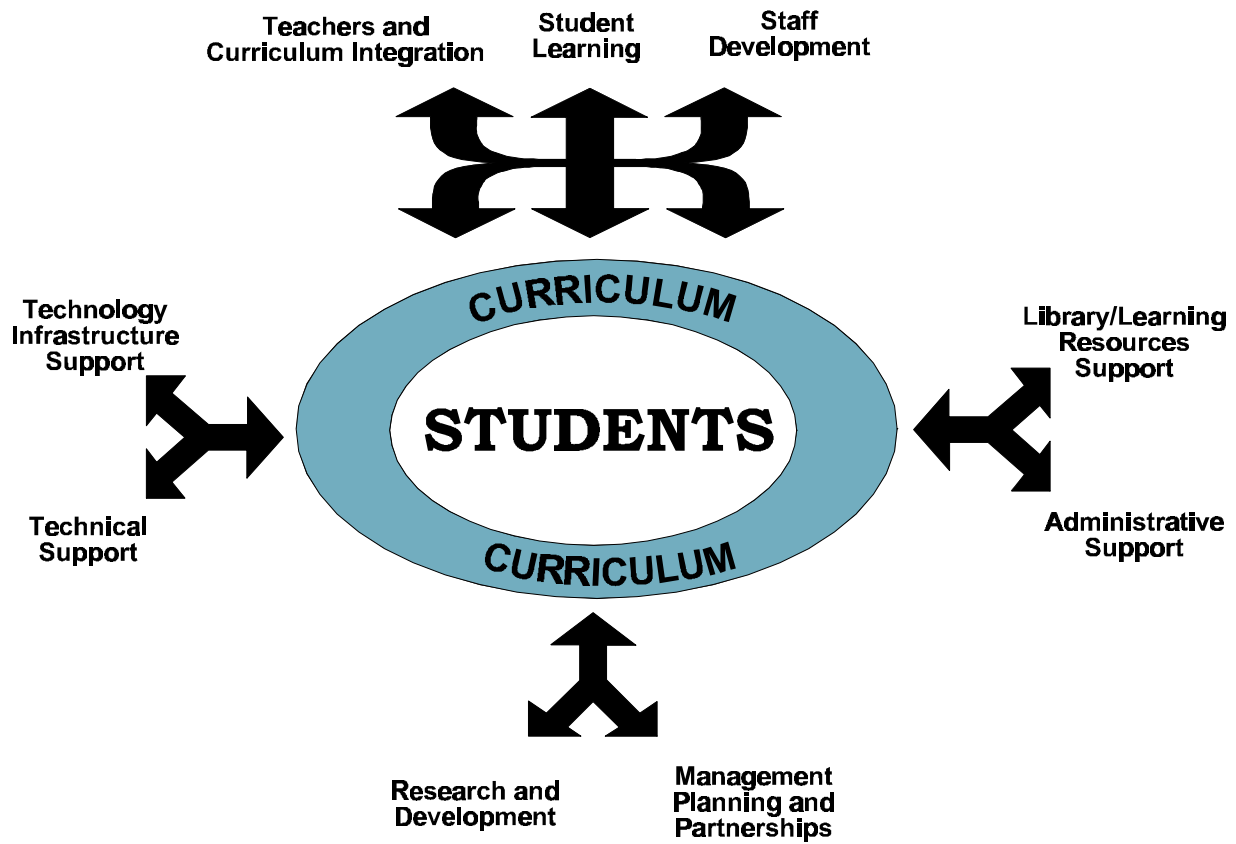


Information & Communication Technologies Integration Plan



Fort La Bosse School Division #41

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DIVISION INFORMATION & COMMUNICATION TECHNOLOGIES INTEGRATION PLAN

2002/2003 — 2004/2005

Acknowledgements

The Division Technology Plan Advisory Committee wishes to thank all who have contributed assistance, suggestions, information, research, and recommendations to the development of the Fort La Bosse Technology Plan. In March 2001, the staff of all schools and departments completed a self assessment of their stage of technological literacy. Technology skills of all grade eight students in the division were assessed using the Fort La Bosse Technology Continuum. The data will be used to assess the effectiveness of the Information & Communication Technologies Integration Plan (ICTIP).

The Plan has gone through two draft development stages and reviews. For example, during Spring of 2001, a plan overview was sent to all schools and administrative staff for feedback. In October 2001, a full draft was circulated to all school staff, division staff and selected stakeholders to obtain comments and suggestions for changes and additions. These comments and suggestions were used to continue the development of the Division Information & Communication Technologies Integration Plan. This document is the culmination of the planning process.

Thank you everyone for your help, participation and contributions.

Technology Planning Core Committee
Fort La Bosse School Division #41

Division Information & Communication Technologies Integration Plan Committee

Co-Chairpersons

- Howard Griffith – Educational Technology Consultant – Fort La Bosse SD
- Emma Lou Evanson – Coordinator of Curriculum and Student Assessment - Fort La Bosse SD

Core Committee Members

- Emma Lou Evanson – Coordinator of Curriculum and Student Assessment - Fort La Bosse SD
- Howard Griffith – Educational Technology Consultant – Fort La Bosse SD
- Yvonne Sheane – Trustee Representative
- Ron Cole – VCI Educator/Senior Years Technology Pathfinder

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- Vaughn Bender – Senior Computer Technician - Fort La Bosse SD
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- Sharon Spak – Coordinator of Student Services - Fort La Bosse SD
- Kevin Wadham - Advisory Council for School Leadership, Virden Junior High School

I. Executive Summary

I.1 Purpose

This Executive Summary provides a summary of the future direction of information & communication technologies in the Fort La Bosse School Division. The purpose of this document is to:

- provide a vision, plan and directions for computer, information, communication, and networking technology implementation within the Division for 2002-2003, 2003 to 2004, and 2004 to 2005;
- ensure that the Division investment in information and communication technologies integration is focused on enhancing and improving student learning;
- provide overall guidance and direction for decision making regarding computer, information, communication, and network technology use, integration, implementation, support, acquisition and administration within the Division;
- assist the Division and schools in determining budget requirements for the acquisition and implementation of information and communication technologies;
- ensure that the Division and schools maximize their technology investments;
- provide an overall framework for the development of school Information & Communication Technologies Integration Plans; and
- comply with the computer, information, communication, and network technology planning recommendations of Manitoba Education Training & Youth.

I.2

Fort La Bosse School Division's "Information & Communication Technologies Integration" Vision

Our challenge is to seek ways to enhance and improve student learning and achievement in an increasingly technological world.

Our Vision is to maximize opportunities for students to use technology creatively and effectively in every day activities, to enhance learning.

We see a future where our students are empowered to become independent, life-long learners in this world of rapid technological change.

I.3 Fort La Bosse School Division's Information & Communication Technologies Integration Goals

To achieve our Technology Vision, nine key planning goals were identified to ensure success. The nine key goals are clusters of sub-goals, actions, responsibilities, strategies, assessments, reports, resources, outcomes, timelines and costs that, implemented individually or orchestrated as a whole, will contribute to the realization of our vision. The nine key planning goals are:

Goal One: Student Learning

All students will have equitable access to information and communication technology resources to provide technology opportunities to meet Manitoba Education Training & Youth prescribed learning outcomes and to enhance and improve student learning.

Goal Two: Teachers and Curriculum Integration

All teachers will have access to and use information and communication technologies to enhance and improve instruction and to assist them with administrative tasks.

Goal Three: Staff Development

All staff will have access to a wide variety of information and communication technologies in-service, training and support programs.

Goal Four: Library and Learning Resources Support

Division and on-site learning resource support will be provided to assist Schools and Division Departments with information and communication technologies advice, standards, selection, acquisition, storage, circulation and implementation.

Goal Five: Technical Support

Division and on-site technical support will be provided to assist Schools and Division Departments with information and communication technologies technical maintenance, support, implementation and operations

Goal Six: Administrative Support

All schools and Division Departments will use information and communication technologies to support efficient, effective and secure management of information.

Goal Seven: Technology Infrastructure Support

A variety of information and communication technologies will be managed as a whole or technology infrastructure to enable the Division to maximize its investment in information and communication technologies in an effective, efficient, and systematic manner.

Goal Eight: Management, Planning and Partnerships

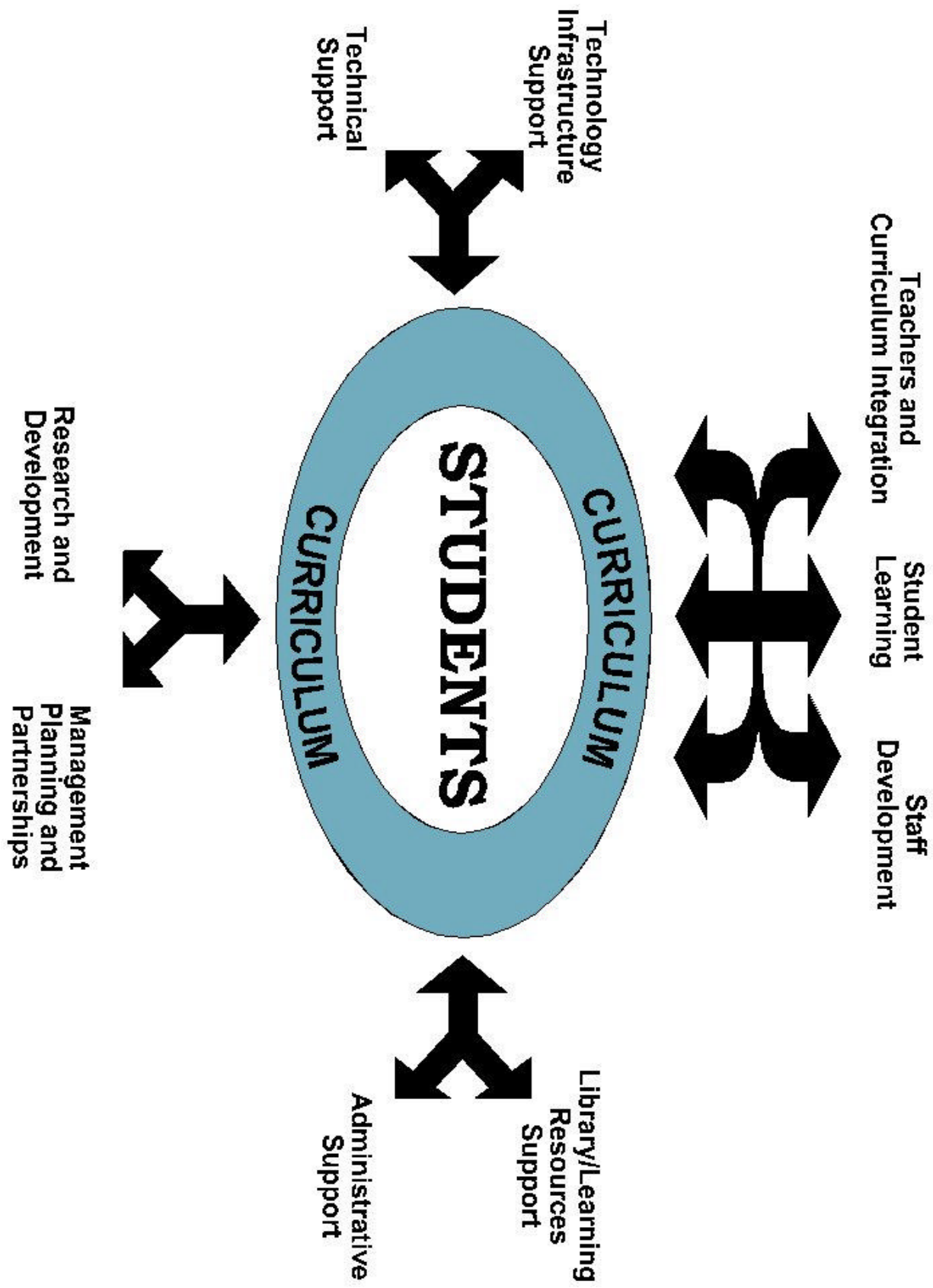
The Division will manage the Information and Communication Technologies Integration Plan to maximize the educational impact of information technologies investments in an effective, efficient, and systematic manner using appropriate management, planning, partnership and collaborative actions.

Goal Nine: Research and Development

We recognize the need to stay current on research related to the impact of technology on learning and teaching. All staff need to stay abreast of new developments that have the greatest impact on students.

I.4 Technology Plan Integration Model

These nine key goals are all interrelated and need to be integrated or orchestrated as one effort to achieve our vision. The following diagram is an illustration of the relationship between and among these key nine goals. The diagram is called the Technology Plan Integration Model.



II. Introduction

II.1 Definition of Information and Communication Technologies (ICT)

Manitoba Education explains information and communication technologies by stating:

“Technology may be regarded as

- a tool or machine
- a process, system, environment, epistemology, an ethic
- the systematic application of knowledge, materials, tools, and skills to extend human capabilities

Thus, technology includes not only tools and machines, but also their impact on processes and systems, on society, and on the way people think, perceive, and define their world.”

“Over the past few decades, a particular dimension of technology has come to permeate nearly all aspects of human life: information technology. The information technologies, comprising computers and their peripherals, computer software, the Internet, and electronic multimedia, are becoming part of our daily existence at an ever-increasing rate....

To prepare students for their roles in society, Manitoba Education and Training has identified technology, along with literacy and communication, problem solving, and human relations, as a foundation skill area to be developed in every subject area and grade (A Foundation for Excellence, 1995). Development of technology as a foundation skill area will not only enable students to use technology to learn, but will also enhance their understanding of the connections between technology, society, and the environment.”*

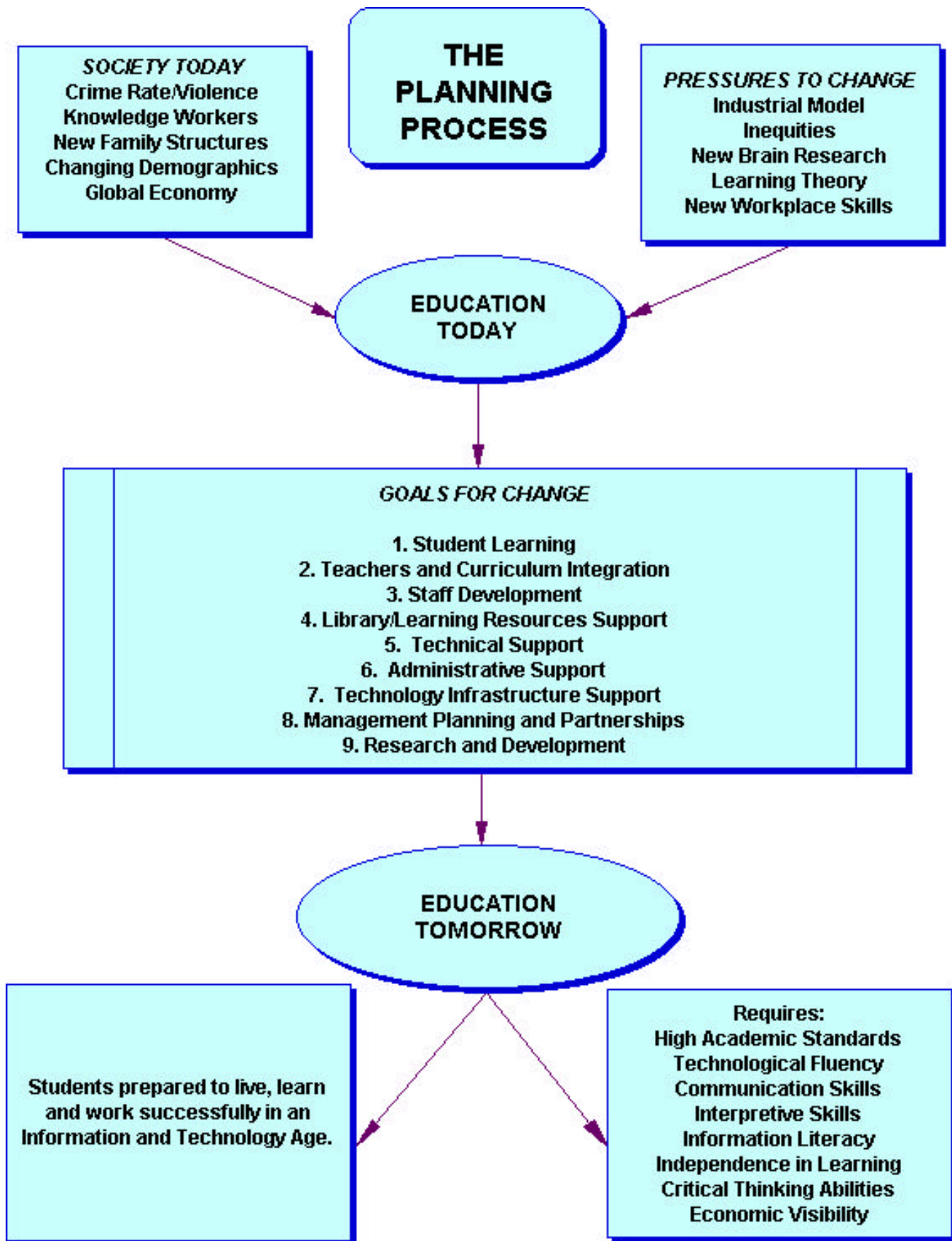
* (Technology As a Foundation Skill Area: A Journey Toward Information Technology Literacy, Manitoba Education & Training; 1998)

It became obvious early in the development of the Division Information and Communication Technologies Integration Plan that the plan must recognize all information technologies. Therefore the plan reflects a comprehensive and broad definition of information and communications technologies.

Although the Division Information and Communication Technology Integration Plan focuses primarily on new and some emerging technologies, the traditional technologies are included where possible and as time permitted. The primary focus of the plan is on the original terms of reference of computers and network technologies.

II.2 The Planning Process

In referring to the “planning process diagram” below; the Division Information and Communication Technologies Integration Plan was created to move student skills from the education system of today into the education they need for tomorrow.



III. Current Division Status: Where We Are Now

III.1 Background

Fort La Bosse has a history of strong support for Information and Communication Technologies. The Division's *Technology 2000 Plan*, was adopted in 1995, and was extended into the current school year. After a number of years of Division support and several significant achievements, much is yet to be done.

III.2 Internal Review

Beginning in March, 2001, the Technology Integration Planning Committee conducted an assessment of the current status of technology literacy across all groups in the division.

The assessment included:

- teaching staff;
- educational support staff (TA's, librarians, secretaries, transportation & maintenance);
- school and office administration and support staff;
- an assessment of all current Grade 8 students, using the Technology Integration Skills Continuum, to provide a baseline of student competencies.

Summaries of the survey results are provided in the sections that follow:

III.2.1 Survey of Teacher Competencies

The Teacher Competencies rubrics were divided into two parts:

- Rubrics for "Basic Technology Competencies"
- Rubrics for "Technology Integration Competencies"

Both sets of rubrics, based on the "*Code 77 Self-evaluation Rubrics*" of Doug Johnson, provided a narrative for staff explaining what a teacher using each rubric might be doing while using technology at different levels.

Each rubric had four levels of use, from which the teacher selected their current level of comfort in using technology.

- Level 1: Pre-Awareness
- Level 2: Awareness
- Level 3: Mastery
- Level 4: Advanced

A total of 95 response sheets were returned from teaching staff, for a total response of 69% (95/137). The response % for each level was calculated by dividing the number of responses to a particular level by the total number of responses (95).

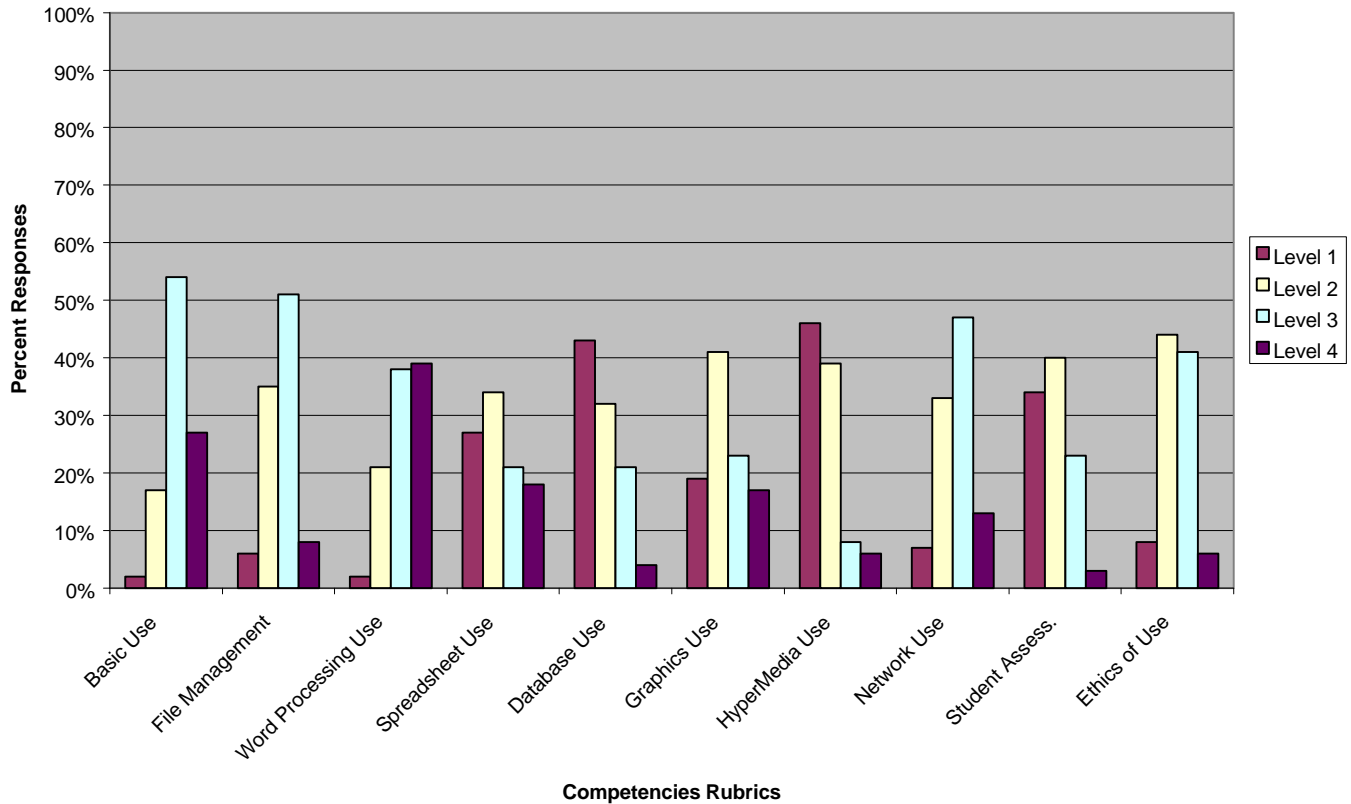
Basic Technology Competencies

For most rubrics dealing with Basic Technology Competencies staff were at either a level 2 or 3, with small numbers on either side reporting either level 1 or 4 (Basic Use, File Management, Spreadsheet Use, Network Use, Ethical Use).

The exceptions were:

- *Word Processing: most teachers reporting level 3 or 4*
- *Database Use, Hypermedia Use, and Use for Student Assessment: most teachers reported level 1 & 2*

Teachers: Basic Technology Competencies By Level



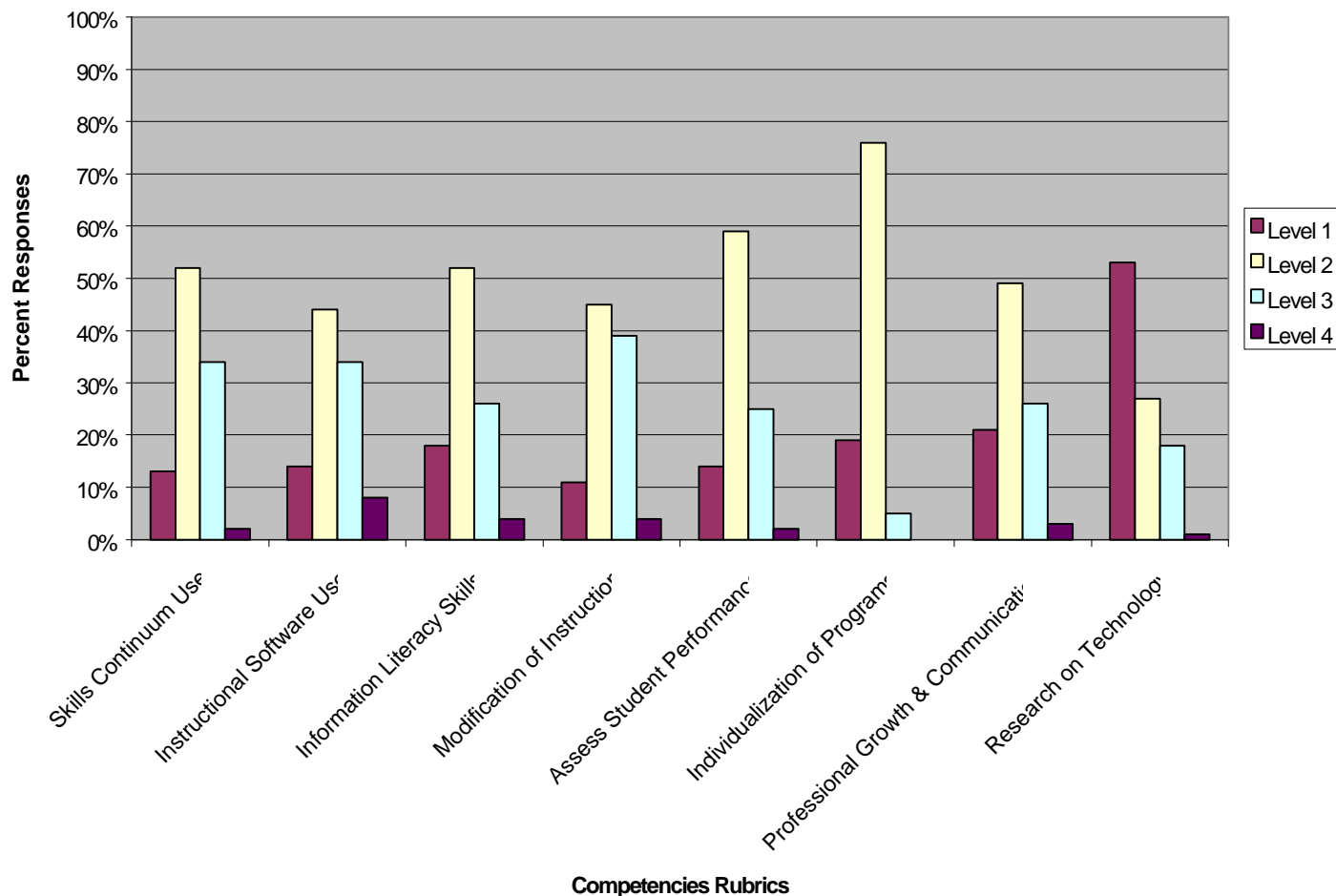
Technology Integration Competencies

For most rubrics dealing with Technology Integration Competencies staff were mostly at level 2, with the next largest group being level 3. Small numbers were reported on either side reporting either level 1 or 4 (Technology Skills Continuum Use, Instructional Software Use, Information Literacy Skills, Modification of Instructional Delivery, Assessment of Student Performance, Network Use, Ethical Use).

The exceptions were:

- *Individualization of Educational Programs: most teachers reporting being on level 1 and 2.*
- *Research and Evaluation of Technology Use: most teachers reported a level 1.*

Teachers: Technology Integration Competencies



Professional Development

- 89% of educators surveyed indicated they would like Division sponsored and organized professional development in the use of information and communications technologies.

III.2.2 Survey of Administrative Competencies

The Administrative group is composed of:

- Principals and vice principals
- Senior Administration/Department heads

The Administrative competencies were measured using the “Rubrics for Leadership: What technologically Literate administrators and coordinators should know and be able to do with information and communication technologies”.

These rubrics, based on the “Code 77 Self-evaluation Rubrics” of Doug Johnson, provided a narrative for staff explaining what a teacher using each rubric might be doing while using technology at different levels.

Each rubric had four levels of use, from which the administrator selected their current level of comfort in using technology.

- Level 1: Awareness
- Level 2: Minimal
- Level 3: Mastery
- Level 4: Advanced

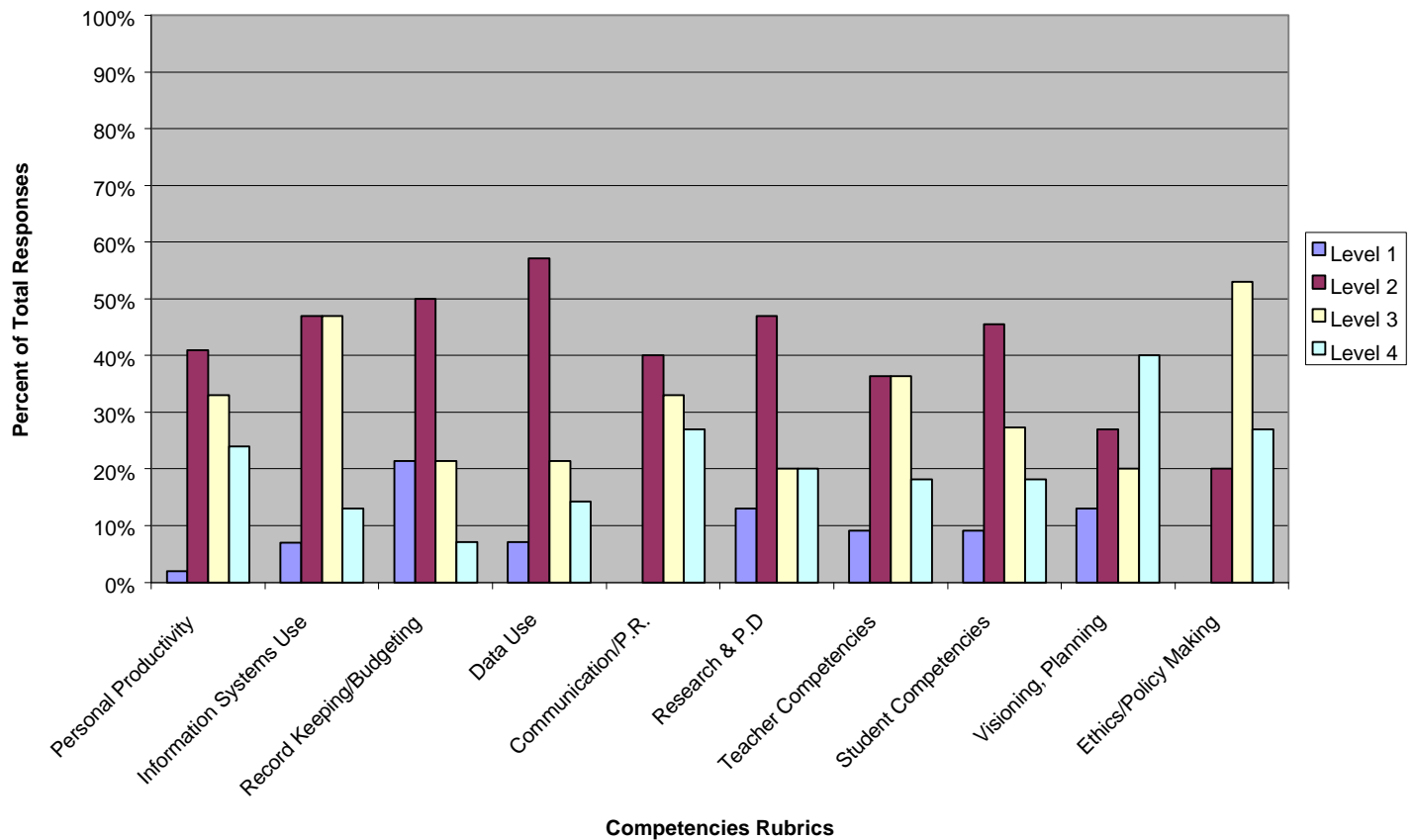
A total of 15 response sheets were returned from administrative staff, for a total response of 75% (15/20). The response % for each level was calculated by dividing the number of responses to a particular level by the total number of responses.

For several rubrics dealing with Leadership Competencies for supporting technology integration, staff were at level 2 (Record Keeping/Budgeting, Data Use, Research and Professional Development, Student Competencies). Some others had level 3 the next highest or equal to level 2. (Personal Productivity, Information Systems Use, Communications/P.R., Teacher Competencies). Small numbers reported being on either side, indicating either level 1 or 4

The exception was:

- Ethical Use and Policy Making: most administrators reporting a level 3

Administration Leadership: Competencies Supporting Technology Integration



Professional Development

- 91% of administrative staff surveyed indicated they would like Division sponsored and organized professional development in the use of information and communications technologies.

III.2.3 Survey of Support Staff Competencies

The Support Staff group includes:

- Teacher Assistants
- Library Technicians/Clerks
- Secretaries/Office Clerical Staff/Special Services Staff
- Transportation/Building and Maintenance Staff

The Support Staff competencies were measured using the “Rubrics for Competencies in Using Technology – What technologically literate staff should know and be able to do with information and communication technologies”. These rubrics, based on the “Code 77 Self-evaluation Rubrics” of Doug Johnson, provided a narrative for staff explaining what a staff member using each rubric might be doing while using technology at different levels.

Each rubric had four levels of use, from which the staff selected their current level of comfort in using technology.

- Level 1: Pre-Awareness
- Level 2: Awareness
- Level 3: Mastery
- Level 4: Advanced

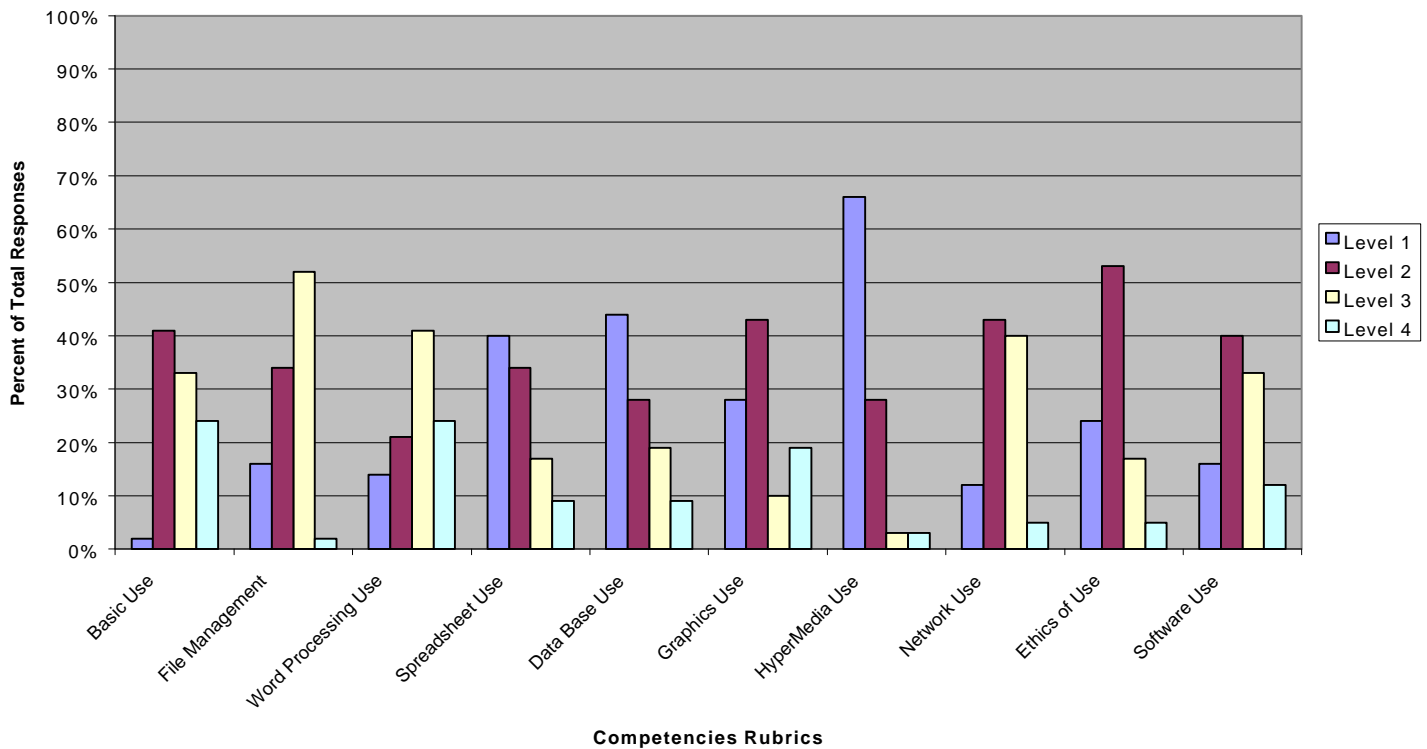
A total of 58 response sheets were returned from the Support Staff group, for a total response of 77% (58/75). The response % for each level was calculated by dividing the number of responses to a particular level by the total number.

For most rubrics dealing with Basic Technology Competencies Support Staff were at either a level 2 or 3, with small numbers on either side reporting either level 1 or 4 (Basic Use, File Management, Network Use, Ethics of Use, Software Use).

The exceptions were:

- Spreadsheet Use, Database Use, & HyperMedia Use: most reporting level 1 use.

Support Staff: Basic Technology Competencies



Professional Development

91% of support staff surveyed indicated they would like Division sponsored and organized professional development in the use of information and communications technologies.

III.2.4 Assessment of Student Strengths and Weaknesses

In the Spring of 2001, technology integration skills of Grade 8 students were assessed. Students were asked to score themselves using the Grade 8 Technology Integration Continuum Check Sheet. Overall it appeared that students at the Grade 8 level had higher skill levels than initially expected by the committee. However the assessment was able to identify the following as areas in need of focus* in order to generate improvement:

- Technology Awareness: Specific sections on 'Networking' and 'File Management'.
- Social and Human Issues: Specific sections regarding 'Historical and Futuristic Perspectives' and 'Ethics'.
- Publishing Technologies: Specific sections regarding 'Page Setup', 'Document Management', 'Editing', 'Web Authoring', and 'Printing'.
- Database: Students indicated a lack of skills and understanding across this section.
- Spreadsheet: Students reflected a lack of skill in more advanced sections including: 'Layout', 'Sorting & Arranging', 'Evaluating Information', and 'Charts'.
- Drawing Tools: Students lacked ability in the more advanced skills like: 'Edit Colours', 'Adding Text to a Graphic', 'Exporting & Converting Files'.
- Multimedia Publishing: Students lacked skills throughout this section.
- Internet: Students lacked skills in all areas: use of the 'World Wide Web', 'Electronic Mail', and 'Video Conferencing'.
- Programming: In general students lacked skills in the area of programming.

* **Areas in need of focus** were determined by summarizing a representative, and random, sample of student responses from all schools surveyed. This was a 10% sample of all respondents. An 'area in need of focus' was identified when less than 50% of the sample student responses indicated an understanding of a particular skill.

NOTE: At the time of the Grade 8 student survey the K-8 Technology Skill Integration Continuum was only partially implemented, with only the Keyboarding section being compulsory. The Keyboarding section was the only one not identified as an area in need of increased focus for instruction.

III.2.5 Summary of School and Division Comments

The following summary is only the most frequent comments that were made on the Technology Competencies surveys. For a summary of all comments see, ***Summary of School and Division Technology Survey Comments***.

In summary, the most frequent comments from staff were:

- (13) Need More Training/Inservicing
- (5) Need Help with Integration
- (4) Staff At Different Level – Need to Plan PD Accordingly
- (4) Need On-Site Support
- (3) Need More Technical Support
- (3) Finding The Time To Learn And Practice Is A Problem
- (2) Internet/Email Too Unreliable To Use
- (2) Getting My Students Access To Computer Lab Is A Problem
- (2) Need Wide Area Network

III.3 Assessment of School Technology Stage of Development - A Snapshot

Narrative Review of Current Situation:

■ Student Access and Use

- Student productivity and learning is enhanced and improved through the use of computer technology.
- All students have access to computer technology throughout the school
 - *Most schools have at least one computer lab.*
 - *Most schools have at least one computer per classroom, some have 3 to 5 (usually have no lab)*
- All school computers are installed with Internet access.
 - *Access to the Internet is governed by parental permission via the Division's Acceptable Use Policy.*
 - *Currently students are not given Division Email accounts. Some have their own accounts through web mail sources. e.g. Hot Mail, Yahoo, GeoCities, SchoolNet. Use of these accounts may be allowed by school policy.*
- Computer technology can be used in all subject areas as appropriate.
 - *Varies from school to school and even classroom to classroom.*
 - *Some teachers complain about lack of access to computer labs due to scheduling.*
 - *Some teachers complain about hardware and software not working reliably when needed.*
- Not all students use computer technology on a regular basis as needed.
 - *Varies from school to school and even classroom to classroom.*
- 60 to 70% of students regularly use computers outside of the school environment.

■ Teacher Access and Use

- The teachers' role, productivity and learning is enhanced and improved through the use of computer technology.
- Some teachers use computer technology regularly for planning, record-keeping and reporting.
 - *Varies from school to school.*
- Most teachers have convenient access to computer technology at school for their own use.
- Some teachers have access to a computer at home.
- All staff have the opportunity to have free school email via the Division's Web/Email server.
 - *However, only about 60% of staff have taken advantage of this.*
 - *Only 60% of the email accounts requested are used on a regular basis by staff.*
- Some teachers collaborate electronically with colleagues to share resources.

■ Planning and Leadership

- Educational Technology Plan – expired in 2000, currently being updated.
- The Division developed and adopted a *Technology Integration Skills Continuum* for grades K-8, in the fall of 2000. Implementation began in the fall of 2000, with all schools presenting formal keyboarding to students in grades four to eight. In addition, starting at all K-8 levels in the fall of 2001, schools are to implement focused skill instruction in areas targeted by the Continuum Committee. By the fall of 2002, the Technology Integration Skills Continuum will be implemented in its entirety.
- The Division has an Educational Technology Consultant.
 - *Responsible for yearly planning, budgeting, purchasing, and staff support for schools.*
 - *Done in consultation with the Senior Technician.*
- The Secretary Treasurer fulfills the same role for technology located in the Division Office.
 - *With support of the Senior Technician.*
- Division has a Technology Leadership Team for planning/sharing at the Senior Administration level.
- In some schools the principal uses technology regularly and plays a leadership role in planning.
- Most Schools do not have a formal short term or long term Technology Plan.
 - *Some schools include a technology section in their overall school plan.*
- Some staff are involved in technology planning and making purchasing decisions in their schools.

- The Division is currently exploring and considering the implementation of Manitoba Education Training & Youth's "Distributed Learning Model".
 - Currently RCI and FLAC are piloting the delivery of one distributed education curriculum (Fall 2001).
 - One teacher is working on the development of a on-line course, in partnership with MET, during the 2001-2002 school year.

■ Software and Hardware

- Computer software and hardware is being introduced in most subject areas, as appropriate.
 - *Levels of introduction vary from school to school, and classroom to classroom.*
- A few teachers have a computer designated for their specific use.
 - *Depends on the school.*
- A mixture of Pentium, P-II, and P-III computers are found in all schools.
 - *Some '286's, '386's, and '486's exist but most have been retired due to age and ability.*
 - *Pentium systems are almost 5 years old – soon to be retired due to age and ability.*
 - *Three years worth of computers will soon be off warranty.*
- Advanced computer technology is available as appropriate, e.g., digital camera, scanner, video camera.
 - *Usually at the school level, but not every classroom.*
 - *Three schools have computer data projection units.*
 - *In the Fall of 2001, the Division purchased a data projection that schools can borrow for short periods of time.*
- Schools have received a Division selected suite of application software, e.g., Works, Publisher, Office.
 - *Beyond this schools often use their own funds to purchase other titles specific teachers wish to use.*
 - *The Division and schools are expected to follow legal licensing protocols.*
- Library card catalogue is automated for circulation, inventory and management in all schools (MicroCAT).
 - *One library is working towards automating its' check-out and circulation.*
- All schools have a school administrative student record system to record and report student/course data.
 - *Not all schools are on the same system (SIS – most small schools, WinSchool – VJH, TREVLAC – VCI)*
 - *This creates issues and problems of transferring student data between schools and to Division Office.*
 - *Three schools have school administration systems that allow the creation of electronic report cards.*
 - *Four schools are using the administrative system to track student attendance (replacing registers).*
 - *All schools report their student enrolment data to the Department electronically.*
 - *Some schools have expressed an interest in obtaining a "grade keeping" program to integrate with the administrative software.*
- The Transportation Department has been investigating a new software program for their use (bus route information, repair & maintenance information, inventory of tools & parts).
 - *Transportation, Schools, and the Division Office, have recognized a need to have any transportation program integrate data with the administrative package(s) used in schools and the office.*

■ Infrastructure/Networking

- Classroom, library and office computers are connected through a school-wide local area network, which includes electronic mail.
 - *Most schools have at least one network jack per classroom, and labs are wired for 20 to 25 connections.*
 - *All schools have been upgraded to Cat 5 twisted pair cabling, with hubs for connectivity to servers.*
 - *One has upgraded internal networking cable to fibre optics.*
 - *Some schools have been upgraded by adding high speed switches.*
 - *All schools now have Novell 5.1 network operating systems for their servers.*
- The Board of Trustees has approved the creation of a Wide Area Network between schools and offices, utilizing "wireless" technology (2001-2002).
 - *Initially this network will allow all schools to receive access to high speed Internet services*
 - *In the future it will be developed to inter-connect schools for educational and administrative functionality.*

- Until the Fall of 2001, Internet access has been provided to schools in a variety of speeds and forms (inequitable)
 - *Virten schools had access to high speed ADSL service, as of January 2001. (1.5 Mbit down and 64Kbit up)*
 - *RCI and Elkhorn schools utilized a satellite connection (400 Kbit down and 56 Kbit up)*
 - *All other schools shared a single phone line between all computers (56Kbit)*
 - *With the implementation of the high speed wireless Internet connections, all schools will be receiving this service by the Fall of 2001.*
- The Division has a web page, with resources for schools to access.
 - *This web site is maintained by a teacher volunteer.*
- Some schools have a school web page to share information with parents and the community.
 - *Some were created a few years ago and have not been updated recently.*
- In one school, teachers update daily student records using in classroom computers on the local school network.
- Most classrooms do not have adequate electrical infrastructure to support technology safely.

■ Technical Support

- A Senior and Junior Technician provide technical, networking, and Internet support to all sites.
 - *The Junior position was added in the fall of 2000 in response to identified needs for more technical support.*
 - *The technicians provide expert service for all Division computer systems. The Senior Tech. is a CNE.*
- On-site technical support for staff is provided by school staff.
 - *Most schools have a teacher who is assigned to oversee and manage the technology in the building, as well as to help other teachers.*
 - *Two schools use a Teacher Assistant level position for this purpose.*
 - *Some of these staff receive a small amount of time, outside of regular duties, to perform support tasks. All is paid for within staffing formula for each site.*
 - *Many teachers feel that this type of support is critical to success in integrating technology for students.*

■ Professional Development

- Some staff make computer technology upgrading a personal priority. They attend workshops & conferences.
- The Division in past years has offered regular technology training workshops for staff.
 - *This was cut back when staff enrolments dropped off and staff indicated that they wanted help at their work site instead.*
 - *The STAF, Technology Pathfinder Program was created in the spring of 2000 to inservice and help staff at their schools. This program has had some initial success but needs to be better promoted. Pathfinders are also leaders who deliver workshops on P.D. days.*
 - *Another problem for having group workshops is the lack of a lab facility that can be easily accessed for staff training, without depositing students from school labs.*
- The focus of professional development needs to be on transforming learning and teaching through integrating information and communications technologies.

■ Non-Teaching Staff

- All secretaries coordinate and maintain student records electronically.
 - *Using their school administrative software package and EIS from Manitoba Education.*
- Some secretaries use advanced features of student records, reporting and word processing software.
 - *All secretaries were supplied with licenses for Microsoft Office (WORD, EXCEL, ACCESS).*
- All secretaries maintain a computer accounting system.
- Teacher Assistants assist students with computer technology.
 - *TA knowledge of hardware and software varies depending upon their primary role in supporting learning.*
 - *Some TA's require specialized technical knowledge for their job. e.g., Brailier, Intelli Keys, etc.*
- All school Libraries are staffed with Library Technicians or Clerks who use an automated catalogue system to catalogue and manage library resources.
- Some custodial/maintenance staff use electronic mail for division communications.
 - *This could be expanded to include: work orders, ordering supplies, budget, work schedules, etc.*
 - *Transportation has a school bus management program, and inventory databases.*

■ Funding

- Funds for purchasing of hardware and software are managed centrally by the Educational Technology Consultant.
 - *The Educational Technology Consultant annually seeks budgetary support from the Board.*
 - *Central purchasing creates some standards and saves money through volume purchasing.*
- Schools and the Senior Technician are consulted as part of the purchasing process.
 - *Schools can add other items, using school based funds, to the Division order if they choose to.*
 - *Staff have the opportunity to purchase personal computers at the Division tendered price.*
- Manitoba Education Training & Youth provide categorical grants for some types of technology. e.g., Vocational Equipment Replacement Grants, Vocational Start-up Grant, Distance Education & Technology Professional Development Grant.
- Schools and the Division from time to time participate in partnerships that bring new technology to the Division. e.g. TSRC labs (cost sharing), Chevron Oil (donations), Computers For Schools & Libraries, Strategic Alliance with RF-NOW.
 - *These supplement the technology available in schools while reducing costs to the Division.*

III.4 Funding and Plan Priorities

In the Spring of 2000, a working session with Schools Administrators was asked to identify and prioritize technology issues that would be reflected as future needs. The following is the summary of the items (listed from the most to the least important) identified by the school administrators.

1. Complete Equalization of Hardware Allocations To Schools*
2. Allocation to School Based Purchasing of Software & Supplies
3. Increased P.D. in Integration of Technology in Curriculum*
4. Need a Junior Technician to assist Vaughn**
5. P.D. Support for School Secretaries & Librarians*
6. School Time for "Division Tech Support Person" based on student ratio.
7. Cost Sharing of TechWorks
8. Improvement of Internet Access, Speed, & Consistency (Wireless & Other)*
9. Tech Support Personnel in each School
10. Old Technology (aging) needs more support (repair & upgrading)*
11. Hardware Support of CGL Math Grade 7/8, Senior 2, Senior 15F*
12. Greater Attention to Technology Impact on Facilities (furniture, infrastructure)*
13. Administrative computers VS Education computers -- separate budget**
14. Hardware Support for Specific Programs (ex. Library, Music, Columbia Systems)
15. Budget Carryovers to Allow Long Range Goal Planning**
16. Division should pursue lease financing of purchases for maximum impact.

** These items have been addressed already.

* These items have started to be addressed, but are on-going.

IV. Our Vision and Goals

IV.1 Developing the Divisional Technology Vision

Our challenge is to seek ways to enhance and improve student learning and achievement in an increasingly technological world. The demand for educational change combined with the dramatic increase in the availability, quality, and power of Information and Communication Technologies have simultaneously grown into two of the most significant trends in education today.

Our challenge is to link educational change and the implementation of Information and Communication Technologies, for high impacts on student learning and achievement.

The plan then becomes our road map to our vision of the future. To create our Information and Communication Technologies Integration Vision, there are a number of sources that can help including:

- our Division Mission and Values;
- the experience and knowledge of Division staff;
- assessment of and input from Division staff;
- what the research says; and
- Manitoba Education, Training, and Youth.

IV.1.1 Our Division Mission and Values

The Fort La Bosse School Division is committed to working together with our communities to prepare students for the future by providing quality education and fostering lifelong learning in caring environments while making the best possible use of resources.

The values which guide us are:

- A responsibility to provide quality education for all students.
- An openness to change that enables us to respond thoughtfully to the demands of the future.
- An appreciation of and belief in the diversity, strength and commitment of our communities.
- An understanding of communities in 'their broadest sense; including staffs, parents, families, homes, businesses, cultures, as well as our students as partners in education.
- A fostering of healthy self-esteem and high achievement in students so that they may become self-directed, responsible adults.
- A respect for all people and their ideas which is demonstrated in all decisions, actions and communications.
- A desire for safe caring environments that show an appreciation of the talents, strengths and needs of our communities.
- An obligation to make the best possible use of all available and potential resources including the personnel, finances, and materials used to support education.
- A desire for responsible citizens committed to lifelong learning for everyone; students, staff, parents, and all community members.

IV.1.2 Experience and Knowledge of Our Staff

The experience and knowledge of our staff play pivotal roles in the design, development, implementation, monitoring, and evaluation of the Division Technology Plan.

Technology Integration Skills Continuum was developed during the 1999-2000 school year, by a committee of staff representatives, and was approved for implementation by the Fort La Bosse Board of Trustees in the fall of 2000.

Our “Technology Pathfinders” served on the Continuum Committee, and continue to be of service on the Technology Planning Committee.

IV.1.3 What the Research Says

There is a growing wealth of useful research on how best to use technology to enhance and improve student learning and achievement. For example, Elizabeth Wellburn, of the B.C. Ministry of Education (1996), completed an extensive and significant review of recent research literature regarding the status of technology in education and found that most of it is “*overwhelmingly positive about the potential of a variety of technologies to be powerful components in accomplishing current educational visions.*” She also reported that the literature review indicated that the top ten reasons for using technology are to assist with educational goals such as:

- “ 1. *individualization.*
2. *increasing proficiency of accessing, evaluating and communicating information.*
3. *increasing quality and quantity of students’ thinking and writing.*
4. *improving students’ ability to solve complex problems (a skill that cannot be “taught” , but which appears to develop in a more focused manner when productivity tools are available).*
5. *nurturing artistic expression (many flexible tools are available).*
6. *increasing global awareness.*
7. *creating opportunities for students to do meaningful work (work that reaches out and has value outside school — e.g., is presented to an audience other than the teacher).*
8. *providing access to high-level and high-interest courses (even in Divisions where some courses have been impossible to offer).*
9. *making students feel comfortable with the tools of the Information Age (which they are almost certain to use in their future).*
10. *increasing the productivity and efficiency of schools.”*

In addition, studies examining the success of technology-rich schools have revealed four key features that appear to represent best practices of the high technology school of the future (Glennan and Melmed, 1996). These four best practices of the high technology school of the future are:

- *emphasize the role of concentrated, conscious and explicit planning among school leaders, families and students to create “Learner centred” environments. These learner-centred environments focus on how technology can support students’ individual needs and capabilities, not on the capabilities of the technology itself.*
- *the goals and challenging standards for student achievement are clearly articulated. These measures of student success are not simply limited to achievement test scores, but also include indicators of other important processes, such as student motivation and engagement, job placement, attendance rates and level of family involvement.*
- *emphasize the restructuring of the school to support the learner-centred environment and achievement of standards. Successful technology-rich schools physically reorganize and redesign their classrooms and school buildings, rethink their use of time, re-evaluate the manner in which they deliver their curriculum and build better partnerships among teachers, administrators, parents and students.*
- *near universal access to computer technology — a minimum of at least one computer for every five students.*

Further research on the impacts of integrating Information and Communications Technologies in the classroom can be found at Computer Education Coordinators of Manitoba (CECM) web site:

<http://www.cecm.winnipeg.mb.ca/resources/research.html>

The site summarizes some of the most current research and literature on this topic.

IV.1.4 Manitoba Education, Training, and Youth

- **Background**

Manitoba Education & Training first identified the importance of technology in our education system by identifying it as one of the four "Foundation Skills", including "Technology Skills" with, "Literacy and Communication Skills", "Problem Solving Skills", and "Human Relations Skills" (Renewing Education: New Directions, July 4, 1994).

Technology is further referenced in other Department documents, but its importance is highlighted in a document devoted solely to it: "Technology as a Foundation Skill Area: A Journey Toward Information Technology Literacy" (1998). This document focuses on how schools are expected to plan for, use, and integrate technology. It also identified an "Information Technology Skills Continuum" – an age appropriate list of attainable student outcomes.

- **The Department's Vision is:**

"The use of information technology will help enable all students to solve problems, improve their personal performance, and gain the critical and abstract thinking skills necessary to become lifelong learners and contributing members of their communities....."

To achieve this vision, all Manitoba students will

- **use information technology** to structure inquiries, solve problems, and gather, organize, validate, and communicate information on a local and global scale
- **manage information technology** by making creative, productive, and efficient technology choices for the tasks at hand
- **understand information technology and reflect upon the ethics and impact of its use, synthesizing new insights and making reasoned decisions as information technology evolves**

Skill development in this foundation area will be accomplished through the integrated use of information technology in all Manitoba curricula."(Technology As A Foundation Skill Area: A Journey Toward Information Technology Literacy, 1998)

- **Supporting Development - Manitoba Exemplars:**

- 1. Middle Years Multimedia Project (IMYM)**

The Interdisciplinary Middle Years Multimedia (IMYM) Project is a curriculum-based research and development project sponsored by Manitoba Education and Training. The purpose of the project is to develop an effective instructional model that supports integration of information technology with curriculum through an interdisciplinary approach to instruction at each grade level of the Middle Years.

The use of information technology in the IMYM project facilitates the integration of curriculum and allows students to acquire the information technology skills and competencies necessary to function in today's society.

“The use of information technology allows middle years students to:

- 1. develop knowledge, ability, and responsibility in the use of information technology*
- 2. acquire, organize, analyze, evaluate, and present information using appropriate information technology*
- 3. use information technology to expand their range and effectiveness of communication*
- 4. solve problems, accomplish tasks, and express creativity, both individually and collaboratively, using information technology*
- 5. understand the role and impact of information technology, and apply ethical, responsible, and legal standards in its use*

In addition to the above, information technology allows teachers to differentiate instruction by addressing the variety of learning styles and multiple intelligences found in students..”

<http://www.edu.gov.mb.ca/metks4/tech/currtech/imym/index.html>

2. Curriculum / Multimedia Integration Project

The Curriculum/Multimedia Integration Project facilitates the integration of technology and multimedia into Manitoba curricula. Technology and multimedia integration in teaching and learning allows Manitoba students to learn how to use technology how to manage technology to understand technology and reflect upon its use

The Curriculum/Multimedia Integration (C/MI) Project was initiated by Manitoba Education and Training to support teachers in their selection and integration of multimedia learning resources with curricula organized around outcomes.

<http://www.edu.gov.mb.ca/metks4/tech/currtech/cmi/index.html>

3. Computer Guided Learning (CGL) Projects

The CGL projects at Senior I, Grade 7 & 8, Senior II, and Senior IV Calculus, resulted in the development of computer guided learning programs at each of these levels in Mathematics. METY, in conjunction with the Western Provinces, and a book publisher developed these curriculum integration materials and provided them to Manitoba schools first on a pilot and then on a full access basis.

Part of the Senior I pilot was an effectiveness study. This study was undertaken to evaluate the efficacy and usefulness of The Learning Equation Grade 9 Mathematics courseware and support materials. The performance of students who used TLE as their main method of instruction was compared to that of students who used more traditional techniques and materials. Results show students using CGL demonstrated statistically significant improvements in performance when compared with students using authorized texts. Students using CGL as the main delivery system performed significantly higher on a pre/post test design study at all levels of mathematics ability regardless of gender.

<http://www.edu.gov.mb.ca/metks4/tech/currtech/cgl/index.html>

4. Curriculum Information Technology Integration Project (CITI)

The Curriculum Information Technology Integration (CITI) Project was initiated to support teachers in their selection and integration of information technology skills and competencies and to provide linkages between core-curricular outcomes, and information technology skills and competencies so that information technology becomes a meaningful part of resource-based learning in Manitoba. To realize the vision of technology as a foundation skill, Manitoba teachers and curriculum developers require resources which integrate the information technology skills and competencies found in TFS with core-curricular outcomes.

This project created electronic resources that allow teachers to access information technology-enhanced instructional and assessment strategies, interactively on the World Wide Web.

<http://www.edu.gov.mb.ca/metks4/tech/currtech/citi/index.html>

5. GrassRoots Program

GrassRoots is a national program supported by METY, to support the integration and use of technology in Manitoba Schools. GrassRoots offers rewards and incentives to create curriculum related resources, and acts as a forum for sharing these resources. It also hosts many teacher resources that can be applied to the classroom.

<http://www.edu.gov.mb.ca/metks4/tech/currtech/grassroots/index.html>

6. Web-Based Course (WBC) Research and Development Project

This project supports Department-developed distance education course materials development. Courses are supported by computer-mediated communications and are delivered asynchronously via the World Wide Web. Pilot research performed by the Department has resulted in a “Distributed Learning Model” for further course development and delivery by schools.

<http://www.edu.gov.mb.ca/metks4/tech/currtech/wbc/index.html>

IV.2 Our Vision

Fort La Bosse School Division’s “Information & Communications Technology Integration” Vision

Our challenge is to seek ways to enhance and improve student learning and achievement in an increasingly technological world.

Our Vision is to maximize opportunities for students to use technology creatively and effectively in every day activities, to enhance learning.

We see a future where our students are empowered to become independent, life-long learners in this world of rapid technological change.

IV.3 Our Division Information & Communication Technologies Integration Goals

To achieve our Technology vision, nine key planning goals were identified to ensure success. The nine key goals represent actions, responsibilities, strategies, assessments, reports, The nine key planning goals are:

Goal One: Student Learning

All students will have equitable access to information and communication technology resources to provide technology opportunities to meet Manitoba Education Training & Youth prescribed learning outcomes and to enhance and improve student learning.

Goal Two: Teachers and Curriculum Integration

All teachers will have access to and use information and communication technologies to enhance and improve instruction and to assist them with administrative tasks.

Goal Three: Staff Development

All staff will have access to a wide variety of information and communication technologies in-service, training and support programs.

Goal Four: Library and Learning Resources Support

Division and on-site learning resource support will be provided to assist Schools and Division Departments with information and communication technologies advice, standards, selection, acquisition, storage, circulation and implementation.

Goal Five: Technical Support

Division and on-site technical support will be provided to assist Schools and Division Departments with information and communication technologies technical maintenance, support, implementation and operations

Goal Six: Administrative Support

All schools and Division Departments will use information and communication technologies to support efficient, effective and secure management of information.

Goal Seven: Technology Infrastructure Support

A variety of information and communication technologies will be managed as a whole or technology infrastructure to enable the Division to maximize its investment in information and communication technologies in an effective, efficient, and systematic manner.

Goal Eight: Management, Planning and Partnerships

The Division will manage the Information and Communication Technologies Integration Plan to maximize the educational impact of information technologies investments in an effective, efficient, and systematic manner using appropriate management, planning, partnership and collaborative actions.

Goal Nine: Research and Development

We recognize the need to stay current on research related to the impact of technology on learning and teaching. All staff need to stay abreast of new developments that have the greatest impact on students.

V. Actions for Implementation

Goal One: Student Learning

Enhance and improve student learning through equitable access to information and communication technology resources, to meet Manitoba Education Prescribed Learning Outcomes and the Fort La Bosse Technology Integration Skills Continuum.

Introduction

Goal One: Student Learning is the primary focus of our Division Technology Plan. All other goals support this primary goal.

Information technologies have become an important aspect of modern life. As a result, these technologies need to be integrated into appropriate subject areas and used as tools to enhance and improve the education of each student. These new technologies: computers, computer software and electronic communications, will contribute to the education of each student along with the existing “traditional” information technologies such as: print, video, television and emerging information technologies such as: virtual field trips, simulation software and groupware.

The skills needed by students to use the new technologies must be integrated into existing courses and not taught as a separate subject. The type of skills required include the use of productivity, graphic, multimedia and publishing tools; telecommunication tools; research, information gathering and presentation tools and simulation tools.

“Over half of Canadian occupations are based on the manipulation of information and the percentage is growing. In 1971, 44.1% of occupations could be classified as being information workers. By 1996 the percentage had increased to 55.3%. Meanwhile, there has been an increasing trend towards the employment of knowledge workers. While total employment in Canada grew at an annual rate of 2.1% between 1971 and 1996, the knowledge worker classification increased by 4.1% annually.” (Belanger, Marc; The Social Impacts of Information and Communications Technologies (ICT); Industry Canada; Sep.13, 1999)

To participate and make informed decisions in today’s world, a global citizen requires technological and information literacy skills that include the ability to gather, process and manipulate data. These skills are now as essential as traditional numeracy and literacy.

To make technology a viable tool for learning, all students, including students with disabilities, must have easy and convenient access to computer, computer software and electronic communication technologies. While computer labs can make effective use of equipment and be very valuable in the teaching of specific skills, computer labs should not be the only access to information technologies for students. A variety of spaces and groupings; such as the library, classrooms and other learning areas; should be structured so that information technology becomes a natural and integrated component of the learning process for all students.

Benchmarks, Practices, Targets and/or Standards

In this regard, Manitoba Education, Training, and Youth has published the standard for student information and communication technology outcomes. These outcomes are outlined in their document *Technology as a Foundation Skill Area*, 1998.

In the fall of 2000, Fort La Bosse SD approved the implementation of Technology Integration Skills Continuum. This document serves as a guide for student performance at the K-8 levels. The goals of this continuum are being implemented in phases each year for three years, starting in the fall of 2000.

As all Manitoba Education curriculum is revised and updated, the integration of student information and communication technology outcomes will be included in specific curriculum topics. For examples see the Curriculum Information and Technology Integration (CITI) Project, Manitoba Education.

<http://www.edu.gov.mb.ca/metks4/tech/currtech/citi/index.html>

1.1 Student Learning: Integration of Technology Outcomes

As a minimum expectation, the Manitoba Education and Fort La Bosse SD student information and communication technology outcomes will be the standard for all Division Schools.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
1.1.1	Begin the implementation of the Manitoba Education and Fort La Bosse SD student information and communication technology outcomes.	Schools	Implementation	On Going
1.1.2	The Division will conduct an annual review to determine the present implementation of the Manitoba Education and Fort La Bosse SD student information and communication technology outcomes. <ul style="list-style-type: none"> • Model & use CITI resources • Model & use IMYM resources 	Technology Consultant, Curric. Coord, & Schools	Review Report By Oct. 2001	Annually (Spring)
1.1.3	Based upon the survey results, the schools and Division will develop strategies and actions to assist schools with the implementation of the Manitoba Education and Fort La Bosse SD student information and communication technology outcomes.	Technology Consultant, Curric. Coord, & Schools	Implementation Action Plan	Annually (Fall)

1.2 Student Computer Access and Use Policies

Equitable student access to technology will be provided within the Division. In addition, a plan will be developed to maintain the minimum students to computer ratio target of 5:1. Ethical and appropriate student use policies for computer technology will be established.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
1.2.1	<p>Define a minimum Division standard for computer technology equity for all schools:</p> <ul style="list-style-type: none"> • Define the standard, including specifications for areas such as: <ul style="list-style-type: none"> • number and type of computers; • lab configuration; • Local Area Network (LAN); • Division Wide Area Network (WAN); • library configuration; • classroom configuration: <ul style="list-style-type: none"> • suggested arrangement • mobile laptop class sets • Hand-held technologies(Palm) • technical support, 	Technology Consultant Sr. Tech.	Computer Equity Standards	Spring 2002
1.2.2	Implement the Standard.	Technology Consultant, Sr. Tech, & Schools	Implement the Standard	Summer 2002
1.2.3	Review the Standard.	Technology Consultant, Sr. Tech.	Review the Standard	Annually (Spring)
1.2.4	<p>Develop guidelines and recommendations for the support of information technology and student learning in locations such as:</p> <ul style="list-style-type: none"> • the library; • student support centres; • classrooms; • science lab; • mobile computing; and • other locations. 	Technology Consultant, & Schools	Guidelines and Recommendations	Annually (Spring)
	<p>NOTE: There is a growing need, particularly at the secondary level, for cross-curricular computer labs or stations so that students can have access for a growing number of areas such as:</p> <ul style="list-style-type: none"> • Mathematics; • Science; • Language Arts; • Social Studies; • Research; • Career Programs; • PLATO / Success Maker software; • Interactive Testing. 			
1.2.5	Develop Division policy regarding ethical and appropriate student use of computer technology.	Technology Consultant, & School Admin.	Division Policy on Student Use of Computer Technology	Winter 2002 (Draft)

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
1.2.6	Review and revise Division policy regarding the ethical and appropriate student use of computer technology.	Technology Consultant, & School Admin.	Division Policy on Student Use of Computer Technology	Annually (Winter)

1.3 Special Education Services

Equitable and appropriate student access to information and communication technology will be provided within the Division for students with special needs.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
1.3.1	Special education students and staff will be provided with equitable and appropriate information and communication technology.	Spec. Educ. Coordinator, Tech. Consultant, & Schools	Provide Equitable & Appropriate Technology	On Going
1.3.2	Training for staff who use software and hardware specific to special needs students (ex. Braille software, Board Maker/ Overlay Maker, Intelli Keys).	Spec. Educ. Coordinator, Tech. Consultant, & Schools	Specific training for special needs programming	On Going
1.3.3	Have Tech Support in place for specialized hardware used by special needs. (ex. Apple/MAC, and dedicated hardware)	Spec. Educ. Coordinator, Tech. Consultant, & Sr. Tech.	Prompt service for special needs hardware/software	On Going

1.4 Distributed Learning

Distributed Learning using information technology is a learning environment that is a new educational initiative that functions independent of geography and traditional school sites. Department and school developed distance education course materials are supported by computer-mediated communications and delivered asynchronously via the World Wide Web. This initiative can offer learners — staff, parents, students, community members — exciting and new opportunities for self-paced and individualized learning. This type of an educational service is particularly useful to students/parents who prefer learning at home, want an alternative delivery choice, have a physical or medical condition, or are athletes or performers with demanding schedules.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
1.4.1	Explore the feasibility of using electronic means of delivering distributed learning programs to students at the High school levels.	Technology Consultant, Curric. Coord., & Schools	Distance Learning Feasibility Report	On Going
1.4.2	Explore a Division Distributed Learning model or “virtual” school.	Technology Consultant, Curric. Coord., & Schools	Develop Distributed Learning and/or ‘virtual’ school concept	Winter 2004
1.4.3	Support ongoing development and implementation of Distributed Learning courses in our schools.	Technology Consultant, Curric. Coord., & Schools	Support development of Distributed Learning	On Going

1.5 Integrated Use of the Internet/Intranet and Student Use Policies

Use of the Internet will be integrated within the curriculum and directed towards areas such as: communications, research, information retrieval and problem solving.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
1.5.1	Develop strategies and actions for student use of the Internet	Technology Consultant & Schools	Strategies and Actions Report within the curriculum.	On Going
1.5.2	Develop and/or acquire curriculum support materials and training for student use of the Internet and the World Wide Web (ie Media Awareness Kit, CITI, IMYM).	Technology Consultant, & Schools	Student support materials	On Going
1.5.3	Develop a Division policy, with guidelines, regarding Web Page content	Technology Consultant, & Schools	Develop Policy	Fall 2001
1.5.4	Annually review and revise guidelines and policies for student use of the Internet.	Technology Consultant, & Schools	Review and revision	Annually (Spring)

Goal Two: Teachers and Curriculum Integration

All teachers will have access to and use information and communication technologies to enhance and improve instruction and to assist them with administrative tasks.

Introduction

Information and communication technologies can provide teachers with engaging, effective, productive and motivating ways to meet student's needs. Easy access to computers and information technologies can help teachers improve their classroom practice by expanding their opportunities for training, by fostering collaborative work with other teachers and professionals, access educational research, download Manitoba Education curriculum documents, download lesson plans, access libraries and engage in on-line professional development.

Goal Two: Teachers and Curriculum supports the primary focus on student learning of our Division Technology Plan.

It is only after a teacher starts to use the computer and information technologies as part of their daily activities that the power and potential educational value becomes apparent. Teachers must be made aware of the provincial philosophy concerning the use of information and communication technology in the classroom, as modeled by the IMYM, CGL, and CITI projects implemented as exemplars of good teaching practice, supporting integration of technology.

<http://www.edu.gov.mb.ca/metks4/tech/currtech/index.html>

These revisions of the Manitoba Education curriculum have enormous implications for teachers, and represent major changes in what the curriculum defines, what teachers will need to do, and what children will be able to do.

2.1 Enhance and Improve Curriculum and Instruction

There is a need to develop and implement strategies and actions to help teachers use technology as an integral component of the instructional program to enhance and improve instruction.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
2.1.1	Manitoba Education and Fort La Bosse SD student information and communication technologies outcomes implementation.	Schools	Implementation	On Going
2.1.2	Develop and/or acquire teacher curriculum support materials to facilitate the integration of information and communication technology across the curricula.	Schools	Acquire curriculum support materials	On Going
2.1.3	Provide opportunities for teachers to exchange ideas related to using and integrating information and communication technology in the classroom. i.e. Division Technology Fair	Technology Consultant, Curric. Coord, & Schools	Sharing between staff	Spring 2002
2.1.4	Provide examples and opportunities for enhancing and improving instruction in areas such as: <ul style="list-style-type: none"> • student centred learning; • resource based learning; • information literacy; • active learning; • simulations; • CITI model; and • IMYM model. 	Curric. Coord., & Schools	Begin Implementation	On Going

2.2 Teacher Computer Technology Access

Division teachers are at various stages of using and integrating information and communication technologies. Teacher access to these technologies is critical to the successful implementation of the Manitoba Education, Training & Youth student technology outcomes.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
2.2.1	Computers used by teachers will be connected to the Division WAN.	Technology Consultant, Sr. Tech., & Principals	Teachers have WAN connectivity	Fall 2002
2.2.2	Computers for use by teachers will be made available in classrooms. Teachers will be provided the option of a laptop instead of a desktop.	Technology Consultant, & Principals	Teachers have computers for their use	Fall 2003

2.3 Administrative Tasks

There is a need to develop and implement strategies and actions to have teachers and school administrators use information and communication technology as a tool to expand their scope in handling and sorting information

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
2.3.1	Develop a list of ideas which demonstrates a variety of ways that application software can be used to help with some of the administrative tasks and provide appropriate training.	Technology Consultant, Sr. Admin., & Schools	List of ideas	Fall 2002
2.3.2	Based upon the List of Ideas from 2.3.1 (above) select and/or develop application software for Division wide implementation.	Technology Consultant, Sr. Admin., & Schools	Select and/or develop	Spring 2003
2.3.3	Designate, where appropriate, some standard software applications that will be mandatory across the Division, such as: <ul style="list-style-type: none"> • Report Card software; • Applications Software; • Microsoft Office; • Student Records Software; • Reporting/portfolio technologies; • Worksheet and lesson planning technologies; • Templates; • Class lists and databases; • Assessment technologies; • Use of Internet listservers to facilitate discussions; and • computer managed instruction. 	Technology Consultant, Sr. Admin., & Schools	Designate standard Division software	Spring 2003 (& On Going)
	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
2.3.4	Develop software templates to help teachers use applications software more effectively, such as: <ul style="list-style-type: none"> • class lists; • form letters; and • planning 	Technology Consultant, Sr. Admin., & Schools	Software templates	On Going

2.4 Innovative Projects Fund and Assistance

The Division will provide funding and other opportunities for teachers to develop and implement innovative uses of information and communication technologies to improve teaching and student learning. Action Research can be a useful tool for this area (Zuber-Skerritt, 1996).

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
2.4.1	Approve an Information and Communication Technologies Innovative Project Fund for development and implementation of innovative uses of computer and information technologies to enhance and/or improve teaching and student learning. Approved projects must have potential for Division-wide implementation.	Division Board	Approve Innovative Technologies Project Fund	Fall 2001
2.4.2	Develop guidelines for fund applications;	Technology Consultant, Sr. Admin., & Schools	Guidelines	Spring 2002
2.4.3	Establish finances for the Fund.	Technology Consultant, Sr. Admin.	Finances	Spring 2002
2.4.4	Projects approved annually	Technology Consultant, T.L.T.	Approval	Fall 2003
2.4.5	The Division will provide support for teachers and/or school teams to participate in applying for external National level, Provincial level or other appropriate Innovate Project grant programs.	Technology Consultant, Sr. Admin., Div. Board.	Support	Fall 2004 (& On Going)

2.5 New or Renovated Schools

All new or renovated schools will include features such as: wiring standards, lighting, furniture, facilities, and staffing considerations that reflect the requirements that place the integration of information and communication technologies into the curriculum as a major emphasis of the school educational program.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
2.5.1	New or renovated school design and construction will reflect the requirements of the integration of information and communication technologies into the curriculum as a major emphasis of the school educational program.	Technology Consultant, Sr. Tech, Facilities Sup, Principals	Facilities design reflect technology requirements	As Required

NOTE: During the development of a design for a new or renovated school, a team of knowledgeable computer and information technology specialists, teacher-librarians, teachers and administrators will be created to consider the best placement and configuration of technology within the school. Because there is no "correct" way to organize computers and information technologies within a classroom, flexibility will be a prime design criteria for the arrangement and allocation of technology within new and renovated schools.

2.6 Computer Technology Requirements For New Staff

The Division will seek new teachers who not only have appropriate professional qualifications, but also have appropriate and current information and communication technology skills.

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
2.6.1 Prepare a list of desired technology integration skills, to be used during interviewing of prospective staff.	Superintendent, Principals, Technology Consultant	Hiring criteria for technology skills	Winter 2002

2.7 Staff Computer Purchase Program

A Staff Computer Purchase Program will be implemented. The Program will be periodically reviewed and updated.

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
2.7.1 Create a Computer Purchase program (ie. payroll deduction) and put necessary resources in place.	Sec. Treas., Technology Consultant	Implement Program	Spring 2002
2.7.2 The Staff Computer Purchase Program will be reviewed and updated. Consideration will be given to areas such as: <ul style="list-style-type: none"> • teacher needs; • changing computer technology; • electronic communication technology; and • purchasing and/or leasing alternatives. 	Sec. Treas. Technology Consultant Program	Review Staff Computer Purchase	Annually (Spring)

Goal Three: Staff Development

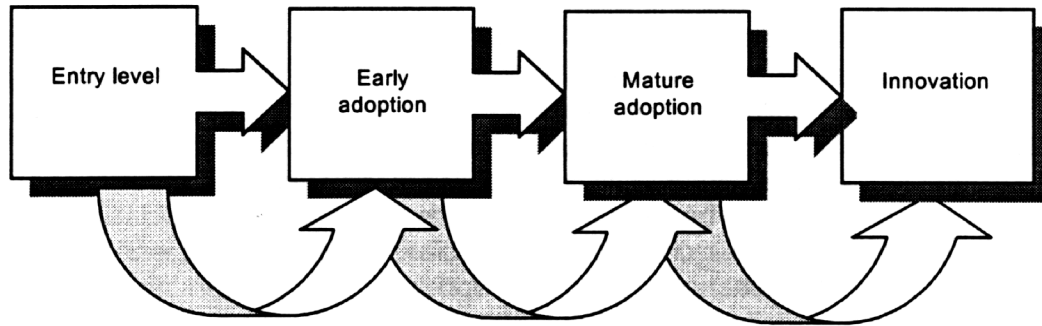
All staff will have access to a wide variety of Information and Communication Technologies inservice, training, and support programs.

Introduction

Goal Three: Staff Development supports the primary focus on student learning of our Division Technology Plan.

Teachers and support staff are critically important in whatever happens when information and communication technologies are used in education. If information and communication technologies are to have an impact on teaching and learning within the Division, teachers must be comfortable with technologies such as — computers, software. WANs, and the Internet. Teachers must see these technologies as tools that enhance rather than interfere with or replace their daily teaching. For this to happen, teachers and staff need relevant and appropriate training, and access to computers and information technologies.

Research and experience have shown that it takes time for teachers and staff to adopt computer and information technologies. The following Adoption Model diagram is a representation of this adoption growth.



In planning for staff inservice, the implications of the Adoption Model must be considered. There are three transitions where staff may need support through inservice and training opportunities. The activities at each transition must be designed to nurture staff growth toward the next phase of adoption.

Time is required for staff to become skilled and knowledgeable users of technology. In the case of teachers, research shows that it can take between 3 - 7 years to progress from the 'entry' level to the 'Mature Adoption' level.

3.1 Division Staff Technology Development Programs

The Division and Schools will allocate human and financial resources to the implementation of the Division Technology Plan and Division Staff Technology Development Program.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
3.1.1	A Divisional Staff Technology Development Program will be developed to meet the needs of teachers, (as identified in the Division survey April 2001).	Technology Consultant, Curric. Coord., Pathfinders.	Staff Technology Development Plan	Winter 2001
3.1.2	Review Divisional Staff Technology Development Program.	Technology Consultant, Curric. Coord., Pathfinders.	Review & revise Development Plan	Annually

NOTE: The Division Technology Staff Development Program Plan may include, as appropriate, collaborative opportunities (using 'real' and 'virtual' networks') with groups or agencies such as:

- the Division Professional Development Committees
- the Division employee groups (ex. Teachers, Librarians, Secretaries, Principals, etc.)
- Senior administrative staff
- Professional groups (ex. WRISEC, STAF, ManACE);
- the Universities and Colleges.

NOTE: The Division Technology Staff Development Program Plan will include special programs for library technicians that will enable them to be leaders in the utilization of computer and information technologies.

3.1.3	The acquisition of technology skills shall become part of an individual's professional growth, as appropriate to the job description.	Staff, Principals, & Consultant	Include as part of an individual's professional growth plan	Fall 2002 (annually)
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3.2 School Staff Technology Development Programs

The Division and Schools will allocate human and financial resources to the implementation of the Division Technology Plan and School Staff Technology Development Programs.

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
3.2.1 Implement a School Staff Technology Development Program which reflects the identified technology needs of: <ul style="list-style-type: none"> • the School staff; • the School Technology Plan; • the Division Information Technology Plan. 	Principals, & Staff	School Staff Technology Development Program	Fall 2002 (annually)

3.3 Support Staff Technology Training

Support Staff will have appropriate technology training to help them to effectively perform their responsibilities.

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
3.3.1 Develop a list of appropriate technology skills required for support staff positions.	Sr. Admin., & Support Staff Groups	List of needed technology skills	Fall 2002 (annually)
3.3.2 Training programs for support staff will be part of the Division Technology Development Program.	Admin., Technology Consultant	Support Staff Technology Training Program	Spring 2003

3.4 Technology Training Resources

Division staff, teaching and non-teaching, will have appropriate technology training to help them to effectively perform their responsibilities. Technology training resources will be established and/or designated to provide new and ongoing computer and information technologies training and inservice opportunities.

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
3.4.1 Technology training resources will be established and/or designated for training and inservice, as needs arise, in areas such as: <ul style="list-style-type: none"> • curriculum integration such as: <ul style="list-style-type: none"> • Manitoba Education Information and Communication Technology student outcomes; • CITI; • IMYM. • software; • hardware; • the Internet such as <ul style="list-style-type: none"> • Internet management tools • Web Page Design; 	Technology Consultant, Curric. Coord., Admin.	Technology Training Resources	On Going

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
<ul style="list-style-type: none"> • pilot and experimental programs; <ul style="list-style-type: none"> • Distributed Learning • simulations and • demonstrations. 			
3.4.2 The Division will establish a staff training centre or a mobile set of laptops for training.	Technology Consultant	Technology Training Centre(s)	Fall 2003

Goal Four: Library and Learning Resources Support

Division and on-site learning resource support will be provided to assist Schools and Division Departments with information & communication technologies standards, selection, acquisition, storage, circulation and implementation.

Introduction

Goal Four: Library and Learning Resources Support supports the primary focus on student learning of our Division Technology Plan.

A learning resource is information, represented and stored in a variety of media and formats, that assist student learning as defined by Provincial or local curricula. This definition spans what we can call traditional, new and emerging technologies. Although the Division Plan focuses primarily on new and some emerging technologies, the traditional technologies are included where possible. In future revisions of this plan, the broad spectrum of learning resources including traditional, new and emerging technologies should be addressed more thoroughly. The reason is that these technologies must all be recognized and supported as contributors to student learning.

4.1 School Level Learning Resources and Library Support

The Division and schools need to review the future direction of their school libraries and how they will fit in the future with respect to traditional, new and emerging information and communication technologies.

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
4.1.1 The role of school libraries will be reviewed with respect to future directions for traditional, new and emerging information and communication technologies.	Schools, Library Coordinator, Technology Consultant.	Future role review	Fall 2002
4.1.2 The role and responsibilities of Library Assistants will be reviewed to accommodate traditional, new and emerging information and communication technologies.	Principal, Library Coordinator, Technology Consultant.	Role and responsibility review	Fall 2002

4.2 Division Library Automation Program

The Division will provide support and long term direction to schools for library automation. Library automation and questions about compatibility, appropriate hardware, software replacement and electronically linking all library collections in the future must be addressed.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
4.2.1	Provide support and long term direction for library automation.	Library Coordinator, & Library Assistants	Long term Library Automation Plan	On Going
4.2.2	Evaluate the effectiveness of our current library automation software and hardware, and provide recommendations.	Library Coordinator, & Library Assistants	Long term Library Automation Plan	Fall 2003
4.2.3	Standard software will be provided for libraries to meet identified needs.	Library Coordinator, & Technology Consultant	Standard and appropriate software for libraries	Fall 2004

4.3 Audiovisual and Traditional Technology Standards

The Division will have standards for school audiovisual and traditional technologies.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
4.4.1	Baseline audiovisual technology standards will be established for schools.	Technology Consultant, & Schools	Establish Division basic audiovisual standards for schools.	Fall 2003
4.4.2	Implement baseline audiovisual technology standards for schools.	Technology Consultant, & Schools	Implement Division basic audiovisual standards for schools.	Winter 2003

Goal Five: Technical Support

Division and on-site technical support will be provided to assist Schools and Division Departments with information and communication technologies technical maintenance, support, implementation and operations.

Introduction

Goal Five: Technical Support supports the primary focus on student learning of our Division Technology Plan.

Implementing computer and information technologies requires much greater investments in on-going technical support for teachers implementing and integrating technology in classrooms, the library, computer labs and other locations for learning. In addition, as more and more computers are placed in schools, and connected to a local area network and the Division's wide area network, on-site technical support becomes even more of a necessity.

5.1 Division Level Technical Support

The Division will provide technical support to Schools and Division Departments. Technical support services should continually work toward improvements in service to meet the response time requirements of Students, Teachers and Administrators. In addition, Technical Support needs to continue to be proactive extending efforts in: planning, scheduling, monitoring, evaluating, and budgeting(in consultation with the Technology Consultant).

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
5.1.1	Provide Division Level Technical Support in the area of Network Technical Support, including areas such as: <ul style="list-style-type: none"> • the Division Wide Area Network. • the Division Web, Email, News server(s). • server monitoring and efficiency upgrading. 	Sr. Tech.	Provide Division level technical support	Ongoing
5.1.2	Provide Division Level technical support for Schools including areas such as: <ul style="list-style-type: none"> • network servers, <ul style="list-style-type: none"> • backup for records • computers in labs, classrooms, libraries and other learning locations; • library automation such as: <ul style="list-style-type: none"> • software installs; • network troubleshooting; • backup for library records • major information technology modifications or installations. 	Sr. Tech. Sr. Tech Jr. Tech Jr. Tech Sr. Tech	Provide School level technical support	Ongoing Ongoing Ongoing Ongoing Scheduled

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
5.1.3 Provide Division Level Technical support in the following areas of Administrative Technical Support including:	Sr. Tech.	Provide Division level technical support for administrative applications	Ongoing
• Administrative software;	Sr. Tech		Ongoing
• Student Records software;	Jr./Sr. Tech		Ongoing
• installation of administrative computer hardware and software; and	Jr./Sr. Tech		Ongoing
• other areas as assigned	Jr./Sr. Tech		To Be Determined

5.2 Division Level Technical Support Improvements

Technical support requires improvements in the level of service to meet the needs of Students, Teachers and Administrators, in a timely fashion. In addition, the mode of operation needs to continue to be proactive in planning, scheduling, monitoring, evaluating and budgeting in advance.

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
5.2.1 Implement an assessment and review of current tools, practices, and responsibilities; with a view to improving service levels. This will examine three levels of support:	Sr. Tech., Technology Consultant, & Schools	Assess and review current support model to improve service	Winter 2002
5.2.2 Review and improve technical support services by developing an approval and priority process in the areas of:	Sr. Tech.	Review and improve technical support	Fall 2002
• project implementation;			
• costs for hardware repairs;			
• work requests implementation;			
• school based support.			
5.2.3 Improve communications between Division technicians and clients by such actions as:	Sr. Tech., Tech. Consultant, & Schools	Improve communication	Fall 2002
• provide on-site report on work performed	Sr. & Jr. Tech.	Work completed reporting system	Fall 2002
• numbering of all workstations for tracking repairs/problems by (site name, room#, machine#, model).	Schools, Site Admin.	Labeling of systems In schools	Fall 2002

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
5.2.4 Develop a consultation process that would estimate the technical support implications and costs of equipment purchases and/or donations. This and/or Donation information will be used by schools and Division Departments to estimate the actual costs and technical support requirements accurately.	Sr. Tech., & Technology Consultant	Review process to estimate actual costs and technical support costs for purchased and/or donated equipment	Ongoing
5.2.5 Continue the Division Web Site and include an annual evaluation. Develop and improve the Division Web Site with an emphasis on: <ul style="list-style-type: none"> • expansion of content; and • improved information. 	Web Master	Continue and evaluate the Division Web Site development and improvement	Ongoing
5.2.6 Provide ongoing management, maintenance and development of the Division Web Site. Appropriate time needs to be allocated.	Web Master	Management, maintenance and development	Ongoing
5.2.7 Add a technical support “Frequently Asked Questions” page to facilitate providing ‘routine’ technical support solutions to Division staff.	Sr. Tech.	Add “Frequently Asked Questions” page on Division Web Site	Fall 2002

5.3 School Level Technical Support

To improve technical support services, a three level responsibility model including a Division Level of Technical Support, a School Level of Technical Support and a School Staff Level of Technical Support will be explored.

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
5.3.1 School level technical support options will be explored.	Sr. Tech., Tech. Consultant, & Schools	Investigate school level technical support	Spring 2002

5.4 Staff Level Technical Support

To improve technical support services, a three level responsibility model including a Division Level of Technical Support, a School Level of Technical Support and a Staff Level of Technical Support will be explored;

<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
5.4.1 Staff will be provided with ‘routine’ hardware and software technical support training and skills (see 3.1.1)	Sr. Tech.	Provide staff level technical support training and skills	Spring 2003

Goal Six: Administrative Support

All Schools and Division departments will use information and communication technologies to support efficient, effective and secure management of information.

Introduction

Goal Six: Administrative Support supports the primary focus on student learning of our Division Technology Plan.

Technology used as an administrative and management tool can enable teachers, administrators, and Division personnel to be more efficient and effective managers of information. The driving force behind using information technology as an administrative and management tool is that the amount of time spent doing administrative tasks is reduced in favor of more time with students. In some cases, lower costs are achieved. In other cases, very large amounts of information can be managed — never before possible using manual methods.

6.1 Administrative Support That Will Target Efficiency and/or Effectiveness For All Teachers and Students

The Division will continue to explore and implement, where appropriate, information technology administrative support that will support efficiency and/or effectiveness for all teachers and students.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
6.1.1	The Division will explore and implement information technologies that will support efficiency and/or effectiveness for all teachers and students, where appropriate, in areas such as: <ul style="list-style-type: none">• technology strategies that help manage classroom diversity;• reporting/portfolio technologies;• worksheet and lesson planning (CITI);• on-line lesson plans and supports;• templates;• class lists and databases;• assessment technologies;• use list serves to facilitate discussions; and• computer managed instruction.	Technology Consultant Sr. Admin., & Schools	Explore and implement appropriate administrative information technologies for teachers and students	Ongoing

6.2 Administrative Support For Administrative Efficiency and Effectiveness For All Staff

The Division will continue to explore and implement, where appropriate, information technology administrative support that will support efficiency and/or effectiveness for all staff.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
6.2.1	<p>The Division will explore and implement information technologies that will support efficiency and/or effectiveness for all staff, where appropriate, in areas such as:</p> <ul style="list-style-type: none"> • Use the Web to distribute information; • WAN access to Division info.; • Student Records; • Attendance; • Student Timetabling; • Financial and business functions; • Human Resources Functions; • Record / Document Management • Transportation and Maintenance; and • Division Calendaring; 	Technology Consultant, Sr. Admin., & Schools	Explore and implement appropriate administrative information technologies for all staff	Ongoing
6.2.2	Provide support, maintenance, training and direction for the Division student information systems (EIS, SIS, WinSchool, Trevlac).	To be Determined	Provide support for Division student info. Systems	Ongoing
6.2.3	Develop guidelines and policies for appropriate staff use of the Internet.	Technology Consultant, & Sr. Admin..	Develop and annually review	Spring 2002
6.2.4	Develop a Division policy on the ethical and appropriate staff use of computer technology.	Technology Consultant, & Sr. Admin..	Division Policy on Staff Use of Computer Technology	Spring 2002
6.2.5	Review and revise Division policies regarding appropriate staff use of technology.	Technology Consultant, & Sr. Admin..	Review and revise policies on staff use	Annually

Goal Seven: Technology Infrastructure Support

A variety of information and communication technologies will be managed as a whole or Technology Infrastructure to enable the Division to maximize its investment in information and communication technologies in an effective, efficient and systematic manner.

Introduction

Goal Seven: Technology Infrastructure Support supports the primary focus on student learning of our Division Technology Plan.

Implementing information and communications technologies means much greater investments in developing, establishing and maintaining the investment in this Technology Infrastructure. In this regard, school Divisions are at an early stage of development throughout North America because of the rapid rate of change in network and Internet technologies and the recent, rapid rate of adoption by school Divisions.

Fortunately, there has been progress in identifying best practices to assist school Divisions and help them avoid major pitfalls. Manitoba Education & Training, Public Schools Finance Board, released building infrastructure guidelines. The March 1999 document, titled "Guidelines for Computer Data Cabling and Electrical Wiring in Schools", includes suggested minimum technology infrastructures for different areas of schools (classrooms, science labs, gyms, music rooms). Both electrical and network cabling best practices are included.

7.1 Division Wide Area Network

The fall of 2001 will see the implementation of the wireless infrastructure needed to provide high speed Internet service to Fort la Bosse schools and offices. In addition to Internet service, this infrastructure will provide us the possibility of linking our current individual site networks into one wide area network (WAN). The implementation of a WAN will provide all sites with the benefits and efficiencies that can be gained through communication, and sharing of programs and data.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
7.1.1	Implement the Wide Area Network	Sr. Tech., Wireless Vendor	Setup the WAN	Fall 2002
7.1.2	Improve the WAN to accommodate Expected increased use.	Sr. Tech., Wireless Vendor	Make improvements to the WAN as needed	On Going
7.1.3	Investigate filtering software to block out objectionable Internet material.	Sr. Tech. & Tech. Consultant	Install Internet Filtering software	Spring 2002
7.1.4	Implement filtering software to block out objectionable Internet material.	Sr. Tech. & Tech. Consultant	Implement Internet Filtering software	Fall 2002
7.1.5	Investigate network software for: <ul style="list-style-type: none"> • Accounting • Student Records • Transportation • Work orders/purchase orders 	Sr. Tech., Technology Consultant, Sr. Admin., & Schools	Investigate network capable administrative software	Spring 2002
7.1.6	Implement network software for: <ul style="list-style-type: none"> • Accounting • Student Records • Transportation • Work orders/purchase orders • Energy Management 	Sr. Tech., Technology Consultant, Sr. Admin., & Schools	Provide network capable administrative software	Fall 2003

7.2 School Local Area Networks

The Division has Local Area Networks (LAN) at each school site. All wiring is Level 5-5e twisted pair. Virtually all classrooms have at least one outlet, with labs having many more. The wiring goes back to various hubs, which are in turn connected to other hubs which connect the Local Area Network.

It has taken a number of years to get to this point. Each year, specific funds are allocated to have wiring completed, at various sites. This has resulted in several stages of wiring. Before any new wiring is undertaken each building should have a plan for where the network will be connected in the future, and how it should be done, that is, where the wiring closets will be, how the wiring closets will be connected, and how the wiring will be labeled and mapped.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
7.2.1	Each School will have a suitable Local Area Network plan and map. This should be part of a School Three Year Technology Plan.	Sr. Tech., Tech. Consultant Sup. Of Ops. & Schools	School LAN Plan and Map	Fall 2002
7.2.2	Each School shall maintain a file of network and Internet ID's & passwords.	Principal, & Sr. Tech.	Record ID's & passwords	Fall 2002

7.3 E-mail Development

All central office administration and staff, school administration, and school secretaries have e-mail. Some school staff also have divisional e-mail addresses assigned to them, by their request. Our current e-mail server can handle the demands placed upon it by current users.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
7.3.1	Monitor the current e-mail server usage, to identify and plan upgrades as required to meet demands from expected higher levels of usage.	Sr. Tech.	Improve and enhance Division e-mail communications.	On Going

7.4 Intranet Development

An Intranet (NOTE: different from an Internet) is a collection of private Web sites that are available only to employees, or other trusted parties, within an organization. An Intranet site will be used to improve communications and provide for electronic publication and distribution of Division documents.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
7.4.1	Develop School Intranets: Within schools for class and administrative use.	Sr. Tech.	Develop school Intranets	Fall 2003
7.4.2	Develop a Division Intranet: To be shared between schools for class and administrative use.	Sr. Tech.	Develop Division Intranet as part of the Division WAN	Fall 2003

7.5 Hardware and Software Standards

To reduce costs and ensure compatibility, the Division will develop computer hardware and software standards, as appropriate.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
7.5.1	Hardware and software standards for computer operating systems, network software, security software, and telecommunications software, will be developed on a regular basis, where appropriate.	Sr. Tech. & Technology Consultant	Division Hardware and Software Standards	On Going
7.5.2	All donated computer hardware and software will be consistent with the Division Hardware and Software Standards, where appropriate. (ex. CFSL)	Sr. Tech., Technology Consultant, & Schools	Donated Hardware and Software Standard	On Going

7.6 Software Standards, Licensing and Bulk Purchasing

The Division will have standards, licensing and bulk purchasing for the efficient and cost effective acquisition of information and communication software technologies.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
7.6.1	Standard software will be provided for instructional settings to meet student technology outcomes. The software will be appropriate for the grade level.	Technology Consultant, & Schools.	Standard and appropriate software for instructional settings	Spring 2002
7.6.2	The Division will participate as a partner in Manitoba Education volume and/or licensing purchasing agreements for software products as appropriate.	Technology Consultant.	Participate in Manitoba Education software agreements	On Going
7.6.3	The Division will negotiate bulk licensing and software agreements with vendors where appropriate for school based administrative, instructional and educational software products as appropriate.	Technology Consultant.	Negotiate Division software agreements	On Going
7.6.4	The Division will develop guidelines for sites to use for recording & monitoring software licensing.	Technology Consultant, Sr. Technician.	Monitor software licensing	Spring 2002
7.6.5	Schools & other sites in FLB will maintain accurate records of software licenses & installations (following the Division developed guidelines)	Principals, Site Admin.	Monitor software licensing	Fall 2002

7.7 Information Disaster Plan and Security

There are a number of WAN and LAN areas that require attention.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
7.7.1	There are a number of WAN and LAN areas that require attention. These include information and network areas such as:		Information security	
	<ul style="list-style-type: none"> enforcing regular data backups and data verifications at each site; 	Sr. Tech, Senior & Site Admin.	Information security	On Going
	<ul style="list-style-type: none"> create an Information Disaster Prevention and Data Security plan. 	Sr. Tech., Senior & Site Admin.	Information security	Winter 2001

7.8 Reclaim, Reuse, Reduce, and Recycle

The Division will have guidelines for the appropriate use, recycling and/or disposal of old or obsolete computer and other information technologies.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
7.8.1	The Division will determine a minimum standard for the technical support and servicing of old or obsolete computer technology and other information technologies and communicate to schools each year the service and support for such equipment, and equipment that will not be provided service for.	Sr. Tech., & Technology Consultant	Minimum Standard	Winter 2001 (On Going)
7.8.2	Information technologies that are deemed unsuitable or unusable as part of 7.8.1, will be identified for "planned removal from service" in the next budget year. <ul style="list-style-type: none"> budgets will plan for replacement of these retired technologies, based on need & use. 	Sr. Tech., & Technology Consultant	Planned removal and replacement of unsuitable or unusable technologies	Winter 2001 (On Going)
7.8.3	The Division will be responsible for evaluating, redistributing, recycling and discarding old or obsolete computer technology that has been designated as discarded by schools or Division Departments.	Sr. Tech., & Senior Admin.	Appropriate disposal of computer technology	On Going

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
7.8.4	A central repository or location to review and discard old or obsolete technology will be created.	Sr. Tech., & Senior Admin.	Appropriate disposal of old computers	Fall 2002

NOTE: Currently old or obsolete information technology that no longer serves a useful educational function, is not cost effective to service, or does not meet the standard set by the Division, is appropriately recycled or discarded, in accordance with Board policy.

Goal Eight: Management, Planning and Partnerships

The Division will manage the Division Information Technology Plan to maximize the educational impact and use of the investment in information and communication technologies, in an effective, efficient and systematic manner using appropriate management, planning, partnerships and other collaborative actions.

Introduction

Goal Eight: Management, Planning and Partnerships supports the primary focus on student learning of our Division Technology Plan.

Initially, we must manage, implement and renew regularly the Division Technology Plan to maximize the educational impact and use of our technology investments in an effective, efficient and systematic manner using partnerships and other collaborative opportunities. We must anticipate educational needs and technological opportunities so that we can shape a future that will best serve our students. We must foster using technology to its greatest potential for improving learning, instruction and administration at all levels.

8.1 Division Level Management and Planning

The Division will create, renew and manage the Division Technology Plan to maximize the educational impact and use of our technology investments in an effective, efficient and systematic manner. In addition, based on the present model, a revised leadership and decision-making model is proposed to ensure successful implementation of the plan.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
8.1.1	A new Division Technology Steering Committee will be created with representation such as: <ul style="list-style-type: none"> • Trustees; • Students; • Parents; • Teachers (level groups and special areas); • Support Staff (Librarians, Secretaries, TA's); • School Administrators; • Division Administration; • Business Community; 	Technology Consultant, & Committee	Establish new Technology Steering Committee	Fall 2002

NOTE: The main function of this committee would be to assist the Educational Technology Consultant in the, feedback on the implementation, and the annual revision of the Division Technology Plan and Technology Integration Skills Continuum. In addition, specific tasks will be completed with the assistance of Division staff and/or Departments and/or standing and/or ad hoc committees.

8.2 School Level Management and Planning

Schools will create, renew and manage a School Technology Plan to maximize the educational impact and use of our information and communication technology investments in an effective, efficient and systematic manner. These school plans will be linked to the Division Information Technology Plan and revised annually.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
8.2.1	Each School will include technology planning as part of the annual School Plan, based on the Division Technology Plan goals, actions, policies and guidelines and the unique needs of their School.	Principal & Staff	School Technology Plan	Fall 2002
8.2.2	A template and advice will be available to assist Schools in creating their School Technology Plan. Sharing of school ideas and planning developments.	Technology Consultant, Sr. & Jr. Techs.	Inservice, advice & sharing	Fall 2002
8.2.3	Monitor and provide feedback to schools on their School Technology Plan feedback	Technology Consultant	Monitor & provide feedback	Spring 2003
8.2.4	Monitor, revise and update the School Information Technology Plan	Schools	Revised Plan	Annually

8.3 Technology Collaboration and Partnerships

The Division supports collaboration and partnerships at the Division and School level that can appropriately contribute to the achievement of the goals of the Division Technology Plan.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
8.3.1	Explore and facilitate greater interaction, collaboration and support with respect to Division and School Technology Plans implementation. The goal would be to obtain financial, hardware, software and human resources in accordance with existing Division policies.	Technology Consultant, & Schools	Explore financial, hardware, software and human resources to facilitate Technology Plan's implementation	Fall 2002

NOTE: Partnerships could be explored and developed with individuals, and/or agencies, and/or groups; such as: • Parents; •Municipal Community; •Business Community; •College/University Community.

Goal Nine: Research and Development

We recognize the need to stay current on research related to the impact of technology on learning and teaching. All staff need to stay abreast of new developments that have the greatest impact on students.

Introduction

Goal Nine: Research and Development supports the primary focus on student learning of our Division Technology Plan.

	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
9.1.1	Fort La Bosse will continue to support research and development in the area of technology by continuing to have representation on various professional committees, both external (ManACE, SWMETC, CECM) and internal (TLT, Division Technology Committee).	Technology Consultant, Sr. Administration	Committee research & planning	On Going
9.1.2	Fort La Bosse will participate in events such as technology fairs/forums that display the latest uses for technology in the classroom.	Technology Consultant, Curric. Coord., & Schools	Participate in technology related special events	Spring 2002 (on Going)
	<u>ACTIONS</u>	<u>WHO</u>	<u>WHAT</u>	<u>WHEN</u>
9.1.3	Fort La Bosse will continue to support professional development that explores technology for special needs students. (ex. Enabling Technology conference)	Technology Consultant, Special Educ. Coordinator	Professional Development exploring enabling technologies	On Going
9.1.4	Fort La Bosse will maintain and expand the division website posting good sites for all educators that would promote the development of learning strategies that would integrate technology into everyday learning situations.	Web Master, Technology Consultant, Curric. Coord.	Provide 'technology related' web resources	On Going

VI. Implementation & Supporting The Plan:

Implementation: Making the Plan Happen

The plan will clearly outline the individual goals, related actions, and timelines for implementation. In addition the personnel responsible for each action will be identified.

Introduction:

For the implementation of the Information and Communication Technologies Integration Plan to happen a number of steps need to be identified and supported by all parties.

VI.1 Implementation of the Plan

There are a number of steps that will facilitate implementation of the Plan and should be acted upon as soon as possible. These are:

- approval by the Division Board of Trustees;
- appointment of the Division Steering Committee;
- understand the total financial picture for information technology funding by development of a Consolidated Information & Communication Technologies Budget that includes all financial resources, direct and indirect, that are available and have been available for Information Technology;
- review all timelines annually;
- set realistic priorities;
- review the estimated cost for implementing the Division Plan and set budgetary goals for the next three years.
- proceed to full implementation;
- collaborate, collaborate, collaborate; and
- communicate, communicate, communicate.

VI.2 Communications

The vision, goals, and related actions will be clearly communicated to all school division stakeholders. This will be achieved through communication to regular Division Committees, Advisory Councils for School Leadership, and public information opportunities.

VI.2.1 Division Level

At the Division level it is important to communicate not only internally within the Division but also to the broader community.

1. External communications, by meetings, the mass media and publications, could include stakeholders such as the:
 - Education Community (ex. Advisory Councils, Department of Education, other Divisions);
 - Municipal Community (ex. Town/Village, Municipal governments);
 - Business Community;
 - Mass Media.
2. Internal communications, by meetings, the mass media and publications, should include:
 - Students;
 - Parents;
 - Teachers;
 - Non-teaching staff;
 - School Administrators and
 - Division Administration.

3. In addition, special communication efforts should be developed such as:
 - Division meetings to announce and briefly describe the Plan and indicate the Division direction and commitment. Also, time for questions and answers should be provided;
 - Electronic publication (CD-ROM & Web Site) of the plan and distribution to:
 - i. Principals;
 - ii. Technology Support Teachers;
 - iii. Library Assistants; and
 - iv. Division Departments.
 - Presentation of the Executive Summary and/or Plan highlights and distribution to:
 - i. teachers;
 - ii. support staff;
 - iii. school Parent Advisory Councils (upon request); and
 - iv. division Education Committees and Associations.

Communications to internal stakeholders should indicate where the plan is available for viewing such as public and school libraries and the Division Web Site.

VI.2.2 School Level

At the school level, each school will have a School Technology Plan that is articulated with the Division Plan. Schools will keep their Parent Advisory Committees and their community involved and apprised of progress in this area.

VI.3 Monitoring, Evaluation and Renewal

The Information and Communication Technologies Integration Plan will be a 'living' document that will be reviewed annually. The progress in implementing the Plan goals will be monitored so it can be modified to best meet the needs of our students.

Monitoring and evaluating are important management tools that can be used to ensure success of the Division Information and Communication Technologies Integration Plan. These tools can generate data and information that can be important in decision making and modifying the plan based on the success or failure of specific Plan actions.

VI.3.1 Monitoring and Evaluation

To ensure that the plan is successful and implementation is proceeding as specified, a monitoring and evaluation program is required.

Monitoring provides an early identification of which parts of the plan are being implemented successfully and which are not. Changes and adjustments to problems can be made before they become major issues. Monitoring can be tailored to particular needs and can be as frequent as daily, weekly or monthly.

VI.3.2 Review and Renewal of the Plan

This step is a review of the entire plan based on monitoring and evaluation information and the need to extend the plan one more year to maintain a three year timeline. Rather than invoking the total planning process at the end of the current plan it may be more expedient to continue the current plan, modifying and adding to it, to meet new educational goals and needs.

Appendix A: Glossary of Terms

The following are definitions of some terms used in this publication. These definitions will be useful to the reader where some terms are unfamiliar or some definitions are emerging.

Access

Frequent and regular access is required for technology integration to occur. A few minutes each week is not enough. Technology tools and resources must be available as needed. In general, as a minimum, there should be one computer for every six elementary students and one computer for every three secondary students. Access is also affected by location of computers, such as in classrooms, computer labs and the school library.

Action Research

Action research is used to refer to ways of investigating professional experience which link practice and the analysis of practice into a single productive and continuously developing sequence and which links researchers and research participants into a single community of interested colleagues. It is about the nature of the learning process, about the link between practice and reflection, about the process of attempting to have new thoughts about familiar experiences and about the relationship between particular experiences and general ideas. Practitioner action research is thus part of the general ideal of professionalism, an extension of professional work, not an addition to it.

Benchmark

A standard of excellence or achievement against which similar organizations, processes or practices can be measured or judged. In management practice, going out to look at the best organizations, processes or practices in the world for a specific function to see how that do it.

Best Practice

Division and school practices that are exemplary in terms of information technology implementation. These practices, once identified, can provide practical suggestions or benchmarks for others to follow.

Distance Education / Distributed Learning

Education using different media such as correspondence, radio, television, computers and the Internet, but requiring little or no physical attendance at the institution offering the courses.

Equity

The definition of equity can be complex. Equitable access to computer technology is usually defined in terms of computer to student ratios and statements such as "fair and equal access to technology by all participants".

Emerging information technologies

Information technologies such as: the Internet, virtual reality, virtual schooling and groupware.

Ergonomics

The science that studies the relationship of humans to their working environment and seeks to improve working conditions and increase efficiency.

Hardware

The physical equipment related to a technology. A term used to refer to the components of a computer system.

ICT

Information and Communication Technologies. An acronym commonly used to describe the blending of computer information technologies with communications technologies.

Information Literacy

The ability to access, evaluate, organize, manipulate and present information (including electronic information). The ability to recognize the need for information to solve problems and develop ideas; pose important questions; use a variety of information gathering strategies; locate relevant and appropriate information; assess information for quality, authority, accuracy and authenticity. Includes the abilities to use the practical and conceptual tools of information technology, to understand form, format, location and access methods, how information is situated and produced, research processes, and to format and publish in traditional textual and multimedia formats and to adapt to new and emerging technologies.

Information technology

A term that has a number of different definitions and dimensions. Generally, the term means the broad subject concerned with the processes and tools used to send, retrieve, store, manipulate and manage information using any technology including traditional, new and emerging technologies. Sometimes the term is used only to mean computers, networks, electronic data bases, CD-ROMs, laserdiscs, video cameras and fax machines and telecommunications.

Infrastructure

The basic underlying framework or features of a system or organization. The fundamental facilities and systems serving a country, city or area, as transportation, communication systems, power plants and schools.

Intranet

A collection of private Web sites that are available only to employees, or other trusted parties, within an organization.

Internet

A worldwide 'public' computer network connecting individuals, organizations and other computer networks to information services and electronic mail. The global network of networks now used for everything from email to electronic commerce to research.

LAN or Local Area Network

A local area network. A network of computers usually confined within a single school or office building.

Learning Resources

A learning resource is information, represented and stored in a variety of media and formats, that assist student learning as defined by Provincial or local curricula.

Multimedia

Use of text, graphics, video, animation and sound in an integrated way. The combination of video, audio and text in a single platform or presentation.

Network

Any system consisting of two or more computers connected via network cables or a linked set of computers and computer equipment.

New information technologies

Information technologies such as: computers, networks and telecommunications.

Nodes

Routers or switches on a broadband network that provide a possible link from point A to point B across a network.

School library

The school library is the instructional centre in the school that coordinates on site and off site access to information, resources, services and programs. These services integrate information literacy, the intellectual access to information, with teachers, to develop independent learners who are effective users of information and ideas and committed to informed decision making.

Skills for the Information Age

Students need to develop attitudes, skills and knowledge that can be generalized and applied to new tools and situations in the future. The standard has been achieved if students are equipped to learn how to effectively use new technologies that are yet to be invented.

Software

The messages transmitted or processed through a communication medium. This term also refers to a computer's list of instructions (program) written for programmable computers.

Specifications

While it is a common practice to refer to technology standards such as those for networking, hardware, software and wiring, these are in fact specifications. Specifications are often stated because of a desire to "standardize", to provide consistent advice, or to set minimum requirements rather than describing ideal situations.

Standard

A standard is the satisfactory or challenging level of measurement for a goal. A standard can express the desired or ideal state in a particular area

Strategic Planning

Strategic planning is a system by which a school Division, together with its community, envisions its future and develops the procedures, operations and stakeholder support to achieve that future.

System

A system is a group of parts or components working together as a functional unit. The parts of a system are subject to a common plan and serve a common purpose. Because its parts function together as a unit, a system takes on characteristics and properties of its own that are more than the sum of its parts. A system has implicit systemic features that, once understood, can enable us to better manage these systems.

Systems Thinking

Systems thinking is the way we think about a problem; the way we understand the world; the way we characterize and describe a problem. To apply systems thinking to a problem means that we think about the problem as a system; we can understand and describe it as a system; we realize that there may be no single cause of the problem. This is opposed to a single cause orientation — straight “cause-and-effect thinking” — where we view a problems as single, independent situations. Instead we view problems as multiple, mutual and interdependent. A tool or means by which the complexity of processes within society can be simplified.

Teacher-Librarian

A teacher-librarian is a professional teacher with a minimum of two years of successful classroom experience and additional qualifications in the selection, management and utilization of learning resources, who manages the school library and works with other teachers to design and implement resource based instructional programs. Teacher-Librarians teach identification of information needs, information retrieval, independent learning, organization and presentation skills, use of computers as information tools and the evaluation of information once retrieved.

Technology

A term that has a number of different definitions and dimensions. The term can refer to using computer technology and telecommunications. The term can refer to the processes, tools and techniques that alter human activity. The application of scientific knowledge for practical purposes; the employment of tools, machines, materials and processes to do work, produce goods, performs services or carry out other useful activities.

Technology Integration

Refers to the use of technology across the curriculum for research and production of products of learning.

Telecommunications

Any process or group of processes that allows for the relay of printed or written matter, moving or fixed pictures, or other or audible signals.

Traditional Information Technologies

Information technologies such as: print, film, photography, radio, audio tape recorder/playback, audio CD-ROM, television, cable, telephone, video cameras, interactive television, videotape recorder/playback, and graphing calculators.

Virtual

Not real. The term is popular among computer scientists and is used in a wide variety of situations. In general, it distinguishes something that is merely conceptual from something that has physical reality, an artificial environment created with computer hardware and software. For example, a virtual classroom could bring students together from all over the world but would not exist in a physical setting.

Vision

A planning term that has a number of different definitions and dimensions:

- Your shared hopes, dreams and shared image of the future.
- When change occurs we have to move from “how it is” to a vision of ‘how it will be.’
- Visioning is a journey from the known to the unknown, which helps create the future from a montage of facts, hopes, dreams, dangers and opportunities.
- Powerful visions are never an escape from reality. It is important that an awareness of today’s reality be present in a vision or else it becomes disconnected and powerless.

A vision will include:

- an image of how we see our purpose unfolding;
- a picture of the preferred future we seek to create;
- an answer to the question “What do we really want?” and
- A transcendent view of the possible.

WAN or Wide Area Network

A network of computers covering a wide geographical area. For example, a School Division network of computers which connects all schools together. See also LAN, Internet and Network.