
Framework for Technology Integration in Education

**A Report of the MLA Implementation Team
On Business Involvement and Technology Integration**

March 1996

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For additional information about the Framework for Technology Integration in Education, please contact:

Denis Herard
MLA, Calgary-Egmont
513, Legislature Building
10800 - 97 Avenue
Edmonton, Alberta T5K 2B6
Telephone: (403) 422-5378*
Fax: (403) 427-1835
E-mail: dherard@assembly.ab.ca

The Framework for Technology Integration in Education is available on the Internet at Alberta Education's home page (<http://ednet.gov.ab.ca>).

* To be connected toll-free from outside Edmonton or Barrhead, dial 310-0000.

"The future of Alberta lies in the hands of all of us – and the task of building that future must begin today."

***Ralph Klein
Premier***

"Alberta's education system must move in new directions to continue to provide a relevant, quality education for all Alberta students."

***Halvar Jonson
Minister of Education***

The members of the Business Involvement and Technology Integration MLA Team would like to thank the Technology Advisory Committee for their contributions throughout the consultation process.

TALKING WITH ALBERTANS

Many Albertans are interested and excited about technology and education. They read about activities taking place in other provinces and in other schools around the world. They wonder how we compare, what directions Alberta intends to follow, and what our plan is for becoming a national leader in technology integration in Canada.

In March of 1994 Education Minister Halvar Jonson established the MLA Team on Business Involvement and Technology Integration in Education to consult with Albertans and provide recommendations to government on how best to expand and enhance our use of technology in education. My colleague, Hung Pham, MLA for Calgary-Montrose and I were asked to serve on the MLA Team.

In the past year, our Team formed an Advisory Committee comprised of experts in technology and education. This committee reviewed technology integration initiatives in Canada and in other countries, as well as information from briefs and presentations. It prepared a Technology Integration in Education Discussion Paper which was widely distributed to Albertans in July 1995. That discussion paper proposed a vision and strategy for an education system transformed by technology. It also made a number of recommendations for consideration by Albertans.

Over 600 responses and 40 briefs were received from parents, school councils, school boards, teachers, school superintendents, the Alberta Teachers' Association (ATA), business and other interested citizens. There was very strong support for phasing technology integration into Alberta's education system. This report reflects what the Advisory Committee and our Team heard, and our recommendations as a result of that public response.



Denis Herard
MLA, Calgary-Egmont
Chair, MLA Team on Business Involvement and Technology Integration

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TECHNOLOGY: HELPING STUDENTS SUCCEED

The future of our children and the future prosperity of Alberta lie in the ability of our students to be successful, productive citizens. To ensure that all of our students have the best advantage possible, Alberta must continually look for new ways to improve student learning. Technology has become an essential tool in continuing to provide Alberta students with a relevant, quality education in the 21st century. Our success in the global economy depends, in part, on the effective integration of technology in education.

The government of Alberta shares a major responsibility in providing all its students with the kinds of learning opportunities that will prepare them for success in life and the workplace. We must take bold steps to ensure that all students, not just a few students in a few schools, have access to modern technologies and telecommunications, and that our teachers are trained, supported and encouraged to use technology regularly in their instruction.

In its inquiry into technology, teaching and learning in this province, the MLA Technology Integration Team learned that some schools are doing innovative things to change the ways in which teaching and learning happen. The Team gained insight into how technology is playing a significant role in supporting that transformation, and how technology can continue to support that change into the future.

To provide technology-enriched learning opportunities for students across this province, and to do it equitably and affordably, the government of Alberta must invest in technology. It must commit resources to support student access to learning opportunities regardless of their circumstance or location. It must invest in technology and telecommunications so that students can tap into information from around the world. Every effort in this direction brings us one step closer to ensuring success for all our students and a prosperous future for Alberta.

Please Note:

The word “technology” in this document refers to using computing technology and telecommunications.

RECOMMENDED DIRECTIONS

The Government of Alberta should ensure that the benefits of technology are available to all Alberta students in an equitable and affordable manner. This report should also help ensure that:

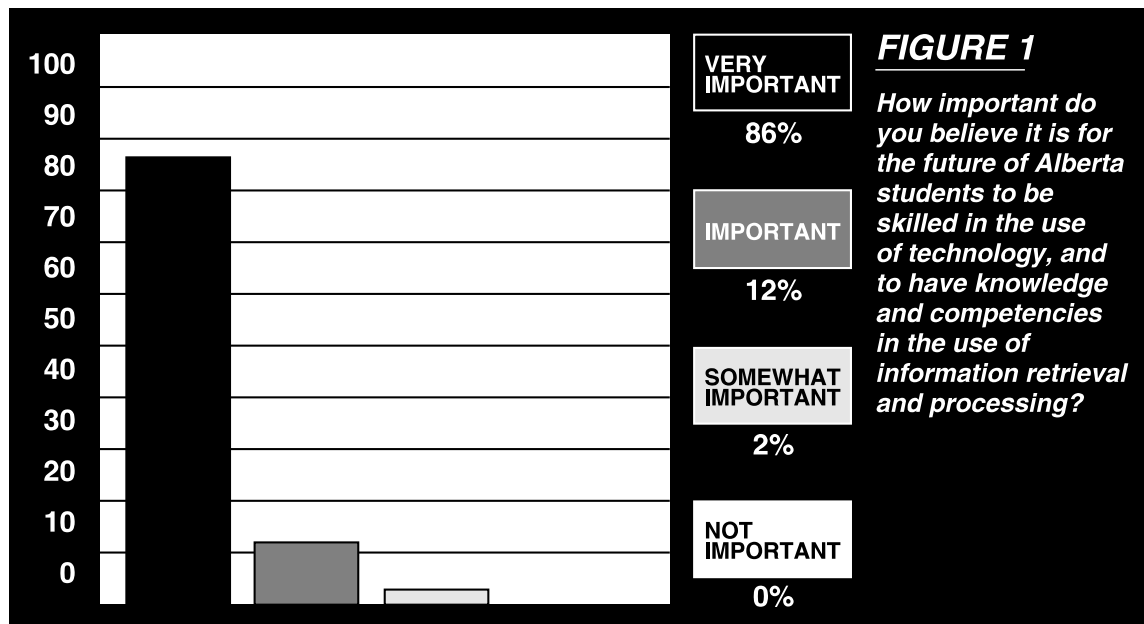
- Alberta students are well prepared for a knowledge-based society by being skilled users of technology and telecommunications
- Students are motivated to take responsibility for independent lifelong learning
- Alberta teachers are skilled in the use and application of technology and telecommunications
- Schools and other places of learning are equitably and appropriately equipped with modern technologies including access to technical support to meet learning and instructional needs
- Learning and teaching resources are available to support learning and the management of learning
- All Alberta schools are connected to a provincial learning network
- There is province-wide coordinated planning for the integration and implementation of technology
- Accountability measures are in place to monitor progress; results are communicated to Albertans
- Management of information and business functions of the education system are more efficient
- Business partnerships and community resources are extensively used in supporting technology integration and implementation
- A smooth transition between grades and levels of education is facilitated through the use of technology
- Government assists in developing content and knowledge-based industries in Alberta

STUDENT LEARNING AND FUTURE EMPLOYABILITY

Albertans said that technology integration in education is very important to ensure the success of our students. They want students to be well prepared for a knowledge-based society by becoming skilled users of technology and telecommunications. They believe that technology can help students become lifelong, independent learners, better able to apply the skills of critical thinking.

Regardless of the programs students take, Albertans want technology to be an integral part of how and when students learn. Albertans want a provincial curriculum and assessment program that reflects an information, knowledge-based society.

Albertans believe that technology will increase the choice of programs available to students wherever they learn - at school, at home, or at the workplace. They want a stronger relationship between the technology skills students learn in school and those required by the workplace.





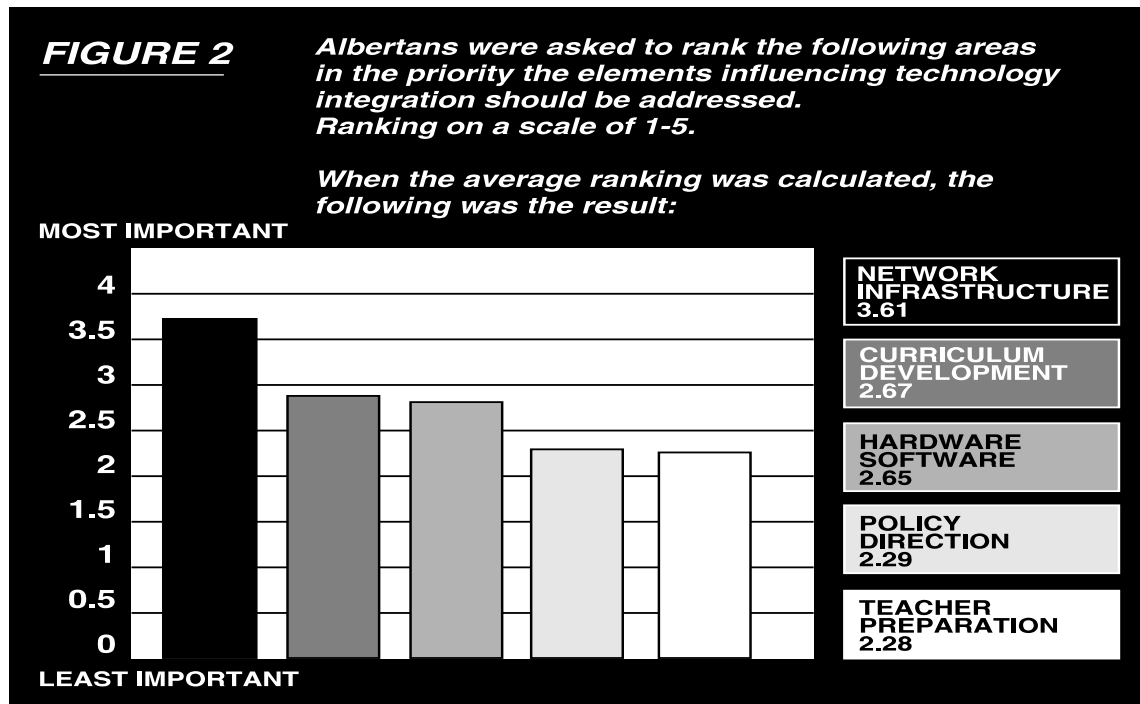
Recommendations:

- **Technology be used to help students learn difficult concepts, and develop critical thinking skills**
- **Technology learning expectations continue to be clearly defined and included in curriculum revisions**
- **Business and other education partners be involved in reviewing students' technology skills to ensure they are relevant in the workplace**
- **Methods and tools for assessing student performance in the use of information technology be developed**
- **Schools, school boards and the province report on student performance in the use of information technology**
- **High school graduation requirements include technology-related skills**

ACCESS TO TECHNOLOGY AND THE INFORMATION HIGHWAY

Albertans have said that providing modern computer technology, appropriate software and access to the information highway for both students and teachers, should be among the first priorities in technology integration. They believe that technology can improve education and increase access to education opportunities, especially for rural students. Courses should be available to remote and small schools through affordable distance delivery and telecommunications so that rural students have the same level of access as urban students. By setting minimum standards, equal access can be achieved across Alberta.

Albertans have also expressed the view that those schools which have already invested in technology should receive funding to expand their efforts in technology integration.



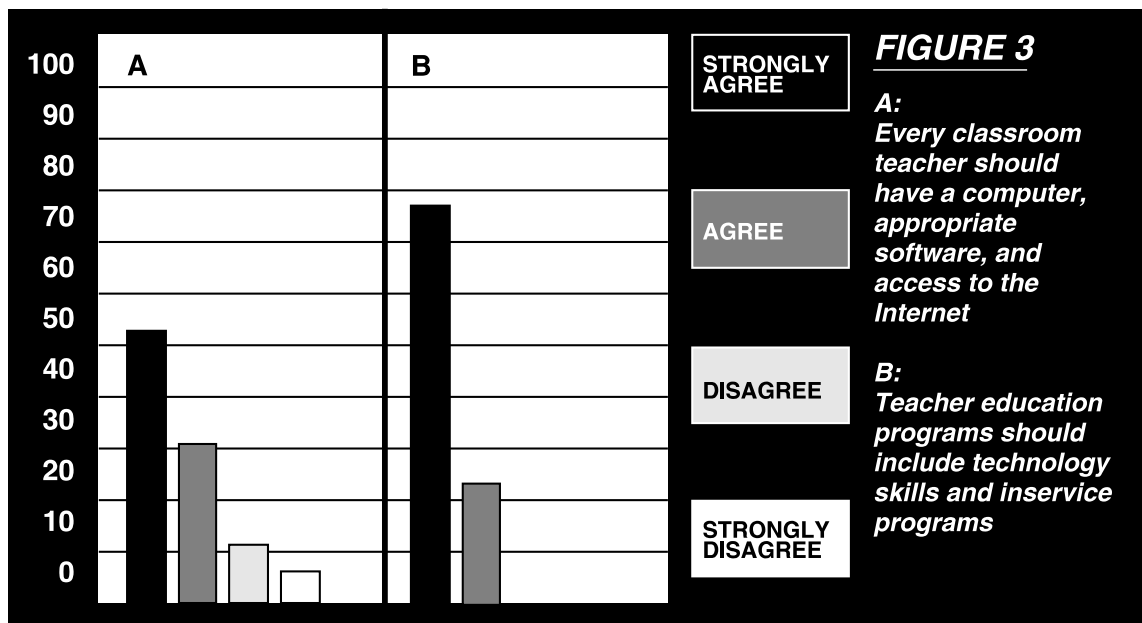


Recommendations:

- **All Alberta schools and classrooms be equipped with modern computer technology to achieve an average student to computer ratio of 5:1**
- **Minimum provincial standards be set for technology (computers, networking, emerging technologies) to satisfy instructional, curricular, and administrative needs**
- **All provincial schools, post-secondary institutions, libraries, media centres and museums be electronically connected to a provincial learning network**
- **A provincial learning network be established to serve education and training needs and standards be defined for the network**
- **All schools have access to the information highway within one year**
- **Alberta's learning network be capable of delivering multimedia programs (those that use audio, video, text and graphics) via cable, television, satellite, telephone, and wireless service providers**

TEACHER PREPARATION AND SUPPORT

Albertans said that teachers need to be computer literate and confident in the use and application of technology to improve effective instruction. They recognize that technology can be an important component of effective teaching. Albertans suggest that technology competencies be included as part of teacher certification, and that teachers continually improve their technology knowledge and skills. The Alberta Teachers' Association supports preservice and inservice professional development programs aimed at improving teachers' abilities to integrate technology into their teaching.





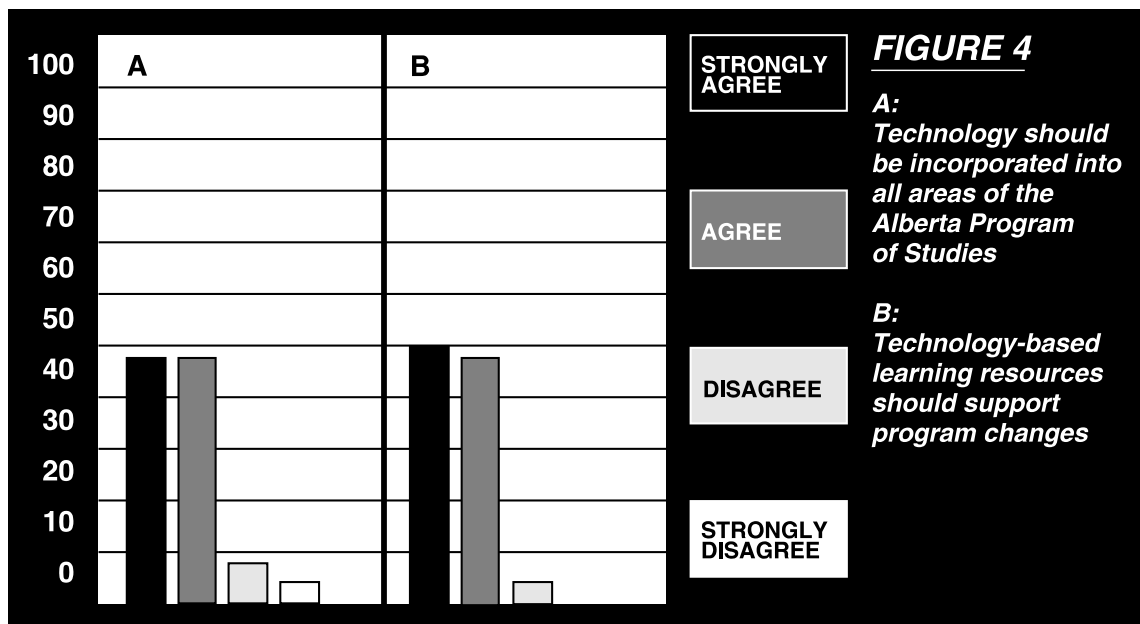
Recommendations:

- **Classroom teachers have access to computers to improve their technology skills and to integrate technology into their teaching**
- **As part of their professional practice, Alberta teachers maintain their ability to apply technology skills to their teaching**
- **Revisions to teacher certification requirements include information technology competencies**
- **As part of their technology integration planning, schools and school boards develop a plan for upgrading teacher competencies and report on teacher progress**

TECHNOLOGY-BASED LEARNING RESOURCES

Albertans believe that students should have access to technology-based learning resources such as multimedia programs to help them learn difficult concepts. They believe that technology can help to accommodate the diverse needs of learners in this province by providing students with a more individualized education.

Albertans support the use of technology to develop innovative ways of teaching and learning. They also support the development of technology-based learning resources to complement existing curriculum. By working with the private sector and other provincial partners, Alberta Education can accelerate the development of technology-based learning resources, and further the development of a knowledge-based industry in the province.





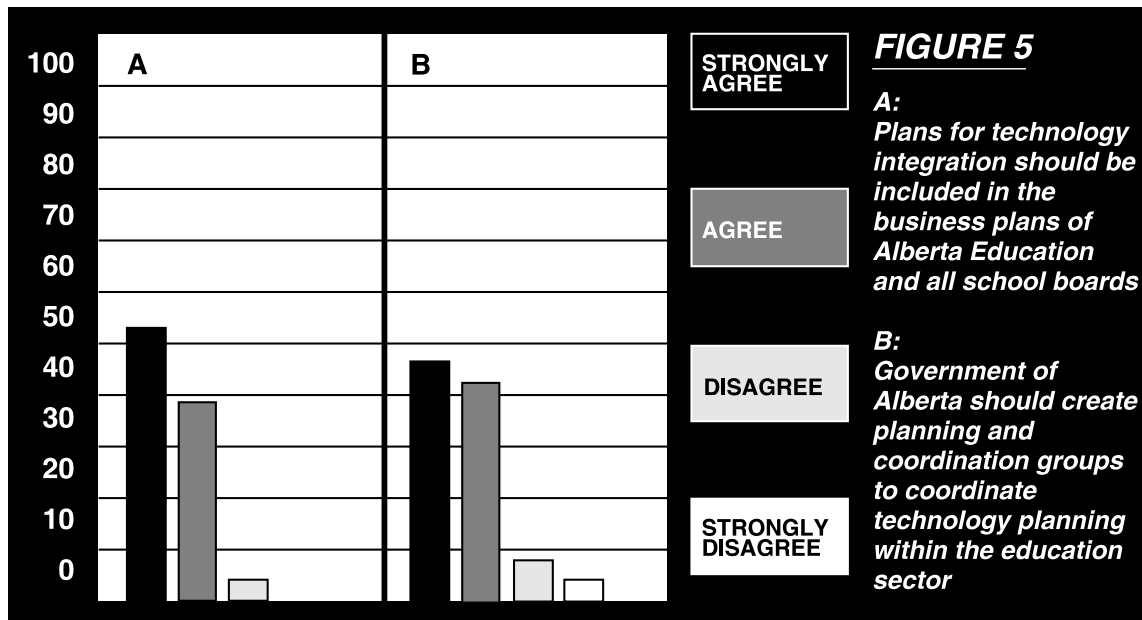
Recommendations:

- **Multimedia resources be used to help students learn difficult concepts**
- **Multimedia teaching and learning resources be available to help teachers make the transition to an information and technology-based curriculum**
- **Technology be used to help teachers, schools, school boards, and the Minister of Education manage, monitor and assess student progress**
- **Partnerships with other provinces and the private sector be used to acquire, develop, and fund technology-based learning resources and learning management tools**
- **Arrangements for volume purchasing and licensing of learning and teaching resources be negotiated provincially to achieve "best value" and reduced costs for taxpayers**

PLANNING AND COORDINATION

Albertans emphasized that long-term planning is needed at provincial and school district levels to ensure that every dollar spent on technology integration is wisely invested. They suggest that technology integration plans be included in school and school board business plans and that public accountability be maintained at all levels. Albertans would like to see a smooth transition between grades and levels of education. They also say that technology planning and coordination groups need to be established to assist and guide boards to implement technology integration.

Albertans want the government to provide leadership and to set policy direction for a technology integration initiative. Albertans recognize that the effective use of technology requires more than simply putting computers in classrooms. It requires that we simultaneously address networking schools, providing access to the information highway, teacher certification, inservice and support, revising curriculum and assessment, developing interactive learning resources, and forming partnerships to achieve our goals.



Recommendations:

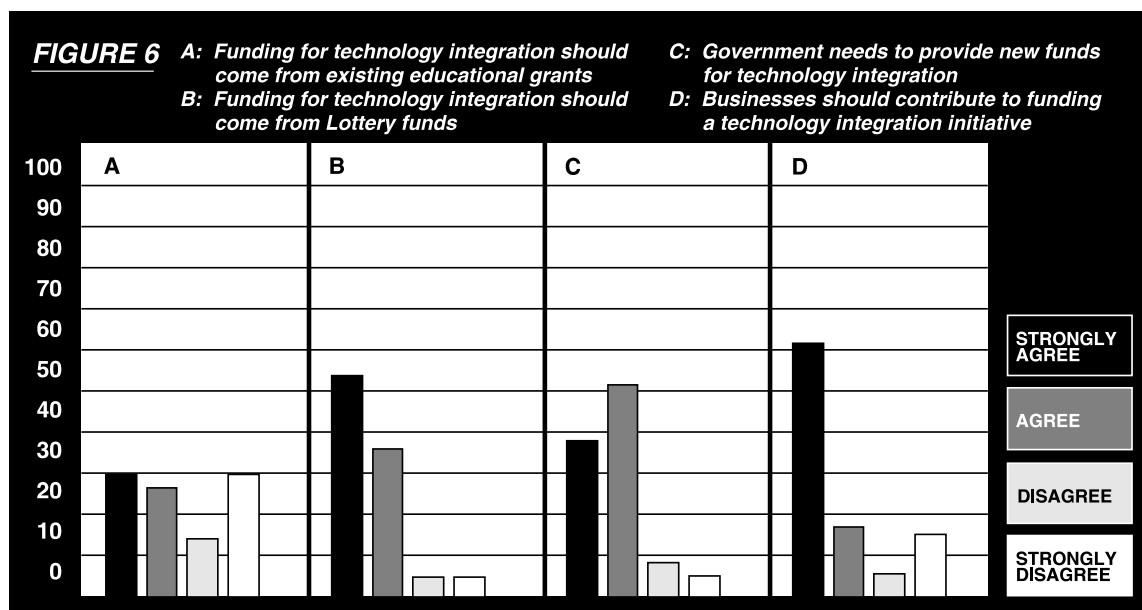


- **Planning and coordination groups be established to assist schools, school boards and the province with technology integration**
- **Schools and school boards be required to develop technology integration plans. These plans would include:**
 - **achieving a 5:1 student to computer ratio**
 - **teacher access to computers at the classroom level**
 - **teacher inservice**
 - **hardware and network standards**
 - **technology support and maintenance**
 - **facility upgrading**
 - **measures for monitoring and reporting results**
 - **business partnerships**
 - **connection to the information highway**
- **Accountability be demonstrated at all levels that investment in technology integration has resulted in better access to programs (e.g., distance education), and improved learning and teaching**
- **Progress is regularly reported to parents and the public to ensure accountability in technology integration**
- **A smooth transition between grades and levels of education be facilitated through technology**

INVESTING IN OUR FUTURE

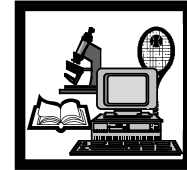
Albertans want government to ensure that Alberta students benefit from technology. They have told us that technology is an important investment for the future of Alberta students.

Albertans are concerned about the cost of technology integration. They recognize that resources are limited to support technology integration in Alberta classrooms. They have told us that additional funding will be required from government and other education partners to increase the technological capabilities of our classrooms, and to provide teachers with the skills and tools they need. Technology integration must be a shared investment by the province, by school boards and schools, and by business partners.



Recommendations:

- **Government re-invest in education by committing funding for technology integration to improve teaching, learning and the future employability of Alberta students**



Reinvestment funds should be directed towards:

- 1. Connecting all schools to a provincial learning network and the information highway**
- 2. Achieving minimum hardware and network standards for schools**
- 3. Developing multimedia learning resources and learning management tools**
- 4. Replacing Alberta's aging computer base with modern technology**
- 5. Revising curriculum and assessment programs to improve teaching and learning through technology**
- 6. Supporting teacher upgrading, inservice, training materials and changes to teacher certification**
- 7. Rewiring and upgrading facilities for telecommunications connectivity**
- 8. Promoting the development of a knowledge-based industry in Alberta**
- 9. Supporting province-wide planning and coordination**

CONCLUSION

This framework report sets the direction for technology integration in education. By working with Albertans, we have developed recommendations for technology integration that will result in a better education for all Alberta students. Our efforts will now be directed towards making these goals for technology in education a reality.

Achieving these goals will take time and considerable effort on behalf of all partners in education. The provincial government, schools and school boards, stakeholder groups and the business community will all have a role to play in successfully integrating technology in education.