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# Executive Summary

This page is intended to provide a concise summary of the future direction for technology in Seventh-day Adventist schools across Canada as proposed in this *Technology Integration Plan*.

## Technology Vision

A technology plan represents an organization's best thinking about technology infusion and directions for the future. Elements of a successful technology plan will find their way into an organization's budget, curriculum and job descriptions.

The vision of this plan is to fully integrate technology in all Seventh-day Adventist schools across Canada. This integration will:

- empower and enhance students, teachers, parents and others with clear targets for technology use.
- allow students and teachers to gather, process, and communicate information at appropriate levels.
- define desired goals for learners.

## Goals of the *Technology Integration Plan*

### *Goal 1 - Technology Across the Curriculum*

Students and teachers at all K-12 levels will use technology to enhance learning across all curriculum areas.

### *Goal 2 - Professional Development*

All teachers will have access to technology training and support programs. By 2001 it is anticipated that all teachers in SDA schools across Canada will have acquired the

necessary skills in technology to enhance the learning experiences of their students.

### *Goal 3 - Technical Support*

All schools and teachers will be provided technical assistance as they implement current software and hardware.

The identification of local conference technology leaders will provide necessary assistance in the implementation of technology at the local school level.

### *Goal 4 - Community and Parental Support*

Financial support for technology integration in SDA schools across Canada must be encouraged at all levels - the SDACC Office of Education, local conferences, and local school boards/operating committees.

### *Goal 5 - Implementation and Evaluation*

A variety of infrastructures will be established to ensure that this *Technology Integration Plan* is meeting the needs of schools and constituencies.

### *Goal 6 - On-going Revision*

This *Technology Integration Plan* will be critically evaluated and updated on a yearly basis to reflect current realities in technology.

# Introduction

## 1.1 Vision

The implementation of a comprehensive *Technology Integration Plan* for SDA schools across Canada will:

- empower students, teachers, parents and other constituent members, with technology and information literacy skills.
- allow these skills to be used to gather, process, and communicate information at a level relevant to their current and anticipated needs.

## 1.2 Mission Statement

The *Technology Integration Plan* for SDA schools across Canada will:

- provide direction and support.
- enlighten, encourage and enable learners to develop and use technology and information literacy skills.
- empower learners to become responsible, contributing and ethical members of an ever changing global society within a Christian framework.

## 1.3 Mandate of the Technology Planning Committee

This plan is the result of work done by a selected group of SDA educators who met at Canadian University College from July 10 - 15, 1997.

The group's mandate was to develop a comprehensive *Technology Integration Plan* which would provide guidance and support for technology decision-making for SDA conferences and schools for the next three years - 1998-2001.

The two-fold premise of this *Technology Integration Plan* is that student learning will

be improved, and our SDA educational system will be enhanced, through technology integration across the curriculum. This technology plan addresses:

- the integration of technology across all curriculum areas, K-12.
- professional development for all teachers.
- hardware and software selection guidelines and support for the interpretation and implementation of the *Technology Integration Plan*.
- funding support from a variety of stakeholders.
- implementation of the recommendations of the *Technology Integration Plan* and the evaluation of its implementation over the next 3 years (1998-2001).
- the ongoing evaluation and revision of the *Technology Integration Plan*.

## 1.4 Committee Members

Dr. Jim Jeffery, Canadian University College (Chair)

Mike Lekic, SDA Church in Canada

Darryl Fillier, SDA Church in Newfoundland and Labrador

Karen Landry, Maritime Conference

Mogens Sorenson, Maritime Conference

Eric Imbert, Quebec Conference

Carol Ferguson, Ontario Conference

Tim Cove, Ontario Conference

Myrene Kartik, Manitoba-Saskatchewan Conference

Michael Adams, Alberta Conference

Del Spent, Alberta Conference

Lawrence McMullen, British Columbia Conference

Kirk Campbell, British Columbia Conference

Jean Septembre, British Columbia Conference

### 1.5 A Technology Vision for SDA Schools

It is evident that knowledge is accelerating at an ever increasing rate. With this tremendous increase in information and powerful advances in technology, comes very real, demanding, yet challenging sets of problems.

Alvin Toffler in his book *The Third Wave* poses the following questions:

- *Is it enough to simply be satisfied with teaching yesterday's 3 R's?*
- *Are we doing our students a disservice if we don't also make them computer and media literate? Should we be giving them the skills to gather, discern and use information gained from the various media sources?*
- *How literate is a child if they cannot discern truth in what they hear and/or see in this world of technology?*

SDA schools across Canada must address the strong challenges found in these words. With this in mind the Technology Integration Committee would like to propose the plan enclosed in this document.

It is our objective, that this plan, be a dynamic and interactive document that will enlighten, encourage, and enrich. It is also our desire that this plan will provide the following elements:

- Identification of goals, skills, and resources relevant to the integration of technology across the curriculum in all subject areas.
- The development of a system of technology training and support for all teachers, in all SDA schools, across Canada.
- The identification of hardware and software resources necessary to implement the components of this plan.
- Procedures for implementing this plan which include strong links of support and lines of communication (e.g. technology leaders, an Internet presence, etc.).

It is our hope that readers will recognize the possibilities inherent in this plan. It not only opens exciting new ideas and methods in the classroom, but also in the area of Christian service in our ever expanding world.

# Goals of the Technology Plan

## **Goal 1 - Integration of technology across the K-12 curriculum.**

- To identify specific technology and information skills needed at various skill levels for both students and teachers.
- To provide an infrastructure for training and an information network to help educators in the effective implementation of technology in their classrooms.
- To use technology to share Christian knowledge and values.

## **Goal 2 - Professional development for Teachers**

- Promote and facilitate the ongoing technology advancement of staff members in an effort to maintain quality education in Adventist schools.
- Engage staff members in active, practical uses of technology at beginner, comfortable, competent, and advanced levels with a view of technology competency at the end of three years.

## **Goal 3 - Software, Hardware, and Technical Support**

- To identify and put into place the steps/processes involved in the purchase of hardware/software.
- To develop, implement and maintain a system of technology leaders responsible for providing assistance in system design, curriculum development strategies and software training.
- To have a multimedia computer within the classroom for every teacher.

## **Goal 4 - Funding; community and parental support.**

- Provide funding for:
  - establishment of a basic technology infrastructure.
  - ongoing professional development.
- Community and parent support:
  - Provide ongoing communication to relevant groups regarding the stages of the *Technology Integration Plan*.
  - Invite relevant groups to view and access technologies at the school.

## **Goal 5 - Implementation and evaluation of the *Technology Integration Plan***

- Ensure that implementation of the *Technology Integration Plan* is meeting the needs of schools and their constituencies.
- Evaluate and share those aspects of the *Technology Integration Plan* that have been successful.

## **Goal 6 - The On-going evaluation and revision of the *Technology Integration Plan*.**

- Critically evaluate and update the *Technology Integration Plan* to reflect changes in curriculum and technological developments.

# Goal 1 - Integration of Technology Across the K-12 Curriculum

## Background

In this Information Age, technology is an essential element in today's classroom. By the turn of this century, 60 percent of all jobs across Canada will require computer skills. Students who do not know computer essentials - word processing, spreadsheets, databases, network usage, and operating systems - will be distinctly disadvantaged.

For these reasons, technologies need to be integrated across the K-12 curriculum and used as tools to enhance teaching and learning. Technology skills must be incorporated into existing subject areas and not taught as a separate subject. The types of skills necessary in today's world include: use of telecommunication tools, publishing tools, multimedia presentation tools, research and information gathering tools.

## Action Plan

To provide for the integration of technology across the K-12 curriculum, an academic plan must be established which will incorporate the following elements:

### 1.1 Identify specific technological & information skills needed at varying user levels.

The following is an example of computer skills that may be required at different learning levels. *(This is reprinted from British Columbia School District #76's (Agassiz-Harrison) Technology Plan - each province may have different requirements.)*

#### Primary

By the end of the Primary Program students will:

- communicate through application software by creating documents using simple word processing, graphics and publishing programs.
- communicate as a class through networks and telecommunication.
- access and retrieve electronic information by using key word searches and electronic encyclopedias.
- use software for drill and practice to reinforce and gain new concepts.
- develop strategies for problem solving, critical and creative thinking.
- develop basic technology skills such as introductory key-boarding, care and safe use of equipment, and use basic technology vocabulary.
- be introduced to various communicative tools such as tape recorders, VCR's, telephones and fax machines.

#### Intermediate

By the end of the Intermediate Program students will:

- continue to build on the skills developed in the Primary Program.
- communicate through application software by creating documents using word processing, graphics, and publishing programs with the additional use of spell checker/thesaurus, spreadsheets, databases and scanners.
- communicate visually, graphically and artistically through multimedia presentations using camcorders and presentation software.
- communicate through networks and telecommunication through the use of

electronic mail, WWW, telephones and faxes.

- access and retrieve electronic information by using key word searches, electronic encyclopedias, almanacs, indexes and catalogues to support learning in all context areas.
- use software for drill and practice to reinforce and gain new concepts.
- develop strategies for problem solving, critical and creative thinking.
- continue to develop technology skills such as keyboarding, care and safe use of equipment and using expanded technology vocabulary.
- use technology and its applications to maximize productivity and effectiveness.
- be introduced to ethical and legal issues surrounding information technology.

### ***Secondary***

By the end of the Secondary Program students will:

- continue to build on the skills developed in the Intermediate Program.
- communicate through applications software by using graphics programs.
- using word processing to incorporate both text and graphics, creating databases and spreadsheets that visually represent data.
- collect, manipulate and interpret data, using scanners and publishing software to produce page layouts.
- communicate visually, graphically and artistically through multimedia presentations using technology tools.
- communicate through networks & telecommunications by using electronic mail, voice mail, bulletin boards, satellite communications, fax machines and classroom telephones.

- understand and practice safe ergonomic strategies in the use of information technology.
- understand copyright laws and other ethical issues pertaining to and emanating from the use of technology.
- be encouraged to develop higher order thinking skills applicable to potential uses of technology in all disciplines which will lead toward the educated citizen.

*(Note to reader: Also refer to the North American Division Curriculum Guide for Computer Education, 1993 for the recommended scope and sequence of specific computer skills K-12).*

### **1.2 Strategies to discover, develop, implement and support the integration of technology:**

- 1.2.1 To strongly encourage the integration of computer and technology skills into all subject areas. *(see Appendix B)*
- 1.2.2 To develop and maintain an internet presence that will allow users to:
  - gain access to other technology plans and implementation strategies and other resources.
  - utilize listserv, or newsgroup sites for the networking of the SDA educational system allowing for the interchange of ideas and support for curriculum integration. This will be accomplished by using the proposed CAT~NET. *(see Appendix C)*
  - acquire an e-mail address for communication purposes.
- 1.2.3 To implement a line of communication to technology leaders for assistance in curriculum integration.

# Goal 2 - Professional Development for Teachers

## Background

Teachers play a key role in whatever happens when computers or other tools are used in education. If technology is to effectively impact teaching and learning within SDA schools, teachers must be comfortable with computers, seeing them as tools that enhance rather than interfere with their daily teaching.

Indeed, technology can help increase teaching time through the use of word processing, database, spreadsheet attendance, report card and test generation software.

## 2.1 Successful Technology Integration

To successfully implement student learning objectives, administrators, teachers and staff members must be provided with effective training and support materials. Research studies have shown that technology is successfully integrated into all areas of student life when the following conditions occur:

- 2.1.1 Administrator/teacher/staff development is ongoing and systematic.
- 2.1.2 Administrators, teachers and staff members are provided with technology training which encourages them to progress from functional computer users to those with advanced levels of proficiency.
- 2.1.3 Administrator/teacher/staff development sessions provide ample “hands-on” experience with technology and serve to introduce new technology tools as they become available.
- 2.1.4 Administrator/teacher/staff training workshops and in-services are aimed

at, and developed directly from, curriculum objectives and requirements.

- 2.1.5 Administrator/teacher/staff members are made aware and kept abreast of the various support staff and resources available to them.
- 2.1.6 Administrator/teacher/staff training, inservices, and workshops are supplemented with lesson modeling, examples of classroom activities, and classroom management techniques.
- 2.1.7 Administrator/teacher/staff training, inservices, workshops, and lesson modeling are followed up with activities which monitor progress and build on initial training.

## 2.2 Educational Technology Strategic Plan

In order to establish a staff development program, conferences and local schools will have to assess formally or informally the following:

- 2.2.1 Professional development interests and needs.
- 2.2.2 Development of a descriptive summary of technology skills and usage.
- 2.2.3 Identification of a number of individuals willing to share skills and techniques with colleagues.
- 2.2.4 An inventory of the type of level of technology in use both at work and at home.

This assessment will indicate the need to establish a sequential, long-term professional development program to provide teachers with

the necessary skills to implement an effective technology plan.

### **2.3 Professional Development Readiness**

Professional development is dependent upon the levels of readiness among teachers involved in the program and involves at least three levels:

- 2.3.1 Whether teachers are capable of basic use of software applications, e.g., integrated software, desktop publishing, internet, and authoring/presentation software.
- 2.3.2 Whether teachers are able to infuse technology effectively into the curriculum, emphasizing a multi-disciplinary approach.
- 2.3.3 Whether teachers are able to design and develop products or presentations that are interdisciplinary, interactive, and thematic using multimedia authoring tools.

Within these levels, teachers are encouraged to actively participate and apply themselves in using technology to enhance their own learning. They should take personal initiative to learn about educational technology tools and resources, and incorporate them as appropriate into their instruction.

### **2.4 Strategies for Implementation of Staff Development**

A plan needs to be developed by either the school or the conference, that will design the path teachers are to follow to achieve the desired outcomes. The following are strategies that may be implemented in this plan:

- 2.4.1 Schools should provide adequate hardware and software in order to increase access to technology.

- 2.4.2 Schools should establish an information technology coordinator who will link administrators, students, teachers, and parents.
- 2.4.3 Conference and schools should provide on-going inservice that reflect staff and administrator needs in using technology to enhance learning.
- 2.4.4 Schools are encouraged to allocate several professional development days, yearly for technology inservice.
- 2.4.5 Schools should annually allocate funds for the implementation of staff development.
- 2.4.6 Schools should provide access through the Internet in order to communicate with other SDA educators for support.
- 2.4.7 The integration of cooperative learning is a dynamic form of professional growth for staff.
- 2.4.8 Conferences and schools should provide educational opportunities that are linked directly to solving real problems related to student learning.
- 2.4.9 Conferences and schools should provide examples of practical uses of technology in all aspects of curriculum.
- 2.4.10 Conferences and schools should ensure that the information technology coordinator is sufficiently trained in order to properly inservice staff members.

### **2.5 Intended Results of Three-Year Technology Plan - 1998 - 2001**

The implementation of an ongoing technology inservice program for teachers is anticipated to be achieved in three years.

- 2.5.1 Pre-implementation Phase: January 1998 - August 1998
  - In conjunction with the SDACC, schools are encouraged to create a similar plan specific to their school needs, outlining

how technology will be integrated into the school's curriculum.

- It is recommended that all schools obtain Internet access.
- Teachers wanting to prepare for the integration of technology could take the following courses through CUC: EDCI 310 *Technology in Education* and/or EDCI 410 *Internet in the Classroom*.

#### 2.5.2. First Year: September 1998 - August 1999

- It is recommended that each school select an Information Technology (IT) coordinator from the school to be trained to help teachers with on-site support, inservicing and dissemination of information. The IT coordinator in conjunction with the principal, would be responsible for ensuring and coordinating professional development activities related to technology.
- Teachers are expected to gain a level of proficiency in the use of the Internet, sending and receiving e-mail, and basic use of software applications. As well they should know how to operate CD ROM's, through inservice training provided by the school. Time for this training (recommended 30 hours) can be provided through professional development days, extracurricular hours, teacher workshops and summer school.
- Computer courses available through local educational institutions, distance education (internet/homestudy/video), or CUC, will supplement technology skills.

#### 2.5.3 Second Year: September 1999 - August 2000

- Teachers are able to prepare and incorporate multimedia presentations (eg. Powerpoint, Hyperstudio) for students through inservice training

provided by the school (recommended 15 hours).

- Teachers are encouraged to integrate technology effectively into the curriculum through the use of technology documents, hands-on, and/or on-site visitation. This can be acquired through the Internet or personal contact with other professionals in the area of technology.

#### 2.5.4 Third Year: September 2000 - August 2001

- Teachers are able to design and develop Powerpoint and Hyperstudio presentations. As well they are able to use software programs to create graphics for educational illustrations and animation, and use scanners through inservice training provided by the school (recommended 15 hours).
- It will be expected that the staff be kept abreast of new technological advances in technology through whatever means possible.

Not all staff members will attain these levels at the same time, however it is anticipated that all staff members will participate in acquiring proficient skills in technology to better enhance educational learning.

Technology can be used to support and provide meaningful professional development experiences for teachers in the following ways:

- teacher ideas shared via the Internet.
- ease clerical tasks for teachers.
- sharing of organized information between teachers.
- ease of research and inquiry on topics and materials.
- provide different ways of instruction and evaluation.
- provide a wide range of resources available that influence learning.

- empower teachers and students with the use of higher level skills.
- provide opportunities for teachers to be learners.

## 2.6 Conference Technology Leaders

It is the desire of the SDACC Office of Education that each conference office of education will develop, implement, and maintain a group of technology leaders.

These conference technology leaders (CTL's), based on the level of **support** from their local school and conference, and as time and commitment allow, will fulfill the following job description:

- Act as a role model for teachers, demonstrating the use of technology across the curriculum.
- Encourage technology integration.
- Be involved in professional development training.
- Advise conference and schools concerning technology advancements.
- Interact through e-mail with schools.
- Aid in the implementation of technology plans.
- Direct schools to resources that will be able to answer their questions.

### 2.6.1 Teacher Productivity Training

In teacher productivity training, CTLs will:

- Learn skills and techniques necessary for teaching basic applications (word processing, drawing, painting, spreadsheets, etc.)
- Demonstrate the use of spreadsheets by creating teacher documents such as class check-off lists and substitute teacher daily lesson schedule and plans.
- Demonstrate use of spreadsheet principles in using gradebook programs to facilitate teacher record keeping and communication.

### 2.6.2 Multimedia

In multimedia training, CTL's will:

- Explore the planning and design of classroom multimedia projects.
- Learn skills and techniques for basic multimedia applications such as Powerpoint, Hyperstudio, etc.
- Demonstrate the use of multimedia applications for instructional use.
- Examine a variety of evaluation and assessment tools.

### 2.6.3 Telecommunications

In telecommunications training, CTL's will:

- Become active, competent on-line users of telecommunication services.
- Use the Internet as an instructional tool.
- Research and capture web pages.
- Create a *web page*
- Address issues related to acceptable use policies, child safety, security, copyright, etc.

### 2.6.4 Learning Resource Management

In the learning resources management training, CTL's will:

- Address a learning resource management plan as part of a local technology plan.
- Use resource-based learning as an essential part of technology-related curriculum planning and implementation.
- Use information literacy to access, evaluate and use information from a variety of sources.
- Have a tool for software evaluation and selection.
- Address acceptable use policies, copyright, ethics, child safety and other related issues.

# Goal 3 - SOFTWARE, HARDWARE, & TECHNICAL SUPPORT

## Background

The ongoing implementation of technology in SDA schools across Canada means that teachers and schools must have access to technical support. The following guidelines provide a basis for evaluating each schools' technical needs.

## Action Plan

### 3.1 System Setup

When setting up computer systems three main areas need to be considered:

- 3.1.1 Schools need to first assess their technology needs by referring to denominational or provincial guidelines.
- 3.1.2 Schools need to choose software that meets identified needs.
- 3.1.3 Schools need to acquire hardware that will run the desired software (*see Appendix F and Appendix G*).

### 3.2 Hardware, and Technical Support

After needs have been identified the issue of software and hardware purchase arises. Schools will not want to buy cheap software or hardware and then have problems. Care needs to be taken that quality products are purchased which provide satisfactory technical support. (i.e. warranty, proper licensing of all software, service contracts, upgradability, phone support, Internet on-line support.)

By using quality products, schools will have a more reliable and durable computer setup.

This will in turn sustain the life of the computer technology service.

To effectively complete these primary objectives a school, whether 1 or 10 teachers, needs to obtain a multimedia computer system and Internet access.

### 3.3 Networks

If your school exceeds 10 individual computer systems, you will want to consider the advantages of networking your school computers.

A network environment enables people to communicate with each other. This reduces the high cost of purchasing expensive peripherals, adds security to stored programs and data, and eliminates the high cost of duplicating resources. You could network your school administration, teachers in their classrooms, and your computer lab(s). Please note that a network involves a higher level of technical knowledge and financial commitment from the local school.

*(For network advantages see Appendix G.)*

### 3.4 Software Selection

The process of software selection will be greatly simplified if the following guidelines are followed:

- Analyze needs
- Specify requirements
- Identify promising software
- Read relevant reviews
- Preview software

- Make recommendations
- Get post-use feedback

(See Appendix E for software selection help.)

### 3.5 Identify, develop, and maintain an infrastructure/framework for implementing the *Technology Integration Plan*

- Choose technology leaders who will be responsible for assisting in the interpretation and implementation of the TIP.
- At the conference level establish a program of workshops and accredited courses offered at teacher conventions, summer school, and regional workshops.
- Identify resources to aid in the development of computer usage policies
- Identify resources to aid in the development of policy for acceptable Internet usage in the school. (see Appendix J)

### 3.6 Computer Usage Policies

Most people who use on-line services have mainly positive experiences. But, like any endeavor - traveling, cooking, or attending school - there are some risks. The on-line world, like the rest of society, is made up of a wide array of people. Most are decent and respectful, but some may be rude, obnoxious, insulting or even mean and exploitative.

As with all matters of law and ethics, ignorance of the rules does not excuse violations. The following is a recommended policy. (see Appendix J for a complete *Acceptable Use policy*.)

It is contrary to most computer policies to:

- Use another person's account (even if you have permission).

- Attempt to discover another user's password.
- Copy, disclose, or transfer any of the computer software provided by the school without written permission from the school.
- Copy any of the copyrighted software provided by the school without permission. (*NOTE: It is illegal to copy any software which has a copyright.*) The use of illegally copied software is considered a criminal offense.
- Use any school computer equipment or software to violate the terms of any software license agreement.
- Attempt to bypass standard procedures. This includes, but is not limited to, unauthorized use of a password, accessing a file without permission, and reading an execute only file. Lack of file protection does not give the user the right to do any of these things.
- Copy, rename, change, examine, or delete files belonging to someone else without the owner's permission.
- Deliberately use the computer to annoy others. by sending obscene, abusive, or threatening messages.
- Use a school computer for non-educational work. For example, using school computers for profit making activities such as running a word processing service is NOT permitted.
- Tamper with terminals, microcomputers, or any other associated equipment.
- Collect or discard output other than your own without the owner's permission.
- Consume food or drink around terminals, microcomputers, or any other computer equipment.

### 3.7 Internet Safety Software

Great concern has been expressed over material available over the internet. However, there is software available to control what can be accessed on the Internet. Three of the better software programs are:

- Netnanny
- Cyberpatrol
- Surfwatch

All of the above software can deal with problems such as:

- Violence/Profanity (graphics or text)
- Sexual Indecency (graphics or text)
- Gross Depiction (graphics or text)
- Intolerance (graphics or text)
- Alcohol & Tobacco (graphics or text)

*(See Appendix I for resources dealing with child safety on the Internet.)*

# Goal 4 - Funding: Community and Parental Support

## Background

The funding of educational initiatives is a challenge. Given the nature of Seventh-day Adventist education across Canada, allocating additional resources from an already limited resource base is a difficult task.

However, in order for this plan to be realized to its fullest potential, all levels of school governance must commit to make available the necessary resources to local school boards to facilitate the equitable implementation of the goals and objectives set out in this document.

### 4.1 Action Plan

In considering the implementation of a technology plan there are several salient issues that must be considered.

- Spending money on technology is an investment, not just an expenditure. School boards should realize that the purchase of technologies will benefit students during the current academic term, and for the immediate terms that follow.
- Investment in technologies must be needs-driven. The acquisition of new technologies should be made following a careful analysis of the technology plan and the existing available resources.
- The real cost of implementing a technology plan includes initial costs and on-going costs. Successfully implemented technology plans allow for both initial capital expenditures and funding for on-going support and upgrading of software

and hardware, as well as additional funding for staff training as required. Appropriate depreciation of technology items should allow for regular replacement of dated/obsolete equipment.

- The technology committee should designate a sub-committee whose primary mandate is to ensure the availability of the requisite resources for the implementation of the emerging plan. Further, this sub-committee will provide guidance as to the level of funding that can be realistically sustained. A phase-in period set over a fixed time line may assist many boards in realizing their technology plan, especially when resources are limited.
- To ensure the success of this technology plan funding should be made available from all governance levels: the SDA Church in Canada, the local conference, and the local school board. Funding principles at the SDA Church in Canada and conference levels must allow for equitable dispersal of funding at the local school level.

### 4.2 Budget Development

In the development of budget guidelines the following points are recommended:

- Requiring a minimum dollar amount per student for technology education;
- A budgetary formula to conferences and local boards in the area of technology education;

EXAMPLE:

**Operating Expense**

Technology Education	
Hardware	2%
Software	2%
Training	1%
Maintenance	1%
<b>TOTAL</b>	<b>6%</b>

**Capital Expense**

Technology Education	
Annually	2%

- Required depreciation of technologies allows for the replacement of equipment at a regular interval (3 to 5 years);
- Seek to achieve equity in the disbursement of identified funds; and
- Ensure that minimum levels of technology are present in all schools within the SDA Church in Canada.

### 4.3 Funding of Initiatives

The following serve as starting points in considering various funding options and sources for the implementation of this plan.

**Matching Fund** -- To encourage the acquisition of educational technologies, it is recommended that the SDA Church in Canada assist in providing a matching fund to conferences to purchase a computer at the local school level, given specific purchasing guidelines. (1/3 Union + 1/3 conference + 1/3 local board = fixed maximum [for schools who meet criteria])

**Grants** -- Establish a centralized listing of available grants from corporate, government and private sources that would provide assistance to local boards through CAT~Net. (i.e. grants available from corporations such as Intel, Microsoft, etc.)

**Special Project(s)** -- The SDA Church in Canada will undertake specific project(s) on an on-going basis to assist conferences and local boards in implementing local technology plans. (i.e. assisting schools in developing web pages by providing a host site)

**Local Fundraising** -- As local boards develop and implement technology plans they should be encouraged to seek additional local sources of funding to assist in realizing stated objectives. (i.e. citrus sales)

### 4.4 Recommendations

CAT~Net -- The establishment of a *Canadian Adventist Teachers Network* by the SDA Church in Canada, in conjunction with Canadian University College, could greatly facilitate the implementation of technology plans by conferences and local school boards. The potential benefits include:

- Assistance in the development and implementation of technology plans;
- Availability of limited technical support;
- recommendations regarding the purchase of various hardware and software, including the purchase of site-licenses; and
- The establishment of the CAT~Net web site.

### 4.5 Community and Parent Support

Involvement of constituent members and parents is essential for the success of any technology plan. Components of this involvement include the following:

- 4.5.1 The technology committee composition needs to reflect a cross-section of the community and include a treasurer/finance expert. (Teachers, administrators, parents, business people, church members)
- 4.5.2 The technology committee needs to communicate to parents and

constituency the plans that they have concerning technology in the school.

- The committee's philosophy and objectives of technology implementation.
- The projected costs (both initial and annual).
- The benefits of the program (both to students and community).
- The status of the program as it proceeds through the implementation process.

4.5.3 The technology committee needs to involve parents and constituency in the decision-making process. This might take the form of information nights during which individuals would have opportunity to express

their views in relation to the technology plans.

4.5.4 The technology committee needs to make provision for parent and constituency access to the technology being utilized in the school.

#### **4.6 Marketing/Public Relations**

To make any technology plan more meaningful to the general constituency, communication needs to take place.

This may take the form of newsletters, outlining the overall philosophy of technology use in our schools, the make-up of the technology plan, and examples of how technology is being used in the schools to benefit students.

# Goal 5 - Implementation and Evaluation of the *Technology Integration Plan*

## Background

It is the desire of the SDACC Office of Education that a minimal technology base, consistent with denominational and provincial education standards, be achieved in the short-term.

The implementation timeline for this *Technology Integration Plan 1997-98* is illustrated below.

## Action Plan

### 5.1 Proposed Implementation at the SDACC Office of Education Level

*July, 1997*

First draft of technology plan completed and distributed to committee for revision.

*August, 1997*

-Final draft and revisions completed  
-Along with Jim Jeffery, identify and list:

- Links to provincial Ministry of Education websites
- Links to technology plan sites
- Links to specific subject curriculum guides

-Identify a website and webmaster to hold plans

-webpage

-Explore where listserv or newsgroup forums can be set up (or identify some that are already in use)

*September, 1997*

Publish technology plan in HTML format including link starts to:

- Technology plans
- Provincial specific sites
- Technology leader support

*Late September - October, 1997*

-The website, with the technology plan, will be running with all links confirmed.

-Identify an example of newsgroup inter-activity with other teachers.

### 5.2 Proposed Implementation at the local conference level

*August, 1997*

-Make education superintendent aware of technology plan

-Prepare instruments for:

- School technology plan worksheets
- Hardware/software worksheets purchasing procedures
- Implementation and evaluation worksheets

*Late August - October, 1997*

Send memo to all schools stating:

- All technology plans be in place by year end
- Availability of technology leaders
- Publication of first year proficiency expectations

-Communicate the plan to all educational personnel at teachers convention

-All teachers conventions will have substantial, meaningful workshops and/or presentations on technology use

*November, 1997*

-K-12 Board presentation using website as presentation tool

-Emphasis on:

- Interactivity of the plan
- Newsgroup-style interactive communication

### **5.3 Evaluation of the Implementation of the *Technology Integration Plan***

Each conference will strike an evaluation committee consisting of the educational superintendent and conference technology leaders to evaluate the progress made towards

the implementation of the SDACC *Technology Integration Plan* at the local level.

Appendix K contains a worksheet to be used in the evaluation of the implementation of the *Technology Integration Plan*. It is important to tailor the recommendations of the SDACC *Technology Integration Plan* to local school needs.

# Goal 6 - On-going evaluation and revision of the *Technology Integration Plan*

## Background

It is an absolute necessity that accountability measures be put in place to monitor the progress of each goal, strategy, and action of the *Technology Integration Plan*.

The *Technology Integration Plan* will be reviewed and revised on an annual basis. Progress reports will be given yearly at the SDACC K-12 Board of Education. These reports will reflect a critical evaluation of the plan and contain proposed updates to the plan which will reflect the most current changes in curriculum and technology developments.

## Action Plan

### 6.1 On-going Evaluation

-Continue to monitor and revise the CAT~Net website to be used in actual implementation of the plan and as the first area of contact.

*November, 1997*

Ascertain degree of support for the program at the SDACC K-12 Board of Education meetings.

*December, 1997 - March, 1998*

-Set up summer program with:

- CUC summer sessions
- Regional 2-3 day workshops

-Identify resources and personnel for 1998 Teachers convention on the theme of "Technology Implementation"

*May-June, 1998*

Schools fill out first-year implementation evaluation

*July, 1998*

Committee assesses first year implementation success

*August - September, 1998*

-Send memo to all schools concerning second year implementation objectives and expectations

-Listserv communication network in place and training set up at:

- Teachers conventions
- Regional workshops

# APPENDICES

# APPENDIX A

## Information Technology Guiding Principles

### Goals of Technology Integration in Schools

Technology is not an end in itself. It represents a set of tools to help students and teachers to achieve their educational goals. The primary goal for the use of technology in education is to improve student learning and enhance the efficiency of the educational system. The educational results of technology integration include:

- Students will use computers and telecommunications technology to acquire the knowledge and skills they need for the workplace, or to continue their education at the post-secondary level.
- Teachers will use technology to access information, to enrich student learning, and to collaborate with each other.
- Teachers, administrators, and other school staff will use technology to share instructional and administrative information.
- The SDACC Office of Education will use technology to enhance the timeliness and effectiveness of communications, information sharing, and data exchange with schools across Canada.

These commonly shared principles will facilitate sound information and technology management practices. These principles will maximize the potential for effective integration of technology initiatives.

### Student Learning and Instruction

- Technology should be used primarily as a tool for learning, not as a subject of learning.

- Technology should be readily available to students wherever learning occurs and readily available to teachers.
- Technology should be used to provide teachers and students with access to learning resources and information available via global networks, such as the Internet.
- Technology should be used to enhance classroom instruction and support individualized instruction.

### Teacher and Staff Development

Educators must take personal initiative to learn about educational technology tools and resources. They also must incorporate appropriate technology into their instruction.

Teachers should be supported in their technology learning and in the effective use of technology resources through access to professional development and training activities.

- All educators should be provided with appropriate hardware and software tools to effectively perform their duties.
- Teachers should have access to support services to enable them to utilize technology effectively.
- Teachers should have access to networks such as the Internet to facilitate information access, communications and collaboration with colleagues.
- Teachers should have access to the latest information that will enable them to share and learn about teaching and student learning approaches that utilize technology.

**Technology Plans, Standards, and Guidelines**

Planning is vital to achieving effective technology integration.

The primary intent of this *Technology Integration Plan* is to facilitate effective use of information technology throughout the education system.

**Hardware and Software**

Hardware and software should be effectively maintained and upgraded on a planned, ongoing basis in order to meet changing curriculum and administrative needs.

Hardware and software integration should be planned and managed within the context of denominational and provincial technology directions, standards, and guidelines.

**Application Software and Systems**

- Packaged software (with a minimum of customization) should be the preferred means for addressing data processing and application systems needs.
- Where application system development is required, a standards-based, modular approach should be used to facilitate compatibility, flexibility, maintenance, and shared use within the education sector.

**Networking and Telecommunications**

Schools and/or conference networks should be planned using standards-based approaches, and within the context of denominational and provincial technology directions, standards and guidelines.

# APPENDIX B

## Sample Objective for the Integration of Technology Across the K-12 Curriculum

Technology lends itself well to learning and instruction because it is a powerful tool that, when properly implemented, improves student learning and achievement.

Below is an excellent example (from the Simsbury, Connecticut school system) of how technology can truly be integrated across all K-12 curriculum areas. SDA Schools will need to integrate Bible across the various levels.

### Grades K-2

#### *Reading/Language Arts*

- Students will, with assistance, enter work such as sight words, numbers, their names or telephone numbers into a template using a word processing/publishing program.
- (Optional Activity) Students will compose work which becomes part of a publishing project such as a class book or individual book. Pupils' writing will be entered using a word processing/publishing program by a student and/or adult.
- Students will illustrate ideas, stories, people, places, scenes, or objects using a paint program.  
(*Curriculum Connection with appropriate grade level science and social studies units is suggested for the above mentioned objectives.*)
- Students will interact with CD-ROM discs, interactive laser discs which extend and enrich the developmental concepts of the reading/language arts program.

#### *Math*

- Students will participate in a graphing project which utilizes a computer graphing program.
- Students will illustrate grade level math concepts using a paint program.
- Students will sort and classify data using appropriate curriculum related software.

- Students will interact with CD-ROM discs, the computerized card catalog and interactive laser discs which extend and enrich the developmental concepts of the math program.

### Grade 3

#### *Reading/Language Arts*

- Students will, with assistance, enter work such as acrostic poems into a template using a word processing/publishing program.
- Students will illustrate a story, poem, report cover, or book report using a paint program.
- (Optional Activity) Students will compose a cohesive narrative which will be entered into a word processing/publishing program by a student and/or adult.  
(*Curriculum Connection with appropriate grade level science and social studies units is suggested for the above mentioned objectives.*)
- Students will interact with CD ROM discs, interactive laser discs, and the computerized card catalog which extend and enrich the concepts of the reading/language arts program.

#### *Math*

- Students will participate in a graphing project which uses a computer graphing program.

- Students will illustrate grade level math concepts using a paint program.
- Students will sort and classify data using appropriate curriculum related software.
- Students will interact with CD-ROM discs, interactive laser discs, and the computerized card catalog which extend and enrich the developmental concepts of the math program.

#### **Grade 4**

##### ***Reading/Language Arts***

- Students will compose, edit, and revise a friendly letter, descriptive paragraph, or narrative using a word processing program such as Microsoft Works.
- Students will illustrate a story, poem, report cover, or illustrative book report using a paint program.

*(Curriculum Connection with appropriate grade level science and social studies units is suggested for the above mentioned objectives.)*

- Students will interact with CD-ROM discs, interactive laser discs, and the computerized card catalog which extend and enrich the concepts of the reading/language arts program.

##### ***Math***

- Students will collect, organize, sort, and graph data using a graphing program.
- Students will interact with CD-ROM discs, interactive laser discs, and the computerized card catalog which extend and enrich the developmental concepts of the math program.

##### ***Science***

- Students will access and retrieve science data utilizing CD-ROMs, interactive laser discs, and the computerized card catalog.

##### ***Social Studies***

- Students will access and retrieve social studies data utilizing CD-ROMs, interactive laser discs, and the computerized card catalog.

#### **Grade 5**

##### ***Reading/Language Arts***

- Students will compose, edit, revise, and produce a hard copy of at least 3 written works (completed in school) for their writing folders using a word processing program such as Microsoft Works.
- Students will illustrate and enhance writing projects by using changes in format, typeface, font size/style, clip art, and student-created graphics using a word processing program such as Microsoft Works.

*(Curriculum Connection with appropriate grade level science and social studies units is suggested for the above mentioned objectives.)*

- Students will interact with CD-ROM discs, interactive laser discs, and the computerized card catalog which extend and enrich the concepts of the reading/language arts program.

##### ***Math***

- Students will collect, organize, sort, and graph data using a graphing program.
- Students will interact with CD-ROM discs, interactive laser discs, and the computerized card catalog which extend and enrich the developmental concepts of the math program.

##### ***Science***

- Students will access and retrieve science data utilizing CD-ROMs, interactive laser discs, and the computerized card catalog.

##### ***Social Studies***

- Students will access and retrieve social studies data utilizing CD-ROMs,

interactive laser discs, and the computerized card catalog.

## Grade 6

### *Reading/Language Arts*

- Students will compose, edit, revise, and produce a hard copy of a least 3 written works (completed in school) for their writing folders using a word processing program such as Microsoft Works.
- Students will illustrate and enhance writing projects by using changes in format, typeface, font size/style, clip art, and student-created graphics using a word processing program such as Microsoft Works.

*(Curriculum Connection with appropriate grade level science and social studies units is suggested for the above mentioned objectives.)*

- Students will interact with CD-ROM discs, interactive laser discs, and the computerized card catalog which extend and enrich the concepts of the reading/language arts program.

### *Math*

- Students will collect, organize, sort, and graph data using a graphing program.
- Students will interact with CD-ROM discs, interactive laser discs, and the computerized card catalog which extend and enrich the developmental concepts of the math program.

### *Science*

- Students will access and retrieve science data utilizing CD-ROMs, interactive laser discs, and the computerized card catalog.

### *Social Studies*

- Students will access and retrieve social studies data utilizing CD-ROMs, interactive laser disks, and the computerized card catalog.

## Grades 7-8

### *Reading/Language Arts*

- Students will create, edit, revise, and produce hard copies of any writing assignment using a word processing program such as Microsoft Works.
- Students will illustrate and enhance writing projects by using changes in format, typeface, font size/style, clip art, and student-created graphics using a word processing program such as Microsoft Works.

*(Curriculum Connection with appropriate grade level science and social studies units is suggested for the above mentioned objectives.)*

- Students will interact with software programs which improve grammar, punctuation, and word usage as they apply to written communication.
- Students will interact with CD-ROM discs, the computerized card catalog, and interactive laser discs which extend and enrich the concepts of the reading/language arts program.
- (Optional Activity) Students will use a multimedia program to create and improve reports and projects assigned as culminating experiences to reading.

### *Math*

- Students will enter data, develop and enter formulas for mathematical calculations into a spreadsheet.
- Students will collect, organize, sort, analyze, and graph data using a spreadsheet program.
- Students will interact with CD-ROM discs, interactive laser discs, and the computerized card catalog which extend and enrich the developmental concepts of the math program.

**Science**

- Students will access and retrieve science data utilizing CD-ROMs, interactive laser discs such as Science Sleuth, and the computerized card catalog.
- Students will gather curriculum-related science data, create a database, organize, and analyze the information.
- (Optional Activity) Students will create a presentation based on a curriculum-appropriate science unit using a multimedia authoring program such as Hyperstudio.

**Social Studies**

- Students will access and retrieve social studies data utilizing CD-ROMs, interactive laser discs, and the computerized card catalog.
- Students will gather curriculum-related data, create a database, organize, and analyze the information.
- (Optional Activity) Students will create a presentation based on a curriculum-appropriate social studies unit using a multimedia authoring program such as Hyperstudio.

**Life Education**

- Students will use word processing programs and available software to complete work related to communication and refusal skills in the areas of drug use and sexuality.
- Students will access and retrieve life education data utilizing CD-ROMs, interactive laser discs, and the computerized card catalog.

**Foreign Language**

- Students will interact with available software, CD-ROMs, interactive laser discs, and the computerized card catalog which help to develop and reinforce grammar and vocabulary skills.

**Art**

- Students will interact with available graphics software, CD-ROMs, interactive laser discs, and the computerized card catalog which help to develop and reinforce creative expression in art.

**Music**

- Students will interact with software that develops music composition skills and techniques and/or lyric writing skills and techniques.
- Students will interact with available software, CD-ROMs, interactive laser discs, and the computerized card catalog which will help to develop and reinforce creative expression in music.

**Life Management**

- Students will create, edit, revise, and produce hard copies of any writing assignment using a word processing program such as Microsoft Works.
- Students will illustrate and enhance writing projects using changes in format, type-face, font size/style, clip art, and student-created graphics using a program such as Microsoft Works.
- (Optional Activity) Students will create a database which compares the nutritional needs for various stages of the life cycle or examines the nutritional values of food listed on food labels.
- Students will access and retrieve information relating to life management skills utilizing CD-ROMs and the computerized card catalog.

**Technology Education**

- Students will create, edit, revise, and produce hard copies of any writing assignment using a word processing program such as Microsoft Works.
- Students will illustrate and enhance writing projects by using changes in format, typeface, font size/style, clip art,

and student-created graphics using a word processing program such as Microsoft Works.

- (Optional Activity) Students will create a database which compares aspects of various forms of technology .
- Students will access and retrieve information relating to technology education skills utilizing CD-ROMs and the computerized card catalog.
- Students will interact with a Computer Aided Design (CAD) program to develop and reinforce concepts in the content area.

### **Grades 9-12**

#### ***English***

- Students will word process papers (essays, term papers).
- Students will access information using CD-ROM and on-line services.
- Students will engage in interactive lessons using distance learning.

#### ***Math***

- Students will use technology as a tool in math courses.
- Students will apply programming logic to problem solving with appropriate software packages.
- Students will expand the programming options available.
- Students will be afforded the opportunity to extend their knowledge of technology applications.

#### ***Social Studies***

- Students will produce word processed papers.
- Students will access information using CD-ROM and on-line services.
- Students will participate in interactive lessons using distance learning.

#### ***Science***

- Students will use technology for gathering, storing and reporting lab data.
- Students will use technology for the simulation of life and earth sciences.
- Students will be afforded the opportunity to participate in scientific electronic forums.

#### ***Foreign Language***

- Students will produce word processed papers that are language appropriate using diacritical marks.
- Students will utilize CD-ROM programs that facilitate reading comprehension and vocabulary acquisition in the target language.
- Students will participate in teacher authored systems to create in-house interactive activities that remediate, reinforce and enrich the curriculum.

#### ***Business Education***

- Students will learn the fundamentals of touch keyboarding, word processing, databasing, and spreadsheeting.
- Students will use technology as a tool in all business courses.
- Students will proceed to advanced levels in word processing, desktop publishing, database and spreadsheet applications.
- Students will access information using CD-ROM and on-line services.
- Students will use distance learning in interactive lessons.
- Students will learn to transfer technological skills to work experience and /or formal post-secondary education and training.
- Students will apply technological skills to interpersonal communication.

#### ***Technology Education***

- Students will use technology for computer aided drafting and architectural design using state of the art software.

- Students will use technology in graphics communication and printing.
- Students will use technology in automotive diagnosis and maintenance.

***Life Management***

- Students will reinforce academic skills as they prepare/produce computer documents: create, edit, save, and print text.
- Students will examine and interpret information given on computer aided instruction.
- Students will interact with software that extends and enriches curriculum content.
- Students will conduct research and/or investigations on various curriculum topics.
- Students will create database/spreadsheets related to specific content areas.

- Students will utilize critical thinking and problem solving strategies to complete curriculum assignments.

***Music***

- Students will use technology for composing musical scores.

***Art***

- Students will use technology for computer aided fine and commercial arts.

***Educational Support Services***

- Students will word process papers.
- Students will receive reinforcement and remediation of core academic skills.
- Students will use technology for application of daily living skills.
- Students will use technology for SAT and GED preparation.

# APPENDIX C

## CAT~Net



**Canadian Adventist Teachers Network**  
Bringing Adventist teachers together.

### Rationale:

The need for an Internet site designed to support Canadian SDA Teachers was presented on many occasions during the Canada technology leaders meetings of July, 1997.

Teachers in mid-size, large, or in small isolated schools, would find great teaching resources and professional support there. It was also believed that we had entered an era where Canadian geography and fiscal restrictions, dictated the creation of a more empowering and relevant system of communication between SDA educators.

Because SDA teachers are to function efficiently in today's technological world for the ultimate benefit of young people and their development, it was firmly believed that this tool would greatly facilitate this task. It would provide Canadian Adventist teachers with opportunities to share professional resources and ideas.

This website is now operational and includes the following components:



**ON-LINE JOURNAL**



**SCHOOLS**



**TEACHERS**



**CURRICULUM  
RESOURCES**



**WANDA  
WONDERS**



**TECHNOLOGY IN  
THE CLASSROOM**

Be sure to visit the CAT - Net Website at: <http://www3.nf.sympatico.ca/orion/catnet/>

# APPENDIX D

## Recommendations for Software Selection

### Step 1. Analyze Needs

The responsible teacher (or materials selection committee) should first determine whether or not the computer is the appropriate medium to use to satisfy particular instructional goals and objectives. There is always the possibility that a careful needs analysis will result in a decision to use some other teaching-learning strategy.

**Needs & Goals.** A need is the difference between "where we are now" (e.g. 60% of the students in the ninth grade score above minimum competence on the state science test) and "where we would like to be" (e.g. 90% of the students in ninth grade score above minimum competence on the state science test). "Where we would like to be" is another way of defining a goal.

**Objectives.** An objective describes "where we would like to be" in more specific terms (e.g. 90% of all ninth grade students will exceed the minimum level of competence on the state competency test administered in the second semester of ninth grade). Objectives must include conditions under which the desired behavior will be demonstrated and the criteria for measuring that behavior.

Educational objectives help us respond to needs by breaking them down into attainable steps, making it easier to get from "where we are now" to "where we would like to be." The educational objective stated above is a "terminal" objective which must be broken down into a series of "enabling" objectives (e.g. By October 31, 1998, all ninth grade students will be able to correctly identify at least five out of seven making it easier to get

from "where we are now" to "where we would like to be."

The educational objective stated above is a "terminal" objective which must be broken down into a series of "enabling" objectives (e.g. By October 31, 1998, all ninth grade students will be able to correctly identify at least five out of seven minerals when shown them by the teacher.)

After considering the benefits and constraints of each learning method, the teacher (or materials selection committee) should be able to make an informed decision about which medium or combination of media will satisfy the identified needs, goals, and objectives.

### Step 2. Specify Requirements

If a careful needs analysis determines that computer assisted instruction is one of the methods that will be used to meet identified instructional objectives, the teacher (or materials selection committee) should then specify the requirements for the computer software.

Factors to consider in specifying requirements for software include: compatibility with available hardware; cost (Will the school need multiple copies of the software? Will a site license be necessary? ); user friendliness; level of interaction desired; adequacy of documentation; access to technical support via toll-free number; and of course, direct correlation with the instructional objectives and curriculum requirements identified in the needs analysis.

Research suggests that educators should apply the following criteria within the context of their objectives and the students' needs: content; instructional presentation; demands placed on the learner; technical features; and documentation and management features.

### Step 3. Identify Promising Software

If requirements are specified in detail, the teacher (or materials selection committee) will have a good head start when it comes to identifying promising software.

There are many ways to identify promising software, and the responsible selector should use as many of them as possible. Catalogs still remain an important source for descriptions of good head start when it comes to identifying promising software.

There are many ways to identify promising software, and the responsible selector should use as many of them as possible. Catalogs still remain an important source for descriptions of software. Most district level educational communications/media centers are on catalog mailing lists from virtually all software producers and wholesalers.

Software is advertised, described, and often reviewed in magazines and journals found in school, Univ.

Teachers who have access to the Internet can find out about software from other teachers by joining a listserv. Posting a question such as, "I am an eighth grade science teacher and I am looking for interactive software for a PC environment that will teach my students how to . . ." is likely to bring dozens of responses.

Many listservs are archived on the AskERIC Virtual Library gopher (gopher ericir.syr.edu)

or WWW site (<http://ericir.syr.edu>). Directions for joining a listserv may be found in the archives, or e-mail AskERIC@ericir.syr.edu, for more information on listservs.

The above are but a few sources for identifying promising software. The more precisely the requirements are specified in Step 2, the easier it will be to screen out those products that are least likely to meet the user's specifications and the easier it will be to focus on more promising products.

### Step 4. Read Relevant Reviews

After a list of promising software has been identified (using the suggestions outlined in Step 3), the teacher (or materials selection committee) may be able to narrow or expand the list by reading relevant software reviews. (*see Appendix E for Internet sites.*) It is very important to realize, however, that reading reviews should not take the place of previewing, described in Step 5.

Software reviews may be found in educational journals, some of which may be identified by searching the ERIC database using appropriate descriptors (e.g. software, selection, evaluation, elementary, secondary). For example, Heyboer and Mayo, in the January 1993 issue of *Teacher Magazine*, describe 12 computer software programs available for elementary and secondary math and science classes.

Evaluation services such as EPIE, subscribed to by many school and public libraries, provide a database of selected software evaluations and reviews. A visit to the library is an important part of responsible software selection.

Keep Step 1 (Analyze Needs) and Step 2 (Specify Requirements) in mind as you

read the reviews. It is also important to note the audience upon which the review is based. A software program may have received a poor review because it was tested with a different audience than the one you have in mind.

Reviews are important screening tools when used as part of the entire selection process.

### **Step 5. Preview Software**

The most effective way to judge whether software is appropriate or not is to observe students as they interact with the program. Are the educational objectives achieved when the student uses the program?

*The responsible teacher should not purchase software without previewing it with his or her own students. Preview as many programs as you can find that appear to meet your selection criteria. Some software vendors will allow free preview of an entire program. Some vendors will provide a free demonstration disk containing a subset of a larger program.*

Some vendors will not allow preview without a purchase order, but will allow the teacher to return the program within a specified time limit with no financial obligation. In some situations, a teacher may be able to borrow a program from another teacher for preview purposes.

### **Step 6. Make Recommendations**

After potential software has been previewed, it is time to make recommendations for purchase. The responsible software selector should be able to:

- select the most desirable software after a systematic evaluation of all alternatives in terms of educational objectives and constraints;

- establish a quantitative method for rating each alternative against the selection criteria established in Step 2;
- evaluate the relative importance of each selection criterion, (i.e. previewing should probably be rated relatively high in importance); and
- create a written record outlining the reasons why a piece of software is recommended or not recommended for purchase.

For software that is recommended for purchase, teachers should include suggestions for optimal use that might have become apparent during the preview period.

### **Step 7. Get Post-Use Feedback**

After software is purchased and used with students, it is important for the teacher to determine the conformance or discrepancy between all of the enabling objectives specified in Step 1 and the student performance actually obtained using the chosen computer software.

The teacher should keep records on the relative extent to which each objective is met or not met. Objectives not met may be addressed by some other software program or by another teaching/learning method.

Post-use feedback can be a significant help to a school's systematic process of software selection, purchase and use.

The accumulation of user feedback, including anecdotal experience on the part of both teachers and students, will naturally serve to improve future needs analyses (Step 1) and all succeeding steps in a constantly improving software selection process.

# APPENDIX E

## Software Review Sources

***Superkids Educational Software Review***  
(<http://www.superkids.com/aweb/pages/contents.html>). This site is an impartial source of information for parents and teachers. The software previews are based on objective analyses by parents, teachers, and children. The advice contained in these pages is guaranteed to improve your child's education and save you money.

***School House***  
(<http://www.worldvilage.com/wv/school/html/school.htm>). This site features educational software reviews, feature articles, cartoons, cool sites and downloads.

***CyberEd Network Educational Software Reviews***  
(<http://www.io.org/~ragogna/softrev.htm>)  
This site contains software reviews, from pre-school to adult, for educators and parents

***California Instructional Technology Clearinghouse***  
(<http://clearinghouse.k12.ca.us>) This site contains a searchable database that allows the user to access reviews in the California Technology in the Curriculum [TIC] Evaluations Database. The database has information on 2,000+ computer software, CD-ROM, computer-interactive videodisc, and instructional video programs. Items in the database are rated by the California Instructional Technology Clearinghouse. These annual evaluation projects of the California Instructional Technology Clearinghouse are administered by the Stanislaus County Office of Education and funded by the Educational Technology Local

Assistance Program, California Department of Education.

***Computing and Computer Companies***  
(<http://www.capecod.net/schrockguide/scitech/scicom.htm>)  
Links to software and hardware reviews are included in the section of Kathy Schrock's Guide for Educators. A great site!!

***Eisenhower National Clearinghouse***  
(<http://www.enc.org/>)  
(ENC) is a nationally recognized information source for K-12 math and science teachers. Sponsored by the U.S. Department of Education, Office of Educational Research and Improvement, the ENC has a searchable catalog of both print and non-print curriculum resources.

***Electronic Learning***  
(<http://scholastic.com/EL/>)  
This site provides information about technology and how it is being used in our schools. The electronic version of this publication includes buyer's guides to new products, software reviews written by teachers and other educational professionals, grant information, and special reports on current topics of interest.

***Favorite Software***  
(<http://www.scrtec.org/software/>) is a collection of educational software reviews submitted by various users. The reviews are sorted into groups by title, grade level, and subject matter. Users can also submit reviews of favorite software. This site is sponsored by the South Central Regional Technology in Education Consortium.

***New Mexico Educational Software Clearinghouse***

(<http://www.enmu.edu/~siegelj/nmescx1.htm>) (NMESC) has a growing collection of software reviews. Special emphasis is placed on software that is useful in teaching students with limited English skills and other special needs students. This Clearinghouse is supported through funds from the Center for Teaching Excellence and ENMU.

***Newsweek. Parent's Guide to Children's Software '97***

(<http://www.newsweekparentsguide.com/>) includes over 600 software reviews arranged by title and grouped into categories. In addition, the site provides access to Newsweek editorials, bulletin boards, and a list of "Editor's Choice Winners."

***PEP Web site***

(<http://www.microweb.com/pepsite/>) This site is an informational resource for Parents, Educators, and Children's Software Publishers. The content of this site has been developed in response to the interests and needs of these three audiences. The site is sponsored by Children's Software Revue and Custom Computers for Kids.

***Technology & Learning Online***

(<http://www.techlearning.com/>) includes searchable software reviews, information about professional development activities, and information on grants. T&L Online is produced by the publishers of Technology & Learning Magazine, a publication for technology-using educators.

***Way Cool Software Reviews***

(<http://www.ucc.uconn.edu/~wwwpcse/wcool.html>). This site includes reviews of commercial software, shareware, freeware, and a copy of the (<http://www.ucc.uconn.edu/~wwwpcse/wcfom.html>) software evaluation form used by reviewers. Reviewers are students (preschool to high school), teachers, and parents. This site is sponsored by the A. J. Pappanikou Center Technology Lab of the University of Connecticut.

***World Village***

(<http://www.worldvillage.com/>) is a virtual community for computing families. The site bills itself as a "premier family-friendly site," and is filled with software reviews under a variety of categories such as the School House, MultiMedia Cafe and the Internet Hotel.

# APPENDIX F

## Purchasing a New Computer

### Purchasing a New Computer

Purchasing a new computer system can be an intimidating experience. However, it can afford the first time buyer an opportunity to really get to know the “ins and outs” of computers. Often when purchasing a computer system the decision as to what computer to buy is either dictated by money or the savvy of some salesperson. Favorite hooks are:

1. *You need to buy this type of system because it has so much more software available for it.*  
Be aware that just because a given system has more software doesn't mean that a school will be able to use or afford all of that software.
2. *You need to buy this type of system because that is what the business world uses and you want to have your students learn on that type of machine.*  
The reality is that students will find themselves in businesses which will be running software that is available on most platforms (eg. Microsoft Word runs on both IBM and Macintosh platforms and in fact the same reference guide is used for both).

Also training your student on WordPerfect doesn't guarantee that they will be using WordPerfect in their work place. It is better to give them a

basic, general knowledge and comfort using a computer thus giving them both the confidence and ability to adapt to whatever software they may be using.

3. *Such and such a system is more expensive than the other*  
Macintosh is said to be more expensive than an IBM system. Yes and no, if you compare prices with highly rated companies (eg Apple, Dell, IBM, etc) you will find pricing very competitive.

In purchasing a computer system the following steps should be taken in the sequence outlined below:

1. Identify basic needs.
  - What is the computer going to be used for?  
Some common uses are:
    - Wordprocessing
    - Database
    - Graphics/Page Layout
    - Accounting
    - Internet access
    - Teacher/Administrative tasks
  - Who is going to be using it?
  - Identify from provincial curriculum guides what the computer system should be able to do in order to fulfill the curriculum objectives and expectations.

- What administrative needs will the computer be used for?
  - Will the Internet and its offerings be used?
2. *Find software that will fulfill the needs list that you identified earlier.*
- Purchase software with industry standards which are available on either the IBM or Macintosh platforms. The following is a list of popular and business standard software available on both platforms and widely used in the school environment:
    - Microsoft Works, Word, Excel, PowerPoint
    - ClarisWorks
    - Adobe PageMaker, Photoshop
    - Digital Chiesel, Hyperstudio
  - Find the ratings for the software.
  - Figure in the cost of multi-user licensing costs (eg. lab packs, site licensing, etc.)
3. *Find out what type of computer system will run the software that has been identified in the previous section. Things to consider here are:*
- Identify lines of support.
    - Is the company you are purchasing the computer from willing to give you support (including coming to your school to help) and for how long?
  - How easy is the system to use? Take the computer for a test drive! Do common operations on each type of computer (IBM compatible or Macintosh) such as installing new software, copying files from one disk to another, renaming files, setting up directories, finding files, etc. Compare the ease of use of both systems.
  - Consider any hidden costs. What will it cost to network computers together? In the case of printers, what are the consummable costs?
  - Minimum system requirements:
    - Multimedia type of computer
    - PowerPC chip/Pentium Chip running at 166-300 MHz or greater
    - 16 - 32 MB of RAM
    - 1.2 GB harddrive or greater
    - 12-24X CD-ROM drive
    - speakers (and sound capabilities)
  - What is the public school district using and can you tap into some of their resources?
  - Who is your immediate resource person that you can turn to help for? Buy what they can help you with.

- 15” color monitor
  - 3.5” floppy drive
  - some form of printer
  - MacOS or Windows 95 or greater
  - ability to connect a modem
- Be aware that there are two (2) common computer platforms

currently considered standard. — Macintosh and IBM compatibles. You would do yourself a service if you carefully research both systems for their strengths and weaknesses.

Now a school should be ready to intelligently purchase a computer system confident that thorough research has been done.

# APPENDIX G

## Network Advantages and Disadvantages

### **Stand-alone computers are limited in the resources they can provide, especially information resources.**

The variety of programs available for students and teachers is growing rapidly. These include productivity programs, simulations, curriculum-related materials, remedial materials, and programs which manage and monitor.

While hundreds of megabytes of data would be prohibitive on a stand-alone computer disk drive, they could be stored on a network server and be accessible to all users on the network.

### **Networks allow users from any location to share resources, programs and data.**

Networking allows the sharing of printers and other peripheral devices such as scanners, CD-ROM players, plotters, modems, tape backup units, etc. from any location.

Information resources can be accessed from the classroom. CD-ROM servers can provide access to resources such as encyclopedias, historical timelines or collections of images by several students at a time.

Network modems allow one or more students, from any computer workstation in the school, access to databases stored on large computers all over the world, or to directly access the same wire services used by newspapers, radio stations and television stations.

Network software enables the teacher to share data files as well as program files with all network users. Teachers can create publicly accessible areas on the server that will be used to store assignments, tests and other files

that students may need. The teacher only has to save a particular file once to make it accessible to all students.

### **Networks are designed to provide the security lacking in stand-alone computers.**

Personal work files are safer as part of a network. Students and teachers can save their personal work in private spaces on the network servers.

Access to those spaces is password protected. This eliminates the use of floppy disks and/or network users' worry about loss of information, damaged or lost floppy disks.

Networks allow the storage of copies of programs in locked, read-only spaces on the server. This allows many users to run the program but prevents anyone from tampering with the program itself. Networking software will also protect program files from unauthorized copying.

### **The maintenance of a network is easier and more efficient than maintenance of a large number of stand-alone computers.**

Networks provide easier maintenance, upgrade of software applications, and troubleshooting user problems. These tasks can be efficiently performed from remote locations and are therefore more cost effective.

### **Networks provide the flexibility for individualized instruction.**

The need for individualization of student learning lends itself to computer use. Schools

can provide individualization through technology. Integrated learning system software provides individualized instruction, enrichment and remediation activities.

**Networking can centralize many of the administrative tasks.**

Administrative applications allow authorized users the ability to store, access, manipulate and share student data, personnel records, and

purchasing information. Secured through passwords, stored information can be immediately accessed for the completion of state and federal reports; student enrollment studies and projections; transportation planning; student/employee attendance; electronic transfer between schools and Board of Education offices; follow-up on purchasing, and special education record keeping requirements.

# APPENDIX H

## Technology and the Internet: Links to Comprehensive Sites

Below are basic resources related to the use of technology and the Internet in schools. Also included are references to sites that can assist educators in technology planning and the technical aspects of networking.

### ***FYI on questions and answers to school Internet user questions.***

(<http://chs.cusd.claremont.edu/www/people/rmuir/rfc1578.html>). This document (RFC 1578) answers the questions most commonly asked about the Internet by K-12 educators. It is a very good background document, albeit a bit dated.

***EDTECH WWW Archive.*** (<http://h-net2.msu.edu/~edweb/>). This site was created to help make the archives and references offered by the many subscribers and participants in the EDTECH discussion list more accessible for reference and study.

### ***Resource Page for Technology Coordinators***

([http://cybergate.com/~blesig/hoffman/tech/ch\\_coord.html](http://cybergate.com/~blesig/hoffman/tech/ch_coord.html)). A good resource with over 100 links to many technology related sites.

***The Technology Coordinator's Home Page.*** (<http://www.wvu.edu/~kenr/TCsite/home.html>). The focus of this site is not content-based or subject-specific educational resources. The primary purpose is to catalogue resources to assist the K-12 school technology coordinators or educators in integrating technology in a wider school context.

***Technology Coordinator's Resource Center.*** (<http://minot.com/~nansen/techcoord.html>). Great resource with links to many sites including technology plans.

### ***Sites for technology education.***

(<http://ed1.eng.ohio-state.edu/guide/resources.html>). This is a brief, annotated list of stable sites which are useful to technology educators.

### ***Educational Technology.***

(<http://tecfa.unige.ch/info-edu-comp.html#Technology>) Part of the WWW virtual library.

### ***Educational Technology Resources.***

(<http://www.cardinalpub.com/etr>). Technology hardware and software news for the educator along with grant and funding information and free educational software offerings.

### ***Guidebook for Developing an Effective Instructional Technology Plan.***

(<http://www2.msstate.edu/~lsa1/nctp/guide.html>) Good guide for developing technology plans. This is a PDF document.

***EDUCOM.*** (<http://educom.edu/>). Educom is a nonprofit consortium of higher education institutions that facilitates the introduction, use, and access to and management of information resources in teaching, learning, scholarship, and research. While targeted at higher education, EDUCOM has a wealth of information of interest to K-12 schools too.

### ***Classroom Connect on the Net.***

(<http://www.classroom.neta>). Classroom Connect, the Web version of the popular magazine, is a resource that will help

you locate some of the most interesting and useful information that is available to K12 educators online.

***Platform for Internet Content Selection, PICS*** (<http://www.w3.org/PICS/>). PICS is a project of the W3 consortium for labeling Net sites for content. It was originally designed to help parents and teachers control what children access on the Internet.

***How to rebut arguments against your school going online***

(<http://www.oise.on.ca/~lromano/issue.html>) This "electronic paper" will rebut the arguments put forward most often by those educators who remain uncertain, uneasy, skeptical, and even resistant to getting Net access. This resource will prove to be an ideal collection of rebuttals for the teacher trying to convince his/her colleagues or school board that access to the Internet is not a luxury, but a necessity - and thus must be brought into the classroom.

***Web66 Network Construction.***

(<http://web66.coled.umn.edu/Construction/Construction.html>). This site will give you enough knowledge to analyze and understand almost any modern computer network. It will also give you a firm foundation to begin learning how to plan your own school network.

***Classroom Internet Server Cookbook.***

(<http://web66.coled.umn.edu/Cookbook/contents.html>). Gives the recipes for setting up an Internet server in a school on a Mac or via Windows.

***A New Internet Protocol for K-12 Schools.***

(<http://www.cvu.cssd.k12.vt.us/K12TECH/k12tech.htm>). A guide for K-12 Schools wanting to get on the Internet. This document is intended to share one school's experiences along the path of using information

technology. It also has a considerable amount of technical information too (e.g., hubs, routers, etc.)

***Tips & Tricks for K-12 Educational LANs.*** (<http://www.thejournal.com/past/april/64hess.html>). Good, practical article.

***Smart Valley Technical Guidelines for Schools.***

(<http://www.svi.org/guidelines.html>). These Guidelines represent an attempt to pool the knowledge of the best and brightest in Silicon Valley to create a set of equipment guidelines for schools.

***Using the Internet in the Classroom***

([gopher://gopher.cic.net:3005/11/classroom](mailto:gopher://gopher.cic.net:3005/11/classroom)). Lists several ways in which teachers have used and are using the Internet in their classrooms. From GSN.

***Computers As Tutors: Solving The Crisis In Education***

(<http://www.concentric.net/~faben1>). This book has one message: schools can use technology more effectively, and for the welfare of students, teachers and the nation, they must do so.

***From Now On.***

(<http://www.pacificrim.net/~mckenzie/>). A monthly electronic commentary on educational technology issues.

***The 'Lectric Learning Web***

(<http://www.chaos.com/learn/index.html>). This corner of cyberspace was created especially for teachers and learners around the world who are working to create new global communities of learning based on communications, collaboration, creativity, and cooperation.

***Information Technology.***

(<http://chronicle.merit.edu/>). Weekly updates on education-related technology news from the Chronicle of Higher Education.

***EdWeb.***

(<http://k12.cnidr.org:90/>). Very good resource! EdWeb explores the worlds of

educational reform and information technology. With EdWeb, you can find educational resources around the world, learn about trends in education policy and information infrastructure development, examine success stories of computers in the classroom, and much, much more.

# APPENDIX I

## Child Safety on the Internet

Children and teenagers can benefit greatly by using the Internet. However, the Internet, like society in general, is made up of a wide array of individuals. Some Internet risks are:

- Exposure to inappropriate material. Children and teenagers may be exposed to material of a sexual or violent nature.
- Exploitation. In a few cases pedophiles have used Internet services to gain a child's confidence and then arrange a face-to-face meeting.
- Harrassment. A third risk involves children encountering e-mail messages that are harrassing, demeaning, or belligerent.

Parents and teachers must take responsibility for children's computer use, especially on the Internet. Common sense rules for children include the following:

1. I will not give out personal information such as my address, telephone number, parents' work address/telephone number, or the name and location of my school without my parent's permission.
2. I will tell my parents right away if I come across any information that makes me feel uncomfortable.
3. I will never agree to get together with someone I "meet" online without first checking with my parents. If my parents agree to the meeting, I will be sure that it is in a public place and bring my mother or father along.
4. I will never send a person my picture or anything else without first checking with

my parents.

5. I will not respond to any messages that are mean or in any way make me feel uncomfortable. It is not my fault if I get a message like that. If I do I will tell my parents right away so that they can contact the online service.
6. I will talk with my parents so that we can set up rules for going online. We will decide upon the time of day that I can be online, the length of time I can be online, and appropriate areas for me to visit. I will not access other areas or break these rules without their permission.

These rules are taken from the brochure *Child Safety on the Information Highway* by Lawrence J. Magid. Printed copies are available free by calling 800-843-5678. For more safety information, check out [www.safekids.com](http://www.safekids.com).

The following Internet sites offer excellent suggestions for Internet safety for children and teenagers.

### ***Guiding Children Through Cyberspace -- URLs.***

(<http://www.infi.net/~carolyn/guide.html>). Great resource with over 50 links! The purpose of this page is to gather together tools and opinions on how to guide children's use of the Internet.

### ***Staying Street Smart on the Web!***

(<http://www.yahooligans.com/docs/safety/index.html>). Practical advice from Yahoo. They also have a good section titled, (<http://www.yahooligans.com/docs/safety/par>

ents.html). What you should know as a parent....

***Safety Tips***

(<http://www.ssdesign.com/parentspage/greatsites/safe.html>). Brief tips on child safety on the Net. From the American Library Association.

***Kid Safety on the Internet***

(<http://www.uoknor.edu/oupd/kidsafe/start.htm>). Another short list of practical tips for safe Net surfing.

***Safe Surfing***

(<http://www.athenet.net/kids/product.html>). Provides links to the popular Net site blocking software along with brief abstracts

***Netsurfing Aids for Child Safety***

(<http://pacific.discover.net/~dansyr/kidsafe.html>). A list with tips and links to other sites on this subject including Net blocking software.

# APPENDIX J

## Acceptable Use Policies

An AUP (Acceptable Use Policy) is a written agreement, signed by students, their parents, and teachers, outlining the terms and conditions of computer and Internet use. It specifically sets out acceptable uses, rules of online behaviour and access privileges. Also covered are penalties for violations of the policy including security violations and vandalism of the system.

All students using a school's computer system or Internet connection should be required to sign an AUP, and know that it will be kept on file as a legal, binding document.

### *Acceptable Use Policies (AUP's) and Guidelines*

([gopher://riceinfo.rice.edu:1170/11/More/Acceptable](ftp://riceinfo.rice.edu:1170/11/More/Acceptable)). This site has a listing of over 30 AUPs and other information on writing an AUP.

### *K-12 Acceptable Use Policies (AUPs) Frequently Asked Questions (FAQ)*

(<ftp://ftp.classroom.net/wentworth/Classroom-Connect/aup-faq.txt>). Good overall document. Lists common questions and answers about the creation of Acceptable Use Policies (AUPs) governing Internet use in a K-12 setting.

### **Example of an Acceptable Use Policy School District #42 (Maple Ridge - Pitt Meadows)**

School District #42 wishes to allow its students to be able to access curriculum based information resources no matter where they may be. To this end, the District permits its students to access the Internet. The responsible use of District facilities is the overriding goal of this policy.

This interconnected world-wide web of computers can provide the students with access to the most recent research and the most up-to-date statistics and opinions. However, the Internet can also provide the students with access to less than desirable information.

While it is in fact, impossible to completely protect students from accidental exposure to inappropriate materials it is important that the district have an acceptable use policy to provide guidelines for the use of this vital informational resource by its students.

It is expected that students will conduct themselves according to the social and cultural norms of their community.

1. School use of Internet is under the direction/supervision of school staff and students are obligated to use it appropriately. They should conduct themselves responsibly, ethically and politely while on-line.

2. Inappropriate use of the Internet is prohibited. Use of obscene or illegal materials, or indulging in activities in support of such activities is prohibited.
3. Students should not allow themselves to become involved in activities or discussions which are illegal or ill-suited and that might include opening themselves to access by people wishing to make inappropriate contacts with students.
4. Appropriate etiquette of Internet use includes:
  - \* respect for the rights of others
  - \* prompt removal of electronic mail
  - \* moderate information storage
  - \* acceptance of responsibility to use the Internet wisely.
5. The School District will not permit its Internet access points to be used for illegal, obscene, or inappropriate purposes.
6. The Internet user accepts the School District #42 (Maple Ridge- Pitt Meadows) regulation and control of CLN use and consents to investigations, where necessary, relating to misuse of CLN as defined by the Ministry of Education (Technology and Distance Education Branch) CLN Acceptable Use Policy.
7. The student and parent will not hold the teacher, school or District liable for any materials retrieved from the Internet.
8. Abuse of the acceptable use policy will lead to suspension and/or termination of the students access to the Internet. The time for this to be determined based upon previous behaviour. (Illegal activities are covered under individual schools' Codes of Conduct and various other District policies.)
9. This agreement shall remain in effect as long as the student is enrolled in School District 42 or until terminated by either party by notification in writing.

The District believes that the benefits of Internet access far outweigh the risks and that the key to safe Internet usage is based on education and example.

### ***Goals and Expectations***

Student use of the Internet is under the direction and supervision of the teacher. Parents may also play a part in supervising appropriate use outside of the school. Under school supervision, the rationale for student use is based on the importance of achieving the following goals.

1. Learn the basic procedures and skills to log into a host computer.
2. Demonstrate a knowledge of telecommunications technology and how it may be used to enhance classroom activities and personal growth.

3. Practise good net-skills by being polite and considerate, and closing unneeded Internet connections.
4. Learn to participate in discussion forums, listservs, conferences and so on where appropriate.
5. Learn to use search tools (such as Veronica, Archie, Anarchie, WAIS to locate and research curriculum related activities, assignments and projects.
6. Learn to utilize e-mail for individual, or group use.

### ***Rationale***

We believe that while there are both pro's and cons to student Internet access, it is a valuable educational tool that can not be ignored if we are to properly prepare students for the challenges of the information age. At this time full student access via CLN and Mosaic for educationally acceptable uses is critical for our students.

### ***District Internet Guidelines for Access***

Students and teachers are expected to conduct themselves in a socially acceptable manner at all times while on the Internet. Access is to be limited to either:

1. Directly curricular related information searches.
2. E-mail with other students or teachers where the interaction is based on acceptable community standards.

The following responsibilities are expected of all Internet Users in our District:

1. Users will not use the Internet for illegal, inappropriate or obscene purposes.
2. Users will not use the Internet for any product and or service advertisement or political lobbying.
3. Users are expected to follow the CLN responsibilities code at all times when using the Internet.

Failure to comply with these guidelines will result in the termination of network privileges for an individual or group.

### ***Roles and Responsibilities***

#### **School Board**

- \* Have and communicate a policy on the student use of the Internet.
- \* Appoint a committee of involved teachers, administrators and parents to review this policy every two years.
- \* Provide schools with a standard informed consent form for parents.

**School**

- \* Have a policy on student use of the Internet that follows the board policy.
- \* This policy to be in the staff handbook and reviewed with the staff before students are given Internet access.
- \* Communicate both the educational benefits and the potential dangers to the staff and students.
- \* Provide teaching staff with a standard informed consent form for parents.

**Teacher**

- \* Review Board Internet policy and comply.
- \* Review School Internet policy and comply.
- \* Review student responsibilities with students before Internet access.
- \* Have all parents sign an informed consent form before students have Internet access.
- \* Provide students with Internet access but also provide an appropriate level of supervision to ensure that the District Internet Guidelines are followed.

**Parent/Guardian**

- \* Be aware of the consequences set out by the school and the district for unacceptable and inappropriate use.
- \* Be aware of the risks inherent in that access, while encouraging safe and acceptable practices of use.
- \* Read the acceptable use guidelines and the school/district policies as they apply to computer/internet access and permit their son/daughter access by signing the informed consent form.
- \* Report misuse of the Internet to teacher or administrator.

**Student**

- \* Sign the informed consent form and understand compliance with this is a condition of access to district computer and electronic resources, and non-compliance may have other consequences as well.
- \* Conduct all of his/her activities in accordance with the guidelines and policies set out for the use of computer and electronic resources related to the school.

- \* Conduct all activities in a responsible, ethical, legal and courteous manner, especially when contacting others on the internet network.
  
- \* Report misuse of the Internet to teacher or administrator.

**Acceptable Use Policy Form**

Students who would like access to the District Wide Area Network and/or Internet services should complete this form and return it to their sponsoring teacher.

Name of Student:

School Name:

I have read the "Acceptable Use Agreement" for the District Wide Area Network/Internet and agree to abide by the provisions therein.

Applicant's Signature

Parent Consent and Signature:

I have read the attached School District 42 "Acceptable Use Agreement" for the District Wide Area Network/Internet and agree to abide by the provisions therein. I understand that although School District 42 has taken reasonable precautions to ensure that inappropriate material is unavailable through the network, it is not possible to completely eliminate the possibility of exposure to such materials. I give permission for my child to receive access to the District Wide Area Network/Internet.

Print name and relationship to student:

Parent/Guardian signature

Consent and Signature of Sponsoring Educator

I give permission for \_\_\_\_\_ (name of student) to receive access to the District Wide Area Network/Internet.

Print name and position:

Sponsoring Educator's Signature

# APPENDIX K

## *Technology Integration Plan Evaluation Worksheet*

The following worksheet statements are designed for simple responses in regard to technology implementation. There are three possible responses for each statement. The responses are Yes, No and NA (not applicable). Mark the one that best describes your current situation. Where possible record comments as you work through the evaluation. These comments can then be used to revise and substantiate your plan.

### 1. *Vision, Goals and Objectives*

- Have you been able to implement the goals and objectives set out in the plan? If not specify the areas which are deficient, and determine what changes need to be made.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Do your goals and objectives still reflect your vision statement and philosophy?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have you been able to achieve the goals set forth in the plan?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Are your objectives still relevant to current educational trends

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have students achieved the goals and objectives of the plan? If not, specify and brainstorm solutions to be added in the revised plan.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

### 2. *Witness and Service*

- Have you been able to implement the goals and objectives set out in the plan? If not specify the areas which are deficient, and determine what changes need to be made.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have the recommendations of the plan proved relevant to the needs of your community.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have the students been able to experience faith enhancement through the plan?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

### 3. *Curriculum Integration*

- Have you been able to implement the goals and objectives set out in the plan? If not specify the areas which are deficient, and determine what changes need to be made.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Do the recommendations in the plan meet the specific curriculum requirements of your province?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have teachers incorporated technology in their day-to-day instruction?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Are the students using technology in their day-to-day class-work?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Has relevant educational software been acquired to support the curriculum?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Is the Internet available and in use for instructional purposes in the school?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have technologies been incorporated into all curricular areas.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

### 4. *Professional Development*

- Have you been able to implement the goals and objectives set out in the plan? If not specify the areas which are deficient, and determine what changes need to be made.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Are the teachers proficient in the use of available technology?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have training opportunities been provide for the teachers to become more proficient in the use of technology?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Do teachers have a source of information and support for their computer generated headaches?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

#### 5. *Administration*

- Have you been able to implement the goals and objectives set out in the plan? If not specify the areas which are deficient, and determine what changes need to be made.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have sufficient funds been set aside for the implementation of the plan?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Has the administration modeled technology literacy?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Does the administration use modern technology to communicate with their teachers?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Has the administration updated record keeping and report making to take advantage of modern technology?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Has the administration been inserviced?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

**6. Technical Support (Hardware and Software)**

- Have you been able to implement the goals and objectives set out in the plan? If not specify the areas which are deficient, and determine what changes need to be made.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Has the hardware purchased met the needs of teachers and students?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Has the software purchased met the needs of the teachers and students?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Are future needs being planned for now so that new purchases will mesh with old equipment?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Does your three year plan still make sense in light of new technological developments?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have purchases been made in accordance with the objectives of the plan?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

**7. Funding**

- Have you been able to implement the goals and objectives set out in the plan? If not specify the areas which are deficient, and determine what changes need to be made.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have sufficient monies come in to cover the purchases outlined in the technology plan?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Are there other sources of money, previously unidentified, which should be added to the plan?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Has a fund been set up to collect the depreciation allowance so that new technology can be purchased to replace outdated equipment?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have those who had donated been shown the benefits of their donation for the students?

(Yes\_\_No\_\_NA\_\_)

Comments: \_\_\_\_\_

- Analyze the effectiveness of disbursement decisions in light of implementation priorities.

(Yes\_\_No\_\_NA\_\_)

Comments: \_\_\_\_\_

#### 8. *Constituency and Parent Support*

- Have you been able to implement the goals and objectives set out in the plan? If not specify the areas which are deficient, and determine what changes need to be made.

(Yes\_\_ No\_\_ NA\_\_)

Comments:\_\_\_\_\_

- Is your constituency aware of the success and future needs of your school?

(Yes\_\_ No\_\_ NA\_\_)

Comments:\_\_\_\_\_

- Have you conducted a parent/constituency survey to assist in the evaluation of your technology plan.

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Have the technical abilities of your students been showcased to the local constituency?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

- Has the community had opportunity to access the technologies in the school through workshops and information nights?

(Yes\_\_ No\_\_ NA\_\_)

Comments: \_\_\_\_\_

# APPENDIX L

## Glossary of Common Computer and Internet Terms

**Bulletin Board Service (BBS):** A place on the network where public messages can be left and one message can reach all users.

**Camcorder:** A hand-held video camera.

**CD-ROM:** Stands for Compact Disk Read Only Memory. An optical disk that can only be read from and not written to.

**Central Processing Unit (CPU):** The main component, or "brain," of a computer. It is the chip that performs all of the information processing. The piece of hardware that contains the CPU is often called the CPU.

**Clip Art:** A series of picture files that are stored on a disk that can be "clipped" and pasted into a document.

**Computer:** An electronic machine that can perform calculations and can process a large amount of information accurately and much more rapidly than the human brain.

**Computer Generated Effects:** The use of a computer in making a film to create certain effects.

**Computer Graphics:** The creation, display, and storage of pictures with a computer.

**Computer-Related Vandalism:** Act of damaging, altering, or destroying a computer, computer peripherals, computer software, or computer service.

**Computer Virus:** A computer program that can reproduce by changing other programs to include a copy of itself. It is a parasite program, needing another program to survive.

**Connectors:** A term used in searching databases which indicates which records satisfying one statement/rule/criterion or both should be selected. The two most common connectors are "and" and "or."

**Data:** A general term for pieces of information that a computer processes.

**Database:** A collection of data organized for search and retrieval. Computer databases are accessed by computer; print databases are available in printed format. A current database is a collection of data updated frequently (hourly, daily, weekly, etc.) and is usually a computer database.

**Desktop Publishing:** A computerized layout program that integrates graphics and text to produce a professional looking document.

**Digitized Effects:** To change analog information into digital information that the computer can use to produce certain effects. For example, when a picture is scanned, the picture image is digitized. This means that the picture image is converted to a digital or numerical format.

**Disk Drive:** The device that reads from and writes to a floppy disk or hard disk.

**Disk/Diskette:** The most common storage device used with microcomputers. A floppy disk is covered by a hard plastic jacket with a metal slide moved to read or write information.

**E-Mail:** Messages, called electronic mail, that are sent and received over a computer network.

**Ethical:** Conforming to accepted professional standards of conduct.

**Hacker:** Computer user who enjoys tinkering with computers as a way to develop new features or who intentionally accesses a single computer, system or a network without permission to do so. They can be there simply to look around or they can be there to destroy.

**Hardware:** The physical equipment of a computer, such as the screen/monitor, the keyboard, the Central Processing Unit, and the storage devices.

**Hypermedia:** A way (for users and programmers) to gather, organize, present, search and customize information from multimedia, databases, and other types of stored information. SuperLink, PowerPoint, and HyperCard are three examples of hypermedia programs.

**Hypertext:** "Active text" where one word is linked to another into a computer program; a type of indexing system.

**HTML:** Hypertext markup language. The programming language used to create WWW documents and define the functions to be performed when one clicks on a button, image, or hypertext link embedded in the page.

**Internet:** A world wide "network of networks" that are connected to each other using IP protocol. The Internet enables file transfers, remote login, electronic mail, news, and other services. Created more than twenty years ago to allow government and university researchers to communicate, it has grown to link sites around the world and includes many commercial groups and individuals.

**Laserdisc:** A disc that is recorded with sound and pictures and read on a laserdisc player by a laser beam.

**Laser Printer:** A printer that produces high quality images using a method similar to that of a photo copying machine.

**Load:** To enter a program or file into a computer's memory.

**Log Out/Log Off:** The act of signing off of and disconnecting from a computer system.

**Login/Log On:** The act of connecting with a computer system and entering your user identification and password.

**Modem:** A device that permits a computer to transmit and receive data over a telephone line.

**Monitor:** A display screen designed as an output device for a computer and usually composed of a Cathode Ray Tube.

**Mouse:** A small hand-held input device with a rotating ball underneath. A computer screen cursor or pointer may be controlled by moving the mouse on a desktop.

**Multimedia:** The merging of traditional computer creation with other media such as laserdisc, television, CD-ROM, sound and video.

**Network:** Several stand-alone or independent computers connected together by cables or telephone lines. In a school computer laboratory, a network usually consists of several microcomputers connected together with a shared network server and printer. The local network may also be connected to remote networks such as the Internet.

**Piracy:** The unauthorized duplication and distribution of copyright-protected software.

**PowerPoint:** Authoring systems that allow for text, graphics, sound, animation, and other effects to be composed for a presentation or for organizing information.

**Printer:** A mechanical output device that can print text and graphics on paper.

**Private Data:** Information which is confidential and only ethically available to selected individuals.

**Public Data:** Information which is available ethically to any user.

**Public Domain Program:** A non-commercial, copyrighted program free of public restriction. Software placed in the public domain can be copied and used without charge.

**Scanner:** A peripheral device that converts text or pictures into bit-mapped data that is put into a computer. The digitized images can then be edited.

**Software:** Program material for computers; instructions to the CPU to tell it what to do with the data it receives. Software programs are usually stored on disks until needed. Sometimes a disk, with its program, is called software.

**Telecomputing:** 1. The act of sending (or receiving) information to another computer via modem and phone line or local area networks (LAN). The exchange of information can be within a building or around the globe. 2. Sending information electronically across a distance using a computer and modem.

**Unethical:** Not conforming to accepted professional standards of conduct.

**Upload:** Sending a disk file from your computer to another computer.

**URL:** Universal Resource Locator A system of references to different Internet sites indicating both the site and the type of protocol or application used to reach it: e-mail, ftp, http, gopher, etc.

**Virtual Reality:** A lifelike world that is created by a computer in which participants can become part of the action.

**Word Processing:** A process using a computer to input and edit text; a computer application that resembles typewriting but allows instant correction of errors, moving text to different locations, and other editing functions.