacher (schools) —> students

2. Job descriptions

- *Technology Coordinator*
- *coordinate purchases*
- *order hardware, software / provide guidelines*
- *administrative assistant support*
- *support for training of office staff*
- *training for Yearbook staffs (most schools)*
- *future direction planner —> course programs (PAA)*
- *network administrator - wire rooms, network computers*
- *planner for CommunityNet, coordinator for CAP, designer of websites, implementer of Acceptable Use Policy*

3. Everyday barriers

- *boundary issues in each of the schools (my job/your job)*
- *time constraints (1/2 day per 6 day schedule in each school)*
- *money issues - no division budget for cross-school items*

4. Success story

- *networked all classrooms to central server — simplified installation issues*

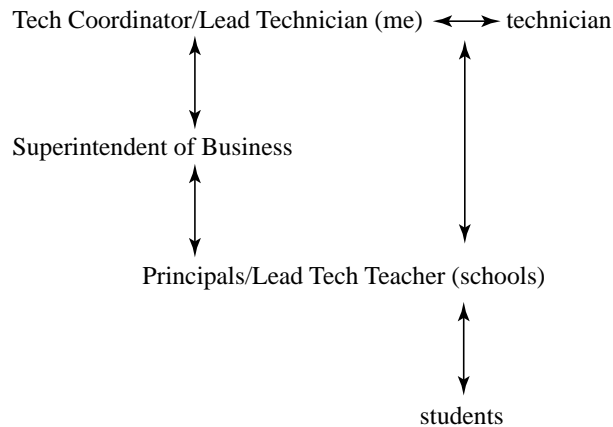
5. Average week

(time usually much higher than this, but this equals 100%)

- *% Admin support – 5%*
- *% hardware support – 10%*
- *% teacher support – 10%*
- *% software support – 10%*
- *% time misc – 5%*
- *% LAN support – 10%*
- *% teaching – 50%*

V. QUESTIONS FOR A SCHOOL DIVISION

1. Organizational structure



2. Job descriptions

- *Technology Coordinator*
- *Infrastructure planner.*
- *purchasing of hardware and software solutions.*
- *Central Office and administrative support*
- *training of division staff*
- *RFP and long range planner.*
- *network administrator – software deployment and auditor*
- *cabling specialist*
- *Chief cook and bottle washer.*

3. Everyday barriers

- *Money, money and did I mention money?*
- *Too much to do too little time .*
- *Breaking old habits ... overcoming individual schools own little domains.*
- *Politics and cooperation.*
- *Commitment to schools and keeping it ... 17 schools and 2 ed sites.*
- *Unable to keep up with all software maintenance.*

4. Success story

- *Summer of 2003, rolled out 400 new units, 19 servers, and redeployed 300 units.*
- *1200 man hour job completed by August 22, 2003.*
- *Full XP client implementation with identical Altiris Solutions being used at all sites.*
- *Made all labs capable of digital processing with appropriate equipment.*

5. Average week

- % Admin/office support – 5%
- % hardware support – 20%
- % teacher support – 10%

% software support – 39%
% time misc – 5%
% LAN support – 10%
% Cnet/SCN – 5%
% Planning, Documentation and Communication – 5%
% Meetings – 1%

**2317 Arlington Avenue
Saskatoon SK Canada S7J 2H8
Phone: 306-373-1660
Toll Free: 1-800-667-7762
Fax: 306-374-1122
E-mail: mcdowell@stf.sk.ca**

www.mcdowellfoundation.ca