Needs Assessment for an Electronic Infrastructure for the Canadian Literacy Community

**Prepared for the National Literacy Secretariat
by Consulting and Audit Canada**

March 27, 1996

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We are making them available in order to validate the needs expressed in the reports and to solicit the participation of all literacy partners in moving towards an electronic infrastructure for Canada.

- ARE NEEDS CORRECTLY IDENTIFIED?
- ARE BARRIERS CORRECTLY IDENTIFIED?
- HAVE ALL THE OPTIONS TO REMOVING THE BARRIERS AND MEETING THE NEEDS BEEN CONSIDERED?

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1. INTRODUCTION

1.1 Study Background, Rationale and Objectives

The National Literacy Secretariat (NLS) was established in 1988. Its mandate is to facilitate the involvement of all sectors of Canadian society in the creation of a more literate country. Through its national program, it supports a range of national organizations and provincial and territorial coalitions for literacy. It has also entered into partnerships with non-literacy NGOs, business and labour organizations, and others to encourage them to focus on the literacy challenges facing Canadians. Through its federal-provincial/territorial program it has established cost shared partnerships with each provincial and territorial government to support a range of literacy projects and initiatives designed to meet specific needs at the regional and local level.

The rapid evolution of computer and communications technologies in recent years has created new opportunities to further the cause of literacy in Canada. The NLS has recognized this potential and has supported a number of projects involving the application of such technologies. These include the National Adult Literacy Database (NALD) which contains a range of information of interest to the literacy community and makes it available either on-line or by means of a telephone call.

Among the provinces, Ontario leads the way in the development of an electronic infrastructure for literacy. This includes three technology-based projects that have been developed on a cost-shared basis with the NLS. These are: AlphaCom, an electronic mail and conferencing service; Alphabase, a literacy program database, and Alpha Ontario, a resource centre connected with the Metro Toronto Reference Library.

In January, 1995, the NLS held a Policy Conversation on the underlying question of the role new technologies can play in promoting and developing literacy in Canada. Many of those present thought that these technologies could play an important part in supporting learners, practitioners and organizations in the literacy area. A subsequent meeting was then held on August 24, 1995 to begin the process of assessing the development of a technology-based infrastructure for the literacy community. The meeting was also a significant first step in helping to define appropriate roles for the various key players, including the NLS.

The meeting focussed on issues related to the development of a strategy with respect to the role of new technologies in meeting the needs of the literacy community in Canada. This strategy would build upon existing initiatives, such as the NALD and the Ontario systems and would highlight opportunities to reduce overlap, create synergy and fill gaps. This process of strategic development would also help the NLS to refine its own role, strategy and funding criteria.

As a consequence of the August 24 meeting, the NLS asked Consulting and Audit Canada (CAC) to conduct this needs assessment for an electronic infrastructure for literacy in Canada. The assessment focusses particularly on the type of infrastructure that is needed to:

(i) to help practitioners and literacy organizations to communicate with each other and with those who support them, and

(ii) provide practitioners and literacy organizations with ready access to the information they require to do a better job.

Those who attended the August 24 meeting constitute the advisory committee for this project.

1.2 Outline

In Section 2, the report first establishes the communications and information needs of practitioners and literacy organizations in general terms and indicates how these needs vary among those serving different groups of learners. Section 3 then presents a brief outline of the current level of electronic support. This is followed, in Section 4, by an analysis of some of the current obstacles to the development of better communications and information sharing and, by extension, to the development of an electronic infrastructure. Section 5 then discusses a number of opportunities in the areas of technology, partnering and funding that might help to remove some of these obstacles. Section 6 lays out some strategic issues identified by participants. Finally, Section 7 summarizes the general findings, outlines a recommended strategy and proposes an action plan.

1.3 Approach

(1) Documents provided by the National Literacy Secretariat and other organizations;

The information for this study came from five sources:

(2) A series of 8 focus group sessions held across the country;

(3) Telephone interviews about 50 individuals identified by the NLS and provincial co-ordinators;

(4) Interviews with senior officers at NALD, AlphaOntario and AlphaCom; and

(5) The BlainReport(1) .

Focus group discussion guides and lists of focus group members are presented in Annex A. Interview guides and lists of those interviewed are presented in Annex B. In this report focus group members and interviewees are referred to collectively as participants.

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(1) In the fall of 1995, François Blain of La Bôite ˆ Projects, a Québec consulting firm, received an NLS supported contract from the Ontario Training and Adjustment Board (OTAB) and the Québec Ministry of Education to conduct a joint feasibility study of the electronic infrastructure needs of the Francophone literacy community in Ontario and Québec. This study is to be released in the spring of 1996. In January 1996, M. Blain was awarded an additional contract by the NLS to hold focus groups in Ontario and Quebec to complete the Francophone component of CAC's study. The findings of this report, which was submitted on Feb 19, 1996 and which is entitled "Evaluation des besoins d'une infrastructure électronique pour soutenir la communauté canadienne de l'alphabétisation" have been incorporated into our report. This latter report is referred to as the Blain Report in this document. It is appended in full as Annex C.

2. THE COMMUNICATION AND INFORMATION NEEDS OF LITERACY PRACTITIONERS AND ORGANIZATIONS

2.1 Communication Needs

In order to be useful to the literacy community, an electronic infrastructure would have to be enable practitioners and organizations to communicate with various groups. For the purpose of communication, participants identified four general groups.

A. Communication Among Peers

A primary requirement of all the groups who participated in this study was to be able to communicate more readily among themselves. This would provide a means for the convenient exchange of practical information as well as providing for more general mutual reinforcement. This need is particularly strong among those working in remote or rural areas who tend to feel quite isolated, a factor which may contribute to the high turnover rate of volunteers.

B. Communication with Supporting Organizations

Participants also expressed the need for an improved infrastructure to enable them to communicate more easily with the various organizations on which they rely for support, including literacy organizations, educational organizations, provincial and federal governments as well as with experts in the literacy field. They are looking to such organizations for support in such areas as training, professional development, expert guidance, coordination- ordination and information (see 3.2).

C. Communication with Others in the Local Community

Practitioners and literacy groups need to be able to communicate with organizations, such as libraries, schools, colleges, community groups, news media and private sector companies and associations with whom they collaborate. Such local networks can enable them to draw upon existing community resources in furthering the cause of literacy.

D. Communication with Learners

Participants also noted the need for improved communication between practitioners and learners and among learners themselves. This would help practitioners to become more effective and would enable learners to support and learn from each other.

The areas in which practitioners feel the need for improved communication vary according to where they are located and which learner group they are serving. Thus, rural practitioners serving widely dispersed learners emphasize the need for networking and sharing information on literacy and related issues such as job availability and skill requirements. Urban practitioners, on the other hand, may be more concerned with identifying and tracking students and avoiding duplication of effort. There is also variation from one part of the county to another. Ontario already has a well developed infrastructure to support its practitioners and literacy organizations (see Section 3.6), whereas the infrastructure in some other parts of the country is much more limited. There are also significant variations among different groups of learners (see Section 2.3). For example, French-speaking practitioners across the country expressed a need for communicating nationally with their counterparts in Quebec and Ontario. Native practitioners also expressed a need to communicate with their peers on a national basis.

The preferred focal point for communications is the worksite, often a school or library. Participants indicated the need to communicate almost on a daily basis with their peers and local partners. Communication with organizations at the federal or provincial level need only be weekly or even monthly, although new programs would require more frequent contact at this level than more established programs.

2.2 Information Needs

One of the principal functions of a Canada-wide electronic infrastructure for literacy would be to provide practitioners and literacy organizations with timely and useful information that would enable them to meet the needs of their learners more effectively and efficiently. Participants in the focus groups and interviews identified an extensive list of such information requirements. These are summarized in seven groups below.

A. Practitioner Training and Development

- practitioner training packages, including training software - especially for volunteers - such training should be responsive to local needs
- information about training and development opportunities, such as workshops and conferences

B. Instructional Design Support

- information on leading-edge developments in instructional design for literacy
- curricula and practices from elsewhere (including other Canadian provinces)
- information on the instructional needs of different types of learners
- instructional methodologies geared to particular groups of learners (see list under 2.3)

C. Teaching and Reference Material

- high quality teaching material (including print material) tailored to learner requirements, such as material suitable for adult learners and material designed for specific linguistic and cultural groups - Canadian content was seen as important
- updates and backup materials
- instructional software
- listings and evaluations of teaching materials
- reference materials, such as grammar books, dictionaries and literacy journals

D. Information on People and Events

- names and addresses of other practitioners, literacy organizations, etc.
- newsletters
- community information
- information on upcoming events

E. General Research and Reference Material

- information on research and studies related to literacy - from the academic world, funded by the NLS(2), etc
- listings, abstracts and evaluations of what is available
- information on who is doing what in the field of literacy research
- literacy statistics and survey information

F. New Initiatives and Opportunities

- significant new initiatives in the literacy field
- up-to-date information on new programs and projects related to literacy in other regions
- lessons learned and success stories from recent projects
- developments and opportunities in distance education

G. Administrative Instruments

- criteria and standards for testing and evaluating practitioners
- student records
- curriculum evaluations
- annual reporting form
- resource and student tracking systems

The interviews and focus groups did not yield clear information on the priorities accorded by participants to these various needs. However, an analysis of interview responses did suggest that the information was needed most for the purposes of practitioner development, followed by assistance in overcoming specific problems (trouble-shooting), followed by general networking for the exchange of ideas and information.

Participants repeatedly emphasized the importance of setting up a system to evaluate the material made available in order to ensure its quality and relevance. One approach suggested was to the establish a gateway or filter through which would pass only material and information that has been evaluated objectively and professionally. Another option would be to have the information evaluated by the users themselves.

2.3 Special Needs of Particular Groups

During the course of this study it became apparent that there are many different groups with special literacy needs and many different types of programs designed to meet those needs. By extension, literacy practitioners working with these groups will also have special communication and information needs. Among the groups(3) with special needs are the following:

- people living in isolated communities
- people with learning disabilities
- people with physical disabilities
- people in need of literacy upgrading
- people in the workplace
- unemployed
- youth
- adults
- elderly
- recent immigrants
- First Nations
- Francophones outside Quebec
- Anglophones in Quebec

Depending upon the group in question, programs may focus on different aspects of literacy (basic reading and writing, basic life skills, job-related skills, numeracy, computer skills, etc.) and may use specific techniques and materials (software for the deaf, Native languages, etc.). The above list is certainly not complete and within each group there are many sub-groups. It does, however, clearly illustrate the fact that we cannot talk about a single, uniform set of practitioner needs with respect to information and communication. Time did not permit us to explore the needs of each of these groups in detail with the exception of Francophones outside Quebec, Anglophones in Quebec and First Nations for whom separate focus groups were convened. We also received specific information on the needs of Francophone practitioners in Quebec and Ontario through the Blain Report.

Much of the variation in needs among different groups has more to do with content of what is delivered by the infrastructure (the type of information required and who people want to communicate with) than with the nature of the electronic infrastructure itself. Indeed, it is possible to identify a reasonably common set of general attributes for this infrastructure. There are, however, some significant differences among certain groups with respect to the barriers that would have to be overcome before the infrastructure could be utilized. There are also some specific concerns over the way in which it might evolve. As noted, this report is not able to deal with each group in detail. It does, however, single out the special requirements of Francophones and First Nations for special attention. A detailed account of First Nations needs appears in Annex D and will be referred to at appropriate points in the narrative. A detailed account of the situation and needs of Francophones in Quebec and Ontario will be found in the Blain report. Key points from a preview of this report and from interviews with Francophone practitioners across the country will be referred to as appropriate.

Francophone Groups Covered by the Blain Report

Francophone practitioners and literacy organizations are centrally concerned with the preservation of the French language and culture and with the importance of literacy to the economy. Literacy is also viewed as central to the ability of people to participate in their communities. There are specific needs for information in French and for communication with other Francophone groups. Apart from the question of language, preliminary indications are that the communication and information needs of Quebec and Ontario Francophone practitioners and literacy organizations do not seem to be significantly different from those of their counterparts across the country, as listed in 2.1 and 2.2.

Official Language Minorities

The primary concerns of Francophone literacy practitioners outside Quebec and Ontario, relate to the preservation of their language and culture. Many Francophone communities outside Quebec feel isolated and neglected(4). There is a heavy reliance on highly committed literacy volunteers within this community. Participants referred to these volunteers as "missionaries", "people with a cause" and "community activists". In addition to literacy, many have to deal with a range of social issues, such as general education, developing job skills and dealing with issues such as unemployment, welfare and childcare. Many are often faced with the additional task of translating texts into French. Francophones outside Quebec and Ontario stressed the need to be able to communicate with their counterparts in Quebec and Ontario.

While the issues of linguistic and cultural preservation, access to French language materials and the desire for communication with other Francophone groups across Canada, set Francophone practitioners apart, their remaining communication and information needs do not otherwise differ significantly from those of other Canadian practitioners, which appear in 2.1 and 2.2.

Somewhat similar concerns were expressed by Anglophone participants in Quebec. In particular, they feel that English literacy is not accorded high priority by the Quebec government and that they are not well linked with the rest of the literacy community either within the province or nationally.

First Nations

Like their Francophone counterparts, First Nations literacy practitioners are concerned with the preservation of their many languages and cultures. There are 53 Native languages in Canada, 43 of which are considered to be "on the verge of extinction", while an additional seven are listed as threatened. Only Cree, Ojibway and Inuktitut are considered to have an excellent chance of survival.(5) In a further parallel with many Francophone practitioners outside Quebec, many First Nations literacy practitioners also face multiple responsibilities, a strong sense of isolation and lack of appropriate teaching materials. An additional problem facing Native communities is a lack of suitably educated volunteers.

The basic communication and information needs of Native literacy practitioners are similar to those outlined in 2.1 and 2.2. However, participants did stress the importance of being able to communicate with other Native literacy programs across the country and of having access to Native language resources and Native literacy data. (For further information see Annex D.)

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(2) One criticism of the NLS, in an otherwise very favourable evaluation study carried out in 1995, was inadequate dissemination of the results of NLS-funded projects. An electronic infrastructure has the potential to support such dissemination.

(3) Note that these groups may overlap. For example some practitioners may work with Francophones in isolated communities.

(4) As noted later, this is less true of Franco-Ontarians than other Francophones outside Quebec.

(5) Information from "Vanishing Languages Imperil Native Culture", The Globe and Mail, Friday March 1, 1996, quoting the following source: *You Took my Talk: Aboriginal Literacy and Empowerment,* Report of the House of Commons Standing Committee on Aboriginal Affairs, 1990.

3. CURRENT SUPPORT FOR COMMUNICATIONS AND INFORMATION ACCESS

3.1 Current Technological Support - General

The current level of technological support for literacy practitioners across Canada varies enormously. This variation is a function of two principal factors: (i) the nature of the provincial infrastructure and (ii) variations in the technological sophistication of individual practitioners. Thus, at one end of the spectrum, we find some individuals who are totally at home on the Internet, while at the other end a few do not even have a telephone.

In much of the country the literacy community still relies primarily on traditional means of communication, such as newsletters put out by provincial networks, conferences. meetings and workshops. In addition, there are many less formal local meetings in church basements, schools, libraries, community centres, etc. Libraries and the educational system are the main sources of instructional material. There are many informal networks for sharing information, a lot depends on who you know and where you are (e.g. urban versus rural) and knowing where to go. Many practitioners rely heavily on their co-ordinators for information. Within their inherent limitations, these informal networks can work quite well for those who take the initiative to develop and use them.

In addition to personal contact, a number of technologies are employed to promote communication and access to information in the literacy community. Apart from computer-based technologies (discussed below), the principal technologies are print (distributed by mail or through pigeonholes), telephone, fax and videos. Educational television and teleconferencing were also mentioned. A number of provinces emphasize the use of the telephone to obtain literacy information. In some provinces this support is available locally while others have established province-wide 1-800 numbers for this purpose. Many participants felt that these means of communication are working well and will continue to have an important role to play, even in the presence of a more sophisticated infrastructure based on information technology.

3.2 Computer Technology - General

In assessing the current status of computer technology in the literacy community for the purposes of this study, there are two key factors to consider:

(i) the current availability of computer technology to practitioners and literacy organizations and the associated levels of training and technical support; and

(ii) the availability of opportunities for practitioners and literacy organizations to use computers for the purpose of communications, access to information and training.

Availability of Computers

Computer resources appear to be very unevenly distributed among literacy organizations across the country. Recent surveys have been completed in Ontario and Quebec and the results are summarized in Sections 3.3 and 3.4 respectively. Information from elsewhere is more impressionistic. Overall, Ontario appears to be the best-equipped province. Elsewhere in the country, many literacy programs are without computers and many of those that have computers have to make do with low-end and outdated equipment, which has been handed down from other users. Most would consider it a luxury to have a 486.

Added to these difficulties, a large number of participants referred to inadequate training and technical support, even when equipment was available. They had to rely on hardcopy information manuals, which are not always easy to understand. Some groups, among Anglophone programs in Quebec, for example, have made arrangements with students at local community colleges to provide technical support, but we were told that such arrangements are not always reliable due to their volunteer nature and the sometimes inadequate experience of those providing the support.

As expected, the situation in wealthier provinces, such as British Columbia and Alberta is considerably better than in poorer provinces, such as the Maritimes and especially Newfoundland. There is an equally great variation within provinces, with literacy programs run by educational institutions often markedly better equipped than those at the community level, especially those in rural and remote areas and among First Nations communities.

With respect to the second factor, the use of computers for networking and access to databases, there are a number of systems in operation across the country. The NALD and the Ontario systems are the most developed and will be described separately in Sections 3.5 and 3.6 respectively.

While we did not attempt an exhaustive survey of available systems, several others were brought to our attention. For example, B.C. and Alberta have on-line databases of available programs and services and have established a number of networks for specific purposes. People in Saskatchewan can access Saskatchewan Literacy Network through the freenet. A number of communities (including Saskatchewan) provide access to library and college holdings through their local freenets. Finally, among those with the means of access, there is a small but growing, use of the Internet. This is likely to increase as major systems, such as the NALD and AlphaCom become accessible through the Internet.

CD-ROM Technology has begun to play a role in practitioner training. A leading example is Alberta's Supplementary Training for Alberta Practitioners in Literacy Education (STAPLE) system. This system is a project of the Literacy Coordinator of Alberta for the professional development of volunteers using multi- media technology. The development of STAPLE software was funded by the NLS, and it is planned to distribute it throughout Alberta. Subsequently, it may be marketed across Canada.

3.3 Computer Technology in Ontario

A recent survey by the Ontario Training and Adjustment Board (OTAB) (referred to here as the OTAB survey)(6) provided some useful information on the availability of computers among literacy programs in Ontario and their use for networking. First, as part of a project to develop the French language component of AlphaCom (see Section 3.6), OTAB funded the purchase of 486-level computers (complete with CD-ROM, fax modem and communication software) for all Francophone literacy organizations in Ontario (note: all groups participating in AlphaCom's network are supplied with computers). The survey results presented below refer to Anglophone and First Nations programs.

Almost all the organizations responding to this survey claimed to use computers (average 3.5 per organization) and almost 80% of them had at least one 386 type or better. The remainder had only low end models. In addition, 27% of the organizations had CD-ROM players. Only about one-third of employees receive on-going formal training (from other staff, outside trainers, etc.). Most technical support is provided by outside consultants, volunteers or staff members. Other statistics of interest are:
- proportion using a LAN: 28%
- proportion using a modem: 79%
- proportion on AlphaCom for e-mail and electronic conferencing: 76%
- proportion that use the Internet: 15%

The funding picture is bright enough to enable 56% of respondents to purchase computer technology from their operating budgets. Other major sources of funding include fundraising and donations (24%), various government sources (10%), not-for-profit organizations (5%). The private sector accounted for a mere 1%.

3.4 Computer Technology in Quebec

The full version of the Blain Report will provide more detailed information on the technology situation in Quebec. Preliminary indications are that only 11% of the 92 literacy organizations in Quebec and 18.6% of its school boards currently use an electronic network.

3.5 The National Adult Literacy Database

The project to establish a National Adult Literacy Database (NALD) was launched in 1989. Its aim is to develop a comprehensive computer accessible database of groups and organizations across Canada that are involved in the field of literacy as well as other information of interest to the literacy community. NALD, which is a federally incorporated not-for-profit organization, is funded by the NLS. It is governed by a Board consisting of people from across the country with a demonstrated commitment to adult literacy and a particular mix of skills.

NALD provides a bilingual Internet World Wide Web site which provides access to its database. This database includes records of literacy programs, services and activities across Canada from a range of groups, including libraries, community- based organizations, national and provincial organizations, schools, post-secondary institutions, centres, networks and research groups. The database currently lists about 6,000 contacts. NALD can be accessed through a toll-free 1-800 number as well as through the Internet. It also publishes "Networks" a quarterly newsletter for the Canadian literacy community. Due the limited resources at its disposal, NALD is unable to deliver training or support to its 300 user organizations.

NALD is in the process of developing Web sites for Canadian/ provincial/ territorial literacy groups and hypertext links to other Web sites associated with adult literacy and is offering to construct Internet home pages for those not equipped to do so themselves. The goal of this activity is to provide a dynamic link through the NALD site to other sites, together with their databases and other information. It will provide a single entry point from which anyone can access literacy organizations, not only in Canada but throughout the world. It is based on the assumption that access to the Internet and its resources will become general within the next three to five years.(7)

However, NALD still has some way to go before it can truly play the national role it has set for itself. Some who had attempted to access the NALD when it operated using a closed system did not always find it as user-friendly as they might have wished. Although since moving to the Internet the situation has improved markedly, this former negative impression will have to be overcome.

3.6 Alpha Ontario and Alphabase

Alpha Ontario, which is located in Toronto, provides clearinghouse services in support of literacy organizations throughout the province. These services focus on the classification and dissemination of resource material (printed, audio-visual and electronic). It provides material and information to practitioners and organizations in both official languages. Services are offered to Anglophone, Francophones, Native Peoples and involved with English as a Second Language.

Alpha Ontario has access to the Metro Toronto Library computer system and is linked, through it, to the national interlibrary loan system. This enable Alpha Ontario to provide a single point of service to organizations and individuals both across Ontario and, increasingly, from outside the province.

To support its bilingual capability in English and French, Alpha Ontario is using the "Canadian Literacy Thesaurus" which was developed as an NLS project by the Canadian Literacy Thesaurus Coalition in which Alpha Ontario played the leading role. The Thesaurus contains a set of about 1800 literacy-related descriptors in both languages. This thesaurus provides a more detailed classification of reference material within the field of literacy than that provided by the general library classification system. The thesaurus terminology therefore helps clients to carry out more detailed searches in either official language. These searches can be made either online (using dial-up access to Alpha Ontario's index) or by telephone (in which case a member of Alpha Ontario's staff will carry out the search on behalf of the client). Experience has shown that telephone access can be advantageous when the query is imprecise, since the staff member may be aware of related information that might not be identified through an online query.

Alpha Ontario also maintains Alphabase, a database of information about programs and organizations involved in adult literacy and immigrant language training in Ontario. Alphabase services include searches on specific topics, provision of mailing labels and a printed directory.

Alpha Ontario is also developing a number of applications, based on Lotus Notes, for distribution to literacy organizations throughout the province. These applications are intended to support the development of a common list of adult literacy and ESL programs, organizations, practitioners and resources throughout Ontario. They take advantage of the technology within Lotus Notes for asynchronous replication. This means that when databases communicate, they automatically exchange information, rather than simply sending it in one direction. Consequently, over time, all databases in the system will contain the same set of information. In addition, the application is self-documenting, containing multimedia video clips that instruct users on how to set up and use the application, thereby minimizing the need for help desk support. Use of these applications should also help to keep Alphabase current.

3.7 AlphaCom

AlphaCom supports some 500 literacy practitioners across Ontario. This network provides communication tools, including electronic mail and a discussion database (based on a product known as COSY) which is partitioned into topics of interest to particular groups. Its services are available in both English and French. Participants can use the system to review discussions, add comments and exchange files. Those who use AlphaCom attribute its success to the fact that its is very pro-active in providing support in the form of computers, training and a 1-800 help line. AlphaCom is currently available through the Internet and is providing support as users telnet from the Internet to its conferencing system.

AlphaCom has already established a Home Page which lists some of the ways in which it is used. These are to enable:

- program co-ordinators and tutors to share ideas and experiences concerning materials and activities;
- administrators and practitioners to share information and expertise on the organization of literacy training;
- Boards and committees to "meet" to discuss issues, make decisions and plan events;
- guest animators and practitioners to participate in electronic workshops for the purposes of tightly-focussed short-duration professional development;
- participants in practitioner training courses to connect with their teacher and with each other;
- people attending literacy conferences to report to the field;
- users to read articles pertinent to their field that are gathered from sources around the world;
- learners to find easy-to-read materials;
- groups of people to meet in electronic focus groups to provide input and feedback on crucial questions;
- learners to communicate with other learners; and
- field development projects to communicate about their plans and products.

Although AlphaCom's clientele regard it as highly successful, it should be pointed out that they constitute a relatively technologically sophisticated group. Initially, AlphaCom was better established in rural and northern areas. While use is still strongest in these areas, there is now a strong urban presence. Participation is low in Native areas. Francophone organizations are on-line and usage is being developed.

Participants admitted that, with the exception of some national teleconferencing and a recent AlphaCom pilot in B.C., Ontario has not accorded priority to communicating with its counterparts across Canada. They cited lack of infrastructure and technological incompatibility as contributory factors. However, they do see the need for practitioners to talk nationally.

3.8 Status of Specific Groups

Official Language Minorities

Preliminary indications are that, most community centres have access to telephones, photocopiers and fax machines. Many also have computers, but these tend to be at best 386's. The Federation Canadienne Pour L'Alphabetisation en Francais (FCAF) is in the process of setting up a home page on the Internet. The system, known as Alpha Franco, is intended to serve the Francophone literacy community. At this stage linkages have not yet been established with NALD or AlphaCom. They hope to be able to provide access to a range of teaching and support materials in French, as well as supporting communications among Francophone practitioners.

Anglophone participants in Quebec also indicated that they have limited access to computers and to the funds necessary to purchase such equipment. They would like to see a gradual shift to an electronic infrastructure which would give them increased access to databases such as NALD.

First Nations

Most First Nations communities are connected to the telephone network and an increasing number have fax machines. Use of computers is still quite limited and computer linkages between communities have yet to be established, except for a very limited use of the Internet, although a few programs in Ontario do make use of the services of AlphaCom. See Annex C for further information.

3.9 Limitations of the Current Support Framework

First, as noted, the current system of sharing information is uneven and suffers from a number of limitations Practitioners and even co-ordinators don't always know where to go for information. Furthermore, they may be unaware of the existence of similar groups. Indeed, a number of focus group members participants observed that these meetings were the first time that they had been made aware of the existence of certain other groups in attendance.

Second, although informal networks and face-to-face meetings have an important role to play, there are drawbacks in relying on them exclusively for communication. Informal networks tend to be haphazard and to rely heavily on the initiative of key individuals. Once these individuals move on, the network tends to fall apart. Face-to-face meetings can be costly, especially among geographically dispersed groups. Other difficulties mentioned include the time spent on communication, for example in making contact with part-time literacy volunteers in situations where variable schedules and unreliable channels of communication make it difficult to share information and to schedule meetings. Telephone and fax do help, but they can also be costly.

Third, we were informed that provincial developments have taken place in relative isolation from one another and even within provinces the literacy community would benefit considerably from wider sharing of information and ideas. While many participants indicated that they would like to communicate nationally, and even internationally, some felt that provincial authorities had been slow to recognize the benefit of establishing inter-provincial links.

Fourth, the current informal support framework does not allow for the systematic capture and tracking of collective knowledge and experience. Instead, much of the available knowledge and experience resides individual level. This limits the ability of the literacy community to learn continuously from experience. Again, high turnover simply adds to this problem.

Fifth, and finally, the current system is that it doesn't deal well with the special problems of linguistic minorities. Both Anglophones in Quebec and Francophones in provinces outside Quebec and (possibly) Ontario feel a pervasive sense of isolation. A Canada-wide framework would help both these groups.

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(6) *Computer Technology Survey of Ontario Adult Literacy Organizations,* Ontario Training and Adjustment Board (OTAB), September, 1995 (Report prepared by Mike Kelly)

(7) This assumption is supported by industry analysts who project that 50% of computer sales will be for home as opposed to corporate use during this period.

4. OBSTACLES TO IMPROVED ELECTRONIC COMMUNICATIONS AND INFORMATION ACCESS

4.1   [General](#)

4.2   [Obstacles Faced by Specific Groups](#)

4.1 General

There are a number of barriers and obstacles to the development of an electronic infrastructure for improved communications and information access in the literacy community. The OTAB study looked at a number of possible factors and found that among respondents the percentage rating specific factors as either important or very important was as follows:

- lack of financial resources: 98%
- lack of time for staff to learn how to use computers: 73%
- inadequate information about the use of computers: 56%
- too many choices, hard to make decisions: 36%
- staff/instructors resistant to using computers: 20%

During the course of our study, participants identified a number of barriers which are listed below. These factors are clearly quite closely interlinked.

Lack of Funding

Among participants, this is generally seen as the leading barrier to further development. Some participants informed us that they can't always meet their salary commitments, let alone invest in new equipment and training. Others felt that the inability to purchase capital equipment under existing government grants was a problem.

Insufficient Priority Given to Literacy

This factor manifests itself in a number of ways. Some participants felt that neither governments nor the educational institutions for which they work view literacy as a priority. Some saw the absence of national standards for testing and evaluation as evidence of this low priority. Others saw the problem in more local terms. For example, it was claimed that literacy instruction is not accorded high priority at community colleges when it comes to promotion. Some literacy practitioners also feel they are last in line when it comes to gaining access to school computers.

Lack of Awareness of Alternatives

There was a perception among some participants that there is no information available in Canada to support them. Among many groups there is, at best, a limited awareness of what is out there. Clearly, literacy organizations are unlikely to make the effort to invest in new forms of communication and information access unless they first understand what is available and what it can do for them.

Fear of Technology

Most volunteer practitioners are over forty years of age and did not grow up with computers. Some are fearful of computers or at least have little confidence in their ability to work with them. This is a significant obstacle that can only be overcome by training, peer example and user-friendly technology. Also, it is reasonable to expect it to diminish quite rapidly in importance over time, as an increasing proportion of the population become comfortable with using computers.

Insufficient Technological Resources

This situation was discussed in Section 3.2. which pointed out how uneven the availability of technology is in the Canadian literacy community. Apart from a lack of computers, participants mentioned problems such as software which they would like to use but could not access, hardware and software incompatibility and lack of access to e-mail.

Lack of Training and Support

Participants also identified this as a major barrier. Many found it difficult to find the money to train practitioners in general, let alone to train them in the use of information technology. At the same time volunteer practitioners in particular often cannot afford to acquire such training on their own. Some participants saw the need for a standard training package to be developed and made available to practitioners across the country.

Similarly, there are often no staff to provide technical support and no money to purchase such support from outside. While some organizations use volunteers to provide technical support, as noted earlier, this can sometimes create as many problems as it solves.

Lack of Time

There are a number of aspects to this frequently mentioned factor. Practitioners, especially part time practitioners and volunteers face time pressures from other commitments and from lack of support in areas such as daycare. Time that is available for literacy work is used for teaching and administration, so that little is left over for acquiring new technological skills. In some cases, it may be more a question of priorities and motivation, which might change if some of the other barriers were lowered.

Other Barriers to Adoption of Technology

Participants identified a number of additional barriers to their use of information technology. Among these were:

- system incompatibilities
- software complexity
- lack of awareness of technological opportunities to access current information
- lack of phone lines (remote sites)

Although we did not attempt to formally rank these obstacles with respect to their importance, participants particularly emphasized lack of funding (and consequent lack of computers) as a major concern, closely followed by lack of training and lack of familiarity with computers.

4.2 Obstacles Faced by Specific Groups

Francophone Groups Covered by the **Blain Report**

Among Quebec Francophone practitioners insufficient funding is probably the single most important obstacle to improved electronic access to communications and information sources. We were informed that, within Quebec, community- based literacy organizations play a secondary role to the educational system on which they depend for funding. As a result relations between literacy organizations and school boards are sometimes difficult and some literacy practitioners feel that literacy does not receive its fair share of available funds and resources.

Additional obstacles identified in the Blain Report include:

- lack of time
- lack of appropriate pedagogical and research materials
- lack of access to electronic networks
- lack of suitable equipment, training and support
- unwillingness to use computers

As noted in 3.6, some progress has been made in the Franco-Ontarian community in overcoming certain obstacles such as the availability of computers, electronic networks and training.

Official Language Minorities

All the obstacles mentioned earlier also apply to this group. Most Francophone centres outside Quebec and Ontario, especially those that are small and isolated, do not have the funds to purchase computers. Funding and support are also a major problems for Quebec Anglophones.

First Nations

In addition to lack of funding and equipment, the main obstacles facing Native literacy practitioners are lack of time (given the many demands being made on practitioners), lack of training and the high rate of staff turnover. We were told that there is also a widespread scepticism concerning the ability of computers to help resolve Native social and linguistic issues (See Annex C for further details).

5. OPPORTUNITIES TO OVERCOME THE OBSTACLES AND MEET THE NEEDS

5.1 Support for an Electronic Infrastructure

The majority of participants felt that an electronic infrastructure had the potential to meet many of their needs, as identified in Sections 2.1 and 2.2. They felt that it would enable them to provide a better service to learners; to communicate more readily with each other, to identify and communicate with experts in specific areas, to support their professional development by giving them access to research findings and innovative ideas, to avoid duplication of effort caused by lack of awareness of work being carried out elsewhere and generally to support a sense of community, especially among those who work in isolated situations. Indeed, the presence of a visible support infrastructure might even reduce the problem of practitioner turnover and might encourage others to volunteer. However, most participants were also quick to point out that such an infrastructure would have to be user-friendly if it was to meet their needs.

5.2 The Logic of a Canada-Wide Infrastructure

A Canada-wide infrastructure would promote communications and information sharing among groups that share common interests right across the country. Variations in needs among different groups of learners (First Nations, Francophone, recent immigrants, people with specific disabilities, etc.) and the literacy practitioners who support them, as discussed in Section 2. When it comes to literacy issues, groups such as First Nations, Francophones, recent immigrants and people with specific disabilities have more in

common with each other than they have with other groups within the same province. Even groups within Ontario, which has its AlphaCom conferencing system which allows particular groups to meet privately would benefit from wider contact with similar groups across the country. This applies even more strongly to smaller provinces. In general, a Canada-wide infrastructure would provide clients with access to a wider range of information, knowledge and experience than a series of independent provincial systems. Furthermore, a Canada-wide infrastructure would help to deal with the isolation experienced by linguistic minorities in certain provinces. Finally, there are potential cost savings in the development of a Canada-wide infrastructure to the extent that participating organizations can collaborate and share resources in developing and maintaining the system and its contents.

5.3 Overcoming the Obstacles

The development of a Canada-wide infrastructure would simultaneously help to resolve some of the obstacles identified in the previous section and would have to be accompanied by a strategy to help overcome some of the others. The key issue of funding is a case in point. A collaborative strategy is needed to finance infrastructure development and operation, while the development of such an infrastructure enables greater leverage to be obtained from the funds that are spent.

A Canada-wide infrastructure would help to address such obstacles as lack of awareness of available information and of others working with similar learner groups, lack of opportunities to access the information that is available and the problem of incompatible systems. However, such an infrastructure would have to be easy to use, inexpensive to operate and demonstrably useful. A system with these characteristics might then help to remove a further set of obstacles, such as fear of technology, lack of time (or motivation) and concerns over software complexity.

Any strategy to develop a Canada-wide electronic infrastructure must address the issues of funding, training and technical support. Such a strategy must include the funding of both the components of the system itself and of the computer hardware and software required by those who will use the system. A key element of such a strategy would be to build upon what is already there, rather than to attempt to construct a new system from scratch. Thus, the NALD and the Ontario systems would likely become important components of any Canada-wide infrastructure, although there would have to be discussions as to how their activities might be rationalized so that they could become specialized "centres of excellence". Furthermore, a Canada-wide system would have a ready-made backbone in the form of the Internet.

The observations of participants on their technology needs and on the available technological opportunities are discussed in Section 5.3. Participants also had a number of observations as to how these technology needs might be met through cost-shared partnerships and various fundraising activities. These suggestions appear in Section 5.4. Clearly, anything that can be done to raise the profile of literacy on the national agenda would encourage the formation of such partnerships and facilitate fundraising.

5.4 Technology Needs and Opportunities

The Human Element

Participants suggested a wide range of means of communication to meet the needs they had identified in 2.1 and 2.2. Although most focussed on technology requirements, many also emphasized the continued importance of face to face interaction in the form of co-ordinators meetings and national and regional conferences. Indeed, even those who stressed the key role of technology felt that the human element was still a vital ingredient.

Technology - General

Among the technology requirements mentioned were:

- access to the Internet and to e-mail
- access to established databases such as NALD and Alpha Ontario.
- a clearinghouse to maintain and update information
- electronic conferencing (videoconferencing, teleconferencing and e- mail conferencing)
- a 1-800 line with help desk
- videos and CD-ROMs

- fax

- mail

- mass media (newspapers, television and radio)
- telephone and voice mail
- facilities to co-ordinate communication at the local level (with colleges, libraries, etc.)

Information Technology

Many participants recognized that even if they do not have access to the appropriate information technology today, within five years it will be all-pervasive. Many agreed that the technology had the potential to help overcome existing problems of isolation and that such technology was quite compatible with a grass- roots approach. Furthermore as younger and more technologically sophisticated practitioners gradually replace their older colleagues, the issue of resistance to technology will decline. Finally, it was noted that there was a snowball effect in that as people gradually became used to the technology they would put it to better use and demand more of it. Therefore, we were told, it makes sense to start planning for this future today, while at the same time addressing the transition issues that inevitably arise. Participants also had some observations on the role that the Internet might play in a Canada-wide system, as well as NALD's potential contribution to that role.

The Internet

In general, many participants saw the Internet (described in [Section 7.2)](#) as the most promising electronic medium to achieve easier and faster communication. They acknowledged that its ability to deliver electronic mail and messaging, conferencing services (including on-line discussion groups and electronic bulletin boards) and access to literacy databases had the potential to meet their key requirements. Participants felt that the Internet would particularly benefit those in rural and remote areas and would greatly facilitate prompt access to time-sensitive material. Participants particularly stressed its potential value in the area of communications (e-mail), allowing practitioners to reach people that they might otherwise have difficulty reaching and generally enabling them to keep current. It was generally seen as complementing, rather than replacing, more traditional methods of communication and information sharing. Participants also stressed the following:

- the importance of first establishing the practical needs of users (something to which this study has contributed);
- the availability of plain language tools and information to enable people to access the Internet; and
- equitable implementation.

Internet services that could be used to advantage include:

- list server discussion groups, which enable users to publish discussion items, add comments and communicate and discuss issues with each other on-line;
- electronic mail services for one-to-one communication;
- access to reference documents and literacy databases; and
- the ability to transfer files which could either be electronic documents or executable files containing software.

Even in remote communities access to the Internet is technologically straightforward. All that is required is a computer equipped with a modem and communications software. However, the main issue in this case is not the Internet service environment itself, but rather it is one of gaining access to computers and establishing an appropriate infrastructure for training and support. Access to computers is discussed in Section 5.5 and training and support are discussed in Section 5.6.

One issue that would have to be faced if the Internet were to form the backbone of the proposed infrastructure is the question of telecommunication costs. Access to the Internet is normally provided by a "service provider", an organization that supplies the telecommunications link to the resources of the Internet. Some service providers, such as Microsoft, America Online and Prodigy, as well as many smaller local firms, operate on a fully commercial basis. Others, such as Carleton University's National Capital Freenet operate on a not-for-profit basis. In any event users are faced with connection charges, either as a fixed fee or on the basis of connect time. This fee could be a burden on literacy organizations with very limited budgets. One approach to limiting these costs would be to piggyback on the existing arrangements of government organizations or educational institutions.

The **NALD**

Although many participants were unaware of the NALD, a number of those who were thought that it could be a key element in any Canada-wide infrastructure(8). Participants stressed, however, that if it was to play such a role it would have to be user friendly, with on-screen prompts and an easy-to-understand manual. It will only be useful if it provides information that appeals to people. Furthermore, it should allow for user feedback. Possible roles identified for the NALD included:

- a national focal point for literacy information;
- a literacy information clearinghouse; and

As noted, the NALD is developing an Internet capability, including a national web site. Some participants felt that this was a necessary step if it was to become a truly national resource. The NALD web site could act as a single entry point through which anyone could access literacy databases and organizations in Canada or, indeed, anywhere in the world. While a number of participants felt that the NLS should also continue to supply the stable and on-going funding necessary for the NALD to remain current and useful, others saw opportunities for a broader base of funding including provincial organizations, literacy institutions and the private sector.

Alpha Ontario and **AlphaCom**

Both AlphaCom and Alpha Ontario could be seen as models for a Canada-wide electronic infrastructure. Specific features of value include Alpha Ontario's thesaurus and its options of on-line and phone-in access and AlphaCom's communication tools and support infrastructure (including training and a 1-800 hotline).

5.5 Computer Needs

Participants indicated that computer technology is moving rapidly towards graphic user interface (GUI) based software, such as Windows 3.1, Windows 95 and Windows NT. According to the META Group of industry analysts, DOS is likely to be phased out over the next 3 - 5 years. GUI based software requires a workstation configuration of 486 or better. This suggests that it would be unwise for literacy groups to pursue a strategy of acquiring low end secondhand computers. Furthermore, the effort to keep obsolete computers running would be a significant burden on untrained staff and would reduce the incentive of practitioners to utilize the system. Finally, any additional cost for faster equipment would be offset over time by savings on telecommunications connection costs.

5.6 Training and Support Needs

The OTAB study posed the following question: "What help would be most valuable to you to enhance your use of computer technology?" The proportion of respondents stating that each identified approach would be valuable or very valuable was as follows:

- software/hardware evaluations and reviews: 97%
- information on available technologies and their use for adult literacy: 94%
- knowing what other programs are doing: 91%
- training in the use of computer technology: 90%
- research into the effectiveness of computer technology in adult literacy instruction: 83%
- a computer technology demonstration centre(9): 72%

Most of these requirements, including the first three, refer to basic information on what is available, what use is being made of it and how effective it is (which our interviews also identified as a key requirement). However, the OTAB survey also indicates the importance of training in information technology, which was also emphasized by the participants in our study. A further, and perhaps more fundamental, reason for the importance of IT training for literacy practitioners is the growing recognition of the importance of computer skills as a fundamental component of literacy, a factor that will likely encourage practitioners to make increased use of computers as instructional media for learners.

Participants also noted that an electronic infrastructure will not function without adequate technical support for both software and hardware. This would encompass both troubleshooting and advice on how to make the best use of available information technology resources.

Some literacy organizations (including many of those in the OTAB survey) have the resources to meet their own training and support requirements, while many (possibly most) will require outside assistance in the form of skilled volunteers or direct financial support. One suggestion was that governments might help to identify and encourage a pool of technology resource people who would be willing to share their knowledge and skills. There was also a recognition that sources of training and support should be regionally based. Other suggestions included:

- train literacy practitioners who can then train their colleagues;
- establish a help desk for support; and
- establish a network to exchange "best practices" ideas and experiences on the use of information technology for literacy training.

5.7 Opportunities for Collaboration and Funding Support

In the course of our consultations, participants made many suggestions for ideas for collaboration and fundraising which might help to address the crucial problem of funding and supporting literacy programs, thereby facilitating the development of a Canada-wide infrastructure. It was also noted that the development of a Canada-wide infrastructure might, in turn foster such arrangements by supporting communication and networking. Some of these ideas are briefly presented below.

Existing Collaboration

The literacy community already makes extensive use of partnerships at both the national and local levels. At the national level, the NLS works in partnership with the provinces on a wide range of programs and projects, while at the local level there are many examples of collaboration between literacy programs and community organizations, such as libraries and schools and social service agencies.

An Integrated Approach

Some provinces are adopting a more integrated view of literacy which might foster the development of such partnerships. An example is Nova Scotia, which has adopted a "convergence model" involving education, literacy, business, labour and community organizations, which it hopes will lead to greater employment. New Brunswick has adopted a similar approach and has identified literacy as an important component of the government's agenda.

Libraries

Literacy training is a natural extension of the library system, which supplies much of the material required. We were told that many adult learners find libraries to be less "demeaning" than schools as a venue for instruction. Many libraries are already equipped with computers and have access to technical support and would make excellent local centres for practitioner access to a Canada-wide electronic infrastructure for literacy.

Educational Institutions

Many literacy programs are based in educational institutions, since literacy can be viewed as a fundamental requirement for nearly all educational programs. Furthermore institutions such as schools, colleges and distance learning organizations are often quite well equipped with computers and access to technical support and many can also provide training. Therefore, as in the case of libraries, they could be used as local access points to a Canada-wide literacy infrastructure.

Federal Government Partners

Various federal government departments have links to specific learner groups which could be harnessed to the cause of literacy. Examples are:

- Human Resources Development Canada(10) - unemployed
- Department of Indian Affairs and Northern Development - First Nations
- Citizen and Immigration Canada - immigrants
- Industry Canada(11) - industrial employees
- Health Canada - people with disabilities
- Canadian Heritage - cultural and official language minorities

In addition, Canada Post has been recognized as a literacy partner and Statistics Canada's survey expertise could prove useful.

Private Sector

The private sector has yet to become a significant player in the field of literacy, yet many participants felt that there was a good potential for collaboration. Suggestions included approaching the computer industry to see if they might help to champion the cause of literacy (and donate equipment and expertise in the process). Since employers would clearly benefit from a more literate workforce, they might be induced to contribute computers in exchange for training, or help with fundraising. Similarly, industry associations and Chambers of Commerce are also potential sources of support. Other possible partners identified by participants include:

- Mass Media (possibilities include telethons, public service announcements, campaigns with matching funds, free advertising, etc.);
- Social Service Organizations (e.g. the "Y", community health organizations, organizations for the disabled);
- Community Organizations (e.g. community rights groups, friendship centres);
- Labour organizations;
- Volunteer Groups (e.g. Telephone Pioneers -retired telephone employees, who might provide technical support)

Fundraising

Many suggestions were also made concerning potential sources of funds. Among these were telecommunications companies, mining companies (in the North), philanthropic organizations, lotteries, etc. Assistance with fundraising might be provided by the mass media, educational organizations, United Way, etc. A further possibility is to acquire services in lieu of money.

(8) One participant suggested that it be expanded to form a National Literacy Database (NLD)

(9) It should be noted that the Office of Learning Technologies (OLT) within HRDC is developing such a centre.

(10) We were told that HRDC's CAN WORK.NET has a link site for literacy which does not at present contain much information, however.

(11) Industry Canada has at least two programs of possible interest to the literacy community, namely the SchoolNet and Computers for Communities.

6. SOME STRATEGIC CONSIDERATIONS

During the focus groups sessions and the interviews, participants raised a number of strategic issues and recommendations. This section outlines these.

6.1 General Strategy

A Collaborative Effort

The construction of proposed Canada-wide electronic infrastructure for literacy practitioners and co-ordinators must, of necessity, involve many stakeholders. Participants saw the NLS as playing a key role as a catalyst in the creation of a national vision and in securing the support of many sectors of society (see below). Since the infrastructure will involve the integration of components developed at the provincial level, the active co-operation of provincial governments is essential. Provincial departments of education should work with each other to ensure that limited funds are put to best use and that unnecessary duplication is avoided. Provincial governments are also in a strong position to encourage the co-operation of certain other stakeholders and potential collaborators in their areas of constitutional responsibility, such as the education sector, municipal governments, community organizations and social service agencies.

Building from the Bottom Up and Building on What is There

Participants felt that it was neither necessary, nor even reasonable, to attempt to construct an electronic infrastructure from scratch. It is much better to incorporate elements that have already proven useful (e.g. AlphaCom and AlphaOntario). While a Canada-wide system would operate within a common technological framework (Internet, national and provincial Web sites, agreed-upon access standards, etc.), the content of the system should develop "organically", in a decentralized manner, building on local grass roots initiatives. Participants particularly stressed that the system should be responsive to the expressed needs of practitioners, co-ordinators and literacy organizations (recognizing that these may evolve over time in response to the development of the system itself).

User Awareness

It was pointed out that there is a need for a comprehensive communications strategy to inform literacy organizations and practitioners about the planned infrastructure and to keep them informed as it evolves. Users have to be aware of the existence of the infrastructure and what it can offer before they will use it.

A User Orientation

The Canada-wide electronic infrastructure is a tool to help practitioners and coordinators to do a better job. Participants emphasized that it will not serve this purpose unless it is simple to use, culturally sensitive, durable, flexible, up-to-date, well supported and inexpensive to access. It should be designed to enable those serving specific learner groups (First Nations, Francophones, disabled, immigrants, etc,) to access pertinent information and communicate with their peers across Canada. In order to ensure continued responsiveness to user needs, it will be important to build in on-going channels of consultation with practitioners and co-ordinators.

User Support

Participants indicated that infrastructure should include provision for training and technical support including a function to advise users on technology requirements and upgrades when necessary.

Input and Evaluation

There is always a danger that the infrastructure could become overloaded with information and that the information it contains could be of uneven quality. Participants were clearly aware of this danger when expressing their needs (see Section 2). There are two basic options. The first is to try to control what goes onto the system. However, with the Internet this is a practical impossibility in any absolute sense. Nevertheless, the managers of key databases could use the clearinghouse approach (as is the case with Alpha Ontario) by determining *a-priori* according to some formal or informal standard what to include in their databases. However, given the desirability of driving the network as much as possible from the grass roots, consideration could be given to establishing a system of user ratings of methodologies, software, guidelines, etc. that are referenced or made available on the network. Ratings could be updated on a continuous basis in response to user experiences.

Evolution of the Network and Transition Arrangements

As noted, the infrastructure will augment, rather than supplant existing means of communication and information access, so that these options will remain available for those who prefer them or who do not have access to the system. For a certain period of time, information in the system's databases may have to be made available in hard copy (accessible via a 1-800 number) as well as electronically.

As noted in Section 3, there are already a number of projects which have yielded or could yield experience of great potential value to the development of a Canada-wide infrastructure. It is important that such experience be tracked systematically in order to guide the evolution of the network. Some participants also raised the possibility of additional carefully selected pilot studies involving particular user groups, technological resources and/or partners in order to demonstrate benefits and determine potential pitfalls. In any event, there is a need to track progress systematically as the infrastructure is being phased in and to make dynamic adjustments in light of this experience.

6.2 Issues Facing Specific Groups

Francophone Groups Covered by the Blain Report

The Blain report stresses Quebec concerns that a national infrastructure will be imposed on them without sufficient consultation or analysis of their particular needs. It emphasizes that co-ordinators must be involved in the development and implementation of the infrastructure. In addressing these concerns, it is necessary to distinguish between questions of technology and questions of content. The technology issues do not appear to be fundamentally any different in Quebec than in the rest of Canada. The Blain report also stresses the importance of training and support.

Official Language Minorities

Francophone minorities in general are centrally concerned with establishing links between Francophone literacy groups across the country, both inside and outside Quebec. They see in an electronic infrastructure a significant opportunity to bring this about. They expressed the same concerns as those in Quebec concerning the extent to which the content of the infrastructure would meet their needs. They emphasized the importance of a Francophone database, which would have to be well publicized and, in the spirit of the Official Languages Act, the continued need for NLS and federal government to recognize their specific literacy requirements.

Somewhat similar concerns were expressed by Anglophones in Quebec. For them, connection to other Anglophones across Canada via a Canada-wide infrastructure would of great value.

Native Canadians pointed to the importance of recognizing their linguistic and cultural diversity and that they not be treated as a single uniform group nor have one person speak on behalf of them. Like Francophones, they view literacy as a key to linguistic and cultural survival. Their level of technological sophistication is lower than much of the rest of the country and they stress the need to progress at their own pace in adapting the opportunity presented by an electronic infrastructure to their own specific needs (see Annex C for further details).

6.3 Possible Roles for the NLS

Possible roles identified by participants include:

- *funding support for network access*: (on a shared-cost basis with other federal organizations, provincial governments and other groups) of computer acquisition, Internet connection, training and support for programs that do not have access to alternative sources of funds (would involve negotiation of funding that is as continuous and stable as possible if the infrastructure is to develop smoothly);
- *continued support for existing initiatives* (in collaboration with the provinces), such as electronic resources, systems and programs that could contribute to the content and functionality of a Canada-wide infrastructure(12) (NALD, AlphaCom, etc), while ensuring that they gradually become available in all parts of Canada via the Internet;
- *support of pilot projects* that enhance the use of the infrastructure and that yield information to help guide its evolution (note: the possible use of the electronic infrastructure itself to disseminate such information has already been suggested);
- joint development and implementation of a *communications strategy* with the provinces to: (i) inform the literacy community of the proposed action plan to develop an electronic infrastructure; (ii) explain its essential features; (iii) describe its advantages and (iv) solicit ongoing grassroots input;
- helping to ensure the information needed to *co-ordinate and monitor* the evolution and operation of the infrastructure is developed and made available to those involved;
- collaborative preparation (with the provinces) of *guidelines to help literacy groups to form partnerships at the local level* (e.g. promotional materials on literacy, list of potential sources of partnering and support) and consideration of incentives either direct (e.g. certificates of merit) or brokered (e.g. tax breaks) for contributors; and
- continuing and collaborative development of a *vision and strategy* for literacy and learning in this country and articulation of the contribution that a Canada-wide electronic infrastructure might make towards realizing the vision.

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(12) The potential to contribute to a national electronic infrastructure could become one of the criteria to be considered in applications for NLS funding.

7. SUMMARY OF FINDINGS, PROPOSED STRATEGY AND ACTION PLAN

7.1 Summary of Findings

Participants in this study voiced strong support for enhanced communication and ready access to pertinent information. They need to be able to communicate easily with their peers, literacy organizations, local partners and learners. The information to which they need to have access relates to practitioner training, instructional design, teaching materials, people and events, research and reference material, new initiatives and opportunities; and administrative instruments. They would also like to see a mechanism for evaluating or vetting this information.

Although there were a few sceptics, it is fair to say that there is general agreement that an electronic infrastructure might greatly help to meet these communication and information needs. This is particularly true in isolated communities with limited alternative means of communication and limited access to pertinent information. Participants stressed that while such an infrastructure would add greatly to existing channels of communication and information transfer, it would not replace them. Existing means of communication (mail. telephone, fax, television, etc.) would continue to play an important role. In particular, they considered the continued presence of the human element (face-to-face meetings, telephone contact and possibly videoconferencing) to be important.

Although most literacy infrastructure development has been at the provincial or local levels, a Canada-wide infrastructure would offer significant benefits in terms of both effectiveness and efficiency. There are many distinct literacy groups dealing with different sets of learner needs (e.g. Francophones both inside and outside Quebec, Natives with a range of cultures and languages, people with specific disabilities, recent immigrants, etc.). Practitioners serving particular groups would be more effective if they could communicate with their peers across the country and if they had ready access to information of mutual interest. On the efficiency side, a Canada-wide infrastructure would reduce duplication of effort among the provinces, while the costs of developing and maintaining the system would be shared more widely. It would also enable practitioners to access a wider range of information sources and experiences than would be possible with a purely provincial system. The establishment of the NALD can be seen as the first step in the development a Canada-wide infrastructure.

Practitioners vary greatly in their current readiness to take advantage of an electronic infrastructure. Not only is there great variation in individual technological sophistication, but there is a wide variation among provinces in the extent of existing electronic support. With [AlphaCom](#) and Alpha Ontario, Ontario clearly leads the way in availability of computers, electronic communication and access to literacy information. The situation in other provinces appears to be linked to state of their economies. Thus, the availability of technological resources appears to be greater in Alberta and British Columbia than in provinces such as Newfoundland.

The main obstacles to the development of an electronic infrastructure are lack of funds to purchase computer equipment (part of a general problem of underfunding which many participants attributed to the relatively low priority of literacy on the agendas of governments and educational institutions); lack of training and support; lack of awareness of what is already available; lack of time to become familiar with and to use a new system; and fear of technology (especially among older volunteers). In some remote areas inadequate or non-existent phone lines present an additional obstacle.

Many participants saw in the Internet the key to the development of a Canada-wide infrastructure. The Internet provides a ready-made and relatively inexpensive means of communication and access to information. It can be used to communicate not only across Canada, but throughout the world. However, practitioners will only find the Internet useful if they: (i) have the necessary properly functioning technology; (ii) know how to use the system; and (iii) have access to individuals and databases that provide them with useful information. The recommended strategy addresses the first two points through appropriate funding and training initiatives. With respect to the third, the proposed strategy is to build upon the the current capabilities of the [NALD,](#) [AlphaCom](#) and AlphaOntario.

7.2 Strategy Proposed by CAC

The basic components of the proposed strategy are to:

- provide means for literacy organizations to acquire tools;
- rationalize the infrastructure services already being provided; and
- provide for support of the infrastructure once in place.

The principal features of the proposed system are illustrated in the accompanying diagram.

1. Encourage Access

a) *Workstations*

The literacy community is in a somewhat unusual position in that a number of potentially useful tools are already available; the issue is one of gaining access to the infrastructure. Analysis has indicated that some provinces such as Ontario and Alberta have a generally (but not universally) well developed infrastructure and a technically sophisticated client base. If technology penetration were to be viewed as a continuum, this would represent the more advanced end. By contrast, other provinces have scanty access to computer resources; any strategy should endeavour to develop a common level for access, not necessarily based on the model followed by more sophisticated groups, but enabling a consistent mode of access to a core set of services.

In order to accomplish this, it is recommended that NLS should explore options for providing funds for literacy groups to acquire computer equipment enabling access to the Internet and to shared national resources.

This could be accomplished by direct grants (provision of some 2000 computers over the next 5 years(13) would entail costs of the order of $2.5 million per year), or by means of partnerships with other government departments or other levels of government. Partnerships with private sector organizations, where some form of tax benefit would accrue to a corporate group, could also be an option which should be investigated.

Some concern was expressed regarding the provision of public-funded equipment to potentially unstable organizations; it would be possible to follow a model successfully used in the USA where a stable organization such as a municipal library acts as the custodian of the equipment which is viewed as being on loan to the literacy group. An agreement is set in place among the custodian, the provider and the user, so that in the event that the user group ceased to function, the equipment would return to the custodian (with the proviso that it should continue to be used for public access purposes).

If the recommendation to support the provision of computer workstations to user groups is followed, it is recommended that the equipment selected should represent relatively high end workstations. This would require that the workstations provided were of the Pentium class of computer with significant memory, disk drives, CD-ROM drive, sound cards and high speed modem capability. While this recommendation may seem extravagant, it should be borne in mind that:

- the power and capability of computer workstations is doubling roughly every 18 months to 2 years, while the duration of this project is 5 years;
- software developers are building application software to take advantage of the current and future technology platforms; in particular, graphics capability and multimedia (sound and video) capability is a given in the workstation environment of the near future;
- it is assumed that any computer acquisition would be based on a competitive tendering process and include the provision for maintenance; and,
- training, support and maintenance becomes more costly if it has to be set up to cover several classes of computer platform; application software designed to run on one may not run on less capable platforms.

It follows that if it is planned to distribute computers to literacy groups, that life cycle cost considerations render it more cost effective to put computers in place which represent current technology, and which will be less likely to be obsolescent (and requiring replacement) during the life of this project.

b) *Internet Infrastructure*

It is assumed that any national infrastructure would make use of the Internet as the vehicle for providing a common access framework and a standard set of facilities for use by literacy practitioners.

The Internet brings together a number of technology components which collectively interact to form a global network of various types of computers linked by telecommunications. Originally developed as ARPANET, funded by the US Department of Defense, it has emerged from a facility predominantly used by academics to become the focus of the 'new economy'.

The components of the Internet are:

- relatively inexpensive **high performance workstations**, accessing the network through dialup connections to enable a high speed data link. Access to the infrastructure is technically straightforward; a modem equipped computer with appropriate software is all that is required.
- a **global telecommunications infrastructure** developed by the phone companies. Users access this network through local service providers, business organizations of various sizes which buy services in bulk from the telecommunication carriers and retail it to individuals and organizations wishing to use the Internet.
- **hypertext document**s. Hypertext technology was developed in the 1970's and 1980's as a means of tabulating and cross referencing documents more efficiently for researchers. The technology builds electronic links into a document, which provide a 'pathway' to another document. In a Windows environment, it is only necessary to point at a hypertext mark in a document to activate the link and call the linked document to the computer screen. The hypertext link works with ease across computer networks, with its capacity being bounded only by the physical speed of data transmission to download a document image to the screen.
- **communication based application software**. The proliferation of electronic mail and messaging software, permitting rapid communication among individuals geographically remote from each other is a fundamental technology of the Internet. Electronic mail also includes the capability to send attachments to documents (files containing information of computer software). Text search and retrieval engines which can search large volumes of text with ease are also widespread. Related to electronic mail is discussion group list server software. This enables a user to post a comment on an issue where it can be seen by others who in turn can add their own comments, either at once or asynchronously (at another time). This provides a useful function in enabling a discussion to be held around an issue, to achieve consensus, without actually meeting with each other except across the network.
- **electronic commerce services**, enabling linkages between suppliers and customers through the use of electronic catalogues and online ordering and payment systems are already being implemented. A number of financial institutions are investigating the use of cryptography to support the secure transmission of credit card data across the Internet.
- **multimedia**, providing voice and video capability into the Internet is already here. Used in the future, it is likely to support discussion groups, to hold electronic meetings, to provide training in the use of new software, and as a standard component of new computer applications. It is already extending into the field of virtual reality where computer users can add tactile interaction to the computer interface.

The services offered to users at the present therefore are likely to include the use of electronic mail, discussion groups, file transfer and document search capability. These are already embedded within the service offerings described.

It should, however, be noted that charges for Internet access, particularly for isolated communities where long distance telephone charges may be incurred in dialling up access to the nearest Internet service provider, may be a prohibitive expense for a small volunteer organization. The response by AlphaCom and Alpha Ontario is to provide users with 1-800 toll free numbers.

It is recommended that NLS should explore access to the Internet by alternate means; for example access for literacy groups piggybacking on government organizations existing communication networks or through local educational institutions such as community colleges. This could provide a low cost community based access option with significant benefit to the client organization at minimal cost to the provider.

2. Application Infrastructure

The existing applications (AlphaCom,NALD) are in the process of being made Internet-accessible. NALD provides a single point of access to the literacy community for locating resources, exchanging e-mail and sharing information. It is recommended that it should continue to be developed along the current line, as the user community throughout Canada may find it easier to use a generic technology approach; it is likely that over time the two service modes will overlap as Internet users become more technically demanding. It is noted that AlphaCom and NALD are already working together towards avoiding a duplication of services.

NALD is currently providing access to a World Wide Web site; the focus lies on the application area, and it is assumed that the general level of computer literacy among clients will grow in the near future to minimize the demand for service.

The AlphaCom experience, however, has clearly shown that at present users feel much happier with a significant and pro-active level of support; during any rollout of new computer equipment, therefore, it is likely that a significant cost component will be the training and support components of the project.

The tables in Annex E describe the likely costs for such a project, on the order of $11 million over 5 years. Based on the delivery of approximately 2000 workstations to client organizations - not individuals - over a 5 year period, the model shows estimated annual costs for workstations, maintenance, the establishment of computing facilities as servers linked through the Internet, and costs associated with training, development and support.

In order to deliver an information infrastructure, it is evident that significant experience has been gained by both NALD and AlphaCom on different aspects of service provision. Enhancing cooperation between these organizations for rolling out a national infrastructure will take advantage of the experience gained in developing applications, and in managing the delivery of training and support as the infrastructure develops.

3. User Support

Any rollout of computer equipment to the literacy community must, of necessity, include the provision of user training and support once equipment is in place. The model followed by AlphaCom was found to be extremely successful in Ontario. It is likely that a rollout of computer equipment would be followed by a significant workload in training and initial support. However, this requirement usually dwindles as users become more familiar with the equipment and the resourcing level would decline and stabilize over time. In addition, provision would require to be made for maintenance and repair of equipment; most likely this could be contracted for through local dealer services. An industry rule of thumb suggests that maintenance costs are approximately 15% of capital costs annually.

The NLS might collaboratively explore options for training and support, through local educational institutions - for example using students on course assignment from electronic technology or computer programming certificate programs, under supervision by faculty. This approach has the benefit of being inexpensive, but current experience with such arrangements suggests that they are not always reliable. A more reliable option would be to appoint a group itinerant trainers (having four such trainers on the road at any one time should suffice for a project of this size) to assist with installation and deliver initial training on-site. These have been factored into the cost model presented in Annex E.

On-going support could be provided through a national 1-800 line for technical support, troubleshooting and expert advice on the use of the infrastructure. One option might be to expand the capacity of AlphaCom's resources in this area to provide Canada-wide coverage. This has also been incorporated into the cost model.

4. Transition and Evaluation

The strategy of phasing in the infrastructure over a number of years, will enable the NLS and its partners in the development to learn from experience as it proceeds. It will be important to ensure that adequate feedback mechanisms are in place to enable this learning to take place.

During the transition period, practitioners who do not have access to the system may wish to benefit from its services. The 1-800 number established for on-going support could be used for this purpose. Upon receipt of a request for information hot-line staff could access it through the infrastructure and forward it to requestors by a number of possible means ranging from direct fax, through Canada Post e-mail services to regular mail, depending on circumstances.

7.3 Proposed Action Plan

Note: This action plan is necessarily at a high level. It would not be worthwhile to present a more detailed plan until those involved have indicated their support for the general approach proposed in this high level plan.

1. Convene a meeting of the steering committee for this project to determine whether or not to proceed with the development of a Canada-wide infrastructure, using this report as a basis for discussion.

2. (Assuming that the decision is to proceed.) Convene a meeting of NLS representatives, provincial co-ordinators and representatives of organizations (such as NALD Inc., AlphaCom and AlphaOntario) whose existing and planned activities could contribute to the construction and operation of a Canada-wide infrastructure. The provincial co-ordinators would identify those provincial organizations they wished to see represented at the discussions and the NLS would identify appropriate national organizations. The purposes of the meeting (which would require 2 or 3 days) would be to:

A. reach agreement on the overall design and content of the electronic infrastructure (including access standards);

B. explore opportunities for rationalizing those activities (existing and planned) of the represented organizations that could contribute to the construction, operation and content of the infrastructure (this could enable existing organizations to become "centres of excellence" in particular aspects of infrastructure operations);

C. discuss opportunities for shared funding between the federal government and the provinces, as well as funding from external sources; and

D. establish a project management committee with agreed- upon NLS and provincial representation.

3. The project management committee would first:

A. establish the project management infrastructure;

B. determine, through provincial co-ordinators, the number and location of those program offices that require computers or upgrades (taking into account the current availability of computers that meet the access standards established in step 2.);

C. discuss the possibility of dial-up access to the Internet using existing arrangements established by others, such as freenets, government organizations and educational institutions;

D. determine a logical and acceptable sequence of content development for the infrastructure, in agreement with the provinces and the organizations involved; and

E. based on this information, prepare more detailed estimates of the costs of developing and operating the infrastructure.

4. Based on the discussion in Step 2C, NLS would then negotiate specific shared funding arrangements with the provinces, other federal government organizations and outside organizations to cover the cost of infrastructure development, as identified in Step 3E.

5. The project management committee would then:

A. develop a detailed project plan;

B. determine an appropriate sequencing of computer installations and content development, taking into account the budget established in step 4 (Note: there might have to be a trade-off between the efficiency of grouping the sequence of installations by geographic area versus the equity of spreading them more evenly across the country);

C. negotiate the bulk purchase of computers (complete with the necessary software and maintenance agreements) - the NLS would likely be the Office of Primary Interest for this purchase which could be made through Public Works and Government Services Canada or by a provincial purchasing group, depending on the level of discounting available;

D. establish Internet access agreements (taking advantage of any opportunities identified in Step 3C);

E. hire roving consultants to provide installation and training support; and

F. establish a 1-800 Hotline (or augment AlphaCom's existing line) to provide technical support, troubleshooting and expert advice (including provision to monitor and classify enquiries in order to learn dynamically from experience).

6.NLS would continue to fund or co-fund the development of infrastructure content on the basis of the discussion in Step 2B and the ensuing agreement in Step 3D. It is to be hoped that these steps would have identified rationalization opportunities that would enable the NLS to obtain greater leverage from its funding support.

Notes: the infrastructure content would include the development of web sites, databases and discussion facilities, downloadable software and on- line training. In accordance with Official Languages obligations, the NLS could take steps to promote the value of the infrastructure to Francophone users. This could be done by encouraging the inclusion of identifiers, based on a common thesaurus, in its funded databases in order to permit searches in either language to find content in either or both languages and by making available interface software that permits the use of accents. The NLS might also negotiate with DIAND for the establishment of databases in selected First Nations languages that might be accessed through the infrastructure.

7. The NLS and the provinces would jointly prepare material to advise literacy programs and organizations on how to seek fundraising and partnering support at the at the local level in order to, among other things, purchase additional computers beyond the number established in Step 3B.

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(13) While 5 years appears to be a reasonable duration for the project, it is used here only for illustrative purposes. The actual duration would have to be the subject of agreement between the partners involved and would be dependent on the availability of funds.

Conclusion

The aim of this report was to assess the needs of literacy practitioners and organizations for a Canada-wide electronic infrastructure for literacy. We have not examined alternative uses of the funds and resources available to the literacy community and so cannot offer an opinion as to whether the development of such an infrastructure is justified relative to other expenditure options. However, we have clearly established that a Canada-wide infrastructure would address a wide range of the communication and information needs of literacy practitioners and organizations. Furthermore, the ability to share information and to build a sense of community among geographically dispersed practitioners should also be of significant benefit to the clients of literacy programs. This report has identified key issues and suggested a strategy (centred on access to computer resources) to achieve these benefits at limited cost through the use of an existing infrastructure. It would give the thousands of committed literacy practitioners the tools to do their job better to the benefit of Canadians.

Key References

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ANNEX A

FOCUS GROUP DISCUSSION GUIDEAND LIST OF PARTICIPANTS
National Literacy Secretariat
Needs Assessment for an Electronic Infrastructure for Literacy
Focus Group Discussion Guide

OBJECTIVE: To assess the needs of literacy practitioners and literacy organizations for an electronic infrastructure to provide information and communications support. While discussion does not directly address the needs of learners, the ability of the infrastructure to provide access to learning material will likely be an issue.

ORGANIZATION: The discussion will be divided into two parts. The first part will focus on the "who", "what", "why", "where" and "when" (i.e. on the nature of the information and communications support required and not on the technology per se) while the second part will focus on the "how" (i.e. on the technological requirements).

FIRST PART

1. Practitioners

In the following discussion participants should consider how the information and communications needs of practitioners may vary depending on the nature of the groups they serve (e.g. Francophones, first nations, immigrants, disabled, etc). If it proves more convenient, the sub-questions can be dealt with as a group, rather than separately.

a. *Who?* With whom do practitioners need to maintain regular communication (i.e. who are the current partners)? {Other practitioners?. Provincial associations? Professional associations? Libraries? Community Centres? Provincial Government? National Associations? NLS? Private sector firms? Experts (e.g. universities)? Potential employers? Labour organizations?}

b. *What?* (content, subject matter) What types of information and communication are vital to the effectiveness of practitioners in their instructional activities?

c. *Why?* (purpose of information/communications)

- practitioner development
- delivery leverage (co-ordination of effort with others)
- delivery design (more effective techniques, approaches)
- diagnosis of learners' instructional needs
- troubleshooting (access to expert backup)

· etc.

d. *Where?* (Location?) Where is this information and communications support most needed (home, school, community centre, library etc.)?

e. *When?* How frequently is this information and communications support needed (on a daily basis, at longer regular intervals, on an irregular basis)

2. Literacy Organizations

What is the nature of the information and communications support required by literacy organizations both inside and outside government? The discussion should be approached using the same set of questions as in 1, above, recognizing that the needs of literacy organizations involve two-way flows of information (i.e. information and communications to and from practitioners, learners and other organizations).

3. Future

What changes to the needs of practitioners and literacy organizations for information and communications support are anticipated over the next five to ten years (for example, in response to the impact of evolving technology on required literacy skills)?

SECOND PART

4. Current Situation

What information and communications support is currently available to specific practitioners groups and literacy organizations and how is it delivered (consider both electronic and non-electronic means)? How effective are these existing means of support in meeting the current needs of practitioners and literacy organizations identified in Questions 1 and 2? Are there any major gaps and/or overlaps in the current support infrastructure?

5. Potential of Currently Available Technologies

Which currently available technologies offer the greatest potential to meet the evolving information and communication needs of specific groups of practitioners and literacy organizations? What are the principal barriers faced by practitioners and literacy organizations in accessing these technologies? What do practitioners and literacy organizations need to know in order to make the best use of these technologies?

6. Support for Collaboration and Sharing

What is the potential for partnering and collaboration (schools, universities, industry, government, etc.) in the development and delivery of literacy training and the sharing of information? Who might be involved and in what areas? How could an electronic infrastructure best foster and support such arrangements?

7. Transition Requirements

What essential characteristics does an electronic infrastructure need to have in order to effectively support the evolving needs of practitioners and literacy organizations identified in Question 3 (including managing the likely transition to more technology-based approaches to literacy training; monitoring developments in delivery technologies and practices and their impact on instructional effectiveness and learner access and motivation; stimulating public awareness of literacy issues; etc.)? How should the the required infrastructure be phased in and what is a realistic timetable for implementation?

8. Funding Sources and Priorities

Over the next five years, which elements/capabilities of an electronic infrastructure should receive priority funding? Who (in addition to the NLS) might provide the required funding? What are the opportunities for joint funding and for obtaining leverage from other public (federal and provincial) and private sector initiatives?

List of Focus Group Sessions

held by

Consulting and Audit Canada

City Group Date

Calgary English December 15, 1995

Winnipeg English December 18, 1995

Fredericton French January 11, 1996

Fredericton English January 12, 1996

Montreal English January 15, 1996

Ottawa English January 19, 1996

Toronto Native January 25, 1996

Toronto English January 26, 1996

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Bell Ault Alberta Association for Adult Literacy

Don Bentley Neil Squire Foundation

Richard Lawrence YukonNet

Terry McGuire Camrose Chapters Program

Ida Stanley-Tober John Howard Society

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Andy Stojak Alberta Association for Adult Literacy

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Nancy Jennings Movement for Canadian Literacy

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Alan Pickersgill Human Resources Development Canada

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Tara Johnson Niin Sakaan Literacy Program

Suzanne Methot Native Women's Resource Centre

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Patricia Hadju Desktop Centre

Mike Kelly AlphaCom

Margaret Maynard Literacy Council of Lincoln

Andre Leise Conestoga College

Susan Sussman Ontario Literacy Coalition

Cheryl Wilson-Lum GOLD Deaf Literacy Network

INTERVIEW GUIDES AND LISTOF INTERVIEWEES
National Literacy Secretariat Needs Assessment for an Electronic Infrastructure for Literacy
Telephone Interview Guide for Practitioners and Co-ordinators

Context

Q1: How broadly do you define literacy?

- basic reading, writing, numeracy
- ability to reason and extract meaning
- problem solving skills
- general communications skills
- ability to use computers/information technology
- other

Q2: Which learner groups do you work with?

- first nations
- immigrants
- Francophones
- people in remote areas
- people with disabilities
- people on the margins of society
- etc.

Q3: What are their needs/priorities with respect to literacy training?

Current Support Needs of Practitioners

Q4: What types of information and communication support are vital to the effectiveness of practitioners in their instructional activities?

Q5: For what purposes are the information and communications support (identified in Q4) required?

- practitioner development
- delivery leverage (co-ordination of effort with others)
- delivery design (more effective techniques, approaches)
- diagnosis of learners' instructional needs
- troubleshooting (access to expert backup)
- etc.

Q6: With whom do practitioners need to communicate on a regular basis?

- other practitioners
- provincial associations
- provincial government
- national associations

- NLS

- other federal government organizations
- professional associations
- libraries and library associations
- Community Centres
- Private sector firms
- Experts (e.g. universities)
- Potential employers
- Labour organizations
- other

Q7: How often are the information and communications support required?

- daily, weekly, monthly, etc.

Q8: Where is this information and communications support most needed?

- home
- school
- community centre
- library
- etc.

Future Support Needs of Practitioners

Q9: What changes to the needs of practitioners for information and communications support are anticipated over the next five to ten years (for example, in response to the impact of evolving technology on required literacy skills)?

Assessment of Current Levels of Support

Q10: What information and communications support is currently available to practitioners groups and how is it delivered (consider both electronic and non- electronic means)?

Q11: How effective are these existing means of support in meeting the current needs of practitioners and literacy organizations identified in Questions 4 - 8?

Q12: Are there any major gaps and/or overlaps in the current support infrastructure?

Support Potential of Currently Available Technologies

Q13: Which currently available technologies offer the greatest potential to meet the existing information and communication support needs of practitioners?

Q14: What are the principal barriers faced by practitioners and literacy organizations in accessing and adopting these technologies?

Q15: What information and training do practitioners require in order to make the best use of these technologies?

Support for Partnering and Collaboration

Q16: What is the potential for partnering and collaboration (schools, universities, industry, government, etc.) in the financing, development and delivery of literacy training and the sharing of information?

Q17: Which partners and which areas of collaboration are the most promising?

Q18: How could an electronic infrastructure best foster and support such arrangements?

Transition Requirements

Q19: What essential characteristics does an electronic infrastructure need to have in order to effectively support the evolving future needs of practitioners identified in Question 9 (including managing the likely transition to more technology-based approaches to literacy training; monitoring developments in delivery technologies and practices and their impact on instructional effectiveness and learner access and motivation; stimulating public awareness of literacy issues; etc.)?

Q20: How should the the required infrastructure be phased in and what is a realistic timetable for implementation?

Funding Sources and Priorities

Q21: Over the next five years, which elements/capabilities of an electronic infrastructure should receive priority funding?

Q22: Apart from the NLS, who might provide the required funding?

Q23: What are the opportunities for joint funding and for obtaining leverage from other public (federal and provincial) and private sector initiatives?

THE BLAIN/TREMBLAY REPORT

La Boîte à projets
Project Management Consultants

Needs Assessment for an Electronic Infrastructure
to Support the Canadian Literacy Community

A report on group interviews held in Ontario and Quebec 18 March 1996

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Table of Contents

Part 2

Report on the Group Interview in Quebec

[Translator's note: Names of organizations and publications that do not have an official English name have been translated here to give a sense of their meaning and objectives. The official French name appears in square brackets [] immediately after the first appearance in English, and where applicable, the French acronym is placed in parentheses (), and used thereafter.]

DISCLAIMER

A STATEMENT FROM THE NATIONAL LITERACY SECRETARIAT ABOUT THE REPORTS CONCERNING THE NEEDS ASSESSMENT FOR AN ELECTRONIC INFRASTRUCTURE FOR THE CANADIAN LITERACY COMMUNITY

The National Literacy Secretariat and its literacy partners are circulating, both in hard copy and electronically, two reports which we have commissioned. The first, prepared by Consulating and Audit Canada, is 'The Needs Assessment for an Electronic Infrastructure for the Canadian Literacy Community.' The second report, prepared by La Boîte à Projets, is focused on the needs of the french language communities in Quebec and Ontario.

THESE REPORTS DO NOT REPRESENT THE VIEWS OF THE NATIONAL LITERACY SECRETARIAT AND THE RECOMMENDATIONS THEY CONTAIN ARE NOT NECESSARILY COMMITMENTS BY THE NATIONAL LITERACY SECRETARIAT.

We are making them available in order to validate the needs expressed in the reports and to solicit the participation of all literacy partners in moving towards an electronic infrastructure for Canada.

- ARE NEEDS CORRECTLY IDENTIFIED?
- ARE BARRIERS CORRECTLY IDENTIFIED?
- HAVE ALL THE OPTIONS TO REMOVING THE BARRIERS AND MEETING THE NEEDS BEEN CONSIDERED?

PLEASE CONTACT US AT:
ELECTRONIC INFRASTRUCTURE
NATIONAL LITERACY SECRETARIAT
nls-sna@nald.ca

Report on the Group Interviews in Ontario

Some information about Ontario

In Ontario, 46 organizations work in the field of francophone literacy. They all have access to a telecommunication network, the AlphaCom network for local, regional and provincial francophone literacy groups.

Already equipped with fax machines, in 1995 literacy groups were given IBM PC-compatible 486 computers tied into the AlphaCom network. A facilitator takes care of the training and technical support for all the literacy groups. The AlphaCom network offers several services, such as teleconferencing, file transfer and E-mail. In addition, a 1-800 line connected to the FORA Centre allows literacy workers to read up on literacy activities, and also, as appropriate, to direct learners to literacy services.

The first data culled from the questionnaire and from statements made during the group interviews allow us to say that in Ontario, there is an interest in communication with francophone literacy groups across Canada. But the participants also identified several conditions for success which must be considered when a project is set up.

1.1 Definition of literacy

The Ontario participants gave a broad definition of literacy, one which went far beyond learning to read and write. According to them, in a highly wired society, *computer* literacy must be deemed essential.

For people to reintegrate into the labour market, people will require a grounding in computers. Giving tools to a person to allow him to function in the world he lives in, that could be literacy. The concept varies from one country to another.

The participants believe that the idea of `literacy' covers more categories than in the past. For them, in our society where the electronic media rule, a failure to master the new technology can place one in the category of illiterate.

The notion of illiteracy is connected to ways of functioning and accessing the knowledge base of one's environment. In an highly technological society, a person who has missed the boat of technology becomes an illiterate. A person who is dysfunctional in his society because he has not mastered the means of communication is illiterate.

Modern society is in a constant state of change, and the illiterate are the people who are unable to learn the new codes.

For me, literacy… those are the people who have trouble learning, unlearning, and relearning. These days, we must adapt. I see that as a malady of a society in total transition.

According to some, literacy takes on a distinctive coloration in a minority setting: in this sense, it must serve to `regallicize' learners.

As you define it in Quebec, adding in the concept of gallicization: people coming back to us to relearn the language.

In addition to support in acquiring intellectual skills, particular attention must be paid to giving learners back the self-esteem they so often lack. The participants included this objective in their concept of literacy.

Improving self-esteem, picking up the pieces. Teaching literacy with tools that validate the learner, like computers.

1.2 Current support needs of groups and trainers

The network and motivations of communication

Questioned on the subject of the nature of trainers' current communications, participants said that their main tendency is to communicate with each other in the literacy centre.

Trainers don't instinctively communicate with the outside. They communicate with each other.

In effect, communication occurs between peers. Thus, trainers communicate with trainers, learners with learners, and so forth. The communications in question are often concentrated in the same region, or even the same literacy centre.

Trainers communicate with their colleagues in other literacy centres in Ontario in order to share ideas and experiences, and sometimes with Alpha-Ontario to obtain teaching materials. Their exchanges are, however, quite limited.

As for managers of literacy groups, they are more oriented to the outside. Co-ordinators seek information from the outside to give to the trainers (for example, information on regional and provincial meetings). They mainly use the telephone and fax.

The major motivator for communicating with the outside remains the search for information needed to do a good job. Teachers seek material and advice on teaching well, learners to learn better, and administrators to manage well.

According to the participants, the messages they read on the [AlphaCom](#) network attest to a need for solidarity among learners. In addition, using this communications medium gives them a sense of pride because it requires a familiarity with computers.

The challenge and pride, maybe, in communicating in a modern way.

Provincial and regional groups, for their part, sometimes communicate with other literacy centres, schools and colleges, usually to find resource materials, and to exchange advice. They say they use various media for communication.

With anyone and by any means: writing, telephone, fax, I never stop. When it's not about literacy, it's about administration, to talk about management.

Participants say they are seeking to broaden communication and establish partnerships in order to work more efficiently, using work done by the various partners.

More and more, we are trying to create partnerships to avoid duplication or reinventing the wheel. Let's look for resources that already exist.

Current obstacles

Regional disparities in the province and computerphobia are the two main obstacles to communication. A third obstacle, lack of time, was frequently mentioned by participants.

Regional differences in Ontario do not help communications. Some participants believe there are barriers between regions. Trainers communicate with their peers in other literacy centres in Ontario. But according to several participants, they communicate primarily with people in centres in their own immediate region.

Regional disparities play an enormous role. The realities of Sudbury are different from those in Sault Ste Marie, so we don't feel a need to look elsewhere.

Geographical differences, distance, play a role. What can Toronto offer me? There are barriers between people. We have to rally the forces instead of looking at the differences. That can play a big part in standardization between Quebec and Ontario francophones.

There exist in Ontario two strands, the *Northern strand*, which is excessively omnipresent, and bears no relationship to the *Central strand*, which is very much influenced by the Toronto environment.

Currently, trainers are using computer-linked communication very little. Fear and mistrust of computers by the various players in the literacy movement seem moreover to be an obstacle to their use.

A lack of technical understanding prevents them from using computer- linked communication. Probably they would be interested in knowing what's happening at Alpha Ontario, but they are more at ease with written material.

Although the learners have an interest in learning, the most important brake on communication by learners resides in their inability to use computers.

At the level of learners, there is a problem of self-confidence. Learners have a tendency to communicate first of all with other learners.

One participant advanced the idea that Franco-Ontarian culture is based on oral interactions rather than on computer-linked exchanges, that there is some work to do in developing other media of communication. Groups are running up against strong resistance now when they suggest holding a videoconference.

People have a tendency to think that if they make a decision by teleconference, it won't be as good as one they made face-to-face.

Other people consider the decisions just as good, but feel unmotivated. `What's in it for me if the machine makes the decisions?' There is an emotional void.

Support needs

The participants would have appreciated having access to all existing material on literacy and on content related to community development techniques. They feel less need to communicate just for the pleasure of it. The biggest need is to obtain information of any kind that can help in carrying out their work.

Without specifying whether the needs expressed are those of the trainers, the learners, or their own, the participants believed that exchanges with the outside should be increased.

The main needs for support that were identified were:

- distance training, eg, university courses made accessible by computer links;

- exchanges on practical cases; examples of literacy training in a minority setting;

- information on research and projects;

- a network of resource people to guide, advise, and exchange views with trainers;

- access to material on learning disabilities;

- information on conference materials;

- tools, training materials on videocassettes;

- circulation of policies on literacy;

- access to statistics on literacy;

- exchanges on services available to learners;

- circulation of information on Departments offering grants;

- creation of a link with government programs and services such as unemployment insurance and social assistance;

- clinics or open lines for discussing problems linked to literacy.

The participants considered that trainers are often isolated and need a means of communicating with each other. The way to do that, however, remains to be determined. The participants grouped the needs of trainers into three categories:

- access to teaching materials;

- exchanges of expert advice;

- distance education.

According to several people who previously mentioned a shortage of time, this kind of communication could help them work more efficiently.

If someone else has done the same work as you, you don't have to reinvent the wheel to be inspired.

1.3 Interest in a telecommunications network

Interest in communication

Interest exists in communicating with francophone literacy groups across Canada. Exchanges with francophone minority groups, those in New Brunswick as much as other francophone minority groups, seemed interesting because it is easier to communicate with peers, and because they possess a system and a reality similar to what you find in Ontario. The participants also sought to provide a counterbalance to Quebec.

Communications between Quebec and Ontario were raised by the participants of their own accord, and they lingered for a long time over the question. Despite their interest in communicating with Quebec, they saw obstacles. They deplored Quebeckers' lack of understanding about the francophone reality outside of Quebec, and they hoped that a relationship could be established in both directions and would be between equals in respect for [Franco-]Ontario culture.

It is human instinct to define oneself by differences, especially in a minority context. There is the large minority, which is Quebec *vis-à-vis* Canada. That minority has to consider itself a majority somewhere, and that is on the level of the Canadian francophone community. Quebec's whole system of values is founded on these two parameters. On the Franco-Ontarian level, we're a minority at all levels.

There is a very high rate of ignorance in Quebec about the Canadian francophone community. At the level of partnerships, we need a partnership of equals.

We are poorly known. People are ignorant about Ontario. I see Quebec resources being misapplied to Franco-Ontarian learners. Our school system is being invaded by materials coming from outside Ontario that do not transmit our culture.

If there were more here, we would get it here. We want an Franco- Ontarian flavour on the levels of language and the functioning of institutions. We want that to reflect our reality back to ourselves.

The participants said they were proud to be Franco-Ontarians and proud of the resources and expertise that they have to offer.

These won't be one-way exchanges. Ontario will go looking for some things in Quebec, but there are things being done here. There must be a certain respect.

In the opinion of the participants, the most important reason they would want to be in contact with literacy groups, especially in Quebec, remains the exchange of teaching materials.

A question of resources: there is a great need for print and audiovisual resources, and for experimental projects. Often we turn to Quebec for resources in French.

Some would like to contact various government organizations to gain access to specialized resources, or to find out about events, research, or the availability of materials.

The main needs expressed in the communications area were:

- information on conferences and other events;

- specialized resources to help solve problems;

- funding models;

- discussions about innovative projects.

The participants believed that learners could gain a lot from a communications network.

For a learner, here or anywhere, it's valuable to meet other learners.

1.4 Obstacles and conditions for a successful telecommunications network

The representatives of provincial and regional organizations believe that the main obstacle to the establishment of a telecommunications network will be its ease or difficulty of operation for users. They consider that the interest will be there, but that to make the establishment of a computer linkage easier, it will be necessary to ensure that there will be training for the trainers and others involved in literacy work.

It's not enough to have the best medium of communication in the world — you have to know how to use it.

There is a great need for awareness and training. It's normal for people to be hesitant, but why are they? How can we counteract that? We have to reinvent community development: people have to learn another way of functioning.

They suggested providing a telephone support line for a period of time.

There should be training in new technologies. So someone can come back and tell us.

There should be a help line while they are setting up the system.

Some people proposed setting up the network on paper first, so that several people involved in literacy training at all levels could check out the problems with the computer system.

The installation has to be done by other methods than with computers.

To this effect, they suggested sending a paper copy of a data bank of existing material on literacy to all the people involved, indicating to them that updates will be available only on the Internet. They believed that those responsible for setting up the communications network would thus create a need that could only be satisfied by a computer link.

Apart from start-up training, those responsible for setting up the network would have to ensure continued support or follow-up for users so that they wouldn't abandon the system at the first difficulty.

The communications network will have to take into consideration the evolution of the technology. Participants were afraid that the network would be limited to current needs and would rapidly become obsolete. Moreover, participants emphasized that one of the main obstacles encountered by literacy trainers and others involved is the text-based format. The new network must definitely offer a graphic interface.

Creating things in anticipation of the future, not in contemplation of what exists now, but what we expect will come about.

All the systems that are being installed have cable and telephone connections. You can't forget that in the system you're going to install.

For the two groups we met, one way to ensure the success of the new network would be to get the learners to participate in their own centres. The learners must be involved in the set-up process, and must be adequately trained.

The Internet, the Information Highway, the institutions and the centres are all going to appropriate them, but the learners are the ones we must keep in mind.

The Internet, when you haven't mastered it, is a labyrinth. For the learner who already has a feeling that he isn't in control, that can be very scary. We have to educate the learners, the end users of that network.

The participants believed that pilot projects should be started. These projects would constitute an important source of support for learners.

We could set up pilot projects in Northern Ontario, in our community centres. Do target-group testing. Go according to the clientele, start with oral instruction, and then evolve towards other things.

To ensure the success of an open telecommunications network for the francophone community and for Quebec, some participants suggested starting with a small project, which would grow along with the interest of the users. If they established ties of friendship, learning would inevitably follow.

Don't start off with something too big, but like a snowball [that would grow as it went]. If you succeeded in creating ties of friendship around a common project at the beginning, afterwards you could introduce other things.

The learners would have to constitute the backbone of this network; they are the ones who would have to be connected to the projects right from the start, because they are the main stakeholders.

The learners would have to test it. It's important to get them involved in it.

They're the ones who will use it the most, but if we, as the people in charge are not comfortable and it scares us at the start, it's hard to warm up to it.

In the opinion of the participants, lack of money shouldn't be an obstacle. For them, that constituted another condition of ensuring the success of the project. They said that they were afraid that while funding could be found to ensure the launch of the project, there wouldn't be enough to keep it going.

There has to be money for start-up, but for the long term too. That discourages people, a project that falls on its face at the end of a year.

If there's no strategy, whether from the government or someone else, for getting money into it again, that does a lot of harm to other projects.

Is this project going to last? Otherwise we won't put the energy into starting it, if it's a special grant and there's only money for one year.

Although the participants suggested starting off with one little project, they hoped for a solid network that would survive the first financial difficulties. They didn't believe that literacy workers would invest time and energy in a network with a limited life expectancy.

We have to do something worthwhile, not like twenty years ago. If there's not enough money to do something worthwhile, leave it alone.

Getting the funders tied into the project seemed important for some of the participants.

In addition, another condition essential to the success of the network was a relationship of equals between Quebec and the Ontario francophone community.

Participants had reservations about the free circulation of information on this kind of network. Participants felt that circulation of information would not be free and open, because there are too many economic factors in play in literacy. For example, certain groups wouldn't want to exchange information on their projects from fear of having the ground cut out from under them.

Some participants feared that the new network would replace the AlphaCom network. That network hasn't meet all the expectations, but it belongs to Franco-Ontarians.

1.5 The potential of current technology

Media such as the telephone and the fax machine will continue to be used for certain kinds of communication. The fax is appreciated because it permits rapid communication and provides a hard copy for any learner, something that is more difficult to do with a computer.

The telephone will continue to attract learners and workers in literacy training because it is efficient and easier to use for people who have difficulty reading and writing. Moreover, the telephone being easy to use, trainers can encourage learners to move from the ordinary use of a telephone to another level by organizing teleconferences.

You have to remember that the learner has an oral tradition. The telephone is a satisfying medium.

Some participants consider that there are already functioning networks. We should study what exists already before launching new projects.

In my opinion, the network is already there to a certain extent, it's just to encourage people to use it.

Explore what's there already, don't reinvent the wheel

1.6 Technology and the means to choose for the future

The Internet was cited several times as the communication tool of the future. The participants found several good advantages, among others its minimal cost of operation and its ease of use; in addition, it is already accessible from several literacy centres. Those who wish to establish a new network are thinking first of all of the Internet, which has the major advantages of offering a graphical interface, of being cheap, and of being easy for someone who has received a minimum of training to use.

It takes a graphical interface, there's no doubt about that. Not much outside of the Internet offers that.

One of the great advantages of the Internet is the costs attached to it, very minimal costs. The Internet is a medium of communication that is going to evolve: sound, pictures. That medium is growing currently because of its ease of use.

What's fantastic about the Internet is that it's for everybody and it's going to connect the whole world. What we have to develop are links throughout the world.

In the world of literacy training, user-friendliness is doubly important.

The service might be a Web page, a data base, film clips, etc.

The participants identified several possible uses for the Internet: exchanges among people involved in literacy, conferences and seminars, distance education, *et al*. Given that the Internet is already popular with some participants, they suggested creating a Web site for literacy on it.

They've just created a Web site for AlphaCom. That's a good idea. It would be ideal for Alpha Ontario.

However, not everyone is open to a new telecommunications network; some indicated they were satisfied with current media.

There are enough media, we don't need to invent another, just learn to use what we already have. The needs are filled. You just have to use them.

1.7 The partners

The participants identified some obvious partners who could be associated with the establishment of a computer communication network: the NLS, computer companies, telecommunications companies like Bell Canada, and the Ontario literacy networks.

The NLS, because it's a federal organization that touches all the provinces. It should be the principal funding partner.

For me, the future of literacy includes computers. I would like them to go after the computer companies, software developers, the Canadian Corels. Let them play a role and earn the money from technical support and software development.

1.8 Priorities for setting up the network

the participants said they were unable to establish an order of priority for setting up the network. In their opinion, all the administrators, trainers and learners should have access to the network from its inception. They didn't want to make choices on this level.

I don't see who we can sacrifice.

Why sacrifices some people? It's a question of time management, of the internal functioning of the machine.

Report on the Group Interview in Quebec

Some information about Quebec

Quebec currently has 102 school boards and 92 independent literacy groups offering literacy training services.

The first results to come out of an inquiry led by Ontario and Quebec, which will be circulated in the Spring of 1996, allows us to note that the use of computer communication links is very rare in the two literacy networks of Quebec. In fact, only 11% (±4%) of all literacy groups use computer-linked communications. That is 18.6% of the school boards and 2.6% of the independent literacy groups. In Quebec, there is no formal communications network connecting francophone literacy groups.

Literacy groups are showing interest in using computer-linked communications and in communicating with the various actors in literacy, starting with their home networks, then with francophone literacy networks. They believe that the use of computer communications will improve access to teaching materials, exchanges, knowledge, a diversity of teaching approaches, and the effectiveness of teaching.

The main obstacles identified, on the subject of the use of new media of information and communication (referred to hereafter as `new media') in the groups, are the lack of financial resources, training, time, and obsolescent equipment.

2.1 Definition of Literacy

Literacy in Quebec has gone beyond the acquisition of basic skills in writing, reading and numeracy. For the majority of participants, literacy includes the development of skills connected with writing, and other competencies such as teamwork, autonomy, communication, and the ability to learn how to learn. People learn not only how to master the written code, but also to understand the world they live in and how to interact with their environment. They learn to exercise their autonomy, their critical faculties, and their roles as citizens, and thus to take part in the development of their community and society.

In the workplace, literacy allows workers to acquire basic skills that will help them to develop, to better understand their work environment, to get involved in a process of change, and also to gain access to more advanced training and to different jobs.

Literacy aims to give them the basic knowledge they need to pursue and go beyond in their work as well as in their quest for education. Mastery of skills in arithmetic, in reading and writing, and in competencies that are germane to the kind of work they do (teamwork, communication, *et al*), is a prerequisite to continued training in employment.

A minority of participants raised the issue of technological illiteracy. The rapid and disorderly emergence of new technologies (microwaves, automatic tellers, personal computers, *et al*) in everyday life, the new skills that these demand, and the difficulty that illiterate people have in using these technologies, threaten to exacerbate the state of exclusion that these people suffer. New information and communications media also put new issues into play for literacy training.

The personal computer has become an instrument of communication. Ten years ago, in an independent literacy group, the computer was a learning tool. It permitted us to use a variety of learning strategies. Now, the computer is changing our lives. We'd better not miss the boat.

Nonetheless, the majority of participants expressed their worry and disagreement with the broadening of the concept of illiteracy to technological competencies. The participants mentioned that one part of the population is coming to grips with the difficulties of adapting to the new media, but that this part of the population does not see the problem of illiterate people being excluded. Literacy does not necessarily address the problems of exclusion suffered by illiterate people. Literacy does not necessarily address people's problems with technology, since some of them have mastered the written code. Participants affirmed that literacy must first address those who are shut out or are marginal in their basic skills of oral and written communication. This affirmation moved one participant to say:

The movement of `computer literacy' appears to be a misrepresentation and a misappropriation of literacy from its legitimate client groups.

Several participants believed that the increasing demands of the labour market, the raising of the [skills] threshold and the broadening of the concept of illiteracy all contribute to increasing the phenomenon of exclusion of poorly educated populations. These populations are often shut out of the labour market. Some participants regretted the phenomenon of the rising threshold of illiteracy. This threshold has progressively gone from Grade 4 to Grade 9, to land up, in 1990, at the level of Secondary V [senior matriculation]. Workplaces raise their requirements; employers demand this level of schooling even if the job doesn't require basic skills in French. Businesses prefer to select a trained workforce from among the 30% of the population that is unemployed. One participant emphasized that illiteracy is also related to the current economic context.

If there were 4% unemployment in Quebec, we would be talking less about the basic skills of workers. It's connected to the development of society. Take away unemployment, and the crisis will be less urgent.

Another risk associated with raising the literacy threshold is that by intervening with the more *trainable* part of the population, you further marginalize the more disadvantaged. The participants feared the exclusion of less educated people from training activities. The illiterate population does not master reading and writing skills; it is often under- educated, and for the most part, at the margin of social and economic activity.

Are we going to be interested [only] in those who find themselves at a level of literacy that is capable of change? Above a point where you have a certain level of qualifications, you will be offered training, but if you're lower than that, you're going to be left out.

The participants feared that the rising threshold of illiteracy and the broadening of the concept of literacy would lead politicians and businesses to make choices that would be to the detriment of the less literate population. In their opinion, there is a risk of seeing sums of money diverted to the advantage of populations with the least need, at the expense of people taking literacy training.

The more things that are included in the definition of illiteracy, the more people are in a position to exercise choices. We run the risk of seeing questions of economic return posed. We risk eliminating client groups that are not profitable enough, whose chances for success are low, and clients who in the medium term are not profitable for government or business managers.

2.2 Current support needs of groups and trainers

The network and motivations for communication

The groups that were present at the meeting communicate with many and varied partners. They interact with reference groups such as the Resource Centre for Adult Education and the Status of Women [Centre de documentation sur l'éducation des adultes et la condition féminine] (CDÉACF); municipal and university libraries; government bodies such as the Quebec Society for Manpower Development [Société québécoise de développement de la main-d'œuvre] (SQDM); the Quebec Labour Centres [Centres travail Québec] (CTQ); groups of a socio-economic character, such as the Economic and Community Development Corporation [Corporation de développement économique et communautaire] (CDÉC); co-ordinating bodies; various federations: the Quebec Federation of Independent Literacy Groups [Regroupement des groupes populaires en alphabétisation du Québec] (RGPAC), the Interregional Literacy Team [Équipe interrégionale en alphabétisation] (ÉIA), the Canadian Institute of Adult Education [Institut d'éducation d'éducation des adultes] (ICÉA), the Canadian Federation for Literacy in French [Fédération canadienne pour l'alphabétisation en français] (FCAF); government and private funders, as well as private businesses (publishers, bookstores, *et al*).

Groups that offer literacy services maintain close ties to social, economic and service organizations in their communities in order to tap specialized resources to respond to the needs of illiterate people and establish ties with them. They also participate in local and regional federations (economic and social) and communicate with provincial associations. The school boards and certain independent literacy groups maintain close ties to the regional literacy councils [Tables de concertation]. For their part, the member groups of RGPAQ maintain close ties with it. Communications between literacy groups, the Councils and the RGPAQ primarily cover information, resources, exchange of services, awareness, representation, problem-solving, development of teaching strategies and materials, and training. Most of the time, it is co-ordinators and teaching advisors who do research (on teaching materials, software, *et al*) for the literacy trainers.

Moreover, the development of literacy is ensured in large part by the Independent Literacy Training Support Program [Programme de soutien à l'alphabétisation populaire autonome] (PSAPA) and grants from the Federal-Provincial Literacy Initiatives (FPLI). Co- ordination among school boards in presenting a project is an essential condition for gaining access to FPLI grants. Since 1990, each region of Quebec has had a federation of school boards which co-operate with one another, and in some regions of Quebec, school boards co-operate with independent literacy groups. There are also some councils of independent literacy groups for presenting and carrying out FPLI projects. The member groups of these federations regularly communicate with each other (FPLI committees, working groups), with literacy players in other regions, resource centres and the Department [of Education], the latter on various phases of the project. Communications are connected to information, coordination and development of content, innovation and circulation of materials. Moreover, several projects funded by the FPLI cover community awareness of communication between the community, the media, the world of work, and partnerships with groups in the community.

At the RGPAQ, which takes in some forty independent literacy groups, there is communication with the membership, associations like the Movement for Popular Education [Mouvement d'éducation populaire] (MÉPACQ), groups like the ICÉA and the SQDM as well as with local and national media. Communications centre on information, coordination of efforts, content development, awareness, and representation.

Members of the ÉIA, a provincial federation of 102 school boards and about 30 independent literacy groups, communicate particularly with the regional literacy councils, which include school boards, independent groups, funders and governments, as well as other organizations such as ICÉA, FCAF, and CDÉACF. Communications centre on the exchange of information, representation and awareness, content development and coordination of efforts.

The Quebec Foundation for Literacy [Fondation québécoise pour l'alphabétisation] (FQA) has a network oriented towards literacy organizations, funders, and partners (bookstores, government departments, libraries, donors, media) and national organizations such as FCAF and ABC Canada. Communications are focused on awareness, representation, coordination of efforts, and fundraising.

Resource centres like CDÉACF maintain a communications network of national and international francophone literacy groups and the anglophone countries. Its staff researches and publishes information and resources on literacy, and circulates publications produced within the IFPCA (materials, approach, research, content, *et al*).

For their part, researchers tap their research from other researchers in the universities and resource centres. They mentioned the absence of places to reflect and pool literacy resources that promote a vision and reflection for action. They also regretted the lack of research into literacy, the poor accessibility, limited dissemination and lack of reinvestment afforded the research that has been carried out on francophone literacy. The participants have had little access to literacy research carried out in English Canada and elsewhere.

Current obstacles

Lack of time and money to acquire technology and poor access to the tools of communication (faxes, computers) constitute serious hindrances to communications among groups and trainers.

In addition, the participants identified three important factors in exchanges and communications on francophone literacy: a shrinking communications network; isolationism and antagonism; and finally, underfunding.

To illustrate the shrinking communications network, one participant cited the disappearance of the magazine *Alpha-liaison*, the temporary suspension of the magazine *The Literate World* [*Le monde alphabétique*] and its return on an intermittent basis, and finally, the internationalization of Jean-Paul Hautecœur's *Alpha* collection. This latter was originally a place for circulating Quebec francophone experiments, but it has now, for all practical purposes, abandoned its Quebec content in favour of presenting international experience in literacy training. The outlets for distribution are diminishing and are not being compensated for by other media and places for exchange.

As for isolationism, some participants referred, among other things, to the absence of an overall literacy policy, a lack of unity of action in a context of scarce resources, and the absence of a formal network for disseminating material among groups and literacy researchers. One participant objected to this observation, noting that the CDÉACF has a mandate to distribute materials to groups.

Moreover, groups in rural areas, or ones that lack financial means and don't belong to any federations, have limited access to information and products.

On the subject of the factor of antagonism between school boards and independent literacy groups, some participants identified the disparity of resources between the two kinds of organization, and the Minister of Education's plan to transfer funds from the school boards to independent literacy groups.

Some people believe that the problem with literacy is not a communications problem, but an under-funding problem.

Literacy in Quebec seems to be a priority in speeches but not in reality. We have succeeded, in the literacy field, in developing networks of exchanges through meetings, publications, ties with labour that have grown over the years, the federations, the various actors. But the two networks always find themselves in dire straits. The literacy networks stay open thanks to [the dedication of] the people who work in them.

The need for support

Participants identified several areas of need for support in communications and information:

- Circulation and accessibility of research, experiments, learning tools and content (particularly the material produced under the aegis of IFPCA), literacy practices, funding sources, special events, and workplace projects.

- Development, experimentation, coordination, and reaction. This category includes the need to work together, to develop new models of intervention, to share opinions, to enrich the vision of literacy, and to establish joint projects.

- Consultation with and between the participants themselves. They need to consult and be consulted, on among other subjects, development of literacy, government policies on policy directions and funding, and action to take (*eg*, on electronic infrastructure issues). Consultation should include follow-up to matters discussed here.

- Sharing experiences, discussions on practices, and access to experts (*eg*, about learning disabilities).

- Circulation of experimental results and research on a broader scale and to a wider public.

- Information and communication with partners and the general population, and on a broader scale, developing awareness of literacy problems, and information on services and resources in literacy training through the media and the groups' own communication channels. To this should be added sharing and barter of services between community groups.

Apart from the need for exchanges, participants mentioned the need to meet to broaden and deepen their thinking, to get development ideas moving, and compose a concept of development in literacy training.

All the needs enumerated above apply to trainers. However, the participants identified some needs specific to trainers:

- Resourcing — discussion groups on a variety of subjects, and exchanges of views on practices.

- Circulation of information on various current media, especially the new media of information and communications.

- Ongoing training (with due regard for the high turnover of trainers) which could be on the use of personal computers, familiarization with basic literacy software (communication, word processing, *et al*) and on the World-Wide Web. This need is linked to constant, reliable technical support

- Training in basic skills (teamwork, learning skills, *et al*) in computer teaching applications and in using teaching software

2.3 Interest in a telecommunications network

Interest in communicating

Although the participants had little familiarity with the new information and communications technologies, they affirmed that groups and trainers are interested in a telecommunications network that would connect groups and their partners in literacy.

We can distinguish *two functions for a telecommunications network*. The first is centred on *communications between groups*; the second involves learners and *personal computer learning applications*. The two functions represent a single interest. There is a place for some serious thinking before deciding on the type of network to put in place.

It has been suggested that the interests of the various players in the literacy movement in having a telecommunications network is in proportion to the number of people and groups they could communicate with over the network.

It [a network] has to be broadly based to be of interest.

Personal computer users insist on the interest and the attraction of the computer for learners, which tends to confirm the opinions of those interviewed by telephone.

Learners don't have a problem with computers; they're just afraid for the first two hours. After three courses, a group, even if they don't understand all the words, can type out a text in a word processor and put words in bold face.

Despite their openness, participants emphasized that *it is important at first to think and organize in Quebec before putting in place an electronic infrastructure across Canada and hooking Quebec up to it*. Some groups whose interests lie in communications and awareness mentioned that they had already established lines of communication with francophone partners outside Quebec. For these groups, such ties are necessary for survival. In their view, a telecommunications network would facilitate those ties.

In support of the need for prior reflection, participants brought up the mistrust of the new media and a lack of information on the possibilities, the impacts, and the stakes of these media for trainers and learners alike in literacy. They insisted on the importance of serious reflection with the members of literacy groups in Quebec on these subjects first, in order to familiarize themselves with the stakes in literacy.

The participants also believed that a telecommunications network should draw its source from the existing base and groups. The participants fear the imposition of a transCanadian network that is not adapted to their needs and is put in place without consultation or serious reflection.

Anticipated benefits of a telecommunications network

The participants are interested in a telecommunications network because such a network could:

- increase the speed of communications

- facilitate access to resources (reference material, experts, *et al*) and to other people;

- ensure a continual process of exchange;

- generate financial savings (postage, telephone).

2.4 Obstacles and conditions for a successful telecommunications network

Among the elements that constitute obstacles, participants identified:

- the lack of familiarity with the tools and the possibilities (information, training);

- the fragility of organizations plagued with chronic under-funding, especially independent literacy groups;

- the annual uncertainty over budget renewals;

- re-examination of the role of school boards in the field of literacy.

Under-funding prevents investment, even on a minimal scale, in the necessary equipment, or even in putting in a second telephone line. In this context, new media are considered a luxury. The uncertainty over jobs saps the energy and the commitment necessary for the successful adoption of new technology. In effect, the great majority of literacy trainers are in an unstable situation, working for an hourly rate, or by the lesson.

In the independent groups and adult education centres, trainers are paid by the lesson, which is an entirely different situation than the introduction of computers in Quebec schools, for example, where trainers are employed full-time, there are training budgets, and scheduled professional development days. That's not the way it works in adult education.

Organizations are overloaded with work and literacy workers are very much occupied with their day-to-day tasks. The appropriation of new media, as much on their technical side as on the pedagogical, requires an expenditure of time, availability to acquire and experiment with this new tool. For the participants, the acquisition and adoption of new media should not reduce the time devoted to delivery of services. The same goes for the training budget, which should not be eaten up by the introduction of a telecommunications network.

The first condition for success for the installation and maintenance of a telecommunications network is access to working equipment (a personal computer and its peripherals, such as a printer and a modem). To this basic equipment must be added, especially in the case of groups that have only one telephone line, a second line to allow for access during busy times.

In addition, for the adoption of a telecommunications network to succeed, it should not occasion costs or additional charges to groups, or under any circumstances, saddle the budget with service charges. It must demonstrate the advantages of using this tool, and above all, that the expenditures connected with the adoption of the new media will be offset by savings achieved (for example, a reduction in mailing and telephone costs).

Moreover, for interest in the system to grow, there must be a large number of users, and they should be able to communicate with each other.

Those responsible for the installation of such a network should also insist on harmonization of equipment and communications software. At present, there is a very great disparity between organizations that have a computer and those that don't. We find, at one end of the continuum, 286s and even Commodore 64s, and at the other end, the latest generation of Pentiums.

Last year, we offered computer training… Out of six groups, I gave training on six different software packages and six different computers.

Continuous training and support to groups are essential conditions for success in adopting and integrating a telecommunications network. Training must emphasize both technical and pedagogical aspects of computer use (promoting its use in groups and the adoption by trainers of new teaching approaches in the context of literacy). The participants also insisted on the importance of support for technical aspects as well as pedagogical ones. This support must be easily accessible in multiple media (in writing, by phone, by Internet, conferences, and group discussions, *et al*).

In order to stir the interest of potential users, the telecommunications network should offer a varied French-language content responding to the concerns of various people involved in literacy. It could, for example, provide access to research on literacy training, on teaching applications software, and on new experiments.

The infatuation of learners for new media can be a very favourable factor in setting up a telecommunications network. However, the corollary to this assertion is that trainers must be involved in the introduction and integration.

The installation and maintenance of a telecommunications resource impose a code of conduct on exchanges.

New media are considered by participants to be a tool of communication and training among others. They must be used in connection with a teaching project, if a group is to avoid a piecemeal adoption. Use of new media must be supported by teaching scenarios and be an integral part of an adult education strategy.

Utilization is not integrated into a project… and that's where the challenge is, I would say. It's to bring the workers, the trainers, to really think about redefining their approach to integrating these media.

Finally, the increasing user-friendliness of personal computers makes their adoption by trainers and learners easier.

2.5 The potential of current technology

The fax, telephone and mail are the most frequently used communication media. Participants nonetheless emphasized the high costs of postage and the telephone. Currently, no technology available facilitates access to resource centres like CDEACF. The procedure for gaining access to resources is complicated. New media could expedite this access. Moreover, several independent literacy groups do not currently have access to basic technologies like faxes. They are limited in their capacity to obtain and operate such communications tools.

Finally, researchers insist on the value of meetings, which through the phenomenon of synergy, move beyond the transmission of information and situation reports. These meetings also allow for the sharing of research results, stimulating and nourishing reflection on the subjects of research, in order to arrive at a vision and coherence in literacy development. Technology would have difficulty in filling this need.

2.6 Technology and Means to Choose for the Future

For the participants, the integration of new media, and more particularly the Information Highway, into literacy training appears to be both desirable and unavoidable.

However, it is essential that the whole array of technology be made available in an integrated manner. According to the participants, it is important to develop a `multimedia' approach to the use of technology. This implies that organizations are able to use, for the purposes of communication and training, a smorgasbord of media, including personal computers, telephone, video, fax, videoconferencing, touchscreens, *et al*.

2.7 Funding

From square one, the participants indicated that at the present time, they did not have the financial resources to adopt the new media. They told us that in spite of all the importance they accorded to these new media, they have other priorities such as — among others — ensuring a certain stability for their trainers and acquiring teaching materials.

It was apparent for most participants that if we wish to integrate the new media with literacy training, we will have to find dedicated funds for purchasing equipment, software and phone lines, as well as for training and support.

Yes, there's interest, but is it a priority? When you're grasping to cope with poverty, to deal with emergencies, you look at luxuries, and you say, "Maybe I'll be able to afford it some day when the prices come down."

Moreover, the participants are of the opinion that the project's managers will have to guarantee longer-term financial support for the project to be self-sustaining.

This requires a long-range view. Even if you start something, you have to ensure that people will be able to support and respond to the demand a little further down the line.

The participants proposed that governments look at the advantages of recycling old machines. In effect, they are suggesting that all departments and agencies of government, when they replace their computer equipment, bring their old equipment to a central point, where it can be reconditioned and made accessible to groups. This should be the subject of clear directives, and not left to the discretion of bureaucrats.

Take Hydro-Quebec, for example. In our area, they sold computers for a pittance, which were then resold by a middleman.

As for training, participants suggested establishing on a regional basis, a bank of resource people from different backgrounds, who would be responsible for giving the necessary training to groups (school boards and independent groups) and making timely support available in both the technical and teaching areas. Budgets will be required to secure the training of these resource people.

Appendix

List of Participants in Group Discussions

1. Ontario Participants

Regional and National Groups

Pierre Foisy	Regroupement des groupes francophones en alphabétisation populaire de l'Ontario
Fred Van Wickle	Réseau AlphaCom
Jean Bouchard	CEEC-RUISSO
Henriette Dauphinai	Réseau Contact Nord
Daniel Laroque	Village électronique
Jean Waters	Collège Boréal
Lucie Goulet	Alpha Ontario
Ghislaine Lefebvre	Centre d'études indépendantes MEFO

Literacy Training Groups

Normand Savoie	ABC communautaire
Marc Bissonnette	La Route du savoir
Sylvain Lapointe	Le Coin des mots
Colette Lacroix	La Magie des lettres
Réjeanne Bélisle-Massie	Roman-Catholic Separate School Board of Kirkland Lake- Kapuskasing
Jocelyne Lessard	Sudbury Separate School Board

2. Quebec Participants

Jean Roy	Table édumatique, ressources didactiques MEQ
Richard Lavallée	AQUOPS
Marie-Paule Vaillancourt	Fondation québécoise de l'alphabétisation
Rosalie Ndejura	CDÉACF
Nicole Lachapelle	RGPAQ
Serge Wagner	researcher
Marie-Paule Dumas	Équipe interrégionale en alphabétisation
Danielle Marchesseault	Ludolettre
Francine Pelletier	ICÉA
Louise Miller	FTQ
Judith Bergeron	Videoway Communications
Sylvie Roy	researcher

FIRST NATIONS SITUATION AND ISSUES FIRST NATIONS

Unique Needs and Traditions

First Nations communities, both within Ontario (where the focus group was held) and across the country, share some literacy-related needs with the rest of Canada, but also have a number of unique requirements that stem from their traditions and their socio-economic position. First Nations have traditionally employed an oral and consultative approach to communication, rather than one based on writing and analysis. This tradition colours their entire approach to literacy training. Practitioners rely heavily on oral communication and approach the task of instruction as a consultative and evolutionary exercise rather than one focussed directly on a final result. Furthermore, there is also a need to demonstrate the link between literacy skills and the development of the family and the community as a whole. The focus goes beyond the acquisition of job skills to encompass life skills in general.

Language is a further factor that differentiates First Nations literacy needs. There are many native languages in Canada, some of which are threatened with extinction. The preservation of these languages is an important literacy issue for First Nations communities. This diversity of languages and cultures adds considerably to the complexity of the literacy issues facing aboriginal Canadians. Furthermore, we were told that the frequent practice of having a single native person speak for such a diverse group can amount to little more than "tokenism".

The Current Situation

First Nations literacy services are delivered from community centres, sometimes by the same people who deliver other social services (such as healthcare, education, job search, daycare, dealing with the law, crisis intervention, alcohol abuse). Practitioners currently rely almost entirely on informal networks of communication, including regular meetings with other practitioners in the region, both native and non-native. Inter-community communications are a hit and miss affair relying heavily, in the absence of an established infrastructure, on personal initiative.

Partnering occurs at the community level and may involve band councils, community centres, schools, libraries and women's groups. The only outside partners tend to be federal and provincial governments, although there are some non-native volunteers, especially in the library system. In Ontario, OTAB works closely with First Nations communities. We were told that OTAB is conducting a pilot project to assess the needs of First Nations communities in Ontario the outcome of which should help native practitioners. OTAB is also conducting an Aboriginal Language Standardization Project and recently issued a progress report. A number of other provinces are also active in the field of native literacy. For example, British Columbia uses STAPLE and videos to train volunteers on reserves through its Native Instructor Program. While some work with native groups is also under way in other provinces there is relatively little communication between them.

Problems with Current Situation

First Nations literacy practitioners face a number of problems. The lack of a tradition of literacy and the need to proceed in a consultative and holistic manner have already been mentioned. As noted, many of these practitioners have responsibilities that go far beyond the field of literacy and often have to spend their time dealing with more immediately pressing social problems. They suffer from isolation, lack of support and lack of resources.

In the area of communications, the current reliance on personal initiative and contacts to forge links within and between communities leaves the system vulnerable to turnover of key staff. The turnover problem is exacerbated by unstable annual funding. We were also told that competition for scarce funding dollars can further block communication among potentially competitive programs.

Another problem is the lack of suitably educated volunteers. Some programs have no volunteers and are run entirely by part-time co-ordinators. We were told that the native communities cannot depend on volunteers, that there was a high turnover rate among those who did volunteer, and that training for volunteers was quite inadequate.

First Nations participants also reported that the teaching materials with which they are supplied for adult literacy training are often juvenile and of poor quality. However, the Ontario Native Literacy Coalition (ONLC) is beginning to address this problem by establishing a clearinghouse to produce and make available native instructional material, but that it needs encouragement and assistance in this endeavour. Finally, some First Nations participants pointed out that their situation is sometimes complicated by unavoidable jurisdictional issues.

Technology Situation and Problems

Most First Nations communities are connected to the telephone network and an increasing number have fax machines. They rely mostly on these and on the mail for communications, although some also have access to newsletters and occasional meetings and workshops They are not, as yet, making extensive use of computers, although computers have been introduced in many schools for upper grade students and are also in use in a number of native community centres (some of which, in Ontario at least, claim to be fairly well equipped). They have yet to establish computer linkages between communities, although a few have access to e-mail via the Web. This slow rate of adoption of information technology can be attributed both to cultural factors and to lack of resources.

On the cultural side, First Nations people are not yet sure how to integrate technology into the life of the community. There is a widespread belief that computers cannot help to solve complex native social and linguistic issues. While there is a strong recognition that they require computer skills, there are other fundamental needs of the community that must be addressed.

On the resources side most bands (with a few exceptions, as noted) have only basic computing equipment at best. This equipment is often old, out-of-date, mismatched and virus-ridden. Even modern and fully functional equipment may stand idle if no-one has been trained to use it. Lack of technical support means that once equipment breaks down it tends to remain that way. Some participants felt that the lack of standard equipment and training simply adds to the frustration and ambivalence that many practitioners experience when confronted with information technology.

OTAB has established a native database service that is accessible through [AlphaCom](). Unfortunately, the First Nations do not make extensive use of this service. Apart from lack of suitable and properly functioning computers, the reasons given, in order of importance, were:

- lack of time to use the service
- lack of training (we were told that training was provided only at the time of initial connection)
- the high rate of staff turnover (making it difficult to establish and pass on skills so that the benefits of any initial training are quickly lost)

Requirements Related to an Electronic Infrastructure

There was widespread support among First Nations participants for province-wide or national communications infrastructure for Native literacy. Although few had had any direct experience with the Internet, there was a widespread view that it had potential, although many saw it as more of a future than a current priority. Access to the Internet was seen as desirable both for its information content but also for the purposes of e-mail communications and national and regional conferencing. However, it was emphasized that any electronic infrastructure (including Internet or AlphaCom) would not be effective without on-going training, technical support and access to expert advice. The Ontario Native Focus Group agreed that a 1-800 number "would be a tremendous help to us and make us more willing to learn to access the Internet". Another suggestion (made in relation to AlphaCom, although it would presumably apply to any electronic infrastructure) was to have a coach to assist native co-ordinators to use the network.

In terms of the information content of an electronic infrastructure, a primary need is access to teaching materials and curricula adapted to native requirements (including materials on CD-ROM). Connection to libraries and other resource centres is seen as particularly valuable. Information on conferences and other events of interest to native literacy practitioners was also stressed (a 1-800 line was suggested as a possible means of accessing such information). Other needs specifically identified include:

- reports the activities of other native literacy programs,
- software for teaching computer skills and more technology training in general (thought to be especially important for youth);
- a student records system;
- in-class computer network (for simultaneous monitoring of students using self-paced instructional software)
- translation facilities for native languages
- programs to train people to train others;
- native literacy data
- research information
- a telephone messaging centre

There was no suggestion that an electronic infrastructure would completely replace more traditional means of communication. Traditional newsletters and face-to-face workshops for training and information-sharing were seen as very valuable and a number of native participants expressed the hope that such meetings could become more frequent.

Message for [NLS](#)

Success depends on the determination of adult learners to improve their lives, on the work of practitioners and the support they receive, on communication between First Nations communities and other communities both native and non-native. Learners should participate in the design of their individual programs of instruction by identifying their needs and goals. It is not possible to deal with literacy in isolation from other issues. Many factors (transportation, housing, childcare, job opportunities, etc.) have an impact on learners' ability and willingness to enhance their literacy skills, so that literacy training should be viewed as part of a holistic approach to community development.

They ask the NLS to recognize the reality of where the native community is at present and to allow them to progress and build on their own strength. Also, because there are many different native cultures and languages within Canada, no single voice can can represent all Canadian First Nations. In order for a national electronic infrastructure to be useful and beneficial to natives, it will be important to recognize this diversity and ensure that native stakeholders buy into the system. They would like to see more native literacy centres open across Canada and would like the NLS to support the development of a literacy framework for First Nations' languages. Finally, they urge the NLS to help elevate literacy issues onto the national agenda and to promote the idea that literacy is a fundamental human right of every Canadian.

COST ANALYSIS

National Literacy Secretariat
National Information Infrastructure Project

5 Year Cost Estimate

Cost Item		Five Year Total
Equipment		
Workstation (inc. software)		$5,000,000
Maintenance (cumulative)		$2,250,000
Servers		$100,000
Server maintenance (cumulative)		$60,000
Telecommunications		
User Access (cumulative)		$300,000
Programming/enhancement		$100,000
	Subtotal	$7,810,000
Staff salaries and benefits		
Consultant/trainers		$1,770,000
Technical support		$354,000
Clerical		$177,000
System Operator		$206,500
Manager		$177,000
	Subtotal	$2,301,000
Travel/training		Total
Trainers		$1,561,200
	Subtotal	$1,561,200
	Total	$11,672,200

Annual costs for salaries, benefits and travel

	Staff No	Salaries	Benefits	Total	
Consultant/trainers	6.0	$50,000	$9,000	$354,000	Benefits assumed at 18% of salaries
Technical support	1.5	$40,000	$7,200	$70,800	
Clerical	1.0	$30,000	$5,400	$35,400	
System Operator	1.0	$35,000	$6,300	$41,300	
Manager	0.5	$60,000	$10,800	$35,400	
Total				$536,900	

Travel/training	No	Cost per day	No. days	Total	
Trainers	4.0	$300	260	$312,240	Assumes 4 consultants travelling at a daily expense of $300

Hardware and software estimates

Workstations

Number of workstations	2000	
Implementation (years)	5	
Unit cost per workstation	$2,500	Includes communications hardware and software
Annual maintenance	15%	Industry standard

Servers

Cost per server	$50,000
Servers per 1000 users	1

Delivery	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Workstations	400	400	400	400	400	2,000
Servers	1		1			2,002

Costs	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Equipment						
Workstation (inc. software)	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$5,000,000
Maintenance (cumulative)	$150,000	$300,000	$450,000	$600,000	$750,000	$2,250,000
Servers	$50,000	$0	$50,000	$0	$0	$100,000
Server maintenance (cumulative)	$7,500	$7,500	$15,000	$15,000	$15,000	$60,000
Telecommunications						
User Access (cumulative)	$60,000	$60,000	$60,000	$60,000	$60,000	$300,000
Programming/ enhancement	$20,000	$20,000	$20,000	$20,000	$20,000	$100,000