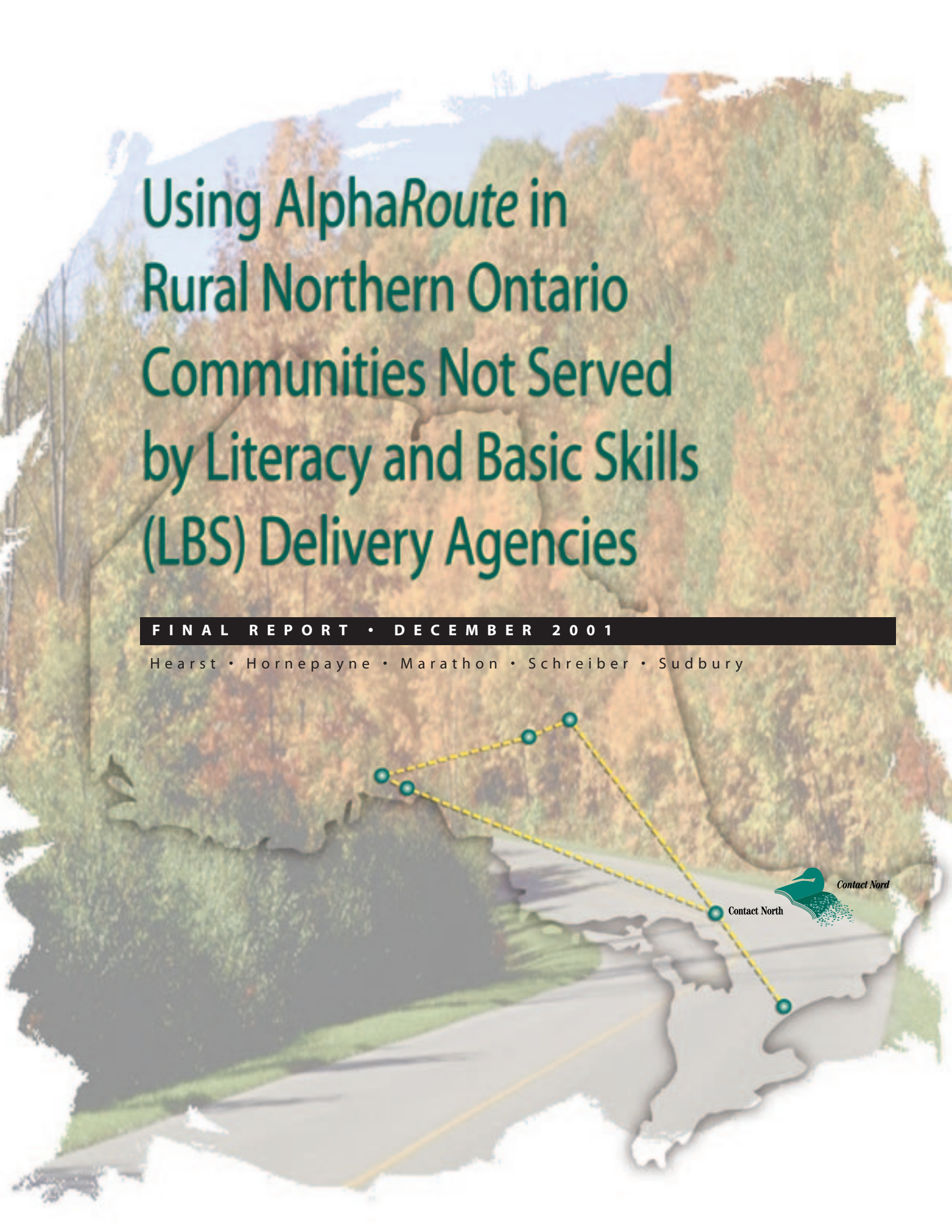
Using Alpha*Route* in Rural Northern Ontario Communities Not Served by Literacy and Basic Skills (LBS) Delivery Agencies

FINAL REPORT • DECEMBER 2001

Hearst • Hornepayne • Marathon • Schreiber • Sudbury



Using Alpha*Route* in Rural Northern Ontario Communities Not Served by Literacy and Basic Skills (LBS) Delivery Agencies
Final Report • December 2001

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Ministry of Training, Colleges and Universities
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EXECUTIVE SUMMARY

Project Background

This project was funded and supported by the Literacy and Basic Skills Program, Ministry of Training, Colleges and Universities (MTCU), and the National Literacy Secretariat (NLS) of Human Resources Development Canada. In conjunction with *Centre* AlphaPlus Centre and Literacy and Basic Skills (LBS) agencies, Contact North/*Contact Nord* has investigated the feasibility and success potential for distance delivery of LBS using Alpha*Route* in two Northern Ontario communities (Hornepayne and Marathon) who are without LBS delivery agencies. Alpha*Route* provides online learning specifically designed to meet the needs of learners in the Literacy and Basic Skills (LBS) Program of the Ministry of Training, Colleges and Universities (MTCU). *Centre* AlphaPlus Centre, in partnership with MTCU and the National Literacy Secretariat (NLS) Human Resources Development Canada (HRDC), developed Alpha*Route*, with contributions from many LBS agencies.

Alpha*Route* is the first fully interactive online literacy learning environment, the result of intensive research and development undertaken by this partnership. Through the existing Contact North/*Contact Nord* distance delivery network, learners were provided the Alpha*Route* experience and connected to LBS agencies in another community at a distance. This project represents a unique partnership and opportunity to meet the objectives of MTCU and Contact North/*Contact Nord*.

One critical component of the current MTCU (2000) "*Tools for a New Beginning: A Strategy for Computer-Based Learning in Literacy*" is to extend literacy learning throughout Ontario through distance education and community partnerships. Contact North/*Contact Nord* is Northern Ontario's Distance Education & Training Network. In partnering with MTCU on this project, Contact North/*Contact Nord* has implemented one of their critical objectives, namely to improve immediate access to educational opportunities for residents of Northern Ontario living in small rural and remote communities who are without access to traditional educational opportunities.

Purpose and Methodology

The objective of this project was to make available the opportunity for literacy training to adults who do not live in a community with established LBS delivery agencies. A secondary objective was to provide a research report detailing this effort.

This project was an extension of the 1999 Alpha*Route (Phase 2) Research Project* that monitored and assessed the nature of support required by learners using Alpha*Route* when working within an LBS delivery agency. However, the current project implemented and assessed the element of distance delivery of Alpha*Route*. Geographical distance was bridged by technical and human support systems coordinated through Contact North/*Contact Nord* in Sudbury and two of its distance education and training centres. The centre in Hornepayne, Ontario served as the point of access for Francophone learners. The centre in Marathon, Ontario served as point of access for Anglophone learners. Each centre was linked to and supported by a corresponding LBS deliverer and mentor through Contact North/*Contact Nord*. Hornepayne was linked to *La Boîte à Lettres* in Hearst, Ontario. Marathon was linked to the Adult Literacy Centre in Schreiber, Ontario. A map of the geographical locations of Participating Centres involved in the project is provided in Appendix A.

Two goals were outlined in the proposal to determine two main components of successful distance delivery of Alpha*Route*.

- Learners' ability to make progress in literacy learning through an extended (distance) delivery model.

- The ways in which rural and remote literacy communities could adapt materials and provide support to learners at a distance.

The research team developed six specific research questions.

1. Can literacy learners in remote Northern Ontario communities make progress using the Alpha*Route* platform? To what extent is progress achieved?

2. Which technical and human supports are necessary and sufficient to provide access to Alpha*Route* and achieve progress?

3. How best can necessary additional learning materials and supports be made available through Contact North/*Contact Nord* and Alpha*Route*?

4. What are the costs in relation to the benefits associated with sustaining distance delivery of an LBS program through Alpha*Route*?

5. What are the minimum infrastructure and support requirements necessary for Contact North/*Contact Nord* and LBS agencies to deliver Alpha*Route* in remote Northern Ontario communities? What are the necessary elements in a model of implementation?

6. How can the research inform the further development of Alpha*Route*? How is this research related to past and future Alpha*Route* research?

The overall research design was exploratory given the nature of the project as a pilot study. The research component employed multiple methods including:

i. Semi-structured interviews with learners.

ii. Semi-structured interviews with two mentors and two site coordinators.

iii. Quantitative literacy assessment measures of all learners (such as entry and exit assessments and contact hours).

iv. Field and operational notes of mentors and site coordinators collected at two intervals during the project.

v. Cost-benefit analysis methods.

vi. One unique feature of the research method was that it was implemented through geographical distance. Interviews and team research meetings were conducted at a distance using Contact North/*Contact Nord*'s technology for teleconferencing. The research team also typically used courier, fax, e-mail, AlphaCom list serve and "proxy" personnel to discuss, collect and submit research data.

One possible research limitation is the limited number of centres (two) and learners. Five of the initial eleven learners continued in the project. The project methods have allowed for a full description of the supports, adaptations and ability for learning progress through distance delivery of Alpha*Route*. However, cautions to the generalizability of findings are offered. The model of implementation that has resulted is best understood as a baseline model of the component parts of distance delivery including the minimum investments necessary to support distance delivery. **It is clear that learners can make progress in their literacy learning.**

Summary of Findings and Conclusions

There was clear evidence that learners are able to demonstrate literacy progress in this distance delivery model. Those who continued through the 18-week session reported progress toward their initial learning goals. **Learners and mentors reported a generally positive learning experience that left them "wanting more".** Despite technical and programmatic glitches with the Alpha*Route* software, a majority of learners expressed a wish to continue with Alpha*Route*.

The participating LBS agencies and Contact North/*Contact Nord* centres itemized both the opportunities and challenges of distance implementation. Among the main themes of opportunity was the **sheer value of bringing literacy to a community that would not otherwise have access.** There were spillover effects to the four communities. **The project stimulated networking, literacy dialogue and an expressed interest in continued participation among the learners, LBS agencies and Contact North/*Contact Nord.***

The most prevalent challenges were **technical glitches with Alpha*Route*** including the virus that caused a deletion of learner files. Other technical challenges arose and were met. **The pilot nature of the project and its short time frame added some frustration and made for steep learning curves.** However, adaptive solutions were found and implemented. Specific recommendations for improving distance delivery include:

1. Flexible access to Alpha*Route* and supporting curricular materials for learners and mentors.

2. Development of a checklist to establish system readiness for mentors, site coordinators and learners which extends beyond the comprehensive training provided by *Centre* AlphaPlus Centre. This may be especially critical to address learner retention issues. For example, focus on a recruitment and retention strategy that takes into account the research on successful Alpha*Route* learners. Suggestions are provided in the report.

Supports and adaptations were evident as the project progressed. Most noteworthy were the efforts on the part of all delivery partners to meet challenges that arose. For example, the Contact North/*Contact Nord* site coordinators and LBS agency mentors formed a hybrid position that functioned to extend both roles. Over the course of the project, it became evident that a critical component of distance delivery is a need for a healthy, ongoing relationship among partners. In this project, the sharing of roles between site coordinators and mentors was one example. They represent the heart of the distance delivery model that hinges on inter-relationships and communications between the literacy communities and the Contact North/*Contact Nord* communities (*See Figure 1*).

Summary of Implications

The project was successful in providing literacy programming to learners who would otherwise not have access. It has therefore met key objectives of MTCU and Contact North/*Contact Nord* to deliver literacy programming to an increasing number of Ontario residents who are otherwise restricted by lack of access.

Alpha*Route* is one component of a system of distributed literacy learning. As the core of the interface with learning, it is critical that it is up and running and fully supported by well-trained and ready staff. Contact North/*Contact Nord* can provide a long arm of delivery to communities who are in need of literacy services in Northern Ontario. Learners can access and make progress using this network, already well established and funded by MTCU since 1986. **However, technical and human supports are critical.** This report provides a first attempt at detailing the component parts of a distance delivery model. Implications and recommendations are provided in the report.

I: INTRODUCTION

1.1 Context

This project was funded and supported by the Literacy and Basic Skills Program, Ministry of Training, Colleges and Universities (MTCU), and the National Literacy Secretariat (NLS) of Human Resources Development Canada. In conjunction with *Centre* AlphaPlus Centre and Literacy and Basic Skills (LBS) agencies, Contact North/*Contact Nord* has investigated the feasibility and success potential for delivery of an Alpha*Route* in two Northern Ontario communities (Hornepayne and Marathon) who are without LBS agencies. Alpha*Route* is the first fully interactive online literacy learning environment, the result of intensive research and development undertaken by *Centre* AlphaPlus Centre in partnership with MTCU and NLS.

This project represents a unique partnership and has presented both MTCU and Contact North/*Contact Nord* with an opportunity to meet key current objectives. For example, one critical component of the current MTCU (2000) "*Tools for a New Beginning: A Strategy for Computer-Based Learning in Literacy*" is to extend literacy learning throughout Ontario through distance education and community partnerships of the sort exemplified in this project.

In partnering with MTCU on this project, Contact North/*Contact Nord*, as Northern Ontario's Distance Education & Training Network, has also attempted to implement this critical objective, namely to improve immediate access to educational opportunities for Northern Ontario residents living in small rural and remote communities without access to traditional educational opportunities.

In building upon the second phase of research into Alpha*Route*, this pilot project represents the first attempt to implement and evaluate distance delivery in Northern Ontario communities. As such, it is a critical component of the fourth phase of research into Alpha*Route* and puts into motion a foundation for future efforts.

1.1.1 Contact North/*Contact Nord*

Contact North/*Contact Nord* is a non-profit corporation funded by the Ministry of Training, Colleges and Universities. Its mandate is to:

1. Increase and improve access for residents of Northern Ontario to formal education and training at secondary and post-secondary levels, and to informal education and training opportunities.

2. Contribute to meeting the ongoing and emerging educational and training needs of remote communities in Northern Ontario, Francophones and Aboriginal peoples.

3. Support innovation in education and learning through exploration and evaluation of new modes of "delivery" using technology and to share information in Northern Ontario, nationally and internationally.

Contact North/*Contact Nord* was established by the Ontario Government in 1986 at a time when distance education was identified as a priority in addressing an inequity in access and services for residents of the North. In partnership with Northern secondary and post-secondary institutions, Contact North/*Contact Nord* makes programs and courses available to meet the needs of residents of the North, especially those in communities remote from conventional delivery sources and in Francophone and Aboriginal communities.

Contact North/*Contact Nord* provides an infrastructure of electronic classrooms in over 100 communities across Northern Ontario. Each Distance Education & Training Access Centre is equipped with a variety of communications technology devices to enhance and deliver programs and courses delivered by educational partners. These technologies include computers, microphones, speakers for audioconferences, facsimile machines, audio and video tape recorders and electronic black-boards that enable learners in different centres to see

and interact with instructors and learners located in participating centres/communities. Contact North/*Contact Nord* pays for the equipment and staffing in the centres. Contact North/*Contact Nord* staff work as community liaisons and are available to assist learners taking courses on the network.

The single most important objective of Contact North/*Contact Nord* is to increase and improve immediate access to formal and informal educational opportunities for residents of Northern Ontario, particularly those living in small and remote communities without access to traditional educational opportunities. Literacy is seen as a priority need for residents of the North. Basic literacy skills represent the foundation for further educational opportunities and a proven way to improve lifelong learning chances of Northerners.
Note: Some Contact North/*Contact Nord Distance Education & Training Access Centres are equipped with videoconference units. See Appendix D (*Contact North/*Contact Nord Map).*

1.1.2 Ministry of Training, Colleges and Universities (MTCU)

The Literacy and Basic Skills (LBS) Section of MTCU aims to equip adults in Ontario with skills they need to meet their goals. LBS funds goal-directed learner centered programs for learners with three goal paths.

1. Employment.
2. Further training and education.
3. Increased independence. Increasingly, LBS agencies are incorporating computers into the learning process, responding to the growing interest and technological requirements of employment.

"Tools for a New Beginning: A Strategy for Computer-Based Learning in Literacy" (MTCU, 2000), details an approach to implementing and supporting a computer-based mode of delivery of literacy services in Ontario which complements and builds upon existing types of delivery. The strategy positions LBS delivery agencies to effectively use technology in the comprehensive education and training system for adults outlined in the provincial report "*Better Skills, More Jobs: Ontario's Plan for Tomorrow's Job Market".*

The LBS Program embeds instruction in basic computer skills within a literacy learning process. MTCU has offered six strategic directions for continued development.

1. Support expanded participation in computer-based and online learning through the LBS program.
2. Support learners to take advantage of the new technologies in their literacy and basic skills learning.
3. Support literacy agencies and practitioners to use computer-based learning effectively.
4. Provide LBS services to more Ontario adults, in new and effective ways, through computer based learning.
5. Involve learners in a new culture of connectivity within the adult literacy field.
6. Promote partnering of LBS delivery agencies with government, non-profit and private sectors to extend the technology leadership role of adult literacy in Ontario.

1.1.3. Literacy, Alpha*Route* and Distance Education

The National Literacy Secretariat (NLS) was established in 1987 and is administered by Human Resources Development Canada. The NLS works to promote literacy as an essential component for a learning society and to make Canada's social, economic and political life more accessible to people with weak literacy skills.

The NLS objective is to work with the provinces, the private sector and voluntary organizations to develop measures to ensure that Canadians have access to the literacy skills that are pre-requisites for participation in an advanced economy.

The partnership between Contact North/*Contact Nord*, MTCU and NLS represents the nexus of possibility for computer based literacy learning and distance education. There has been excitement around the potential of this relationship for some time.

Alpha*Route* is the product of a four-year partnership of MTCU and NLS in cooperation with *Centre* AlphaPlus Centre and LBS agencies. Currently, at the heart of Alpha*Route* are an estimated 160 hours of original learning activities in English and French developed by LBS agencies to reflect five learning stages of Ontario's literacy and basic skills learning outcomes. Activities have been developed and tested with learners at various times during the first three phases of development. Phase 4 of Alpha*Route* development includes the current pilot implementation and research project for distance delivery via Contact North/*Contact Nord*. Alpha*Route* is a "distributed learning system" which is expanding.

The concept and definition of literacy has changed considerably over time but have centred on the basic capacity to read, write and calculate (MTCU, 2000). Current definitions of literacy promote the idea that literacy falls upon a skill-based continuum that is relative rather than absolute. The International Adult Literacy Service (IALS) defines literacy as "Using printed and written information to function in society to achieve one's goals, and to develop one's knowledge and potential". The IALS further defines three distinct literacy types – prose literacy, document literacy and quantitative literacy – with five levels within each type.

Current literature (Abbott, 2001; Laroque, 1999) suggests four key components of these literacy types:

1. Cognitive (reading, comprehension, writing/ composition, spelling, critical thinking, numeracy, speaking, listening).

2. Meta-cognitive/Learning transfer (skill transfers, learning adaptability).

3. Computer/Telematics (keyboarding, navigating, general maintenance).

4. Socio-cognitive (independence, self-efficacy, self-concept, collaboration).

The current research project made efforts to assess literacy as a global construct of components based upon individual goals.

> *"Literacy involves a complex set of abilities to understand and use the dominant symbol systems of a culture for personal and community development. The need and demand for these abilities vary in different societies. In a technological society, the concept is expanding to include the media and electronic text in addition to alphabets and numbers. Individuals must be given life-long learning opportunities to move along a continuum that includes reading, writing, critical understanding and the decision-making abilities they need in their communities." (*Canadian Centre for Literacy, 2000*)*

An added feature of this project was to assess computer-mediated literacy learning (Alpha*Route*) as delivered via the Contact North/*Contact Nord* Distance Education & Training Network. Distance literacy learning was a new undertaking and required an adaptive delivery model.

1.2 Project Objectives

The objective of this project was to provide the opportunity for literacy training for adults who do not live in a community with established LBS delivery agencies and who do not have access to literacy programs and/or services. A further objective was to provide a next phase of research findings to

further understand the components of distance implementation of Alpha*Route*.

This project was an extension of the 1998 Alpha*Route* (*Phase 2*) research project that monitored and assessed the nature of support required by learners using Alpha*Route* materials when working within an LBS delivery agencies. However, the current project added the element of distance delivery for learners who lack access to LBS services. This distance was bridged by technical and human support systems coordinated through Contact North/*Contact Nord* Distance Education & Training Access Centres. The centre in Hornepayne, Ontario served as the point of access for Francophone learners. The centre in Marathon, Ontario served as point of access for Anglophone learners. Each centre was linked to and supported by a corresponding LBS centre and mentor through Contact North/*Contact Nord*. Hornepayne was linked to *La Boîte à Lettres* in Hearst, Ontario. Marathon was linked to the Adult Literacy Centre in Schreiber, Ontario. A map of the geographical locations of participating communities is provided in Appendix A.

The project attempted to determine two main components of successful distance delivery of Alpha*Route*.

1. Learners' ability to make progress in literacy learning through an extended (distance) delivery model.

2. The ways in which rural and remote literacy communities could adapt materials to provide support to learners at a distance.

As such, it represents a distinct and critical component of the next phase of research into Alpha*Route*.

1.3 Research Questions

Six research questions were developed by the research team.

1. Can literacy learners in remote Northern Ontario communities make progress using the Alpha*Route* platform? To what extent is progress achieved?

2. Which technical and human supports are necessary and sufficient to provide access to Alpha*Route* and achieve progress?

3. How best can necessary additional learning materials and supports be made available through Contact North/*Contact Nord* and Alpha*Route*?

4. What are the costs in relation to the benefits associated with sustraining distance delivery of an LBS program through Alpha*Route*?

5. What are the minimum infrastructure and support requirements necessary for Contact North/*Contact Nord* and LBS agencies to deliver Alpha*Route* in remote Northern Ontario communities? What are the necessary elements in a model of implementation?

6. How can the research inform the further development of Alpha*Route*? How is this research related to past and future Alpha*Route* research?

II: RESEARCH METHOD

2.1 Design

The overall research design was exploratory in keeping with the pilot nature of the research project. The project was conducted at a distance and was carried on in a team research format. Therefore, elements of action research have been used to involve a team of researchers to feed into the research process, collect field data and help to interpret the data. In this case, the mentors and Contact North/*Contact Nord* site coordinators worked with the project researcher to provide research feedback from the field. They were also instrumental in helping to develop the set of research tools (interview schedules and literacy measures).

The method was one of triangulation utilizing multi-methods from the social sciences. These methods were both qualitative and quantitative. The project questions assumed a need for describing the contexts of the research project, the learning centres and the supports that would arise during the course of the project. Thus a range of data was collected and analyzed. The methods allowed for testing of literacy progress on an individual case-by-case basis and a rich description of the environments within which progress could be made. The methods were also geared to detailing the support and adaptation in implementation. The complete project flow and design elements are presented in Appendix E (Project Action Plan).

2.2 Participants and Centres

Eleven adult learners, six from the Francophone centre and five from the Anglophone centre began as participants in the study. The learners participated in one of two separate centres. See Appendix A (Map of Participating Communities - Centres) .

1. **The Francophone centre –** situated at Contact North/*Contact Nord*'s centre in Hornepayne, Ontario. This centre was partnered with the LBS agency, *La Boîte à Lettres* in Hearst. Six learners participated in the research. Five learners continued through the 18-week project. The centre was staffed by a site coordinator and supported by a mentor from *La Boîte à Lettres.*

2. **The Anglophone centre** – situated at Contact North/*Contact Nord*'s centre in Marathon, Ontario. This centre was partnered with the LBS agency, The Adult Literacy Centre in Schreiber, Ontario. Five learners began the project. One learner continued through the 18-week project. One learner expressed a wish to re-start the project at a later time. The centre was staffed by a site coordinator and supported by a mentor from The Adult Literacy Centre.

The sample was purposive in that attempts were made to find learners who had not previously accessed LBS facilities and had literacy goals that would fit the project frame. The final sample of learners summed to five with full data and four others with partial data. The reasons for leaving the project included technical glitches with Alpha*Route*, start-up timing and distance to travel to the centre. Those who persisted tended to be females who had lived in Northern Ontario for over 25 years.

2.3 Procedures and Processes

The participating LBS agencies began initial recruitment of learners through four means:

1. Advertisements on cable television channel.
2. Contact with secondary schools.
3. Networking within the LBS community.
4. Networking within the larger community.

Contact North/*Contact Nord*'s site coordinators were also active in networking and attempting to locate participants. Within each centre, learners were assessed over an 18-week period beginning in March,

2001 and ending in June, 2001. Summer shut downs within the LBS agencies dictated the end of the project date. From April 18th through the 27th, a virus infected the Alpha*Route* delivery system. The records and portfolios of learners were lost. The 10-day period of technical difficulty created confusion and broke the flow of the project. Learners, mentors and site coordinators reported frustration.

2.4 Research Tools and Definitions

Four tools were used to collect data. The following section describes the research tools and provides definitions for the main concepts that were measured. Table 1 summarizes the tools and the timing of the collection of each over the 18-week period.

1. Socio-demographic variables such as age, gender, language most often spoken, ethnicity, place of residence, length of time residing in the North and past experience with literacy (computer, language and numeracy) were collected on a standard intake survey.

2. Interviews were conducted with learners, mentors and site coordinators. For mentors and site coordinators, the interview was designed to target issues of their perceptions of learning progress, supports and adaptations (human and technical). They were also asked to describe their roles and relationships. See Appendix B (Interview Protocol – Mentor and Site Coordinator). Any delineation from the original MTCU definition of "contact hours" was noted so as to attempt to formulate a measure of "distance contact hours". **MTCU defines contact hours as: "the actual amount of time that a delivery agency is directly involved** in delivering to learners any of the five delivery services. The number of contact hours includes meetings with learners as well as group activity and workshop presentation. It does not include administrative activities, such as record management or local service planning that support delivery agencies' work with learners. Learner time spent using a computer and learning software is not included in contact hours, nor is homework." (Ontario Ministry of Education and Training, LBS Section, Workplace Preparation Branch (2000a) Literacy and Basic Skills Program: Guidelines) For learners, the interview protocol was modified from Laroque (1999) with input from mentors. See Appendix C (Interview Protrocol – Learners). The project researcher interviewed mentors and site coordinators via teleconference and telephone. The interviews were set up through Contact North/*Contact Nord* and tape-recorded. The mentors interviewed the learners.

3. Literacy assessment data was collected from learners before and after their Alpha*Route* experience. In the Anglophone centre, the Common Assessment of Basic Skills (CABS) was used. The CABS is a standard literacy assessment report in which background information, goals, past educational and work-related experience skills and interests and support needs are assessed. The CABS also has a "literacy quick screen" to assess literacy level in six learning outcomes (speak and listen, read, write, perform basic operations, use measurements, and use computers). There is a detailed assessment report generated in the areas of communications, numeracy and computer skills. The CABS also has an Action Plan for training with suggested steps to lead toward the goal. The CABS interview and assessment guide is a step-by-step manual for conducting and interpreting the initial assessment. In the Francophone centre, an agency-based, French-language literacy assessment tool was used. This tool includes

an individual training plan (long and short term) in the areas of mathematics, employment and communications. It also includes an Action Plan and diagnostic capabilities for literacy levels in mathematics, communications and computing. Literacy assessments were also taken formatively from learner activities within Alpha*Route* and extra demonstration activities.

4. Cost-benefit analysis data was collected to determine costs of the project in relation to the returns/benefits. This included detailed budget examination, examination of mentor and site coordinator notes and an interview with the project manager. The data yielded a) a description of the monetary costs per element of the project and b) a statement of the benefit (critical, essential or beneficial) of each element. Notes are provided for each component in the results section.

TABLE 1: SUMMARY OF RESEARCH TOOLS

RESEARCH TOOLS	PRE-SESSION	MID-SESSION	POST-SESSION
I) SOCIO-DEMOGRAPHICS Age, gender, language(s), place of residence, length of time residing in the North, past experience with literacy (computer, language and numeracy)	●		
II) INTERVIEWS a) **Learners** Adaptations needed for distance Feelings about learning Transference of learning b) **Mentors** c) **Site Coordinators**		● ● ●	● ● ●
III) LITERACY ASSESSMENTS CABS (literacy level, learning style, numeracy, computer literacy) Goal (short-term) Activities/Demonstrations Journals	●	 ● ●	● ● ●
IV) SUPPORT AND ADAPTATION Mentors' notes (journal/log) Site Coordinator notes (journal/log) Contact North/*Contact Nord* notes (Interviews – see above)	⟷ ⟷ ⟷	⟷ ⟷ ⟷	⟷ ⟷ ⟷
V) COSTS AND BENEFITS Contact North/*Contact Nord* Budget Mentors' notes Site Coordinators' notes Interview with Project Manager Contact hours (not researched)	⟷ ⟷ ⟷ ●	⟷ ⟷ ⟷ ●	⟷ ⟷ ⟷ ●

2.5 Data Analyses

Interviews with mentors and site coordinators were tape recorded and transcribed. They were analyzed for narrative themes and examples of opportunities, challenges, adaptations and supports (human and technical). Narrative analysis provided a general story line of the project. Data such as "distance contact hours" were also derived from the interviews to corroborate journal data.

Pre-session and post-session analyses were tabulated from learner assessments and interviews. This included gauging changes in literacy level and progress toward meeting of personalized literacy goals for the 18-week pilot project session. This progress was assessed on a case by case basis. Given the time span of the session and the specific goals of the learners, it was expected that any change would be small and happen within a level rather than across one.

The analysis of literacy progress was in keeping with the agreed upon definitions of literacy of the IALS as "**using printed and written information to function in society to achieve one's goals, and to develop one's knowledge and potential**". The IALS further defines three distinct literacy types – prose literacy, document literacy and quantitative literacy – with five levels within each type.

Also conducted was a descriptive analysis of four key components of these literacy types:

1. Cognitive (reading, comprehension, writing/composition, spelling, critical thinking, numeracy, speaking, listening).

2. Meta-cognitive/Learning transfer (skill transfers, learning adaptability).

3. Computer/Telematics (keyboarding, navigating, general maintenance).

4. Socio-cognitive (self-efficacy, self-concept, independence, collaboration).

Costs and benefits were generated from project budget and notes and an interview with the project manager. Mentor and site coordinator detailed logs and journals were analyzed for numbers of hours in each of:

1. Technical.

2. Administrative.

3. Learner directed activity.

In keeping with an action research model, the research team meetings (most often conducted via teleconference) functioned as providers of input into the direction and interpretation of the emerging results. The model of distance delivery was derived from analysis of all sources of data and in consultation with the project team. (See Figure 1: A Dynamic System of Distributed Literacy Learning)

III: PROJECT RESULTS

3.1 Literacy Progress

Eleven learners began the pilot project in one of two centres – Francophone (six learners) and Anglophone (five learners). Learners were assessed over an 18-week period from March to June 2001. Learners worked a number of hours per week that suited their learning goals and time. However, April 18th to April 27th represented a period of technical difficulty in which portfolios were lost. Five learners continued for the duration of the project.

The reasons for leaving the project included technical glitches, start-up timing and distance to travel to the centre. Those who persisted tended to be females who had lived in Northern Ontario for over 25 years. They also tended to be highly motivated to upgrade their literacy skills.

The five learners who continued were pre-assessed to be at Levels 2 and/or 3. The learners mainly had low levels of computer experience, ranging from none at all to very little. Only one had a moderate amount of computer fluency (9 years experience). Goals for the learners tended to be specific since the duration of the project was short. Goals for each learner were to upgrade language skills for specific reasons such as "*to improve my grammar*" or "*to better help my children with homework*".

Each learner felt that they had achieved their initial learning goal and wanted to continue to enhance their skills. No learner was assessed to have changed his or her literacy between a level, but each made substantial progress within the level and toward his or her goals. This was an expected finding given the duration of the project. In three cases, Francophone learners "ran out" of activities at their current level and moved on to specific activities within the next level. Some became anxious or worried about the short time frame of the project and pushed their learning too quickly to "get to the end of level 5". The learning curve was therefore too steep and they were assisted by the mentors with supplemental activities at their original level to move them back to an optimal level of learning.

The mentors' interviews described a process of building a "scaffold" for learners which relates to that described in the educational psychology literature as a support mechanism provided by a more competent person that helps a learner successfully perform a task that is within their optimal zone of learning. This learning mechanism (scaffold), originating in the writings of Vygotsky, is used widely today to describe one way that the process of distributed cognition takes place. In a model of distributed learning, learners and supportive others think about an issue, share ideas, and network to develop solutions and solve problems. The learning outcomes of each individual are distributed between the components of a supportive system. The system of distributed learning is marked by a learning and support that is open, adaptive and flexible.

To determine literacy progress, four sub-components of literacy were assessed. Results are reported below for the group with specific examples provided from individual learners or their mentors.

1. Cognitive progress - learners demonstrated progress in reading, comprehension, writing/composition and spelling. Specifically, they mentioned and demonstrated improvements in grammar and sentence structure. One learner explained that "Alpha*Route is a gift that has come at the right time in my life … It is a tool which was able to improve my writing, reading and speaking skills*".

2. Meta-cognitive/Learning transfer progress (skill transfers, learning adaptability) – learners expressed the ability of Alpha*Route* to enhance their daily literacy activities. All expressed the meeting of their goal to upgrade language skills. These skills were tied directly to employment performance. For example: "*The project has encouraged me, I can now do my work and not feel lost … I have purchased three good dictionaries and feel confident in reading and writing my reports.*"

3. Computer/Telematics (keyboarding, navigating, general maintenance) – learners all expressed a new and enhanced ability to navigate the Internet, use the keyboard and computer. However, each also expressed a want for continued instruction and involvement in the program and a need for further computer instruction. For example: "*The Internet and computer were scary in the beginning but I managed it. I want to continue with this in September knowing that there will be changes to the program by then.*" Another learner stated that Alpha*Route* had helped with personal computting learning goals: "*I feel more confident using the computer and I want to learn more.*" Still another learner stated that the computer and the World Wide Web were helpful since "*we are isolated from learning institutions*" and so will need to continue using them.

4. Socio-cognitive progress (self-efficacy, self-concept independence, collaboration) – learners spoke openly about their feelings arising from participation in the project. In general, they began with trepidation but built confidence and independence over the course of the project. For example: "(The learner) *was very scared to start the program. She was a bit slow to begin but once she was started, there was no way to stop her … the program encouraged her.*"

Learners were also asked to rate their feelings about, and satisfaction with Alpha*Route* at the end of the session. Learners were asked to rate on a scale of 1-3 (1 being "not at all" and 3 being "a lot") to tell how they felt about Alpha*Route*. In general, results suggest positive effects of the Alpha*Route* experience for the learners. Mean scores for the five learners on sub-components of socio-cognitive responses are presented in Table 2 below. They suggest high levels of pride, happiness, satisfaction and feeling smart. They suggest low levels of boredom and feeling lost or nervous. The participants were in the middle range of feeling unhappy or excited about Alpha*Route*. Mentors cited the socio-cognitive outcomes of the project as one of the main successes. For example: "*The overall feelings of the learners was positive; they felt supported and happy about the project and being a part of it.*"

TABLE 2

Mean socio-cognitive scores for learners in the pilot project

Affect/Feeling	Mean Score
Proud	3.0
Happy	2.8
Smart	2.6
Unhappy	1.6
Excited	1.6
Nervous	1.2
Lost	1.4
Bored	1.0
Satisfied	2.3

Challenges and Opportunities for Learners

Challenges and opportunities of the learning experience were assessed. In general, **the main challenges for the learners were technical, including the virus and the need for more advanced training in Internet usage.** They also unanimously claimed that the **time frame was too short.** Three learners specified a need for home computer access in addition to site access. Suggestions for overcoming the challenges faced in working with the Alpha*Route* software included two main themes:

1. The lengthening of individual activities and/or adding more activities.

2. The provision of more examples within each activity.

The opportunities were expressed in cognitive, meta-cognitive, technical and socio-cognitive realms. For example, learners spoke **about the positive benefits of working at their own pace. This option built a confidence and ability to self-regulate learning.** There was clear evidence of literacy progress for the learners who continued in the project. **There was a unanimous expression of "wanting more"** of Alpha*Route* and to continue in the program. All learners expressed that they would like to become involved again. They suggested a September start-up and a longer duration for the program. One learner who left the project for another program subsequently expressed an interest in wanting to return.

In summary, learners were able to make progress within a distance delivery model of Alpha*Route*. However, the extent of progress appeared to be hampered by technical challenges and a short time frame for the project. It appeared to be facilitated by the abilities of the site coordinator and mentor to troubleshoot, support and provide a scaffold mechanism for the learning.

3.2 Support and Adaptation — A Distance Delivery Model

Mentors and Site Coordinators

At project start-up, learners spent many hours at the Contact North/*Contact Nord* Access Centres. During the first four to five weeks, on average, the site coordinator was spending at least one full hour per day per learner to get them started. The contact was face-to-face on a daily basis to ensure that diagnostic errors, such as errors in logging in and navigating with Alpha*Route*, were detected early and that the learners were comfortable in moving ahead with the process. This was done in consultation with the LBS agency mentor who provided guidance to the site coordinator and to the learners at a distance. They were in contact almost daily via telephone, fax and e-mail. There were, on average, 16 to 20 phone calls per month between the LBS mentor and Contact North/*Contact Nord* site coordinator. They also attended a joint training session prior to start-up.

Mentors and site coordinators were interviewed halfway through the project and at project completion. The interviews were taped, transcribed and analyzed for narrative descriptions of the process and for themes of challenge, opportunity and adaptation. They spoke about the general nature of the project and about working with Alpha*Route* specifically. These themes are outlined and described below as they emerged from the interviews with all four personnel.

Challenge Themes

- The time frame of project was too restrictive for recruitment, learning and adaptation purposes. There was a feeling among all personnel and learners that a longer period of time would have facilitated learning. For example: "*The learners were aware that this was short term and became frustrated*." Mentors and site coordinators felt that more time would help them to keep the learners engaged and motivated and give breathing space for technical difficulties which take extra time to solve at a distance.

- Need more supplemental curriculum (activities and exercises) before start-up. The mentors were able to pull together and provide additional activities for learners who were working quickly or were waiting for software to become functional.

- Learn always to save the work in case of technical difficulty. This becomes more critical at a distance since lost profiles are not so quickly retrieved.

- Redistribute time so as to spend more contact

hours with learners to facilitate psychosocial, socio-cognitive and cognitive goals. Mentors and site coordinators felt that the technical troubleshooting and short time frame took away from the learning facilitation time. Some of the time for contacting and encouraging students was deferred to software glitches.

- More software training should be provided before start-up in the sites. Although mentors and site coordinators attended a highly productive, joint training session in Sudbury, they felt that the software training needed to continue in the sites for a time before the learners arrived. For example: "*We need more training at the beginning of the project so that we do not feel as though we are learning along with the learners*." Mentors felt that further participation in Alpha*Route* distance delivery projects "would certainly be much easier the next time".

- Physical space for project could be expanded so that there is room for a number of learning terminals to be pre-established at each centre to suit the number of learners.

- Need learner/mentor/site coordinator readiness assessment so that each is up to speed on the role and challenges to be faced – this may include a "roles and responsibility checklist" similar to that found in the Alpha*Route* training manual and the Contact North/*Contact Nord* service agreements. For example, to make the project better, mentors suggested that "*learners should all have computer backgrounds, the site should have dictionaries and books, materials and extra software, and the knowledge of ways to use it to enhance the learner's programs*". The mentors and site coordinators relied upon and were assisted by *Centre* AlphaPlus Centre in these ongoing supports.

Opportunity Themes

- Chance to bring the positive gains in literacy progress to remote communities. For example, the theme emerged of learners finding this a beneficial and positive experience. Mentors suggested that others in the communities saw the benefits of the project: "*There are more people in our community, learners and other agencies, waiting for this to happen again*."

- Chance to see the spin-offs and transfer for learners and the community – networking, interest of secondary schools, community groups, individuals and business. For example: "*High school teachers have an interest in this, when you live in an isolated/small community word spreads quickly*."

- The ability to document and further understand the surging nature of the learning that takes place in distance, distributed formats. For example, learners were described as quickly feeling overwhelmed and then having breakthroughs. Mentors and site coordinators were part of recognizing and facilitating this type of learning and literacy progress. In working together, they recognized and responded to opportunities in distance delivery for individualizing instruction to fit different learning curves, learning styles, time frames, schedules and goals. These trends appear especially critical to learners who are travelling a distance to a centre and contacting mentors via telephone and e-mail.

- Students were engaged and delighted to be involved. For example: "*It was nice to watch them be so involved and make progress*."

- Chance to offer an adaptive and creative use of literacy materials. There was general enthusiasm about being part of the project which extended the roles of LBS agencies to distance delivery and increased Contact North/*Contact Nord*'s roles in literacy. Working with the support and development staff at *Centre* AlphaPlus Centre was seen as a way to enhance the learning, the project and the daily practice of the LBS agencies.

- Everyone "wanted more". LBS agencies,

community agencies, site coordinators, learners and Contact North/*Contact Nord* administrators felt that the project was "a positive learning experience" and one that they would be involved in again. For example: "*We have learned so much this time … We are a long way down the road now in understanding how to do this …, the learning curve will not be so steep when we do this again*."

- Positioning of a project researcher facilitated project flow and allowed for the generation of findings, further hypotheses and recommendations.

Adaptation Themes

Site coordinators and mentors mentioned two key themes of adaptation. These were a) the nature of contact hours with learners and b) the nature of the relationship between mentors and site coordinators including the roles and responsibilities of each. In each case, there appears to be evidence for the need for adapting to the realities of distance delivery that includes a high level of flexibility. For example: "*It is just a lot of little things that come up and can be very frustrating, diagnostics are a big part of it*." Other comments reflected the need for working in the evening to meet learner schedules, "*we are all working around different schedules but it is going well so far*". Therefore, flexibility, the need to "think on your feet" to diagnose and troubleshoot and adapt were critical to the success of the project.

Contact Hours

Since 1998, MTCU has defined contact hours as "the actual amount of time that a delivery agency is **directly** involved in delivering to learners any of the three delivery services. The number of contact hours includes meetings with learners as well as group activity and workshop presentation. **It does not include administrative activities, such as record management or local service planning that support delivery agencies' work with learners. Learner time spent using a computer and learning software is not included in contact hours, nor is homework**". (MTCU, 2000)

In this project, mentors reported spending three hours per week per learner on direct learning support such as learner assessment in conjunction with learning goal development. They stated that this should optimally increase to five hours per week per learner. They were spending another 10-15 hours per week in curriculum support and troubleshooting. This included contacting experts, writing requests for materials, searching Internet for materials and implementing materials into the curriculum for each learner. Although not a weekly task, they also spent time on administration (meetings, paperwork, travel, research notes, etc.) that summed to about 40 hours per mentor over the course of the project.

Additionally, site coordinators logged learner contact hours. Initially, they were spending five hours per week per learner (which were often evening hours) and another 15 hours per week in technical and troubleshooting time in total. At the beginning of the project, it was almost impossible to separate direct learner contact hours from technical/computer based contact for diagnostic purposes. The site coordinators found it necessary to sit with the learners at the beginning of the process at which the direct contact time was both in literacy-based content AND the technical support/diagnostic nature of distance delivery of Alpha*Route*. For example: "*The learner hours and technical hours are inseparable, they go together in this case with the software and the hardware troubleshooting and documenting, if they are not working there is no learning. About 80% of my time is involved in learner contact and diagnostics.*" There was variation in the exact number of hours per learner but generally, the pattern was to begin with more numerous and intense contact hours (both content and technical nature) and then drop off in number to about 3 per week.

In the distance delivery model of literacy learning, a sum of contact hours spent per learner per week by both mentor and site coordinators may prove useful. Thus, the optimal number of 5 hours per week spent in direct learner contact by the mentors could be added to the 5 hours per week spent by the site

coordinator for an optimal sum of 10 hours per week per learner. It should be noted that this was seen to decrease over the 18 weeks and to vary according to learner's fluency in computing. Moreover, direct contact hours may need to include some count of time spent learning software and distance support since it is critical to the entire learning process. In the distance delivery model, it may also be useful to consider the number of hours per week in which mentors and site coordinators agencies (LBS and Contact North/*Contact Nord*) need to spend in mutual support and planning. The contact hours should further be calculated per "active" learner since there is no work generated while they are inactive.

In summary, the notion of contact hours for distance delivery may need to be re-defined. A total number of contact hours may best be calculated at a baseline of 10 contact hours per week per active learner. Additional hours may be needed for technical support, communications and planning. The number of contact hours may fluctuate over the course of the project and by nature of the learner.

Mentor/Site Coordinator Relationships

Perhaps the most notable result in this pilot project **was the hybrid position that evolved between the Contact North/*Contact Nord* site coordinators and the LBS agency mentors**. It became obvious that the personnel in these positions not only functioned well as a dual support system, but that this was a necessary component of successful learning progress. In the case of Contact North/*Contact Nord* site coordinators, the roles and responsibilities entailed their usual work processes but geared toward literacy learning and the Alpha*Route* software. "*It is pretty much the same as normal site coordinator roles with different students at different levels of comfort and different learners; we need to feel them out and give them motivation and encouragement like usual.*" The site coordinators helped with recruitment and in keeping contact with learners who appeared to be slowing down on progress or contact. As is usual procedure, the site coordinators were involved in encouraging the learners. Mentors were seen as helpful and supportive in extending this role into literacy learning. For example, preparing student packages and extra activities and giving guidance as to what would constitute literacy learning processes.

Mentors had to adapt to the distance component of literacy and found this challenging but were supported by the site coordinators. Mentors played a key role in adapting to the Alpha*Route* system crash in that they provided the learners with activities to work on while the system was down. "*We used the crash to work on other things and never really stopped learning, although the learners were frustrated.*" The LBS agencies and mentors had clearly defined roles and responsibilities set out in a service agreement with Contact North/*Contact Nord*. These roles did not fluctuate over the course of the project. The roles included each of the following:

- Identifying one mentor.
- Having mentors work as team members for research and learning purposes.
- Recruiting learners in partnership with Contact North/*Contact Nord*.
- Becoming familiar with Alpha*Route* software.
- Delivering the LBS program to learners for 18 weeks.
- Attending meetings and teleconferences as dictated by the project.
- Providing training in literacy and tutoring to site coordinators.
- Participating in the online discussion group designated specifically for the purpose of the project; recording and reporting all required statistical data as required by the researcher.

These roles and responsibilities were met, extended to include providing assistance in troubleshooting, and enhanced through contact with site coordinators.

At the end of the project, additional support for learners was offered in the form of a certificate offered by the LBS agency to thank them for their participation. This was well received. At the end of the project, Contact North/*Contact Nord*'s project manager visited the LBS agencies and presented a certificate and honorarium in thanks. Both gestures functioned to support the project, staff and learners. In one Contact North/*Contact Nord* site, telephone inquires continued to come in through the end of the project from interested learners and agencies (both French and English speaking) who had heard about the positive experience offered by the program and want to be considered for future projects.

Equipment and Technical Support
Throughout the project, technical troubleshooting and diagnostics were performed by site coordinators, mentors, Alpha*Route* and Contact North/*Contact Nord* technical support teams. Contact North/*Contact Nord* technical support was provided to site coordinators and mentors. *Centre* AlphaPlus Centre technical support was provided to Alpha*Route*. For the most part, this was in keeping with the regular roles and responsibilities of each. Mentors and site coordinators became familiar with the support channels from *Centre* AlphaPlus Centre technical support team.

Hardware was made available to each centre as follows:

- IBM PC PIII/600 128/20 (with keyboards)
- Envision 17" monitors
- Yamaha speakers
- 56k internal modems
- Sound Blaster Live 2.0 value
- MS Windows 98 2nd Edition
- Fax machines (rentals)

3.3 Costs and Benefits

The pilot project has proven beneficial in two key ways.

1. It has provided a description of the necessary components of a model of distance delivery of literacy. This model emerged to be a dynamic adaptive system which showed necessity for being flexible. Moreover, the interrelationships between the component parts of the model became well established. Many feedback loops were established to support the learners and the software which were the core of the system. See Figure 1 (A Dynamic System of Distributed Literacy Learning). Future efforts can build upon this model and the opportunities/challenges presented in the project.

2. It has put into place the networks and knowledge for continued distance delivery of literacy in Northern Ontario.

   Costing issues and benefits are listed in Table 3. The table illustrates key cost related issues for each component of this project. Benefit statements are made concerning the necessity of each component (critical, essential or beneficial) to future projects.

TABLE 3: COSTS AND BENEFITS OF MAIN COMPONENTS OF THE DISTANCE DELIVERY MODEL

	COSTING ISSUES	BENEFITS
Publicity - recruiting	• Recruiting • Consider the project awareness characteristics and networks of each community	Critical to recruit and retain learners
Salaries/honoraria	Consider per Contact North/*Contact Nord* site costs • Per LBS agency costs • Background re. telecommunications • Learner scheduling • Distance contact hours/learner • Honoraria for partners within the learning communities	Critical to support learning and research
Administration/Project management	• Consider research, facilitation and managerial duties	Critical to support project and coordinate work flow
Technical support	• Consider remoteness and community characteristics	Critical to support learners and project
Facilities	• Negotiate space per community on cost/month basis • Consider community and space allowances and availability	Critical to support learners
Materials	• Consider production of materials in readiness assessment package for mentors/site coordinators	Critical to keep mentors up to date on project
Computers	• Consider per site number • Emerging support • Minimum 1 unit per centre	Critical and essential for learners
Telecommunications	Consider: • Background of literacy communities re: telecommunications (fiber optics, speed) • Additional needs re: team meetings • Contact North/*Contact Nord*'s contribution	Critical component in distance delivery model (support administration, research, learners, mentors and project flow) Beneficial in: reducing travel costs; enhancing computer/literacy/telecommunication skills for learners
Research	Consider: • Travel into centres for start-up case studies and training • Per centre costs	Beneficial in evidenced-based feedback — May function as project support and system
Printing	• Project materials • Project report	Essential in dissemination and feedback/forward of information
Travel	Consider: • Per/community costs (remote/fly-in) • Team (researcher) into field at start-up • Telecommunications becomes bridge for travel	Essential/Beneficial but ultimately declining when communities establish telecommunications strategy — Contact North/*Contact Nord*
Translation	• Project report • Project materials	Dependent upon the dissemination strategy and project aims

IV: CONCLUSIONS

There was clear evidence that learners were able to demonstrate literacy progress within a distance delivery model of literacy. Those who continued through the 18-week session reported progress toward their initial learning goals. Learners and mentors reported a generally positive learning experience that left them "wanting more". Despite technical and programmatic glitches, a majority of learners expressed a wish to continue with Alpha*Route*.

The participating LBS agencies and Contact North/*Contact Nord* centres itemized both the opportunities and challenges of distance implementation. Among the main themes of opportunity was the sheer value of bringing literacy to a community that would not otherwise have access. There were spillover effects to the four communities. The project stimulated networking, literacy dialogue and an expressed need for continued participation.

The most prevalent challenges were technical glitches with Alpha*Route* including the virus that caused a deletion of learners' files. Other technical challenges arose and were met. The pilot nature of the project and its short time frame added some frustration and made for steep learning curves. However, adaptive solutions were found and implemented. Specific recommendations for improving distance delivery included:

1. Flexible access for learners and mentors including the ability to work in the evenings and access the software from home after start-up.

2. Development of a readiness assessment for mentors, site coordinators and learners which extends beyond the effective training procedures. This is especially critical to address learner recruitment and retention issues. It would include designating someone "on the ground" (site coordinator) within each community to feed back information and facilitate the project flow. It would include assurance that support materials, which exist readily in LBS agencies, are available within centres. For instance, dictionaries, grammar books, assessment tools, etc. For learners, it has been suggested that they should optimally have a strong base in computer skills and be able to work well on their own. It may be that the distance model of literacy delivery is best suited, at present, for learners who are functioning at least at an LBS Level 2 of literacy.

3. Focus on a recruitment strategy that includes both Contact North/*Contact Nord* and the LBS agencies. It is also imperative to stay with the timeline once it has been established so that learners can build on momentum after recruitment.

Supports and adaptations were evident as the project progressed. Most noteworthy were the efforts on the part of all delivery partners to meet challenges that arose. For example, the Contact North/*Contact Nord* site coordinators and LBS agency mentors formed a hybrid position that functioned to extend both sets of roles. Over the course of the project, it became evident that a critical component of distance delivery is a need for a healthy, ongoing relationship among partners. In this project, the sharing of roles between site coordinators and mentors was one example. They represent the heart of the distance delivery model that hinges on interrelationships and communications between the literacy communities and the Contact North/*Contact Nord* communities. Another example was the role of research in detailing the project events. The project researcher and Contact North/*Contact Nord* site coordinator similarly developed a hybrid relationship to facilitate project flow, report writing and generation of recommendations. Moreover, mentors described a process of building a "scaffold" for learners which has been described in the educational psychology literature as a

support mechanism by a more competent person that helps a learner successfully perform a task that is within their optimal zone of learning. This learning mechanism (scaffolding), is used widely today to support the process of distributed learning whereby learners and supportive others think about an issue, share ideas and network to develop solutions and solve problems. The learning outcomes of each individual are distributed between the components of a supportive system. The system generally shows signs of being adaptive, open and flexible. This project represents one such model of a dynamic and distributed distance delivery of literacy. See Figure 1 (A Dynamic System of Distributed Literacy Learning).

Project Implications

The project was successful in providing literacy programming to learners who would otherwise not have access. It has therefore met key objectives of MTCU's literacy communities and Contact North/*Contact Nord* to deliver literacy programming to an increasing number of Ontario residents who are otherwise restricted by lack of access.

Alpha*Route* is one component of a system of distributed literacy learning. As the core of the interface with learning, it is critical that it is up and running and fully supported by system of interconnected people who are readily trained on the software. LBS agencies and their mentors, working closely with the *Centre* AlphaPlus Centre team, have provided the basis of such a system. Contact North/*Contact Nord* can further provide a long arm of delivery to communities who are in need of literacy services. They have the ability and capacity to support and coordinate such projects. They have in place equipment, technical abilities and staffing necessary for continued success of distance delivery of distributed literacy learning. Learners can access and make progress through this network. However, technical and human supports are critical. This report has provided a first attempt at detailing the component parts of a modified, distance implementation model.

In summary, the six original research questions have been answered as follows:

1. Literacy learners in LBS programs in remote Northern Ontario communities can make progress using the Alpha*Route* platform. The extent to which progress is achieved depends upon the technical and human supports available and confirming an adequate time frame for program delivery.

2. Both technical and human supports are necessary to provide access to Alpha*Route* and achieve progress. In the case of distance delivery in remote Northern Ontario communities, the minimum and most basic requirement includes a solid and well-defined relationship between Contact North/*Contact Nord*, its site coordinators, LBS agencies and its mentors.

3. Necessary additional learning materials and supports should be made available through Contact North/*Contact Nord* and Alpha*Route* via start-up training packages and training processes that are comprehensive. At start-up, mentors/site coordinators should be provided with actual materials for learning enhancement. This could ideally be done after they have pre-assessed the learners and undestand fully their goals and plans. Continued dialogue via AlphaCom and Alpha*Route* field consultants is necessary throughout the project.

4. The most significant benefits associated with sustaining distance delivery of an LBS program through Alpha*Route* is that remote communities without LBS agencies would not have the capacity to provideliteracy training in their communities. It has been shown that interest is ongoing and spin-offs are present in the communities.

5. The minimum infrastructure and support requirements necessary for Contact North/*Contact Nord* and LBS agencies to deliver Alpha*Route* in remote Northern Ontario communities can be summarized in Figure 1 (A Dynamic System of Distributed Literacy Learning). Most critical is the coordination of the project through Contact North/*Contact Nord* and MTCU. The necessary elements in a model of implementation are coordination of distance learning and literacy communities, outreach to the learners, research and evaluation of the efforts.

6. The research informs the further development of Alpha*Route* by suggesting needed supports and a model for distance delivery. This project research corroborates many of the findings of the other six MTCU Phase 3 Alpha*Route* pilot projects. It has also raised further questions to be answered in the next phase of research.

Project Limitations

The main limitation of the project is the small number of learners that persisted and thus provided complete data. This small number of cases, while providing a rich description of the processes and supports, necessitates caution. It is not advisable to generalize these findings across other learners and sites. However, the main components of support for learning progress have been documented and considered. Another limitation was the short duration of the project, which created a truncated ability to maintain learners and live through the technical problems that arose. While we have a cross-sectional picture of the case by case progress for five learners, longitudinal data would prove useful in two ways. Collecting data over time would allow for a better description of the distributed and adaptive nature of distance delivery of literacy. We could also better follow the ways in which the system adapted to problems and the conditions under which it reaches equilibrium and optimal functioning. Also, longitudinal data would allow for better measurement of literacy learning over time as related to both short and long term goals of the learner.

V: RECOMMENDATIONS

1. Increase the duration of distance delivery projects. As a base, a September or January start-up that coincided with academic terms would be optimal.

2. Increase level of readiness across all components of the system prior to start-up. This may include a readiness assessment consisting of a checklist for mentors, site coordinators and learners. The checklist might include such items as those found in the well defined *Centre* AlphaPlus Centre training manual along with pre-assessment items for learner computer skills, literacy skills, mentor computer skills, literacy tools for the participating Contact North/*Contact Nord* centres, and additional literacy materials and supports for mentors. Together, the Contact North/*Contact Nord* site coordinator and LBS agency mentor will recruit, assess and pre-train learners. They will have an agreed upon pre and post-assessment literacy tool. Researcher Contact North/*Contact Nord* site coordinator will pre-assess each centre/context for ability to implement the distance delivery model and support literacy learners.

3. Assess the feasibility of each learner having a home computer or computer access in addition to Contact North/*Contact Nord* centres. Each learner should have access to an Alpha*Route* manual of basic operations and a glossary of terms, developed at an appropriate level of literacy.

4. Attend to the nature of necessity for flexible and adaptive approaches needed for successful distance delivery within the established Contact North/*Contact Nord* model. See Appendix D (Contact North/*Contact Nord* Map). The possibility of the hybrid nature of relationships (such as that emerging between mentors and site coordinators and/or the Contact North/*Contact Nord* administrator as project facilitator) is likely to be ongoing and useful to such programming. However, this relationship is dependent upon open communication and strong telecommunications networking.

5. Attend to the importance of the capacity of the computers and Internet connections used in all project sites and LBS agencies. Contact North/*Contact Nord* can provide their information management system to the LBS agencies. They also assist in controlling technical variables, challenges and problems that arise.

6. Continue research on the costs and nature of human and technical adaptations, opportunities and challenges that arise in a distance delivery model. Research should attend to the characteristics of communities, learners and implementation models that best meet goals of MTCU literacy community and the Contact North/*Contact Nord* Distance Education & Training Network. Research should also specifically attend to issues around recruitment and retentions of learners in rural and remote communities. Research should make use of process of complementarity, including multi-methods and action research.

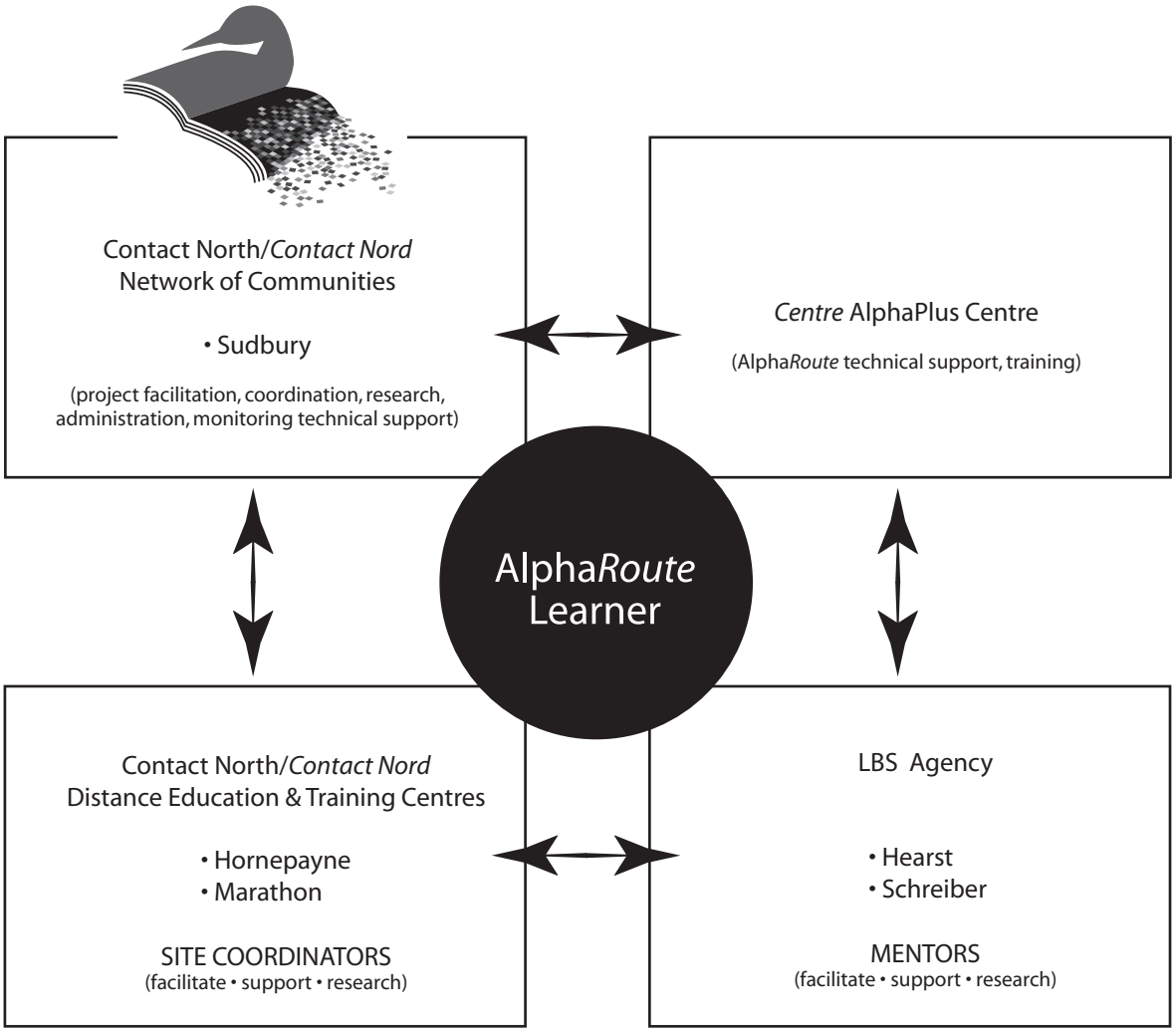
7. In the future, acknowledge the need for a business plan which costs each component of the "dynamic system of distributed distance literacy learning" model (Figure 1). Telecommunications and distance delivery to enhance and support literacy should be the core of the plan.

8. Attend to the limitations of the small number of cases and cross-sectional research and extend the research program into a longer term, longitudinal project. This can enhance the ability to describe and predict the efficacy of the dynamic model of distributed distance literacy learning over

time. It will also allow for statistical power in predicting recruitment and retention strategies and further quantifying distance contact hours and distance literacy progress.

9. Acknowledge that Contact North/*Contact Nord* would feel justified in continuing this line of research and implementation in distance delivery of literacy based upon the findings and involvement in the pilot project. While acknowledging that the model requires more evidence to be perfected, there is a feeling of justification in expenditure of resources in relation to the benefits of this project and possible future benefit for continued distance delivery of literacy. Contact North/*Contact Nord* site coordinators are already in place and providing necessary activities (recruiting, networking in the community, liaison with learners).

FIGURE 1: A DYNAMIC SYSTEM OF DISTRIBUTED LITERACY LEARNING



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Web-based Resources

Canadian Link to Lifelong Learning (CLLL) Web site:
http://www.lifelonglearning.ca

Centre AlphaPlus Centre Web site:
http://alphaplus.ca

Contact North/*Contact Nord* Web site:
http://www.cnorth.edu.on.ca

Ontario MCTU literacy sites:
http://www.edu.gov.on.ca:80/eng/training/literacy/main.html

The National Adult Literacy Database:
http://www.nald.ca

The National Literacy Service:
http://www.nald.ca/nls.htm

The National LINCS Homepage:
http://www.nifl.gov/lincs

MAP OF PARTICIPATING COMMUNITIES (CENTRES)

APPENDIX A

INTERVIEW PROTOCOL (MENTOR AND SITE COORDINATORS) APPENDIX B

Interview Protocol for Mentors

Administrative/Research Concerns

1. Please review interview protocol for learners – these are the questions that you will be asking them at the end of their session. Do you have any change/editions to make?

2. Please send your initial assessment tool and data for each learner.

3. Be certain to gather the following information: age, gender, language, place of residence, length of time in Northern Ontario, past experiences with literacy, past experiences with computers, past experiences with numbers and math, learning goals, training plan, their expectations when entering Alpha*Route*; why they wanted to be involved in the program, literacy level, learning style, mentor's comments/observations.

4. Begin to think about scheduling the "exit" interview with each learner.

5. Begin to think about scheduling final assessment with each learner.

6. Please send your journal/note/diary entries – They will be kept confidential. (mail to Contact North/*Contact Nord* Attn: Kate Tilleczek).

Update items

1. How many learners are presently registered and where each is the 18-week cycle?

2. How is the project scheduling moving? Are there any problems/challenges that you need help with?

Learners progress and your support

1. Describe your role to date and the way it may have deviated from your expectations.

2. Are learners making progress? Explain. How much? In what ways? Why/Why not?

3. Please describe the main challenges you have had with the project and the delivery of Alpha*Route*.

4. How many contact hours are you involved in per learner – has this been constant throughout the project?

Part of this research project involves assessing the progress of the learners. That is why I am asking you to send the initial assessment information. I would also like to have some sense of how they are doing part way through the project.

Please send the following items for each learner (assign an identification number to it and keep a copy of who is who in your files so we can match all the data with the correct learner).

- Their dictionary (if generated).
- Journal samples (ask them).
- Demonstration lessons.
- Additional information and your comments.

5. Please describe the main successes you have had to date.

6. What have been the necessary activities you need to undertake to provide support in the following ways:
- Learners/mentors?
- Administrative support?
- Technical support?
- Infrastructure?

7. Is there any way we can facilitate you further?

8. Can you make any suggestions re: Learner assessment? Project Flow? Research design?

Interview Protocol for Site Coordinators

Administrative/Research Concerns

1. Please send your journal/note/diary entries. They will be kept confidential (mail to Contact North/*Contact Nord* Attn: Kate Tilleczek).

Update Items

1. How many learners do you presently have registered and where is each is the 18-week cycle?

2. How is the project scheduling moving? Are there any problems/challenges that you need help with?

Learners Progress and Your Support

1. Describe your role to date and the way it may have deviated from your expectations.

2. Are learners making progress? Explain. How much? In what ways? Why/Why not?

3. Please describe the main challenges you have had with the project and the delivery of Alpha*Route*.

4. Please describe the main successes you have had to date.

5. What have been the necessary activities you need to undertake to provide support in the following ways:
- Learners/mentors?
- Administrative support?
- Technical support?
- Infrastructure?

6. Is there any way we can facilitate you further?

7. Can you make any suggestions re: learner assessment?

INTERVIEW PROTOCOL (LEARNERS) APPENDIX C

The following questions will help to guide the "exit" interview for the learners. This is to beconducted toward the end of their 18-week session with Alpha*Route*. You may wish to schedule the interview around the same time you conduct the "exit" assessment. Both are critical for the study.

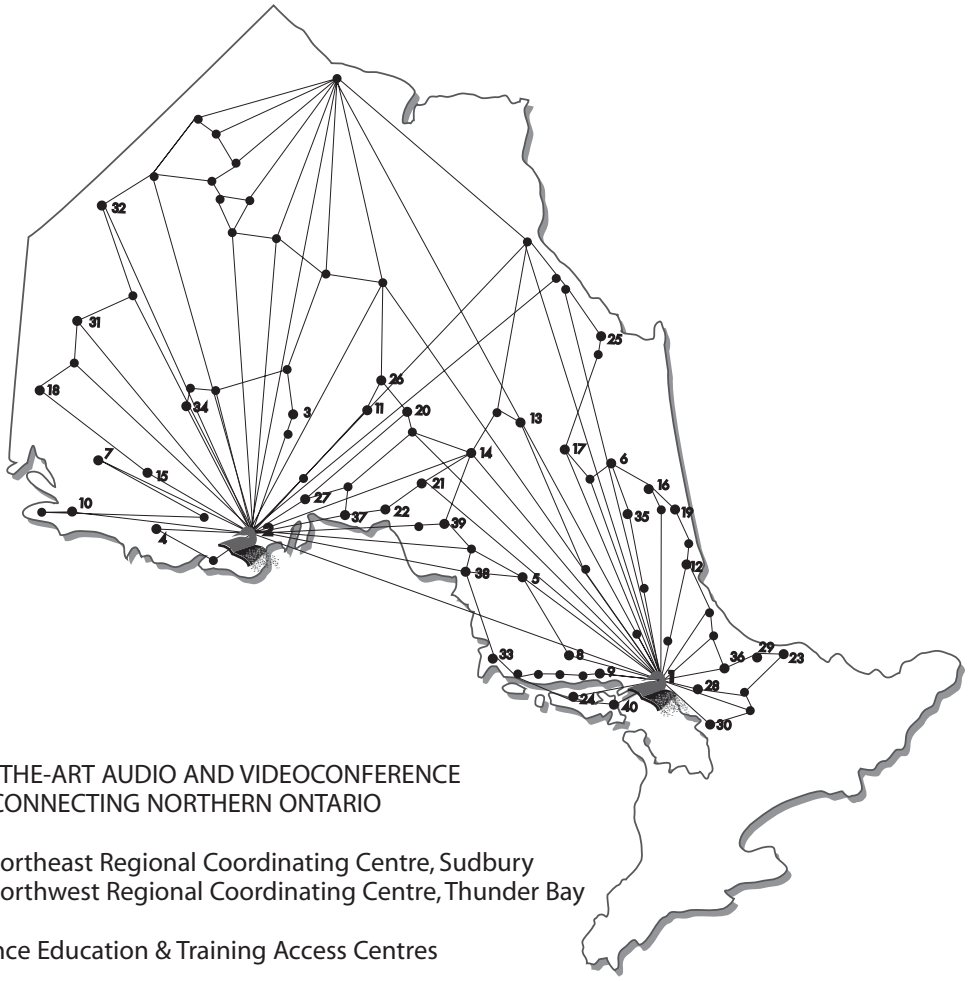
Please use probing techniques to encourage them to speak about their experiences, thoughts and stories. Remember that we are interested in their full experiences of literacy learning. Feel free to add to the protocol and spend time following the lead of the learner. If you make any changes or additions please let me know at: ktilleczek@nickel.laurentian.ca.

1. What was the best thing about Alpha*Route*? What did you like?
2. What was most troublesome? Explain with examples.
3. Did you ever log on just to play or to have fun? Examples.
4. What would have happened if the mentor had not been here?
5. What did the mentor help you with the most?
6. What are the things that you have become good at on Alpha*Route*? – What can you do now that you could not do before? Get examples. (Probe for examples in literacy content AND computer AND numeracy examples.)
7. What will you do with this new learning in your own life? (Examples, specifics)
8. Do you think Alpha*Route* has helped you with your own personal goal from your learning plan? Why/Why not – Explain.
9. Would you take other courses in literacy?
10. What about computers and the Web? Do you think you will use them again in the future? How? Has this experience helped you with this?
11. Would you use Alpha*Route* again?
12. How would you improve Alpha*Route*?
13. On a scale from 1 (very easy) to 5 (very hard), how was the Alpha*Route* experience for you?
14. I am going to say a word, for example, "happy". On a scale of 1-3, tell me how you feel about Alpha*Route*.

	NOT AT ALL (1)	A BIT (2)	A LOT (3)
EXCITED			
PROUD			
HAPPY			
SMART			
SATISFIED			
LOST			
UNHAPPY			
NERVOUS			
EXCITED			
BORED			

CONTACT NORTH/*CONTACT NORD* NETWORK OF COMMUNITIES

APPENDIX D



STATE-OF-THE-ART AUDIO AND VIDEOCONFERENCE
BRIDGES CONNECTING NORTHERN ONTARIO

1 V Northeast Regional Coordinating Centre, Sudbury
2 V Northwest Regional Coordinating Centre, Thunder Bay

• Distance Education & Training Access Centres

3		Armstrong	13	V	Hearst	23	V	Mattawa	33	V	Sault Ste. Marie
4		Atikokan	14		Hornepayne	24		M'Chigeeng*	34	V	Sioux Lookout
5	V	Chapleau	15	V	Ignace	25		Moosonee	35	V	South Porcupine
6	V	Cochrane	16		Iroquois Falls	26		Nakina	36		Sturgeon Falls
7	V	Dryden	17		Kapuskasing	27	V	Nipigon	37	V	Terrace Bay
8	V	Elliot Lake	18	V	Kenora	28		Noëlville	38	V	Wawa
9	V	Espanola	19	V	Kirkland Lake	29	V	North Bay	39		White River
10	V	Fort Frances	20		Longlac	30	V	Parry Sound	40		Wikwemikong*
11	V	Geraldton	21		Manitouwadge	31		Red Lake			
12	V	Haileybury	22	V	Marathon	32		Sandy Lake			

V Videoconferencing facilities

Other communities participating in the Contact North/*Contact Nord* network

Attawapiskat*, Bear Island*, Beardmore, Bearskin Lake*, Big Trout Lake, Black River-Matheson, Blind River, Bracebridge, Caramat, Cat Lake*, Collins, Constance Lake*, Desbarats, Dokis*, Dubreuilville, Ear Falls, Englehart, Foleyet, Fort Albany*, Fort Severn*, Gogama, Gore Bay, Huntsville, Kashechewan*, Kasibonika Lake*, Killarney, Kingfisher Lake*, Lac La Croix*, Lac Seul*, Lansdowne House*, Larder Lake, Loring, Magnetawan*, Matachewan*, Mattagami*, Mikinaak Onigamiing*, Mississauga*, Moose Factory*, Muskrat Dam*, New Liskeard, North Caribou Lake*, Onaping, Osnaburgh*, Pays Plat, Pickle Lake, Pic Mobert*, Pikangikum*, Rainy River, Red Rock, Rocky Bay*, Sachigo Lake, Sagamok*, Savant Lake, Seine River*, Shoal Lake #39*, Smooth Rock Falls, South River, Summer Beaver, Temagami, Thessalon, Thorne, Timmins, Trout Creek, Upsala, Webequie*, Whitesand*, Wunnumin Lake*

* First Nation Communities

Note: In some cases a single dot encompasses more than one Distance Education & Training Access Centre

PROJECT ACTION PLAN APPENDIX E

Using Alpha*Route* in Northern Communities

1. Project Stages

Stage 1: Planning
Stage 2: Training
Stage 3: Equipment access and set-up
Stage 4: Implementation
Stage 5: Collection/analysis
Stage 6: Wind-up

2. Detailed Project Action Plan

ACTIVITY	DETAIL	MONTH
2000		
Stage 1: Planning Establish Team and Start-up	• Create contact list • Establish first team meeting, agenda • Decide on sites • Build contact/rapport with researcher and partners • Draft detailed action plan • Begin to draft project design, method • Library/Internet search, retrieval and perusal of documents (journal articles, books, etc.) • Draft and discuss project design, methodology, instruments, bibliography	July/August
Identify Learners/ Communities	• Contact LBS centres • Set criteria for inclusion in the study • Decide how much learners should know about the project — research bias • First team meeting — coordination and agenda • Draft ethics/release forms for participants • Discuss francophone issues (translation, access, etc.)	September/October
2001		
Stage 2: Training Train Mentors	• Job descriptions • Define roles in data gathering • Make available examples of notes, log entries, etc., that they should keep • 2 day training meetings with Alpha*Route* and MTCU	January 2001

ACTIVITY	DETAIL	MONTH
Stage 3: Equipment Install Hardware and Software	• Work with IBM • Technical installation • Software installation and troubleshooting • Second team meeting • Interim Report	October 2000 to February 2001
Stage 4: Implementation	• Refine research tools and methods	March
Provide Instruction for Learners	• Training • Agreements and ethics • Ongoing liaison with researcher re. data gather process	March
Stage 5: Collection and Analysis	• From learners (pre-test with quantitative instrument) • From mentors (qualitative instruments re. Process) • Log books, notes • Alpha*Route* generated data • Cost/benefit data • From site coordinators • From learners (interview at end of process) • Team meeting – coordination and agenda	March to July
Code, Enter, Clean and Analyze Data	• Establish data file • Enter pre-post data • Clean pre-post data • Analyze data • Write pre-post results section • Code qualitative data • Create charts, graphs, etc. • Team meeting – coordination and agenda	June to September
Stage 6: Wind-up Write and Distribute Report	• Finalize results section • Finalize discussion and implications section • Final team meeting – coordination and agenda • Final Report written • Translation of Report • Distribution of Report	October to January