

BRIDGING ABORIGINAL DIGITAL AND LEARNING DIVIDES

Report on Office of Learning Technologies Support to Aboriginal Communities

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Executive Summary

1. Introduction

Aboriginal communities in Canada face a combined challenge from:

- A learning divide: low relative access to and completion of education and training
- A socio-economic divide: poor economic, health, and social conditions.
- A digital divide: less connectivity, access to internet and use of computer technologies in Aboriginal homes and communities

This Report outlines the findings of a survey of projects funded by the Office of Learning Technologies involving Aboriginal communities. It has been compiled from analysing project reports, a survey, site visits, and telephone interviews with project proponents and other key informants from January to March of 2002.

OLT's role in supporting lifelong learning and the use of innovative learning technologies is important to addressing many of the recommendations of the Royal Commission on Aboriginal People that called for a major improvement in access to education and investment in community economic development. This report assesses the results so far of OLT's support to Aboriginal communities, and provides recommendations on how that support could be strengthened.

2. Findings

- OLT is funding projects in about 6% of the 1152 Aboriginal communities in Canada. Funding to projects serving Aboriginal communities by OLT amount to about 11% of total funding since 1998 (when the Community Learning Network initiative started), compared with Aboriginal people as a proportion of the Canadian population at 3 %. OLT's funding of \$5,685,000 levers investment and makes an important contribution to the learning needs of Aboriginal communities.
- Ontario, BC and Saskatchewan have a large proportion of Canada's Aboriginal population and a high proportion of OLT projects. Manitoba, Alberta, Yukon and Quebec have relatively few OLT Aboriginal projects compared with their proportion of Aboriginal people in Canada. There are no funded projects specific to urban Aboriginal people and communities at this time.
- OLT programs support a variety of approaches to delivering learning technology initiatives, meeting needs and opportunities at the local, regional, provincial and national levels.
- OLT projects are producing significant outcomes in Aboriginal communities in: Culturally relevant education and training; Access to, management of, and training in, the use of information and communication technologies; health and social development programs; community economic development; community learning to strengthen leadership and social capital

- The top issues and challenges identified by communities were¹: Sustainability – the need for long term government support; inclusion – genuine Aboriginal engagement; partnerships – creating and maintaining them; connectivity and access – the Digital Divide

3. Recommendations

3.1 Funding

OLT should continue to prioritise Aboriginal projects, particularly Aboriginal on-reserve, rural communities with 25% or more Aboriginal population, and urban disadvantaged communities in which Aboriginal people live. To leverage additional investment, other federal departments and private sector interests should be invited to discuss increased support to innovative community economic development, digital and learning projects in Aboriginal communities.

3.2 Aboriginal Inclusion

High priority should be given to funding projects led by Aboriginal organisations and where Aboriginal communities are cited as partners or beneficiaries of OLT projects, evidence (written endorsement) of genuine Aboriginal support for, and participation in, OLT projects should be required before projects receive priority rating in the approval process.

3.3 Program Criteria

OLT's funding initiatives should be promoted to urban Aboriginal organisations, and Aboriginal communities in Quebec, Manitoba, Alberta and the Yukon to encourage proposals from underserved communities and regions. Funding criteria should be amended to allow for adequate funds for training of intern and other staff in information and communication technologies and capital purchases of equipment should be allowed in rural Aboriginal communities that have limited capacity to raise capital funds.

3.4 Engagement

A conference should be convened before the end of 2002 to bring together OLT Aboriginal projects and other relevant stakeholders to share best practices and discuss how to strengthen Aboriginal community and adult learning initiatives and peer learning between them. As part of the Government of Canada's Innovation Strategy, a best practices report should be developed using detailed case studies of OLT projects to identify what works and why in Aboriginal adult and community learning, together with an online inventory.

3.5 Access

A review and assessment of community networking technologies should be completed and disseminated to Aboriginal organisations and other community stakeholders, to advise on success factors in creating locally managed networks and related applications. Industry Canada should be invited to support and engage CAP projects in the review to help with its efforts at strengthening sustainability of community access initiatives.

¹ Detailed survey results are attached at Appendix Three.

1. Introduction

1.1 Lifelong Learning and Learning Technologies

The Office of Learning Technologies (OLT) of HRDC provides a unique resource to communities in Canada: it supports the development and use of “Learning Technologies” to strengthen lifelong learning. The OLT works to raise awareness of the opportunities, challenges and benefits of technology-based learning and to act as a catalyst for innovation in the area of technology-enabled learning and skills development.² OLT’s programs include:

The Community Learning Network Initiative (CLN) that supports time-limited pilot projects, in partnership with community organizations, that can offer multi-point access to a variety of learning resources within and across communities. These pilot projects may develop new models or enhance existing exemplary models that other communities can learn from, adapt, or build on in order to promote and increase access to learning opportunities enhanced by technologies. Projects involve: the use of technologies as tools to support and enable learning and networking; a strong community participation or community control at the local level; and the promotion of individual and community development

The New Practices in Learning Technologies (NPLT) works with partners to expand innovative learning opportunities through technologies. Among its activities, NPLT provides support for projects that contribute to a better understanding of learning technologies and how to use and adapt them for adult learners within the educational sector. Projects concentrate on testing, assessing and/or developing new models related to the use of innovative learning technologies in a variety of situations

The Learning Technologies in the Workplace Initiative (LTW) provides funds on a cost-shared basis for projects that expand opportunities for learning and skills development in the workplace through the implementation of technology-enabled learning solutions for workers.

1.2 Lifelong Learning

OLT’s programs and mandate to strengthen lifelong learning is a critical element in Canada’s public policy agenda. At a time of rapid economic and social change lifelong learning is an essential approach to acquiring the skills and knowledge necessary to create sustainable futures for all Canadians throughout their lives and in all the various work, education and community settings that learning can take place. For lifelong learning to be effective it has to be accessible and relevant to the different circumstances of people in their communities, and their diverse settings for learning and education.

² The full mandate and program areas of OLT are available online at: <http://olt-bta.hrdc-drhc.gc.ca/about/>

Increasingly information and communication technology applications (“learning technologies”) are critical tools in this broader and more accessible approach to educational opportunities. They are particularly important to those communities that are remote, that lack large educational institutions, and for whom distance learning using computers fits community and cultural circumstances.

1.3 Innovation, Skills and Learning

The Government of Canada’s Innovation and Skills and Learning strategies emphasise the need for “a well-educated and skilled workforce in all parts of the economy and in all parts of the country”³. In the knowledge-based economy the role of learning technologies is critical to enhancing access to and relevance of learning opportunities and community development strategies to meet the challenges that face Canadians in diverse settings. Innovation and skills development is increasingly a function not just of educational institutions and industry, but much more of communities working across sectors to promote learning and development by building on the assets and innovation of local people to meet their own challenges and create their own opportunities. HRDC’s Skills and Learning Strategy recognises the value of OLT’s contribution through its investment of \$32 m since 1998 in Community Learning Networks that support local capacity building by using online technology for individual learning, community networking and the creation of employment opportunities. The Strategy commits to examine ways to meet the skills and learning needs of Canadians in their communities, and emphasises the need to address educational access and outcome issues for Aboriginal Canadians.⁴

This report provides some input on one critical aspect of OLT’s role in meeting these needs – that of the needs of Aboriginal communities.

1.4 Aboriginal Learning, Socio-Economic and Digital Divides

Aboriginal communities⁵ face major challenges to developing their communities and enhancing opportunities for their residents

A growing “learning divide” sees young Aboriginal people facing disadvantages in terms of educational attainment.

Canada’s Aboriginal population is much younger than the rest of Canada with a median age of 25, compared to a median of 35 years for all Canadians. About 53% of Registered Indians living on reserves are under 25 years old.⁶ According to the 1996 Census 41 % of Aboriginal people aged between 25 and 34 had not completed high school compared with 18% of non-Aboriginal Canadians.⁷ The high school drop out rate for Aboriginal youth

³ HRDC, Knowledge Matters: Skills and Learning for Canadians, p. 2. 2002.

⁴ Ibid, p. 28 & 48. 2002.

⁵ Indian and Northern Affairs Canada defines First Nation, Metis and Inuit peoples to comprise the Aboriginal community.

⁶ DIAND Projections, 1997

⁷ Statistics Canada, Census Canada, 1996.

living on remote reserves is higher and many Aboriginal students perform below the appropriate grade level, especially in key areas such as reading, mathematics and science. In addition, the proportion of Aboriginal people enrolling in and completing post secondary education is much lower than the rest of the population.

Access to adult and continuing education is also limited for many Aboriginal people wishing to upgrade their skills – particularly those on low income, and/or living in remote communities.

Aboriginal communities experience difficult socio-economic conditions – higher rates of unemployment, poor housing conditions and overcrowding, and poor relative health conditions. Both on reserves and in urban communities, Aboriginal Canadians experience a growing socio-economic divide between their average social, health and economic conditions and those of other Canadians.

Aboriginal communities also face a “digital divide” that involves less access to, use of, and training in, information and communication technologies and internet resources on reserves, and amongst Aboriginal people generally. A report on the Digital Divide in British Columbia, for example, found that “there are still significant impediments to First Nations’ ability to take full advantage of the benefits of information technology, including:

- Lack of public access sites on reserves;
- a relatively small number of homes with Internet connections;
- a lack of culturally relevant content;
- lower than average literacy rates; and
- a lack of computer skills and socially relevant Internet training programs.”⁸

A report on “Aboriginal Connectivity” by Indian and Northern Affairs Canada noted that less than 7 % of Aboriginal communities in Manitoba, Nunavut, BC and Saskatchewan had access to high speed internet (cable or xDSL) services.⁹

These divides are inter-related and mutually perpetuating. Without access to the learning and information technologies that are becoming an essential infrastructure for the knowledge-based economy, Aboriginal people and communities will face increasing difficulty creating the kinds of educational and economic opportunities that are required to address their social and economic development needs.

The Conference Board of Canada in its report on Aboriginal Digital Opportunities concluded that “there is a significant danger that Aboriginal peoples will be left behind and disenfranchised as the pace of technology adoption and integration in the economy increases...with knowledge generation increasingly tied to wealth creation, communities with unskilled labour and insufficient technological infrastructure will be challenged to match the rate of development in society as a whole.”¹⁰

⁸ Government of British Columbia, The Digital Divide in British Columbia, p. 3, 2001.

⁹ Indian and Northern Affairs Canada, Report on Aboriginal Connectivity, p.12, 2001.

¹⁰ Conference Board of Canada, Aboriginal Digital Opportunities: Addressing Aboriginal Learning Needs Through the Use of Learning Technologies. p.7, 2001.

However, the issue of the digital divide can't be addressed in isolation from broader learning and community development strategies. The acquisition of skills and capacity to use new technologies is dependent on creating learning and community development environments that can make those technologies tools of relevance and use in the immediate environments that Aboriginal people and their organisations are working in.

A survey of communities using learning technologies¹¹ identified the role of partnerships, community mobilization and lifelong learning as critical elements to long-term success in the use of technology for community development.

In the words of the Royal Commission on Aboriginal People:

“Poverty, ill health, educational failure, family violence and other problems reinforce one another. To break the circle of disadvantage - where family violence leads to educational failure, which leads to poverty, which leads to ill health and back to violence - all these conditions must be tackled together, not piecemeal”.¹²

1.5 Purpose and Scope of Report

This Report provides an assessment of the role of Office of Learning Technologies' (OLT) programs in meeting the learning needs and challenges of Aboriginal Canadians and their communities. The report provides

- a summary and typology of current projects in Learning Technologies led by, or involving significant benefit to, Aboriginal and First Nations communities, funded by OLT derived from Project files.
- an assessment of emerging outcomes, issues and lessons learned from these projects and input from project organisations on how OLT could better meet the learning needs of Aboriginal Canadians, based on survey, interview and site visit results.
- findings on gaps in current program provision relative to Aboriginal learning technology needs, and recommendations on meeting these gaps.

While the report provides a summary of OLT's work in funding projects involving Aboriginal communities it is not a comprehensive analysis of all of that work. Nor is it inclusive of all the initiatives and partnerships by First Nations' organisations with a variety of government and private sector partners to address digital and learning needs amongst First Nations and Aboriginal communities.

The report is based on a survey of projects funded by OLT that identified themselves as either Aboriginal proponents, or as serving Aboriginal and First Nations people and communities. The survey was distributed to each organisation by fax and by email.

¹¹OLT, *Models of Community Learning Networks in Canada*, 1998.

¹² Canada. Royal Commission on Aboriginal Peoples. *People to people, nation to nation: Highlights from the report of the Royal Commission on Aboriginal Peoples.* 1996.

Follow up calls were made, and each organisation was given an opportunity to book a telephone interview or send the completed questionnaire back by fax, mail or email. Of the 37 funded organisations that were confirmed to have projects serving Aboriginal learners, 15 responded to the survey. In addition, two provided telephone interviews, and four participated in site visits to give more in depth input. A number of individuals – key informants – from Aboriginal organisations also provided input into key issues in Aboriginal learning, including representatives of one group that had been unsuccessful in applying for OLT funding.

The projects that did not respond to the survey were mostly those that had completed several years ago and for which the key contacts were no longer available, or they were projects that had just started and did not feel confident responding at this time.

A summary of survey responses are attached to the report, together with an inventory of the projects that involve First Nations and Aboriginal proponents or users. The survey was conducted from January through March of 2002.

2. Analysis of Funded Projects

Since 1998, the Office of Learning Technologies has provided \$5,685,000 in contributions to projects that benefit Aboriginal learners and communities, leveraging at least an equivalent amount of investment from other sources. In total 40 projects have been funded with 37 organisations across Canada. Of these just over half, twenty-two, are active, the others having been completed.

The majority of projects have been funded through the New Practices in Learning Technologies Program, through post secondary institutions and school districts. However, a significant number of projects have also been funded through the Community Learning Network Initiative, with NGOs and Aboriginal organisations. As of January 2002, no Aboriginal projects had been funded by the Learning Technologies in the Workplace Initiative. One research project was funded by OLT conducted by the Conference Board of Canada on “Addressing Aboriginal Learning Needs by Using Learning Technologies”.

2.1 OLT Funding by Program and Type of Organisation

TYPE OF ORGANISATION	CLN	NPLT	TOTAL
Post Secondary Institutions	2	17	19
School Districts	2	3	5
NGOs	6	0	6
Aboriginal Organisations	8	1	9
TOTAL	18	21	39

Nine Aboriginal organizations were funded: Seven local Band Councils; one provincial federation of First Nations, and one National NGO made up of Aboriginal community representatives. Six NGOs were funded that served Aboriginal learners and others in their communities.

The majority (nineteen) of funded projects were conducted by post secondary institutions. Two thirds of these projects (twelve) were specific to Aboriginal communities and learner and the other third involving learning initiatives targeted to a range of learners with disadvantages, inclusive of, but not exclusively benefiting, Aboriginal learners. Partnerships between Aboriginal and non-aboriginal communities were a feature of projects funded under the Community Learning Networks Initiative, particularly in rural and remote areas. There were three projects that had cited Aboriginal participation in their project but for which there was no evidence of any Aboriginal involvement or benefit. These projects have been excluded from the research.

Of the two hundred and seventeen projects funded by OLT since 1998, only twenty three have been specific to Aboriginal learners, and only nine are run by Aboriginal organisations.

- Funding to projects serving Aboriginal communities by OLT amount to about 11% of total funding since 1998, compared with Aboriginal people as a proportion of the Canadian population at 3 %. However only nine out of two hundred and seventeen projects involve direct funding to Aboriginal organisations.
- OLT funding levers investment and makes an important contribution to the learning needs of Aboriginal communities.
- However the number of Aboriginal people and communities engaged with OLT programs is small relative to the high degree of learning and technology needs amongst those communities, and the commitments by the Federal Government to address those needs arising out of the Royal Commission on Aboriginal Peoples.

2.2 Location of Projects

British Columbia and Saskatchewan have a high number of Aboriginal OLT projects compared with their proportion of Canada's Aboriginal population, while Quebec and Manitoba have relatively few. Yukon, PEI, New Brunswick and Nova Scotia have none.

Distribution of Aboriginal OLT Project Sites

Natl	NWT	Nun't	Nfld	PEI	N.S.	N.B.	Que.	Ont.	Man	Sask	Alb	BC	Yukon
4	3	2	1	0	0	0	1	9	1	9	1	10	0
% projects	14%		3%	0%	0%	0%	3%	24%	3%	24%	3%	27%	0%
% Aboriginal population	5%		2%	0.1%	1.5%	1.3%	9%	18%	16%	14%	15%	18%	0.8%

- Ontario, BC and Saskatchewan have a large proportion of Canada's Aboriginal population and a high proportion of OLT projects.
- Manitoba, Alberta, Yukon and Quebec have relatively few OLT Aboriginal projects compared with their proportion of Aboriginal people in Canada.

2.3 Scope of Project Delivery

Aboriginal OLT projects vary in scope from National Programs directed at Aboriginal learners everywhere in Canada, to local Community Learning Network projects in remote on-reserve Aboriginal communities with populations of less than 1000 people.

National	Province/Territory	Pan Canadian	Regional	Community
4	5	3	22	5

The majority of projects are regional in nature – serving a number of communities in a particular region of a province or territory. This reflects the administration of many First Nations in which Band Councils serve a number of on-reserve communities, and of rural school districts and colleges that have regional catchment areas. It also reflects the “economies of scale” involved in creating new learning and information technology initiatives in rural areas, where networks of communities are a cost effective way of sharing resources.

National projects (i.e. those providing resources to learners across the country without specific project sites) funded by OLT have a very broad impact. They reach teachers, health workers, and others in communities across the country, who then use the resources to reach further learners in their own settings. This is a very effective approach to developing and disseminating distance education resources. Three Pan-Canadian projects involve community sites in several Provinces and Territories, allowing for peer learning and comparison of approaches between communities.

- OLT programs support a variety of approaches to delivering learning technology initiatives, meeting needs and opportunities at the local, regional, provincial and national levels.
- Pan-Canadian projects delivering initiatives in several Aboriginal communities at the same time, in different provinces and territories, facilitate peer learning between communities and comparative approaches to addressing learning needs.

2.4 Impact on Communities

Projects funded by OLT have served about 74 specific Aboriginal communities¹³ in Canada since 1998 out of a total of 1152 Aboriginal communities in total in Canada. The majority of these communities are rural and remote. There are a further 40 Aboriginal communities that are the subject of development phase funding under CLN for whom project delivery could occur if full funding is provided.

On-reserve First Nations communities are involved in projects in British Columbia, Northern Ontario and Saskatchewan. Remote Inuit communities in Nunavut, NWT, and Labrador are also involved in several CLN and NPLT funded projects. National projects serve learners throughout Canada and are not specific to a geographic community.

¹³ Aboriginal communities are defined as “Indian reserve, Indian settlement, Metis settlement, Inuit hamlet or census sub-division with 25% or more aboriginal population” in: Indian and Northern Affairs Canada, Report on Aboriginal Connectivity, p.4. January 2001.

Community	Urban	Rural & On-Reserve
% Aboriginal OLT projects	5%	95%
% Aboriginal population	50%	50%

Census statistics indicate that about 30% of Aboriginal people live on reserves and a further 20% live off reserve in rural communities. About 50% of Aboriginal people live off reserve in urban communities. Only two OLT projects indicate any potential involvement of urban Aboriginal people, one in Calgary and one in Toronto. Both are in the early stages of implementation and have Aboriginal people as only one of several partner groups.

- OLT is funding projects serving a small proportion (about 6%) of the 1152 Aboriginal communities in Canada.
- There are no funded projects specific to urban Aboriginal people and communities at this time.

2.5 Learners and Learning Activities

The learning content of projects funded by OLT respond to a range of educational needs of Aboriginal learners, and amongst workers providing key resources to Aboriginal communities. Major subjects of learning activities include: use of information and communication technologies; health and nutrition; maths and science; literacy and adult basic education; employment skills training; early childhood education; and community economic development.

Content of OLT Aboriginal Projects

Health & Childhood	Literacy & Adult Education	Community Economic Development	Maths & Science	Community Development	Skills Training	Other Post Sec.	Use of Technologies
7	7	7	4	5	8	1	19

A small number of projects (two) provide on-line, certificated post secondary courses (an academic BA program and an economic development program). A number of projects combine training in the use of information and communication technologies with other opportunities for distance education. The majority of projects develop and provide access to distance learning programs in continuing education subjects and employment skills training—critical to the many Aboriginal learners who have not completed secondary or post secondary education.

Adult basic education opportunities are being provided, together with literacy and numeracy, to a large number of Aboriginal learners for whom access to learning activities is limited because of their remote locations.

Several projects provide training and resources for teachers, administrators, economic development officers, health workers and social workers to use in their work in their communities including programs and courses in social work, early childhood education, health, statistics, teaching of math and science, environmental management.

There have been a significant number of projects that have also focussed on community economic development, capacity building and community leadership subjects to address Aboriginal governance and development goals. There are a number of “internship” and community based jobs being supported by projects that provide experiential and community based training for Aboriginal workers with potential for long term outcomes on their employability.

Elders are involved in several projects, however the majority of learners are young Aboriginal adults in the community outside of the formal education system. Projects are delivered in community settings that have access to learning technologies such as CAP sites, Band Council offices, community colleges and schools, and the facilities of community-based agencies.

There is an emphasis in many projects on both synchronous and asynchronous learning, both computer based distance learning and real time teaching activities (in-person and/or online). Many of the project reports emphasise the importance of combining in-person teaching and learning activities with the use of computer-based learning. Several NPLT projects have identified skills and approaches to supporting “computer mediated learning” involving the use of both on-line and in-person mentoring and peer learning opportunities.

Culturally relevant learning materials and content is explicit to the approach of most OLT projects with Aboriginal communities. A high degree of expertise is being developed amongst funded projects to produce unique on-line, digital and written curriculum that includes Aboriginal culture and history as the context for Aboriginal learning and teaching.

- OLT’s funding is supporting access to learning opportunities (distance continuing education, information and communication technology training, and adult basic education).outside of post secondary and school settings to many Aboriginal learners who otherwise have limited access to formal or informal education.
- Support to community economic development, capacity building and leadership development has emerged as a significant focus, in addition to formal education programs.
- Internship and community-based employment opportunities for Aboriginal workers are an important feature of many OLT projects that need to be adequately supported to provide effective training to those involved.
- Many projects have reported on the importance of adequate supports to “computer mediated learning” involving mentoring, in-person and peer learning opportunities.

- There is a growing source of expertise and excellence amongst OLT funded projects in producing curriculum materials that are relevant to and inclusive of Aboriginal culture.

2.6 Technologies

Projects are engaging a variety of technologies to achieve results. All projects have an online internet component and involve the use of computers to support learning activities. Most projects have developed a website or portal to enhance internet communication of their community learning network or project, and use email lists or computer conferencing amongst project participants. Local intranets or networks are being developed to connect communities to a regional network in several projects.

Technologies Used by Aboriginal Projects

Audio conferencing	Video conferencing	CD Rom Multimedia	Internet	Regional Network	Interactive
2	3	7	39	5	4

In some cases the lack of high speed internet connection mean that projects have little use for online learning resources as the speed of connection to and download from the internet is a significant barrier. Several projects in BC and Saskatchewan face this reality of the “digital divide”. In some Aboriginal communities, in the Cariboo Chilcotin region of BC for example, telephone service is also not a reality or of very poor quality, making dial-up connection to the internet impossible. Computer based learning is limited to CD Rom based resources in these communities. CD Rom and multimedia applications are the second most utilised technology amongst Aboriginal OLT projects.

A small number of projects are linked to “Smart Communities” funded by Industry Canada, that are developing broadband initiatives. Several projects use interactive components to their website. Three projects use video conferencing, and two have developed audio conferencing and graphics tools.

The high relative cost of adapting and maintaining interactive technologies and applications with sophisticated graphics is referenced in a number of project reports.

- Poor or non-existent connectivity to the internet limits the use of learning technologies in many projects – reflecting the digital divide facing Aboriginal communities.
- High costs for developing interactive technologies and graphic applications is a barrier to the effective use of some learning technologies by communities with limited resources.

3. Survey and Consultation Results

3.1 Outcomes

- OLT projects have significantly increased access to **culturally relevant education and training** by Aboriginal people. Several projects have contributed resources for use by teachers and others to increase career paths for Aboriginal students in math and science, an area in which they are traditionally under represented. The Ditidaht First Nation in the Cowichan School District in BC has used their OLT project to help young people complete their high school education. Due to their remote location (a three hour drive to the nearest high school) very few young people have graduated, but now several are using distance learning to complete high school and go on to further education.

The *Distributed E Learning Community for First Nation Science Education* at Concordia University is providing 17 web based learning modules on science subjects, including lesson plans, teachers' guides, and student learning materials totalling 72 megs of RAM and 800 pages of text that meet Grade 7 – 10 math and science requirements of all 13 provinces and territories. There are also five interactive learning modules being developed with the assistance of IBM Pacific's Design Centre. All of this material uses Aboriginal images, situations and history to encourage young Aboriginal people to pursue a career in engineering and science. The program has an advisory committee made up of Aboriginal elders, engineers and scientists who are role models for students.

- A number of projects have provided enhanced **access to, management of, and training in the use of Information and Communication Technologies**. The Marieval Enterprise Centre, the Ku-ke-nah SMART First Nation, and the Keewatin Career Development Corporation provide information and communication technology training and access through their network of community sites in rural and remote First Nations communities in Saskatchewan and Northern Ontario. These projects emphasise Aboriginal content and local employment by increasing the capacity of communities to generate their own online products, and enhance the expertise and skills of local Aboriginal people to use information and communication technologies, managing their own networks and applications. The Coast Cariboo Chilcotin Learning Network covers an area the size of New Brunswick, and has hired several Community Learning Resource Coordinators to provide training in computer literacy in remote, rural communities.

The *Keewatinook Okimakanak Centre for Expertise for Indigenous Learning Communities* is improving access to equitable and affordable broadband connectivity and all the applications that can be delivered over such a network. The Centre, located in Northern Ontario, is training and employing local people to manage and maintain their broadband network and applications, using their expertise in communication services and networks to create transferable opportunities in other parts of Canada.

- **Health and social development programs** are being delivered online through a number of OLT projects that emphasise traditional aboriginal culture and knowledge. These programs are equipping community-based practitioners in Aboriginal communities to deliver more relevant and effective services, and strengthening Aboriginal health and social workers capacity to use traditional knowledge and culture to enhance the health and social conditions of their communities.

The *Centre for Indigenous Peoples' Nutrition and Environment at McGill University* is delivering an online course with interactive components on "Nutrition and Health for Contemporary Aboriginal Communities". Health related workers in First Nations and Inuit communities in Yukon, NWT, Nunavut and Labrador are using the course to upgrade their skills and knowledge. Improving prenatal nutrition based on promoting traditional Aboriginal knowledge of food and the environment is an important outcome of the project.

- **Community economic development** is being supported by several OLT projects, particularly in rural and resource-based areas that are having to reinvent their economies due to declines in traditional sectors like fishing and forestry. The Lillooet Learning Community Partnership and the Upper Skeena Learning Community Partnership are creating partnerships between aboriginal and non aboriginal communities with very high unemployment (80% plus) in their regions. They are providing training and support to non traditional economic opportunities in agriculture, tourism and value added fish and wood processing. The BC Institute of Technology's Venture Development Centre is providing online entrepreneurial skills training and mentoring to Aboriginal communities working to diversify their economies.

The Council for the Advancement of Native Development Officers is providing certificated, online training in community economic development for 2,000 Aboriginal Economic Development Officers throughout Canada. Their program is accredited by four post secondary institutions. They are developing 16 toolkits for each of the competency areas they have identified to strengthen community economic development (CED) practice, and are working to establish a youth internship program for CED practitioners in Aboriginal communities. The project supports sustainability of economic development officer positions in Aboriginal communities, in the context of a high staff turn over in those positions. The high turn over rate indicates the challenges facing front line workers in CED that networking and learning opportunities can help address..

- A number of projects report outcomes in using innovative **community learning to strengthen the leadership and social capital** of Aboriginal communities. Projects in BC, Labrador and NWT used learning strategies and technologies to enhance community leadership, communication, project management, conflict-resolution and co-operation. A project in Labrador "*Using Learning Technologies to Building*

Leadership Capacity and Inclusive Community Infrastructure in Remote Areas developed on-line training programs using resource manuals and learning circles to enhance leadership, technical and community building skills in remote communities of NWT and Labrador. Some of these tools, such as a “False Consensus Lens” are transferable to other Aboriginal communities. Learning community projects in BC have used experiential learning, “service” learning (learning while working in the service of one’s community), and store front community learning centres to engage people, particularly youth, who have not succeeded in the formal education system. Many of these initiatives also report the importance of mobilising all sectors of the community to work together to address pressing social, economic and environmental issues, creating the social capital necessary to manage and create change. Popular education through online and community-based activities is used to develop community leadership and participation.

The Upper Skeena Development Centre has opened a “Learning Shop” in the Village of Hazelton in the Gitxan First Nation’s territory to promote popular education and community development. They provide action research to support strategic planning in the 14 aboriginal and non-aboriginal communities of the region, and are involved in a sustainable agriculture plan. Youth use the Learning Shop to pursue employment and life skills training, and there is a regular “service learning” program that youth use to create lasting assets for the community. A popular education program for adult learners provides classes in Gitxan culture, music, history and language and “Humanities Hazelton”, a course in philosophy and social sciences. A major objective of the project is to support a continued Aboriginal and rural life style that allows people to survive and stay in their community. The project has become a “hub” for personal learning as well as an internet based resource to the communities of the area.

3.2 Challenges and Emerging Issues

Consultation with organisations funded by OLT, and with other key informants concerned with Aboriginal learning issues, were unanimous in their support for the role of OLT in providing a strategic resource to address Aboriginal learning challenges.

In particular, respondents cited the following positive aspects of OLT programs:

- The relatively long term nature (2 – 3 years) of funding.
- The relative flexibility of the funding criteria to cover learning, community development, and information technology activities on an integrated basis.
- The ability to experiment and test approaches to innovative, lifelong learning in community settings that are relevant to Aboriginal people.

OLT funding is seen as a unique source of support for projects that can be used to lever other investment. The following challenges to achieving project and community objectives were raised by project proponents and key informants in unprompted responses to questions in the survey, site visits and other interviews.

Issues and Challenges

(n = 15)

Issue	# of References
Sustainability – need for long term government support	6
Importance of genuine Aboriginal engagement	5
Difficulty coordinating and achieving partnerships	5
Lack of internet/telecommunication infrastructure	5
Cost of internet/telephone access	5
Finding/retaining skilled technical employees and contractors	4
Lack of computer literacy	3
Need to build local leadership	3
Need to combine online and in person learning	3
Travel costs and time for projects covering remote communities	2
Under estimation of timelines – learning curve involved	2
Lack of cooperation from post secondary institutions	2
Cost and technical difficulty of interactive technologies	2
Lack of technical support/maintenance	2
Academic expectations too high	1
Assessing market value for technology contracts/employees	1

In addition, the following comments were made by respondents on the role and programs of OLT in meeting Aboriginal learning needs.

OLT Role and Programs

(n = 15)

Comment	# of References
Need for more peer learning and networking opportunities (conferences, online and teleconferences with like projects, best practice and resource sharing)	6
More direct contact with OLT staff	5
Continued long term funding	5
More coordination between OLT, HRDC and other government departments (federal, provincial and territorial)	4
Reduce delays in funding approvals	3
Change criteria to allow more funding for training	3
Reduce HRDC reporting requirements/clarify program definitions	3
Change criteria to allow funding for capital assets (e.g. communication technology)	2
Target funds specifically to Aboriginal organisations	2
More coordination between OLT and national Aboriginal organizations in economic development, education and labour market policy	2
Create a task force of Aboriginal representatives on learning	2

4. Findings and Recommendations: Bridging Aboriginal Digital and Learning Divides

4.1 Funding Priorities

Issues:

- OLT provides a unique and valued resource to efforts by Aboriginal educators and communities to address related learning, technology and community economic development needs. Adult and community learning activities that OLT supports are critical to the education circumstances of Aboriginal learners and communities, many of whom are not engaged in formal education.
- Current OLT funding is serving about 74 out of 1150 Aboriginal communities but only 9 out of 217 projects directly fund Aboriginal organisations. The level of investment in Aboriginal communities from OLT, HRDC and other sources is not adequate to seriously address the recommendations of the Royal Commission on Aboriginal People to enhance Aboriginal access to learning.
- Aboriginal on-reserve, rural communities with 25% or more Aboriginal population, and urban disadvantaged communities in which many Aboriginal people live have the greatest concentration of learning, digital and socio-economic challenges. Those communities need to be prioritised for funding.
- Increased matching investment could be leveraged through active engagement with other departments, provincial territorial involvement and the private sector.
- Program delivery in response to isolated project proposals isn't producing a strong knowledge base on what works and why to inform community practice and public policy. A proactive National Demonstration Program is needed to test and link-up innovative approaches to community learning and development on a systematic basis, with a strong peer learning and evaluation component to inform public policy and strengthen best community practices. This could be developed as a major component of the Government of Canada's Innovation Strategy, strengthening community led innovation to address the challenges facing Aboriginal people.

Recommendations:

- 4.1.1 OLT should continue to prioritise Aboriginal projects, particularly Aboriginal on-reserve, rural communities with 25% or more Aboriginal population, and urban disadvantaged communities in which Aboriginal people live.
- 4.1.2 OLT share this report with Aboriginal organisations, other federal departments, provinces/territories, private foundations, Telcos and other stakeholders and facilitate discussion on funding and cooperation to support innovative community economic development, digital and learning projects in Aboriginal communities.

4.2 Aboriginal Inclusion

Issues:

- OLT funding guidelines prioritise projects that target Aboriginal communities. Only a small proportion of projects provide funds directly to Aboriginal organisations. Generic projects that include Aboriginal learners as one of several target groups may not direct and make the necessary resources available to secure genuine Aboriginal participation and inclusion.
- There needs to be evidence of Aboriginal participation from the outset of a project proposal together with a realistic strategy to maintain a genuine partnership with Aboriginal participants.
- Aboriginal people should be involved in project design and management where they are a project's target group.
- Post secondary institutions should not deliver programs to Aboriginal people without involving them in the program design.

Recommendations:

- 4.2.1 High priority should be given to funding projects led by Aboriginal organisations and where Aboriginal communities are cited as partners or beneficiaries of OLT projects, evidence (written endorsement) of genuine Aboriginal support for, and participation in, OLT projects should be required before projects receive priority rating in the approval process.

4.3 Program Direction and Guidelines

Issues:

- Urban Aboriginal people and communities are underserved by OLT funding, but experience the same learning, socio-economic and digital divides of other Aboriginal people. Quebec, Manitoba, Alberta and the Yukon are underserved relative to their share of the Aboriginal population in Canada.
- The current program array of three separate initiatives and funding procedures is complex for proponents and for administration purposes. A single funding initiative inclusive of different learning and community targets would be preferable. Development phase funding is widely valued amongst CLN projects, and is used to sort out how and if projects are feasible, with what partners.
- Long term funding timelines are necessary to achieving outcomes in Aboriginal communities with major challenges. Up to five year contribution agreements would be appropriate where circumstances warrant longer term development initiatives.
- The role of OLT staff should be recognised as critical to communicating with, advising, providing ongoing support to, and monitoring OLT projects. OLT staff are widely valued as sources of advice and expertise by Aboriginal organisations.

- For some rural Aboriginal communities, the exclusion of minor capital purchases of information and communication equipment can be a major barrier to their success given the lack of sources of revenue for their projects. In addition, limits on OLT funding of training for interns and other workers is a barrier to developing the capacity and skills of locally recruited staff.
- The strength of many OLT projects lie in their integrated approach to tackling inter-related digital, socio-economic development and learning divides in Aboriginal communities. Program criteria need to reflect learning, labour market, information technology, community economic development and social capital outcomes.

Recommendations:

- 4.3.1 OLT should carry out outreach activities to promote knowledge of its funding initiatives to urban Aboriginal organisations, and Aboriginal communities in Quebec, Manitoba, Alberta and the Yukon to encourage proposals from underserved communities and regions.
- 4.3.2 Funding criteria should be amended to allow for adequate funds for training of intern and other staff in information and communication technologies and other relevant skills. Capital purchases of computer and communication equipment should be allowed in rural Aboriginal communities that have limited capacity to raise capital funds.

4.4 Content and Engagement

Issues:

- Youth learning activities are components of the majority of OLT Aboriginal projects. The demographics of the Aboriginal population mean that youth leadership and development will be increasingly important. However there are limited opportunities for youth themselves to engage in discussion on their learning and development needs, and no youth led OLT projects.
- OLT funded learning activities and projects are responding to a variety of learning subjects and needs of Aboriginal people. Aboriginal communities are taking on more responsibility for their own community economic development, governance and public administration, and for sustainable resource management. These four areas may require more attention in Aboriginal learning programs in the future.
- Support to peer learning and networking is the highest priority of respondents for enhancing OLT's role in supporting Aboriginal learning. There is a need for a specific conference for sharing of experiences and expertise between Aboriginal OLT projects and organisations.
- There needs to be an assessment of best practices in OLT's Aboriginal projects to strengthen practice amongst Aboriginal educators and communities, and to inform public policy on how to systematically enhance supports to effective Aboriginal community learning and development.

- Many OLT projects are developing tools that are transferable to other Aboriginal communities. An online and published inventory of tools and resources for Aboriginal community learning would be useful to many communities. This could include instruments used for leadership development and capacity building, culturally relevant content and curriculum, and the use of indicators and benchmarks to measure and target long term improvements in community social, learning, digital and economic conditions.

Recommendations:

- 4.4.1 A conference should be convened before the end of 2002 to bring together OLT Aboriginal projects and other relevant stakeholders to share best practices and discuss how to strengthen Aboriginal community and adult learning initiatives and peer learning between them, and review how content could be strengthened in youth development, community economic development, resource management, and governance. This event could be featured as a component of HRDC's engagement strategy for its Knowledge Matters paper and could be used to develop an ongoing Aboriginal Advisory Group.
- 4.4.2 A best practices report should be developed using detailed case studies of OLT projects to identify what works and why in Aboriginal adult and community learning, and to inform public policy on how to systematically enhance supports to effective Aboriginal community learning and development. This report could contribute to addressing the Government of Canada's Innovation Strategy focus on strengthening community led innovation.
- 4.4.3 A published and online inventory should be developed of tools and resources being created by Aboriginal projects including examples of: Leadership development and capacity building tools; culturally relevant curriculum; partnership building; and the use of evidence based frameworks for evaluation.

4.5 Access

Issues:

- Internet connectivity and the lack of access to, cost of, high speed internet connections continues to be a major barrier for Aboriginal communities. It is unlikely that the private sector is going to meet this challenge given the rural and remote nature of many of Canada's 1152 Aboriginal communities.
- A number of OLT's Aboriginal projects are experimenting with network applications to enhance local connectivity. New technologies and applications are having mixed results. There is very little sharing of knowledge on these technology areas by Aboriginal organisations.

Recommendations:

- 4.5.1** A review and assessment of community networking technologies should be completed and disseminated to Aboriginal organisations and other community stakeholders, to advise on success factors in creating locally managed networks and related applications. Industry Canada should be invited to support and engage CAP projects in the review to help with its efforts at strengthening sustainability of community access initiatives.