DOCUMENT RESUME

ED 391 459 IR 017 596

TITLE	Distance Education Network. SSTA Research Centre Report #95-10. SSTA Research in Brief.
INSTITUTION	Saskatchewan School Trustees Association, Regina.
PUB DATE	Nov 95
NOTE	30p.
AVAILABLE FROM	Saskatchewan School Trustees Association Research Centre, 400-2222 Thirteenth Ave., Regina, Saskatchewan S4P 3M7, Canada ($11 Canadian).
PUB TYPE	Reports - Descriptive (141) -- Reports - Research/Technical (143)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Agency Cooperation; *Decision Making; *Distance Education; Educational Change; Educational Media; Elementary Secondary Education; Foreign Countries; *Information Technology; Instructional Innovation; Interactive Television; Internet; Networks; Program Implementation; *Regional Planning; School Surveys; *Technological Advancement
IDENTIFIERS	Canada; Connectivity; *Saskatchewan (Regina)

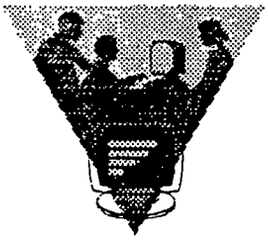
ABSTRACT

The Distance Education Network of the Saskatchewan School Trustees Association (SSTA) was established to provide leadership in exploring enhanced program delivery through distance education and information technology. This report, a product of three meetings of the Distance Education Network in 1995, begins the process of suggesting directions and identifying issues regarding the implementation of information technologies. Sections include the following: (1) "Assumptions..." assembles quotes concerning the irreversible impact of emerging technologies on society and education and describes a resource network called SchoolNet which aims to have all of Canada's schools and public libraries connected to the Internet by 1998; (2) "How Will Information Technologies Be Used?" offers questions to consider in clarifying the purpose of implementing technologies; (3) "Leadership and Coordination" discusses the importance of a vision for such implementation in Saskatchewan, evidenced by the development of necessary skills, incentives, online resources, and an action plan; (4) "Developing Partnerships" raises the possibility of a broad coalition of school boards and a working partnership with Saskatchewan long distance phone services; (5) "Planned Implementation" lists possible models or approaches for implementation; (6) "Directions and Promising Practice" highlights interactive televised instruction already offered in some parts of Saskatchewan and the possibility of learning from other provinces perceived to be more cutting-edge in this regard; and (7) "Research for Informed Decision Making" suggests topics for future inquiry. Appendices include acceptable use policies for information technology and reports the results of the 1995 Educational Technology and Distance Education Survey. (BEW)

RESEARCH IN BRIEF

Distance Education Network

SSTA RESEARCH CENTRE REPORT: #95-10 **DATE:** Nov 95



Information technologies hold great promise for transforming education. The Distance Education Network was established to provide leadership in exploring enhanced program delivery through distance education and information technology. Network participants expressed strong interest in expanding the use of information technologies. This interest was balanced with concern for leadership within an articulated vision.

The Distance Education Network held three meetings in 1995 at the at Viscount Central School, Joe Duquette High School in Saskatoon and at the Saskatoon Travelodge. This report begins the process of suggesting directions and identifying issues regarding the implementation of information technologies, including:

- Assumptions ...
- How will information technologies be used?
- Leadership and Coordination
- Developing Partnerships
- Planned Implementation
- Directions and Promising Practice
- Research for Informed Decision Making
- Appendices:
  - A. Guidelines for Acceptable Use Policies.
  - B. Results of the Educational Technology and Distance Education Survey.

The opinions and recommendations expressed in this report are those of participants in the Distance Education Network. This Network is established by the SSTA:

- to provide a forum and opportunity for school systems to explore and collaborate on innovative approaches to program delivery,
- to identify driving and restraining forces for enhancing program delivery, and
- to report and make recommendations to boards of education and the Association on approaches to enhancing program delivery in Saskatchewan.

Support for the Network is provided by the SSTA Research Centre. Supporting school boards are encouraged to duplicate this report for use within the school division. Each copy should acknowledge the SSTA Research Centre as the source.

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Assumptions . . .

Views on technology and its impact on society range from positively enthusiastic to deeply critical. However, there is no disagreement on the fundamental message that changes in society brought on by emerging technologies are both wide ranging and irreversible. Computers are changing the way we live. The following perspectives on technology and social change represent the wide range of opinions to consider in planning for the implementation of technology in education (adapted from **Intersections on the Information Highway** (1995) published by SchoolNet):

> During the past year, Canada, the United States, Japan and many European countries have announced major programs to implement information highways that will deliver a broad range of multimedia services directly to homes, schools and businesses. Canada's phone companies ... plan to build an $8 billion national information highway over a decade ... At least 80 percent of the homes and businesses in Canada will have interactive services like home banking, shopping, and on-demand movies by 2005."
>
> The Ottawa Citizen, April 6, 1994

- Today's users of new technology are caught between two very different ways of perceiving the world. On the one hand, there is "visual space" - the linear, quantitative mode of perceptions that is characteristic of the Western world; on the other hand, many of the latest technologies are pushing towards "acoustic space" - the holistic, qualitative reasoning of the East. With the advent of the global village - the result of world-wide communications - these two world views are slamming into each other at the speed of light. Western society, previously tied to the printed page, will be plunged into a new form of knowing - habitually relating to simultaneous, discontinuous and dynamic information structures. Emphasis on left-brain standards and skills in our education system will give way, for the first time in 2500 years, to right-hemisphere conditions which nurture the skills of the acoustic world. Back to the basics is the last bugle call of the die-hards.

  McLuhan, Marshall and Bruce R. Powers (1989) **The Global Village: Transformations in World Life and Media in the 21st Century** (Oxford: Oxford University Press).

- Peter Drucker predicts greater social changes as a result of current information technologies. He describes a society, fashioned in large part by exploding technological change, which will be characterized by an economic order in which knowledge will replace the traditional sources of labour, raw materials and capital, as the engine of the economy. With the manufacturing and service sectors rapidly shrinking, and the knowledge sector expected to comprise a relatively small percentage of the future workforce, major social challenges lay ahead. Some of the effects of such changes, massive layoffs, chronic unemployment and a rise in non-standard employment, are already visible. Current income disparities in society between the haves and have-nots are likely to be exacerbated by those who have access to information and those who do not. Drucker predicts a social restructuring which will result in major shifts in power from the government to the social sector. Thinking through the purpose, value and content of education is identified by Drucker as one of the priority tasks of society during this transition period.

  Drucker, Peter F. (1994) "The Age of Social Transformation", **The Atlantic Monthly**, 274.5 (November).

- Computing is not about computers any more. It is about living. Computers will evolve from the confines of keyboards and screens to objects we talk to, drive with, touch and even wear. These liberating developments in information technology will fundamentally change how we learn, work and entertain ourselves.

  Computers are changing the way we live.

  Negroponte, Nicholas (1995) **Being Digital** (New York: Alfred A. Knopf, Inc.).

- Using CD-ROM technology and modems, 'hypermedia webs' would be virtual schoolhouses, allowing self-directed learning by computer and encouraging students to make their own personal and idiosyncratic connections between data. The upshot would be less emphasis on memorizing information and more on fostering the ability to think relationally, to discern logical patterns in masses of data. If we don't teach our kids to think like that, it would be like nobody having bothered to teach a kid to read once Gutenberg printed books.

  Chidley, J. (1994) 'Technology: A Brave New World'. **Maclean's**. (January 8). Page 25

- Futurists predict that there will be dramatic changes in education fueled by a technological revolution. The days of students gathering in buildings for lectures will be dead. There will be far fewer traditional schools and more data-based schools accessible to virtually everyone.

  Tom Keenan, Dean of continuing education at the University of Calgary, as reported in 'The Future Appears - Now'. **The Leader Post** (Saturday, April 15, 1995) page D3.

- Computers are predicted to become more sophisticated, more common and far cheaper. Consider that since 1980, computers have improved 150-fold. If you applied a similar improvement to a Boeing 747 it would carry 500,000 people at 20 million miles per hour and an around-the-world ticket would cost one cent.

  Frank Feather author of **The Future Consumer,** as reported in 'The Future Appears - Now'. **The Leader Post** (Saturday, April 15, 1995) Page D3.

- Technophiles see only what new technologies can do and are incapable of imagining what they will undo .... a dissenting voice is sometimes needed to moderate the din made by the enthusiastic multitudes. We need to become more critical of the relationship between technology and culture, to understand and control technologies and view them in the context of human goals and social values.

  Postman, Neil (1992) **Technopoly: The Surrender of Culture to Technology** (New York: Alfred A. Knopf).

- I don't think the technology is as big an issue in education as people's attitudes and values. Putting computers into schools is like if for some reason we thought kids wouldn't succeed if they didn't become musicians so governments decided to put pianos in every classroom. Its not going to help. Any musician will tell you that music is not in a piano.

  Kay, A. (1990) "On Computers In Education." **BYTE** (September) Page 232.

SchoolNet is Canada's national electronic educational resource network being implemented by Industry Canada along with provincial and territorial ministries of education, other educational stakeholders and industry. SchoolNet's aim is to connect all of Canada's 16,500 schools and 3,500 public libraries to the Internet by 1998. Access volume of SchoolNet is growing at a phenomenal 65% per month! SchoolNet can be explored at (schoolnet.carleton.ca). Teachers, students and members of the general public can access, free of charge, over 1500 electronic educational services through SchoolNet. A school system database is being initiated in 1996 including information related to policies, financial information, individual expertise, legal developments, social trends, and educational change indicators. SchoolNet is investing $52 million over the next three years to ensure quality educational resources are available on-line.

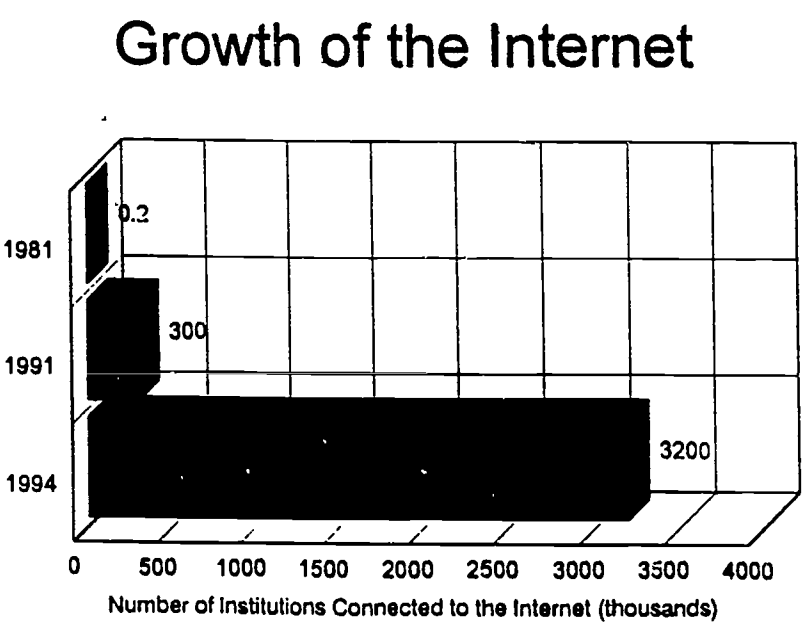
"It's very interesting to see what's going on here in Canada in a number of areas. SchooNet is the leading program in the world in terms of letting kids get out and use computers."
Bill Gates, president and founder of Microsoft quoted in the **Ottawa Citizen** (November 25, 1995) Page 1.

A study commissioned by the Canadian Teachers' Federation (1995) entitled **What Services Do Canada's Teachers Want?** attempts to provide direction for SchoolNet. The report identified three broad categories of services that teachers would like to have from the Internet:

- Resources: lesson plans, free access to SchoolNet, news services, library access, software on-line, databases.
- Connections: discussion groups, class twinning, experts on-line.
- Learning: on-line lessons, credit courses.

Teachers expressed the opinion that the continuing reduction in resources in their school made it hard for them to believe that a national telecommunication network like SchoolNet would ever be available to them in any meaningful way.

Development of the information highway is a work in progress. The use of information technologies in the 1990's is like being in the second wave of pioneers; a good deal of work has already been done, but there is even more to come. Many experts now predict that the information highway will likely take shape as a 'network of networks', built over time as economics dictate - just as our system of physical roads and highways evolved from gravel roads to major highways.



* Edwards and Carpenter (1995) Kids, Computers and You. page 72.

The main uses of the Internet are reported as:

1. Electronic mail or e-mail: E-mail is cheap and fast and offers instant access anywhere in Saskatchewan or the world at one basic rate. Any information on a computer can be exchanged. Examples of Saskatchewan addresses include:

Saskatchewan School Trustees Association	ssta.regina@sasknet.sk.ca
Saskatchewan Education, Training and Employment :	
Ken Horsman	khorsman@sasked.gov.sk.ca
Larry Symes (Multimedia Learning)	symes@ sasked.gov.sk.ca
Margaret Lipp (Curriculum and Instruction)	mlipp@ sasked.gov.sk.ca
Janice Charlton (Special Education)	jcharlton@ sasked.gov.sk.ca
Darryl Hunter (Assessment and Evaluation)	hunter@sasked.gov.sk.ca
Creighton S.D. No. 111	csdno111@sasknet.sk.ca
Kerrobert S.D. No. 44	kerrobertsdofc@sasknet.sk.ca
Outlook S.D. No. 32	Outlook.sd@Sasknet.sk.ca
Prince Albert S.D. No. 3	sgange@paschools.pa.sk.ca
Regina RCSSD No. 81	RRCSD@ibm.net

2. UseNet Newsgroups: Newsgroups are discussion groups where users can post or download files and images. There are currently over 5000 newsgroups devoted to a specific topics.

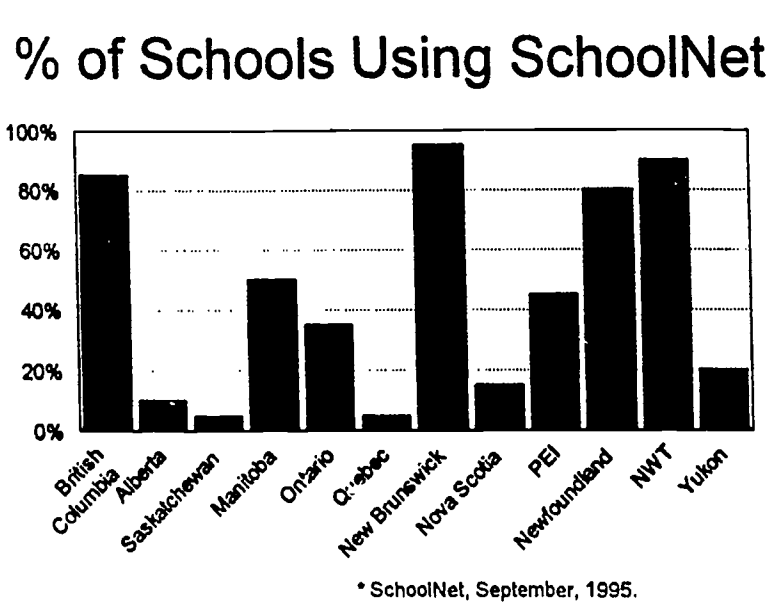
3. World Wide Web: The www is a menu-based format that connects to other computers as a source of information that combines text, pictures and sound.

The cost of access to the Internet in Saskatchewan differs by area and service provider. SaskTel offers the Internet for a $35. connection fee plus $19.95 per month (using an existing telephone line) for:

- Urban areas: 10 hours free time and $3.00 per additional hour
- Rural areas: 3 hours free time and $6.00 per additional hour
- Some northern areas cannot access the Internet.

Basic e-mail/ Internet costs for one line for one month are projected as follows (assuming the line was left open 5 hours per school day):

- $300. per month for an urban school or school board.
- $600. per month for a rural school or school board.



* SchoolNet, September, 1995.

The following assumptions about computers are identified for education and schools: (from Edwards and Carpenter (1995) **Kids, Computers and You.** p.49)

- Computers are playing an increasing role in all our lives and are not a passing fad.
- Computers, with their multiple uses, can become valuable learning tools in a school.
- Computer use is becoming so pervasive in everyday life, it is important that everyone develops basic computer skills.
- The earlier a child is introduced to computers, the more comfortable he or she will be around them.

Computers are not typewriters.

Numerous studies point to the tremendous potential of information technology, edutainment software and the information highway to enhance student learning performance. (Edutainment is a combination of education and entertainment software; suggesting games have educational value.) While new technologies have the potential to form the basis of programs just as glossy textbooks once did; desired learning outcomes should guide how technology is used in schools.

Information technologies are rapidly transforming the way our children learn. Students and teachers now have access to a world of ideas and information in the classroom or at home. However, spending priorities and budget constraints mean that many schools cannot afford the computers and resources that are needed to benefit from these opportunities.

If computers are changing the world and the way we live, we must ask, "What should our children be doing with computers?" It is important that boards of education clarify the direction and plan for utilizing information technologies.

HOW WILL INFORMATION TECHNOLOGIES BE USED?

Leadership begins with a sense of vision. Without a vision there can be no leadership.

A first step is to clarify the purpose of implementing information technologies. Network participants stressed the necessity of beginning with a clear understanding of the goal in mind. The implementation of information technologies requires a clearly defined 'desired future state'. Planning can then move to assessing the gap between the present and future state, and creating a realistic transition plan of action to close or bridge the gap. Questions to consider include:

- How should a school be organized? What should our children be doing with computers?
- What sort of infrastructure (hardware, software, expertise) will you need to achieve your vision?
- What kind of technology belongs in a classroom?
- How are computers being used now? How should computers be used?
- How accessible should computers be? Should computers be in labs or classrooms?
- Does edutainment software belong in school?

- Will computers prepare students for employment?
- Do boys use computers more than girls?
- If expenditures for information technologies are increased, what will be reduced?
- Why rush into information technologies; why not wait 10 years?
- What is the Internet? Is the Internet the information highway?
- What can students do on the Internet?
- What can teachers do with computers?
- Why are teachers reluctant to use computers?
- Will computers ever replace teachers?
- Do teachers need their own computers?
- What kind of support do teachers need?
- Where does funding come from?
- What is the role of parents and the community?

What should our children be doing with computers?

Why Use Technology?

- Students learn and develop at different rates - technology can individualize instruction.
- Our graduates must be proficient at accessing, evaluating, and communicating information using the tools of the information age.
- Our graduates must be globally aware and able to use resources that exist outside the school.
- Our students must be engaged in problem solving that is realistic and meaningful - technology is an effective tool for engaging students in solving complex problems.
- Technology can foster and increase the quantity and quality of students' thinking and writing.
- Technology can nurture artistic expression.
- All students need access to information and a broad range of courses.
- Schools must increase their effectiveness and efficiency.

According to one study done by the Centre for the Study of Computers in Education at York University in Toronto, students using computers in writing were far outstripping students in traditional schools by grade five in the sophistication of their compositions, as well as their mastery of spelling, grammar and syntax.
"The Future Is Now At This Model School".
Globe and Mail (Friday, March 31, 1995). p.A24

Student Learning: Improving student learning should be the primary objective of investing time and money in information technologies. Programs should be designed to ensure that students achieve the desired learning outcomes for content and learn new ways of processing information. For example, one school board's priority is to improve student writing. How might technology be used to support this goal? Distance education should also be explored as a valuable resource for meeting the needs of individual learners. Adopting new technologies offers an opportunity to ensure that programs are designed to prepare students for life in the 21st century.

School Administration: Technology has a proven record of improving effectiveness and efficiency in certain administrative tasks. For example, if the school board wishes to better connect the schools in the system - technology is one tool that can assist in achieving that objective.

Saskatchewan school systems were surveyed* in the fall of 1995 regarding the implementation of information technologies. Over half of the responding school boards reported having no established plan or being in the process of developing a plan to guide implementation of information technologies. School systems with an established plan were more likely to be using the Internet, electronic mail and value the potential of information technologies. The primary purposes for investing in educational technology were ranked as:

- Resource support for classroom instruction
- To better prepare students for life and work experiences
- To extend and enrich secondary program offerings
- Tools to transform and individualize instruction
- To connect learners/schools in a local area network
- To extend the viability of small schools

* See the results of the Educational Technology and Distance Education Survey in APPENDIX B.

> Technology is the application of scientific knowledge to the solution of practical problems.

LEADERSHIP AND COORDINATION

Leadership and co-ordination issues are a high priority for network participants. A good deal of frustration was expressed with the difficulty of establishing implementation directions for information technologies given unresolved questions regarding the current pilots in Saskatchewan and clear direction from the province. Expectations regarding teaching and learning using information technologies and the impact on schooling is not clear. Boards of education are reluctant to invest in information technologies and distance education until these questions are resolved. The complexity of change within a context of many unanswered questions frustrates local leadership with not knowing where to begin.

Provincial implementation of information technologies in Saskatchewan has been plagued by the following concerns:

- People do not understand the vision and directions.
- People are concerned about the provincial commitment to the funding of education.
- People do not implement properly what they don't understand.
- People do not implement what they are not committed to.

Participants indicated a provincial distance education strategy is necessary to develop clear understanding of the direction for Saskatchewan that will enable school boards to make informed decisions to meet local needs. Leadership challenges include:

- **Vision:** Leadership must begin with a vision and without a vision there can be no leadership Collectively, we must determine the desired future state and begin the process of building that vision. It is important to acknowledge that distance education is not a panacea for declining enrolments in rural schools. Increasing reliance on technology will result in a corresponding loss of local control. Questions include: How will information technologies be implemented in

Saskatchewan? What is the role of Saskatchewan Education, Training and Employment? What is the appropriate voice and role for school boards, SCN, and SaskTel? How are decisions being made? Is there a will to address legislative and regulatory barriers?

- **Skills:** Opportunities to develop greater understanding about information technologies and their application to education are essential for students, teachers, administrators, trustees, and parents. Resource personnel with technical skills who are knowledgeable and credible are essential to support school system implementation and maintenance of information technologies. Questions include: How can we increase training and awareness opportunities? How might school boards and the government of Saskatchewan work together to ensure that resource people are available? How do you encourage staff to accept and utilize new technologies?

- **Incentives:** Change occurs only when there are incentives. Information technology is an expensive tool that may make certain processes easier, but has a high depreciation value. Implementation will increase the costs of education at least in the short term. Questions include: Will school board pilots be supported? What is the long term plan? How will Internet services be implemented? At what cost?

- **Resources:** The financing of information technologies is a major hurdle. On-line resources must be developed to support Saskatchewan curriculum, instruction and evaluation. Correspondence courses should shift from paper-based to on-line delivery. A combination of satellite and fibre optics delivery approaches must be supported to meet diverse needs. Programs must be evaluated to inform school board decision making. Questions include: How will the correspondence school and distance education programs be integrated? What are the advantages and limitations of using information technologies? What impact do information technologies have on teaching and learning? What information is available now? Who can school systems contact for more information? How might greater regional and provincial co-operation be achieved?

> 'We can spend time worrying about where we will get more money, or we can focus on using what we have now.'

- **Action Plan:** While individual school system action is occurring, many of the challenges can only be addressed at the provincial and national level. A planned approach is preferred. Guidelines for school board policy development, hardware and software purchases, and maintenance are essential. Questions include: Where does a school board begin? How can school boards help Saskatchewan Education, Training and Employment to clarify the vision?

> What is the appropriate balance between local autonomy for boards of education and having the province make all decisions?

DEVELOPING PARTNERSHIPS

A school board cannot do it all alone. Successful adoption of information technologies and distance education in Saskatchewan requires a comprehensive and integrated approach including K-12 and adult education, libraries and other community groups. Such a comprehensive approach could enhance programs and offer enriched services in communities. In some instances, issues of 'control', 'jurisdiction' and 'competition' are seen to be counterproductive. There are several examples of successful partnerships currently being developed.

Boards of education might become more entrepreneurial. Who would be interested in accessing information technologies in your community? Who needs technical support? Could boards of education sell these services?

Who are the possible partners for using educational technologies in your community?

- ✒
- ✒
- ✒
- ✒

Successful implementation of information technologies for smaller school divisions may require the development of shared service agreements or coalitions to develop the necessary supports. A broad coalition of school boards and other community organizations provides a promising alternative. Individual costs could be reduced through a shared services approach.

SaskTel is a critical partner in the implementation of information technologies in Saskatchewan due to its monopoly on delivery services and as an agent of government public policy. The expansion of long distance calling zones and lowering of transmission costs for schools are essential for implementation in education. A working partnership with SaskTel is necessary to address the issue of equity of access for rural and northern schools.

PLANNED IMPLEMENTATION

Participants encouraged a rational, planned approach to implementing information technologies. Current demands on financial resources as well as staff time and energy makes it essential that efforts be based on a well thought-out strategy that is complementary to provincial initiatives. Resources are too scarce to pursue false directions. While participants welcomed incentives to advance the implementation of information technologies, concerns were expressed that the current lottery approach is too limited in scope.

Network participants suggested that the educational stakeholders in Saskatchewan should be working collaboratively to implement information technologies just as with other major renewal efforts. Options to consider include:

> Businesses have found that the cost of buying a computer and software make up only 17% of the real cost to the company. The largest cost factor is not in the purchase price but in training and support, and the amount of downtime for employees to acquire a whole new set of job skills.
> Edwards and Carpenter (1995) **Kids, Computers and You.** p.110

- Cancopy Approach: Agreements should be negotiated at the federal and provincial level to ensure lowest possible on-line rates for the education sector. Perhaps a 'Technology Development Grant' should be considered similar to the former EDF grant.
- Resource-Based Learning Model: Provincial leadership should sponsor professional development opportunities and support in the same manner as other initiatives in the past.
- Special Education Model: Funding and support services could be integrated into the way Saskatchewan Education, Training and Employment does business as with special education.

Effective implementation of information technologies cannot be achieved by one individual or group. A planned collaborative approach is essential. Issues to consider include:

- Should distance education be delivered from several locations or a centralized correspondence school?
- Should one provincial timetable of course offerings be developed for distance education?
- How can boards of education ensure availability of knowledgeable and skilled personnel?
- Should conditional funding for the implementation of information technologies be supported by boards of education? Will a more eclectic approach be as efficient or effective?
- Can a shared leadership strategy be developed with input from all the education stakeholders?
- How can a broad range of training and awareness opportunities be made available? Awareness sessions regarding what is possible and more in-depth sessions on how to move forward are necessary. It is important that we do not reinvent the wheel.
- Standards for hardware and networking should be shared. Financial requirements should be included.
- Equity issues related to access for rural and northern schools should be addressed by Saskatchewan Education, Training and Employment.

DIRECTIONS AND PROMISING PRACTICE

A survey of Saskatchewan school boards indicated that systems currently using information technologies expressed fewer concerns and envisioned greater potential. For example, school systems not using the Internet placed a lower value on e-mail, access to on-line resources and expressed a higher level of concern regarding the need for censorship on the Internet.

Network participants indicated interest in further developing models and approaches already known and proven in Saskatchewan including:

- Interactive Televised Instruction: Distance education courses are being delivered by the Saskatchewan Communication Network (SCN) on satellite TV with interaction through telephone and facsimile. Students can see, hear and interact with their teacher.
- Distance Education Seminars: Sessions for trustees and educators might be delivered across the province more efficiently using a distance education approach.

> Imagine a brand new car is dropped into a third world village that has no knowledge of modern technology. The keys are in the ignition. Climbing inside, the natives discover that the seats are comfortable for sitting or sleeping. The trunk provides excellent storage for your belongings. The car offers protection from the rain, and can keep you warm when it is cold or cool when it is hot. The instrument panel can bring you music or fire with the push of a button. It provides light at night and a horn to scare away animals. All of these practical functions would attract a lot of excitement but you would never know its real power or function until someone put it on a highway. Adapted from Edwards and Carpenter (1995) **Kids, Computers and You.** Page 6.

In addition, a good deal might be learned from other jurisdications who are perceived to be leading in this area such as British Columbia and New Brunswick. Saskatchewan can benefit from the work that others have already accomplished.

RESEARCH FOR INFORMED DECISION MAKING

Network participants strongly supported the need for information to inform decision making. Research is necessary to monitor the impact of technology on teaching and learning. Broad areas that need to be examined include:

- Has the implementation of information technologies improved student learning?
- What are students learning?
- What is happening in other jurisdictions? What works?
- What types of educational technologies are being used effectively?
- Is there a model delivery system?
- What are the effects of technology?

SPELL CHECKER

I HAVE A SPELL CHECKER.
IT CAME WITH MY PC.
IT PLANE LEE MARKS FOR MY REVUE,
MISS STEAKS AYE CAN KNOT SEA.

EYE RAN THIS POME RITE
THREW IT.
YOUR SURE REEL GLAD TWO NO.
ITS VARY POLISHED IN ITS WEIGH...
MY CHECKER TOLLED ME SEW.

A CHECKER IS A BLESS SING
IT FREEZE EWE LODES OF THYME.
IT HELPS ME RIGHT, AWL STILES TWO REED,
AND AIDES ME WHEN AYE RIME.

EACH FRAYS COME POSED UP
ON MY SCREEN,
EYE TRUSSED TOO BEE A JOULE.
THE CHECKER POURS ORE
EVERY WORD
TO CHEQUE SUM SPELLING RULE.

RE FORE A VEILING CHECKERS,
HOUR SPELLING MITE DECLINE,
AND IF WERE LACKS OR HAVE A LAPS,
WE WOOD BE MADE TO WINE.
BUTT NOW BEE CAUSE MY SPELLING
IS CHECKED WITH SUCH GRATE FLARE,
THEIR ARE KNOW FAULTS WITH iN MY CITE,
OF NON EYE AM A WEAR.

NOW SPELLING DOES KNOT PHASE ME,
IT DOES KNOT BRING A TIER
MY PAY PURRS AWL DUE GLAD DEN
WITH WRAPPED WORDS FARE AS HEAR.

TO RITE WITH CARE iS QUITE A FEET
OF WITCH WON SHOULD BEE PROUD.
AND WEE MUSSED DEW THE BEST WEE CAN,
SEW FLAWS ARE KNOT ALOUD.

SEW EWE CAN SEA WHY EYE DEW PRAYS
SUCH SOFT WEAR FOUR PEA SEES.
AND WHY I BRAKE iN TWO AVERSE
BY RIGHTING WANT TOO PLEAS.

AUTHOR UNKNOWN
(POSTED ON THE INTERNET)

Acceptable Use Policies: Information Technology

A good deal of concern exists regarding the need to develop acceptable use polices for information technologies, specifically the Internet. There are a number of approaches to consider:

- software is available now to lock-out what is undesirable on the Internet,
- software is currently being tested that will allow a site to select only what is desirable,
- most schools and school systems find it worthwhile to develop acceptable use policies, and
- groups in the U.S.A. and Canada have organized to lobby governments to develop regulations that would make the posting of unacceptable material a crime.

Software: Software is available now to lock-out what is undesirable on the Internet. **Net Nanny** (±$70.) maintains a dictionary of information or phrases the school doesn't want sent from or received by the school computer (i.e.: personal information, credit card numbers, profanity, or adult bulletin boards). If **Net Nanny** encounters these during a surfing session, it shuts the computer down. **Surfwatch** (±$70.) filters out unwanted material on the Internet by screening and then blocking out the sites. The software is password protected and can be updated regularly. **SafeSurf** is a new software program currently being tested that is designed to only permit those sites that identify themselves with a child-safe code to be accessed by children. All other sites would be rendered invisible.

Acceptable Use Policies: The Internet has been compared to being like a large city. Just as you wouldn't take a young child and drop them off in the city to find their own way and look after him/herself, it is recommended that schools develop policies regarding appropriate technology use. SchoolNet has identified certain 'trigger' words which will automatically shut the network down to the local school. Schools are encouraged to monitor who is using SchoolNet when the system shuts down. Experience has shown that schools should be more concerned about supervising what their students are doing, than worrying about the intrusive evils of the Internet.

Many ideas and examples of acceptable use policies are available on the Internet (http://www.rice.edu/armadillo/acceptable.html, for example). The following are suggested as key questions to address in a school board policy:

A. Philosophical stance
   1. How is the delivery of information changing in the society?
   2. What is the proper relationship between information and student learning?
   3. How does access to information relate to citizenship in a democratic society?
   4. What relationship should the new information technologies and resources have to the division's curriculum and instructional strategies?
   5. What relationship should the new information technologies and resources have to the division's selection and screening of instructional materials?

B. School/ home responsibilities
   1. How much supervision do students require at various age levels?

2. Who should provide the supervision? How?
3. Should parental permission be required for independent use?
4. Who decides which information sources are acceptable? The school? parents?

C. Staff responsibilities
   1. What are appropriate roles of teachers, administrators and library media specialists? Should they be pre-screening materials and sites? Should access to some sites be prohibited?
   2. How is guidance different from censorship?
   3. How important is it that staff learn to conduct research and show students how to research with such new tools?
   4. Should staff blend this new kind of research throughout curriculum?
   5. Should staff teach new research skills?

D. Student responsibilities
   1. What constitutes responsible behavior and communication?
   2. What is the connection to existing policies and procedures?
   3. How much privacy can students expect? Under what circumstances can their messages be scanned or their telecommunications be watched? What are the procedures governing such issues?
   4. What limits, if any, should be placed upon freedom of speech?

Typically, in most divisions there will be a set of procedures which spell out in considerable detail how to translate into school practice the broad principles stated in the board policy. For the Internet, these would speak to program development, roles and sanctions.

For more information, see:

Guidelines for Developing AUPs

- The CoVis Network Use Policy
  (includes a template for you to use, and a paper on the topic.)
  ||http://www.covis.nwu.edu/CoVis AUP.html||

- California Depart Ed Acceptable Use Policy District Guidelines
  ||gopher://goldmine.cde.ca.gov:70/00/C D E Info/Acceptable Use/Policy||

- Creating Board Policies for Student Use of the Internet
  by Jamieson McKenzie, Ed.D.
  ||http://www.pacificrim.net/~mckenzie/fromay95.html||

- Guidelines for Developing a School or District "Acceptable Use Policy" ||Bellingham, Washington|| -Board Policy, Student Access To Networked Information, Resources, -Administrative Procedures: Student Access To Networked Information Resources, Parent Permission Letter (text)

Educational Technology and Distance Education 1995 Survey

This report provides the results of the SSTA Research Centre **Educational Technology and Distance Education Survey** conducted in the fall of 1995. The findings outlined in this report represents responses received from 55 school divisions as of September 29, 1995.

Responses to this survey were completed by:	The enrolments of the school divisions that responded to the survey included:
31 directors of education	21 S.D. - Under 899 students
10 boards of education	20 S.D. - Between 900 -1499 students
8 other school division staff	9 S.D. - Between 1500 - 2499 students
5 individual trustees	5 S.D. - Over 2500 students
1 not identified	

Part I: Planning and Purpose

Does your school division have a plan for the implementation of educational technologies?

23 school divisions reported having developed a plan for the implementation of educational technologies. 32 school divisions reported having no established plan or being in the process of developing a plan.

What type of support is required to develop a plan?

'This plan has now been completed (not enclosed) i.e. actions completed. - The planning process is under way for a five year plan. - Planning is in process. - Our last plan was in 1989. It is obsolete and we are in the process of completing a new plan for the total city systems. - We have a committee in place, but the mandate is growing. Managing that mandate is difficult. - We have established a committee that is in the process of developing policy and curriculum in this area. When done we will be glad to make a copy available. - All schools could have at least single stand alone call in to Internet, standardized DOS/Windows platform and perfect office. - None at present. - We

have a series of different initiatives but they are not connected as the actual extent and purpose of technology as related to instruction is not known or understood. - The technology plan is at the end of its 3 year cycle. We will be developing a new technology plan in the near future. What we would need is an indication of what schools will require in new technologies in each year of a three-year plan. - Quite extensive planning procedures have been undertaken. A copy of the plan will be available during the 1995-96 school year. - We are currently in the process of establishing such through our recently established technology committee. I think a great deal of support is needed in the technical area as well as in facilitating the consideration of a # of options. - We require an individual with adequate training to guide our division in developing this plan. - Consultative, specialist support. - What is the best Direction to go? To what extent do you develop programs? - The school division uses our own consultative staff plus support from outside consultants. - We have set up a technology committee to set up a plan.'

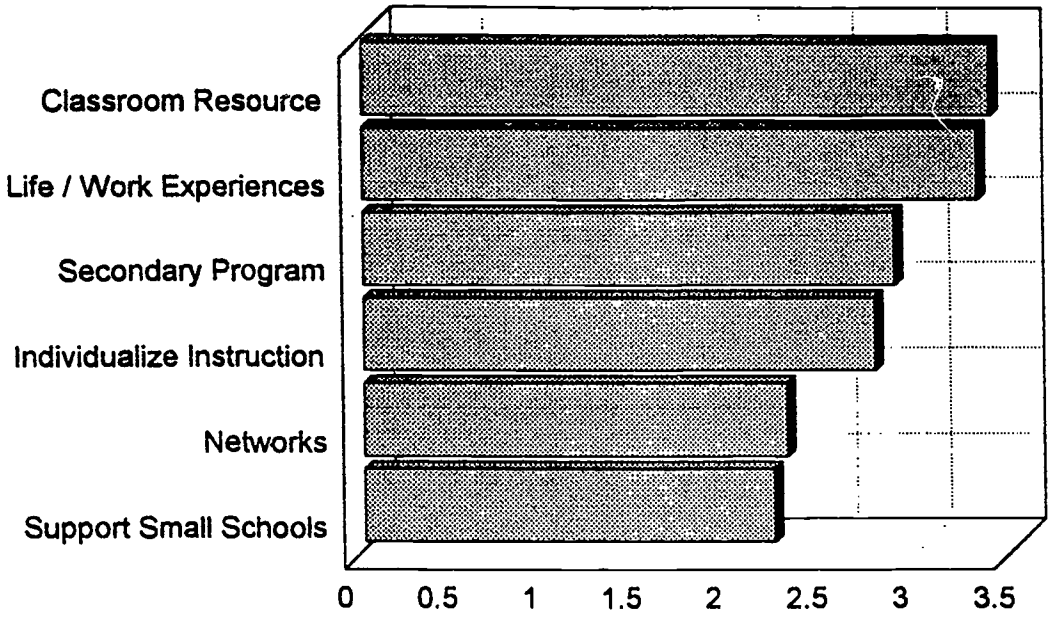
'Financial. - Financial. - Financial. - Financial. - Financial. - We have a committee established and a fairly good handle on our needs. Financial resources are what prohibits us from having a functional plan. - Put aside so much money for the next 5 years. - We have discussed the options numerous times and we are involved with SCN programming from Viscount as two schools. The other options are need financial support to do. - Costs not available. - Equipment, resources, money. - Yes, we have looked into this. But until definite funding is available we cannot go ahead. The school principal has his best of computers, etc. - Financial Commitment and staff involvement. - Financial assistance/Technical Expertise - Better rates to link to Internet/SchoolNet. - Implementation of the plan will require support-resources such as funding, equipment, training/professional development. - Schools must provide technology needs almost exclusively from their global budgets, are not earmarked for only one purpose. Exception: Federal $ on pilot project to support Internet access was dedicated exclusively for this purpose.'

'A lot of dedicated people. - Networking with other school systems to share ideas.- Staff training & in-service. - Professional Development. -More knowledge regarding the usefulness of resources such as Internet. - We are very concerned that the U of S doesn't require more classes in Communication/Technology. These are not even required in the program for librarians. - A good document/conference to discuss use of technology in classrooms - LEADS Leadership Committee is also discussing/possibility, we could team on this topic. - Information of interest would consist of multimedia strategies, networking information and ways and means of using the Internet. - Philosophical and financial commitment on behalf of the parents and board, teachers and principals.'

'More knowledge regarding Sask. Ed curriculum expectations. - SETE needs a clear vision statement so we can function and plan more effectively in this area. - More direction from the Dept. of Education regarding expectations, funding, etc. - More information. from the Dept. like the hardware guidelines recently distributed.'

'Not a priority at this time.'

Primary Purposes for Investing in Educational Technologies

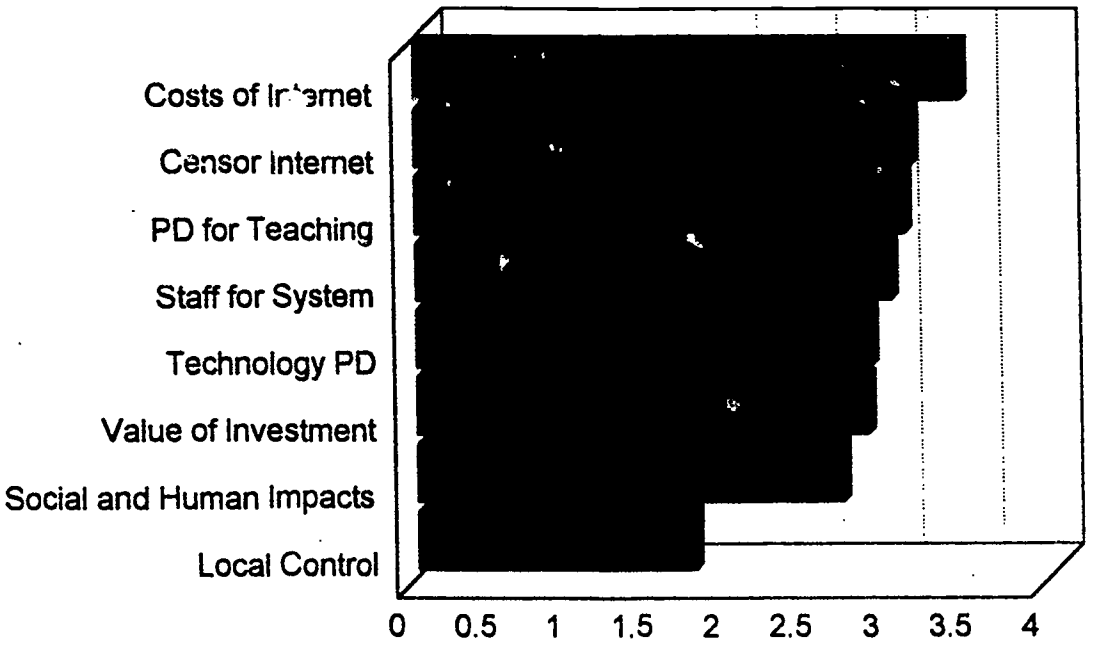


The primary purposes for investing in educational technology are:

3.38	Resource support for classroom instruction
3.31	To better prepare students for life and work experiences
2.87	To extend and enrich secondary program offerings
2.76	Tools to transform and individualize instruction
2.29	To connect learners/schools in a local area network
2.22	To extend the viability of small schools

4 = critical importance
3 = very important
2 = some importance
1 = little importance

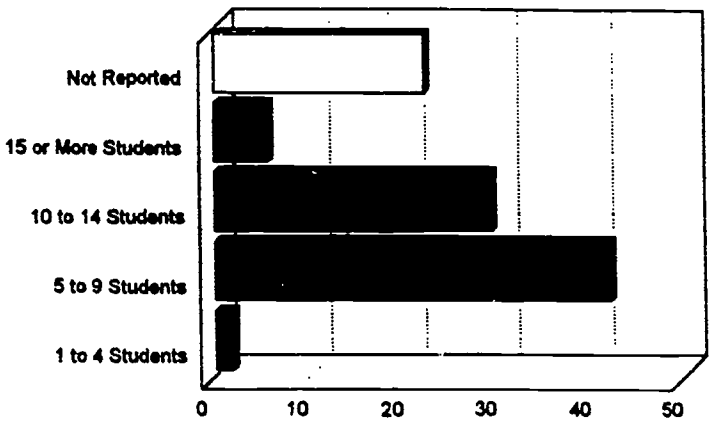
Levels of School Division Concern



Concerns were expressed regarding:

3.44	The costs of accessing the Internet for schools
3.13	The need to censor and regulate Internet information
3.09	Availability of PD for transforming teaching / learning
3.00	The availability of staff for system maintenance
2.87	Availability of PD regarding technology/ Internet
2.85	The benefits of investing in technology
2.69	The social and human impacts of technology
1.76	Loss of local control with increasing globalization

The Number Students Per Computer



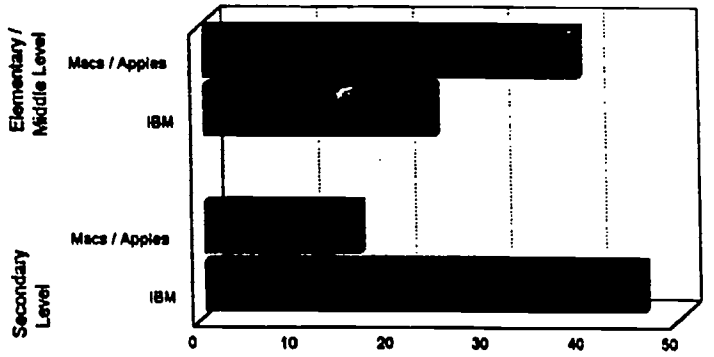
An average of 2.56% of current budgets was reported as dedicated to educational technology with a range of 0 to 10%.

An average of .56% of current budgets was reported as dedicated to technology support (PD, staffing, licenses) with a range of 0 to 5%.

Based on the enrolments reported and the number of computers currently in use, there is an average of 7.76 students for every computer in Saskatchewan schools. A range of 3.7 to 18.3 students for every computer was reported.

Respondents reported that computers were being utilized:
55.1 % in labs, 19.3% in classrooms, and 6.6% in resource centres
Elementary / Middle Level: 39% Macs or Apple II, 24% IBM
Secondary Level: 16% Macs or AppleII, 46% IBM

Percentage of Types of Computers In Use



The following school courses were identified as priority areas for the development of quality multimedia distance education (ranked by frequency):

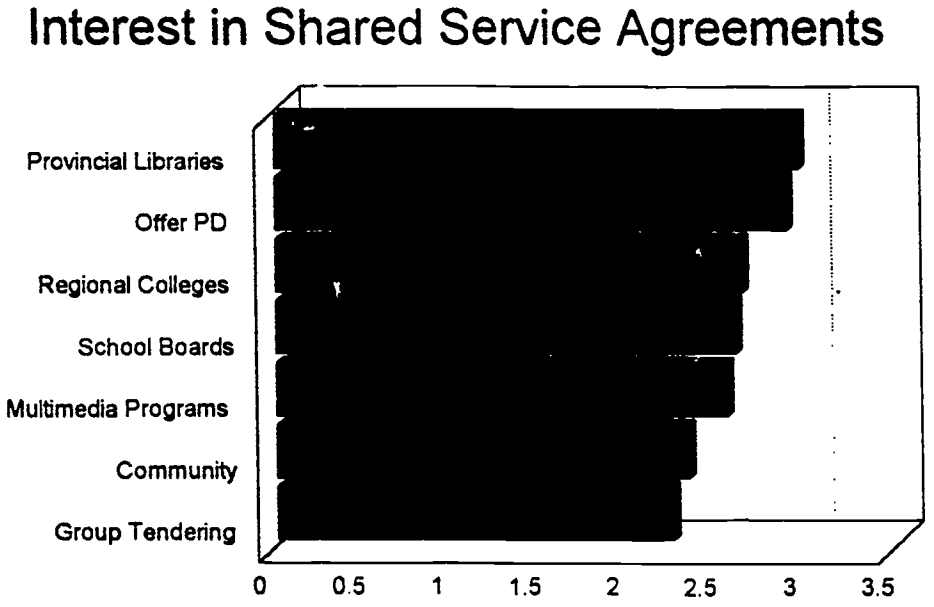
Secondary Math and Calculus	Secondary Sciences	Secondary Language Arts
French 6	Second languages such as Mandarin, Chinese and Spanish.	Social Studies (all levels) Geography & History
Information processing 20/30	Computer Applications and effective use of the Internet	Computer Science
Word processing.	All required areas of study.	Accounting
Computer literacy 7/8	Integration of various subject areas. i.e. Science, Arts Ed and Social Studies.	Arts Education
Business courses.	Industrial/Practical Arts	Resource Based Learning
Enrichment beyond the CORE	Arts Education 9 -12	None we have yet to see the need.

Comments:

'The college of education needs to teach new teachers how to integrate the new technologies into the instructional package in the classroom--not in teaching students how to use the technologies but rather how to incorporate the resources available through the technologies into the lesson plans. - Difficult to say calculus, one example, French difficult to do, likely options such as mechanics, psychology, etc.-We have at this stage not gone into distance education. However, we are looking at the possibility. -We are an elementary system; there are no priorities for us. - With increased use of technology related to resource-based learning more computer will be located in Learning Resource Centre and classrooms over the next 3 years. - Our elementary schools are in very poor shape with most of our old apples somewhere between 10-14 years old...still going. - Both distance education strategies and course enhancement should be primary focuses along with resources for all areas. - Varies from school to school where the needs are. - Interactive television delivery would open up many options. - Our operating budget is around 5 million, we spent 70M on hardware in 1995. A detailed % is difficult to arrive at without a lot of clerical work. - Most units are apple units other than Macintosh. - Where there is a shortage of qualified teachers, classes should be provided through SCN, as well as those with limited enrollments. - Our system does not approach technology as a specific subject area. Our philosophy is that technology is a tool to be integrated into all subject areas. - Multimedia and distance education do not of necessity go together. They can be seen as discreet endeavors. - We are a K-8 school so distant education is not for our division. - As you can see from the following breakdown, our computers are in bad need of upgrading. - We are a K-8 system only. - We still have 30 apple computers that are used in our classrooms, and those are included in the counts above. - I'm not fully convinced that for the average student distance education is a quality experience. - Concern about lab work for sending students and adequate supervision. - CORE offered by staff - Expertise & Staff lacking in other. - All resource systems have at least 2 CD ROM multimedia systems - All

offices have CD's as well as 28.8 modem capacity for communication. - Local BBS set up incomplete due to last of EDF (primarily used for Tech. Development is now done so the Board has to address this need full face in 1996...Wire and cable project at one site is a virtual fact...continued upgrade & Internet and BBS need to be completely addressed.'

Part 2: Building Partnerships:

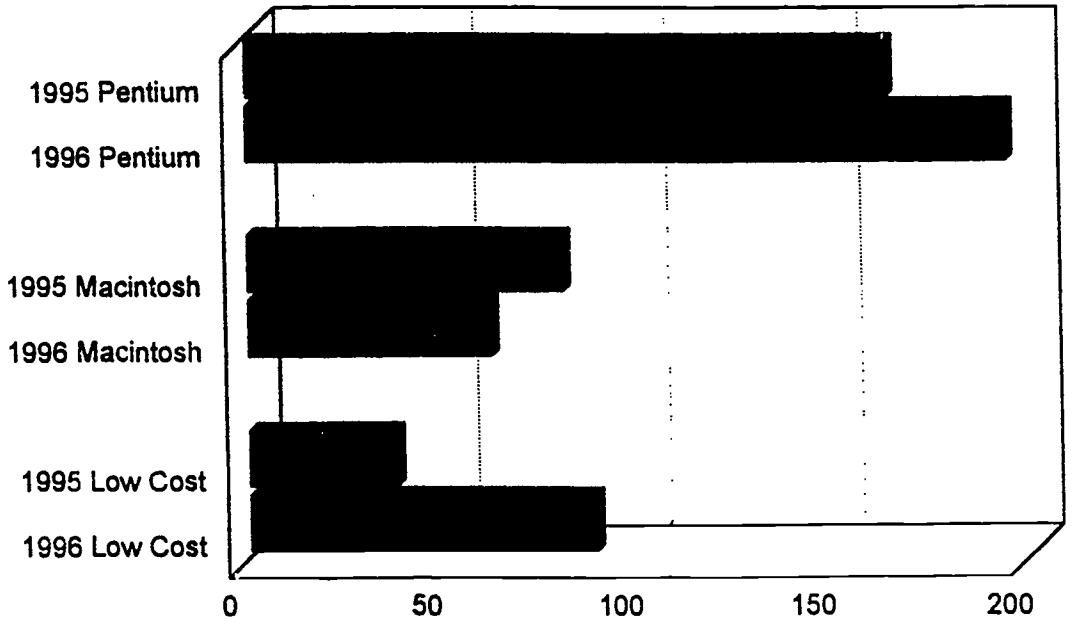


The level of interest reported by school boards in developing shared service agreements:

2.96	To network resources with provincial libraries
2.89	To offer PD opportunities regarding technology
2.64	To network resources with regional colleges
2.60	To network resources with other school boards
2.55	To examine and recommend multimedia programs
2.33	To network resources with other community organizations
2.24	To purchase computer hardware through group tendering

4 = critical importance
3 = very important
2 = some importance
1 = little importance

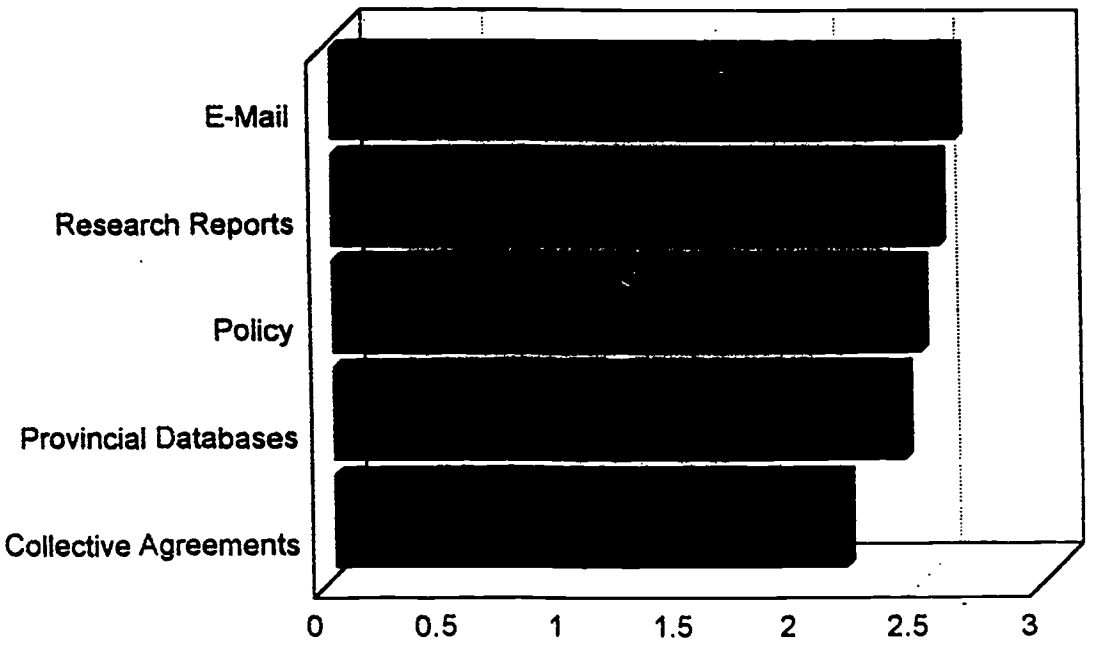
Interest in Computer Purchases



If computers were added to the SSTA group tendering program, responses indicated school board interest in purchasing the following computers:

- 164 Pentium Multi-media workstations with quad speed CD-Rom (≅ $2,800.) in 1995,
- 194 Pentium Multi-media workstations with quad speed CD-Rom (≅ $2,800.) in 1996,
- 80 Power Macintosh Multi-media workstations with quad speed CD-Rom in 1995,
- 61 Power Macintosh Multi-media workstations with quad speed CD-Rom in 1996,
- 37 New but discounted or clearance low cost computers (≅ $1,200.) in 1995, and
- 88 New but discounted or clearance low cost computers (≅ $1,200.) in 1996.

Interest in On-Line Services



School board interest in using computers to access on-line services is:

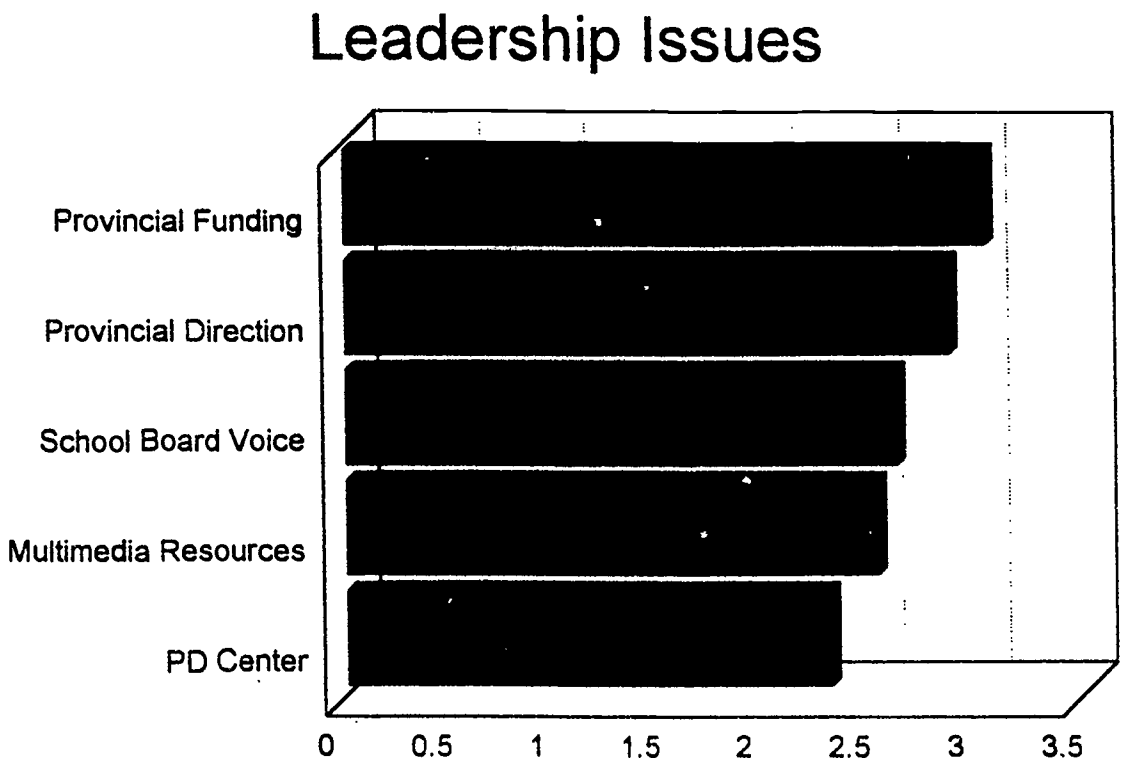
2.62	Electronic mail and communications databases
2.55	Research information and reports
2.47	Educational policy databases
2.40	Provincial finance and enrolment databases
2.15	Collective agreement databases

4 = critical importance
3 = very important
2 = some importance
1 = little importance

Comments:

'All schools are K-12 and jointly share computer lab. (90% IBM, 10% MACS). - E-Mail is long overdue. - Tendering on quality Brand Name equipment only. Schools and Boards do not have the time and expertise to hunt down a vendor for technical support. Too many "home grown" computer companies have gone bankrupt and left many schools with equipment whose warrantees are meaningless. - Great ideas; we now use local E-Mail for various school division communications, month end school reporting etc. - More information is needed on the group tendering process.
Uncertain if we would take advantage of this. - We are spending $195,000 this year. You are too late. Also, we are networking, so we have different hardware needs. - We have already tendered. - I am concerned about group tendering computers. Our experience supports local purchase whenever possible due to the after sale support and maintenance. Much of the after sale involvement comes at no cost through a local supplier. If you purchase from a large group tender process the after sale comes very costly. - We need computers and on-line access for teaching students. - Low cost computers will not be useful except for keyboarding and we already have enough of this generation. - These may be of interest/importance but part of third or fourth wave initiatives. - We have a host of other needs to fulfill before these services will command our attention.'

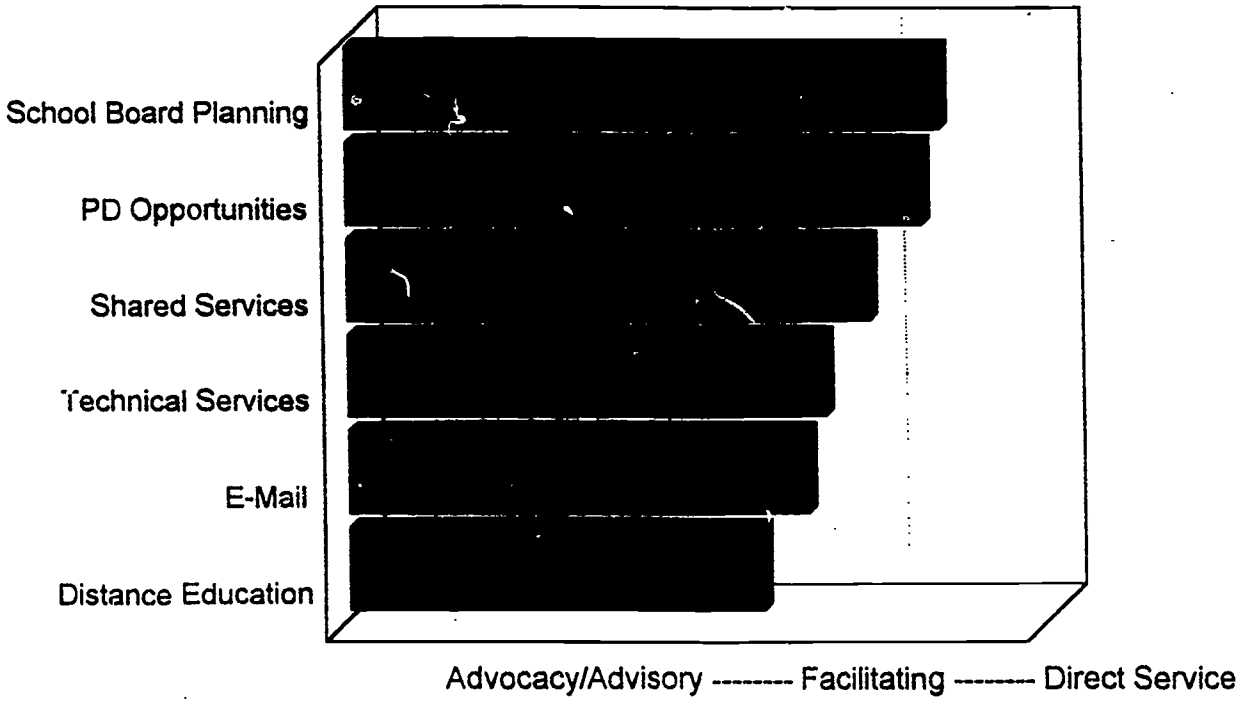
Part 3: Leadership



The current level of school board interest regarding leadership is reported as:

3.04	Additional provincial funding/ incentives for distance education
2.87	Developing common provincial directions and standards
2.62	School boards developing a stronger voice in shaping provincial distance education priorities and plans
2.53	Developing multimedia educational resources
2.31	Leading in developing a PD centre for technology innovation

Leadership Role of the SSTA



Responses suggested the following leadership role as appropriate for the SSTA:

1.69	School board planning/ goal setting
1.64	Opportunities for technology PD
1.49	Developing shared service agreements
1.36	Technical services for technology implementation
1.31	Implementation of electronic mail
1.18	Implementation of distance education

3 = Direct Service
2 = Facilitating / Coordinating
1 = Advocacy / Advisory

What type of support is needed to more effectively integrate technology with teaching and learning?

'Curriculum being implemented with this "technology" component built in-expectation for use. - An extensive and compulsory professional development program for teachers at all stages in their career. - Teacher in-service and program software. - We need financial support from Gov't - Sask. Tel has all the necessary equipment but profit is a major consideration. It is amazing that a Gov't agency with millions in profit, can't have educational services for students and long distance charges kill our opportunities for implementing existing technology. - In-service opportunities locally, for teachers and administrators targeted specifically at teaching and learning i.e. classroom application. - Consultation with Boards to ensure most effective service. - Workshops; compilation of research re teaching/learning; SSTA on-line. - I think a service arrangement re: consultation for tech-services. - Financial. - We feel there should be more hands on opportunities for teachers, and board members to try all this technology, as allot of us are not sure as to what would be beneficial to each school. - Professional development for teachers and board members (different focus). - Staff's equipment needs to be "maintained" near current levels. - Getting tools into the hands of teachers and then giving them the time/training to integrate it into their subject. - Sask. Ed partnering with SSTA needs to create the integration of technology as an expectation.- Integration of technology with teaching and learning will not happen without professional development and a program to renew equipment. - Common direction. - Wide area, LAN, E-mail/communications are in place for administrators/consultants. We need to extend this type of communication to classroom level. - Networking. - Financial support. - Standardization of hard & software. - In-service training for personnel. - Special user rates for communication time (SASKTEL). - Partnerships/Shared services. - Financial support- Field consultants and in-service providers. - Curriculum guides and teacher support materials that focus on goals and practical methods for implementation. - Prepared programs on CD ROM. - PD/PD./PD. - $$ for appropriate resources and programs. - Support from Sask. Education, Training and Employment in the form of funding and staff to conduct training workshops. - Financial. - Funding - it is very difficult to maintain a "leading edge" state with the rapid advances in technology. New software dictates hardware demands. Ongoing professional development to use technology effectively is costly. - Financial Support. - Teachers must be encouraged in their classrooms to use computers as a regular part of their classroom learning environment strategies. - Financial integrated services with SaskTel, SSTA work with STF and government to get these services in place. - We need sufficient information to know the level of involvement required to meet curriculum needs. - Ways to get business to help us buy technology. - Financial, professional development, dealing with rapid technological change. - Professional Development. - A direction with regard to consistency which is beginning with the recent Dept. advise on hardware purchases. Provincial licensing of primary software. On line costs which are affordable. - Finances. - Expertise. This can often be found in communities where there is an industrial base. - We need the software of school subjects at the secondary level. i.e. CD ROM correspondence courses, highly interactive and Saskatchewan curriculum based. - Some good PD on using computers in classrooms. - Incentive funding for the purchase of equipment and software. - Professional Development. - Professional Development. - Professional Development. - Professional Development. - Curriculum being implemented with this "technology" component built in-expectation for use.'

'This is a vital area but all the $ and equipment are useless without appropriate training for the personnel that are supposed to use it. - Without more leadership from the Department about equipment needs a great amount of money could be wasted. - It is essential for teachers to have the necessary knowledge and skill the effectively use the technology. A concerted effect is required to produce inservice and create networks that will provide the necessary support to teachers and administrators. -Some of your questions are not clear and are therefore open to interpretation. - Finances remain the number one reason for slow advancement. However, many board members do not believe in or do not know enough about technology to make it a priority. Teachers will not integrate technology with teaching and learning if they do not have a comfort level with it and they do not see their Boards making it a priority. - Sorry for being late. - There is no extra money so priorities will only take from other areas resulting in more restrictions for local decisions. - This is one of the highest priority areas now we have an awful lot to do in this area and leadership from the SSTA to actually "do" things as well as prodding provincial known agencies would be available! - I'm not sure that Sask. Ed. shouldn't be leading in consultation with the partners.'