

Report # 112

**USING TECHNOLOGIES TO SUPPORT
PROGRAM DELIVERY
FOR
NORTHERN ALBERTA COLLEGES**

Prepared for the

Northern Labour Market Information Clearinghouse Project

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Introduction

The Northern Labour Market Clearinghouse Project has required an examination of the use of technologies to support and deliver programs to students who need combinations of Literacy, Adult Basic Education and Employability Skills. The partner colleges requested information that will assist them in making the transition to technology based instruction in a manner most beneficial to potential students in small and remote communities.

Approach

A number of personal and telephone interviews were conducted using the Northern Labour Market Clearinghouse Project Terms of Reference for this investigation as a guide. As well, an extensive Internet search resulted in the discovery of many relevant research publications.

Definitions

Distance Education

A type of education, typically college-level, where students work on their own at home or at the office and communicate with faculty and other students via e-mail, electronic forums, videoconferencing, chat rooms, bulletin boards, instant messaging and other forms of computer-based communication.

Most distance learning programs include a computer-based training (CBT) system and communications tools to produce a virtual classroom. Because the Internet and World Wide Web are accessible from virtually all computer platforms, they serve as the foundation for many distance learning systems.

There are a number of reasons that an institution may want to consider electronic distance education. While initial costs are high, there is some indication in the literature that there could be an eventual higher cost to not expanding into this form of instruction. Other institutions are already offering distance learning opportunities. Colleges are constantly interested in market share and could wish to ensure a piece of the distance learning market. Students are beginning to look for courses that they can take at home while managing a job and /or family. They may not see attendance at a campus as beneficial.

They may also want to complete course in their own timelines, whether faster or slower than traditional classroom courses. (Webopedia)

Adult Literacy

“Used as a proxy for a large number of related terms, programs and services. These include Adult Basic Education, Adult Upgrading, GED and GED preparation, basic skills training, Essential Skills Training. Related terms include adult and continuing education, community education, labour force development, workplace skills and others.” (Barker, 2003 p.3)

E-Learning

“...used synonymously with e.g. virtual education and schooling, online education and programs, cyber schools, tele-learning, web-based learning, web-based training, internet-based education. Related terms include distributed learning, computer-assisted learning, distance education, computer-managed learning. Learner management systems, and others.” (Barker, 2003, p.3)

Asynchronous Technologies

Allow learners to access information at different points in time and at their convenience. Inactivity is limited. Applications include e-mail, digital video disk. CD-Rom. audio/visual, film, video. (Emerging Directions, 2003).

Synchronous Technologies

Learning takes place for all students at the same time through real-time information and interaction. Applications include satellite broadcasting, video-teleconferencing, Internet conferencing, chat rooms. (Emerging Directions, 2003)

Alberta SuperNet

SuperNet is a high speed telecommunications network extending into even the remotest of Alberta communities. It operates through cooperation between government and business. The provincial government is financing the extended network that is being built by Bell, Canada’s largest communication company. The government will own the extended network, with Axia NetMedia Corp., Calgary controlling customer access to the entire network. Axia will give Internet service providers and others a single point of contact for connecting to the network in any location. Axia’s role is the operating and access manager, providing a single point of contact for Internet service providers. SuperNet itself is not an Internet provider. Although the network is government owned, having its own revenue stream makes it independent of unsustainable subsidies.

The base network, owned by Bell West Inc. is nearly complete. It will link 27 of the province's largest communities with a multimegabit fiber-optic backbone. The connections of the remaining 395 towns to the base network, and to one another, make up the extended network, paid for by a \$193 million investment of the provincial government. In addition, 1,300 government facilities will be served through a separate \$169 million 10 year services contract between the province and Bell.

The completion of the extended network is progressing on time, with mid- to late 2004 the target completion date. As of January 2004, 19 service providers have signed Letters of Agreement to purchase bandwidth on Alberta SuperNet to reach smaller businesses in the Extended Area. Meet-Me facilities have been constructed in 26 of the 27 Base Area communities. Fibre acquisition or fibre construction agreements have been established by Bell, providing all inter-community connection required. All inter-community fibre construction is slated for completion in early 2004. (Completed links within and through the major cities are projected to take until the end of 2004).

The Calgary-Edmonton connection has been completed in preparation for carrying Alberta SuperNet traffic. Construction crews are at work on the 11,000 kilometre portion of the network connecting 395 smaller communities. More than 230 users are now readied.

Bell has partnered with 27 contractors for the construction of the Extended Area network, with 21 crews building Point of Presence (PoP) facilities, preparing connections to user locations and working on inter-community links. Construction of connections to user locations has begun in 72 of 402 communities. More than two-thirds of the fibre needed to link Extended Area communities is in place.

General Principles for Electronic Instruction

The literature review revealed a number of principles to follow as institutions enter the world of electronic distance instruction.

1. *Assist distance students to develop learning communities.*
2. *Train those who are developing the courses in appropriate methodologies for electronic delivery.*
3. *Provide students with the necessary skills to use the technology.*
4. *Design the program to be interactive, allowing for instant student feedback and questions. (Morgan)*

Barriers to Online Education

1. Morgan identified a number of barriers to implementing online education from a survey of developers and instructors. Not surprisingly, these respondents described barriers such as lack of monetary support, inadequate equipment and time constraints that created difficulties in the development and delivery of online instruction. (p.54)

McMullen and Rohrbach (2003) identified additional barriers specific to Aboriginal communities. However, it is possible to apply many of them to other remote areas.

2. Politics. "Political influences that challenge the successful delivery of distance education programmes include the bureaucracy within the education institution as well as decisions made by band, provincial and federal governments.
3. Curriculum and Delivery Models. Distance education curriculum is often developed by people who have little or no understanding of remote communities or Aboriginal culture. When the curriculum is designed for a culture that is different from the developers and the delivery lacks the flexibility needed to support students in remote communities, the needs of the students may not be met.
4. Perception of Distance Education. Past attempts that have been less than successful have led to the view that distance education is second-best. These prior experiences may cause resistance to even properly prepared and delivered programs.
5. Access to Reliable and Appropriate Technology. The authors found examples of projects where the technology required was not available in the target communities. Also, there were instances where the technology constantly failed.
6. Student Independence. Distance education courses have traditionally provided too much independence for Aboriginal students. Social interaction must be built into the instruction.
7. Cost. Distance education is perceived to be more expensive than traditional methods. Given the decreasing government funding for institutions, many are hesitant to embark on development and delivery projects that must be supported by the existing institutional budget.

Distance Learning and Aboriginal Students

The Terms of Reference for this report required the provision of information concerning the suitability of digital instruction for Aboriginal students. In order to fulfill this requirement, considerable attention was given to an earlier Clearinghouse paper; *Report Investigating the Learning Styles of Aboriginal Students*, prepared by Emerging Directions Consulting Ltd.

The *Report* addresses the use of distance education for Aboriginal students. The definition of distance education includes the utilization of learning technologies such as CD-ROM audio-visual, satellite broadcast, video conferencing, Internet conferencing and chat rooms. The advantages of distance learning are primarily those that address the needs of remote communities that lack postsecondary services and that allow students to remain in the community where they have family and other supports. (Emerging Directions Consulting Ltd., 2003)

The challenges of this method of delivery have been experienced in those projects where participants had not been adequately prepared to use the technologies and where there was no student support network in place. The Co-ordinator of Indigenous Programs for Athabasca University confirms this. She reported that readiness is a big issue with the students that she has had contact with.

Learning Styles of Aboriginal Students

McMullen and Rohrbach (2003) summarized the learning styles observations of a number of experienced educators who have delivered successful programs in Aboriginal communities

- Aboriginal students have the same range of learning styles as any other population. Their learning styles are created by their personalities and by their environments. However, understanding Aboriginal culture is beneficial to identifying learning strengths and appropriate program delivery.
- Historically, Aboriginal students learned by watching and listening to stories told by the elders. They did not learn from textbooks but through interactions with others. Knowledge of the learning culture will assist educators in incorporating activities that build on existing behaviours.
- It is necessary to understand historical patterns of skill acquisition in order to apply proven methods that will work with individual learners and the uniqueness of each.

Malatest & Associates (2004) examined 1996 Canada Census data and other research results to prepare a profile of Aboriginals pertinent to their participation in education programs. In 1997-98, 66 per cent of Status Aboriginal postsecondary students were women. A 1999 British Columbia study of former students of colleges and institutes showed Aboriginal students were more likely to have a spouse or partner, to be older than

the general population and to have children. Aboriginal students tend to be older than their non-Aboriginal counterparts.

The study authors identified barriers to Aboriginal participation in postsecondary education common in Canada, the United States, New Zealand and Australia. In too many instances, the students' home communities lack the necessary family and institutional support. The University of Manitoba reported that more students cited "personal problems" as the reason for dropping out than any other reason. Another common barrier is the dislocation experienced by students from remote communities. (p.17)

Greenall and Loizides (2001), in a recent Conference Board of Canada study, reported that Aboriginal peoples face challenges and barriers as they move to adopt technology in order to participate in new economic opportunities. The authors cite finances, technological infrastructure, teacher training and community social problems as the challenges and barriers that Aboriginal communities need help with.

The study is based of three assumptions as follows:

1. There is no clear consensus on the effectiveness of technology for Aboriginal learners. Studies exist that both support and criticize the use of technology based instruction for these learners.
2. Aboriginal learners have unique cultural needs. While technology has the potential to affect Aboriginal values, the protection of their culture is of great importance to their communities.
3. Each Aboriginal community is unique. However, there are common elements within all communities that encourage the discussion of adoption and use of learning technologies.

Greenall and Loizides (2001) reported that Aboriginal communities identified a number of challenges to successful adoption of learning technologies.

- Insufficient financial resources. Both the initial investment and the subsequent need for upgrades and maintenance put of strain on budgets, particularly if the community is remote and needs to fly technicians in.
- Inadequate human resources and technical support. High teacher turnover rates and the lack of technical maintenance services make it difficult for local teachers to use technology as they would like to. Some older teachers are fearful of what seems a very new approach.
- Limited physical and telecommunication infrastructure. For most Aboriginal communities the difficulty in obtaining high-speed Internet connections, local Internet service providers, numerous telephone lines, large facilities to house computers and community access centres and infrastructures to support technology pose significant barriers to the installation of educational technology.

- Lack of an enabling social and economic environment. Communities identified the following social challenges: poverty, unsafe and insecure shelter, lack of adequate childcare services for students with children at home, lack of parental support, family dysfunction, learning disabilities and behavioural problems, low school attendance, parental language barriers, cultural differences, unwillingness of adult learners to make the trade-off between modern and traditional activities, lack of supportive entrepreneurial and innovative environments.
- Limited control over education and training. Aboriginal communities would like more control over how funds are allocated to purchase capital equipment such as computers and networks and for ongoing technical maintenance expenses. These communities feel that Aboriginal strategies and solutions are needed.

Best Practices in Aboriginal Distance Education

McMullen and Rohrbach (2003) examined many community distance education projects and compiled common characteristics of those that were reported to be successful. The best practices include:

1. On-site support: This is the most significant of the best practices. Education professionals “assume a number of roles to motivate and support distance education students while monitoring the personal, social, cultural and political environment of the communities served”.
2. Incorporation of culture and Environment: Local Elders and resource people should be involved in all stages of course design and delivery. This will ensure that curriculum and delivery reflects and respects the culture and environment of the students. Curriculum and delivery must be flexible enough to allow for differences among communities.
3. Prompt feedback: “Distance education courses need to undergo formative and summative evaluations to ensure the courses and programmes meet the needs of the students. Students also need to have easy and regular access to their instructors and the institution. Prompt, comprehensive feedback to assignments, questions, and exam results from instructors ensures students have understood the concepts before progressing in the course.”
4. Building relationships with students: Students need to know who their instructor is and who else is in the course. Personal meetings or some other means of communication should occur prior to the beginning of instruction.
5. Flexible delivery: Students in remote communities will have unique social, political and employment realities. Course delivery must reflect these dynamics.
6. Access to reliable technology: The technology chosen for course delivery must be available to all potential students and it must be reliable.

7. Ensuring students feel part of the school: Students are more likely to succeed if they feel part of the institution. This can be accomplished by such means as issuing student ID cards, regular receipt of information from the institution and eligibility for institutional bursaries and scholarships
8. Government support: Government support including band, provincial and federal will encourage commitment from the communities.

Characteristics of Successful Aboriginal Learning Technology Initiatives.

Greenall and Loizides (2001) examined a number of technology initiatives in Aboriginal communities from which they identified a core of characteristics in the successful initiatives. They all had:

- Community buy-in and support
- Teacher education that enables them to maximize the potential of technology for learning
- Strong physical and telecommunications infrastructures
- Ongoing technical support and maintenance
- Linking of technology with culture and tradition.

The Costs of Online Courses

There are considerable differences in the costs of traditional instruction and those costs involved in technology-based teaching. Often the true costs of traditional instruction are not known because the cost of developing and adapting courses is not tracked. Because instructors have always developed courses and then offered them, administrators tend to budget these activities into salaries and have no budget line items that refer to preparation. (Morgan, p.13)

If an institution is to make an informed decision about undertaking technology-based instruction, the true costs should be determined and compared with the traditional programming. Morgan has developed a model, available on-line for institutions to develop an average cost per student for online instruction. (<http://webpages.marshall.edu/~morgan16onlinecosts/>). The following factors included in the calculations are: “capital and recurrent costs, production and delivery costs and fixed and variable costs. Capital costs are costs for infrastructure, equipment and materials necessary for the offering of courses. Recurrent costs are costs that occur on an

ongoing basis, such as information technology support. Production costs are costs incurred during the development of the courses while delivery costs are costs associated with teaching a course. Fixed costs are costs that do not change as the number of students change while variable costs change with the number of students enrolled. For technology –based education, fixed costs are high, but variable costs are low in comparison to traditional courses". (pp. 13,14)

Morgan calculated the distribution of costs for on-line courses at his university. Developing costs accounted for 48% of the total, teaching costs were 36% and technology and infrastructure costs were the remaining 16%. (p.23)

Resources

Successmaker

Successmaker is a reading program used by Norquest College in its Instructional Technology lab.

Successmaker is a “computer-based reading program that uses literature-based activities to focus on comprehension, vocabulary, phonics and writing”. The grade level includes pre-kindergarten to grade 8. The target population is listed as general, at-risk, bilingual, special needs and gifted.

Costs vary according to the software purchased and the grade levels to be covered. Additional costs depend on the size of the program and the amount of professional development required. A per student range for K-8 implementation is quoted at \$121 - \$201 U.S. Included is the NCS LEARN Management System, teachers’ handbooks and activity guides. Much of the courseware will soon be available through Internet delivery.

NCS LEARN requires a two-day training for teachers and support staff, plus an additional two days of follow-up training for participants to better understand report analyses and intervention strategies. The developer offers a CD-based training module for smaller programs.

Successmaker requires an investment of time and money for successful implementation. Additional resources are required for maintaining computer equipment and staff development.

Initial evaluation results are reported to be encouraging but not conclusive. Many of the participating school districts have conducted their own followups, but little has been published in the professional literature.

The staff at Norquest College have found that Successmaker is geared to adult literacy students. The program gives an initial placement for participants and allows them to track their own progress.

More information is available at www.ncslearn.com

WebCT

WebCT's customer base includes institutions in more than 80 countries. The developers claim to have designed their products and services to support all sizes and types of institutions with varying faculty and student needs.

For those smaller institutions just beginning e-learning programs, the Focus license of WebCT provides course design and delivery capabilities for schools of 3,000 or fewer students. The WebCT Campus Edition offer course design wizards, guides in setting up a discussion area, adding a syllabus or posting a presentation.

Larger institutions or consortia are using WebCT Vista that allows central support for multiple locations.

From the learner perspective, WebCT claims to support a wide range of learning principles such as individualized learning, just-in-time remediation, learner-centred education and active learning.

The State of Georgia has adopted WebCT for all of its postsecondary e-learning programs. The State reports that over 50,000 students are enrolled in e-learning programs, albeit in the university system.

AlphaPlus and AlphaRoute

The Literacy and Basic Skills Program (LBS) of the Ministry of Training, Colleges and Universities of Ontario currently has the largest Canadian package of programs and services.

AlphaPlus uses e-learning tools and supports to engage the adult literacy field in Ontario in live on-line training using Centra Symposium. AlphaRoute training for practitioners has been delivered this way. AlphaPlus is currently engaged in documenting best practices and developing standards and content development models.

AlphaRoute has four sites each serving one of four user groups: Deaf, Native, Francophone and Anglophone. Learners are supported by an on-line mentor based in their literacy program and access to computers and computer support as needed. Mentors use a tool that enables them to view the results of learners' work, revise personal activity lists and communicate with learners using e-mail, fax and on-site support.

AlphaPlus has partnered with three provinces. British Columbia, Newfoundland and Northwest Territories to explore the delivery of AlphaRoute both onsite and distance delivery. (Information is available at <http://alphaplus.ca/gallerydeerlake.html> (Barker, 2003,p.11)

A spokesperson for Alberta Learning, Community Programs indicated that there have been initial discussions with British Columbia around the possibility of conducting a joint pilot project using AlphaPlus. She also indicated that the Department is of the view that insufficient technology is in place to support the project in Alberta.

Illuminate

Illuminate has developed synchronous instructional software called vClass. The program offers two-way audio, whiteboards with Power Point capability, breakout rooms and application sharing. The company's Canadian head office is in Calgary. Norquest College conducted a comparison of three software programs and chose vClass because of its flexibility, price and user friendliness. With a Java plug-in it is possible to experience sample lessons at www.illuminate.com. The Sunchild Reserve in Central Alberta is featured on the Illuminate website as a satisfied user. That description can be found at http://illuminate.com/case_studies.jsp.

Barker (2003) noted that the delivery of literacy programs and services via e-learning is relatively new in Canada. She provided three U.S. programs that are available to Canadians.

TV422 – a blended online and TV course via public television; (www.tv411.org/index.shtml)

LiteracyLink - Online Community, Workplace Essential Skills Online, GED and pre GED from PBS; (www.pbs.org/literacy)

Employability skills from Skills Tutor – an online learning service.
(<http://skillstutor.com/index.cfm?fuseaction=home.welcome>)

When examining software for appropriateness, it could prove useful to have a consistent range of characteristics against which to judge it. Suggestions for characteristics can be found in a comparison of twenty software products that can be found at: <http://www.marshall.edu/it/cit/webct/compare/comparison.html>.

Millar, (1996) in a National Literacy Secretariat report, concluded that no type of software has been shown to be particularly more advantageous.

Funding Sources

Human Resources Development Canada (HRDC) has an office of New Practices in Learning Technologies (NPLT). NPLT works with partners to expand innovative learning opportunities through technologies. Among its activities, NLPT provides support for projects that contribute to a better understanding of learning technologies and how to use and adapt them for adult learners at home, at work or in their communities. Projects should attempt to concentrate on testing, assessing and/or developing new models related to the use of innovative themes, objectives and assessment criteria as described in the NPLT Guidelines and Funding Application dated April, 2001. <http://olt-bta.hrdc-dhrc.gc.ca>

National Literacy Secretariat

The mandate of the National Literacy Program is to facilitate the involvement of all sectors of society in creating a more literate Canada. One of the ways that the National

Literacy Program does this is by providing financial assistance. The National Literacy Secretariat has two funding streams. Through its federal-provincial/ territorial stream, it supports projects which are directed to regional or local needs. And, through its national funding stream, it supports projects in partnership with a variety of non- governmental and voluntary organizations, both literacy and non- literacy groups and business and labour organizations.

The following types of organizations can apply for funding:

- non-profit organizations operating at the national, provincial, regional, community or neighbourhood level;
- non-governmental institutions, including teachers' federations, labour unions, trade associations and professional associations;
- all Canadian postsecondary institutions such as universities, colleges and vocational and technical institutes.

Types of projects eligible for funding:

1. The development of learning materials.
2. Research.
3. The improvement of access and outreach
4. The improvement of coordination and information sharing.
5. Increasing public awareness.

More information is available at: <http://www.nald.ca/nls/nlsfund/nlsfund/.htm>

Alberta Learning

The Executive Director, Institutions and Community Services indicated that a joint proposal from Alberta North had been received in the 2003/04 fiscal year. He did not elaborate on specifics. He anticipated a positive response to a partnered proposal for e-learning development from two or more of the Clearinghouse participants, particularly one with an Aboriginal focus. He could not speak to amount or terms of reference.

Discussion and Conclusions

The SuperNet project appears to be progressing according to the original timelines. Those communities that already have access are reported to be enthusiastic about its possibilities. SuperNet has caught the attention of a New York based computer magazine that featured its story in a January 2004 issue. (Cherry, 2004)

There was little attention in the literature to comparisons of the effectiveness of various e-learning media. The best practices appearing in the literature often used a mix of two or more of computer-based, videoconferencing and e-mail.

There is an abundance of programs available that support the electronic delivery of academic upgrading instruction. Most are designed in the United States and require significant staff development. WebCT is widely used. However, personal interviews yielded information about rapidly increasing costs for the product. One college indicated that the costs have outdistanced any advantages it might have had. Little information about PLATO is contained in this report. The PLATO website requires a user access in order to get beyond the home page. Again, current users were less than enthusiastic about the product's effectiveness. The Elluminate vClass program has the advantage of an Alberta head office and appears to be flexible enough to support any range of instructional content.

The literature was consistent in what constitutes the requirements for a successful e-learning project.

- Basic to success is both adequate hardware and community access to technical support. Absence of these factors leads to frustration and eventual lack of interest in the instruction.
- Distance education students do less well if they conduct their studies alone. The literature contains repeated recommendations that "learning communities" assist students to persist in their studies. The Norquest College vClass program has a facilitator at each site whose task it is to note any student difficulties with the software, to supervise examinations and to communicate with the Edmonton-based program co-ordinator. The facilitators are administrative support people rather than instructors.
- There is no evidence of differences in learning styles and comfort with electronic instruction between Aboriginal and non-Aboriginal students.
- Curriculum development for Aboriginal students, however, must include input from community members. Curriculum that acknowledges Aboriginal culture and heritage is more meaningful than materials developed by and for non-Aboriginals.

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Appendix A

Best Practices

Aurora College

Northwest Territories

www.auroracollege.nt.ca

The Northwest Territories has some of the most isolated communities in Canada. Many are accessible only by air or winter road while the total population for the territory is less than many small cities in the south. Due to this isolation, distance education has the potential to play a major role in the delivery of education in the region.

Aurora College has the responsibility to meet the education needs of adult students in the territory. The college, a department of the territorial government, has a closer relationship with the Department of Education, Culture and Employment than provincial colleges in the south have with their respective education ministries. Employees of Aurora College are government employees rather than college employees and college buildings are directly maintained by the territorial government. This relationship allows faster response to community needs, but the bureaucracy inherent in this model can potentially suppress creativity.

Virtually all communities in the Territories have Community Learning Centres (CLC) operated by Aurora College and maintained by the Department of Public Works and Services. Most centres are new, well designed and are used for a variety of other community purposes in addition to education. Each centre has classrooms, office space, computer labs, and some centres have residences attached for visitors.

In addition, virtually every community in the Northwest Territories has an adult educator residing in the community. Each community is significantly different culturally, economically and socially. This difference, combined with the geographic isolation faced by communities in the Northwest Territories, requires an educator on-site to undertake a variety of student assistance roles.

Maureen Gross, Coordinator of Community Programs for Aurora College in the Sahtu Region of the Northwest Territories, emphasises that to properly support students, the local adult educator must recognise the environment unique to his or her community. Features of the environment include cultural traditions and ceremonies, education levels, access to technology, reading levels, history, available employment, politics, social barriers and other additional features unique to each community. Continued assessment of these features and community needs is essential, as the courses available must reflect the socio-economic and political realities of each community.

Essential for student success are the appropriate delivery technology and the quality of the instructors. Prior to internet-based delivery, Maureen Gross thought the success rate for print-based correspondence courses in the Sahtu Region was essentially zero. By adding the structure provided by internet delivery, the student success rate has improved dramatically. The quality and commitment of the instructor will also determine, to a large degree, the success of remote Aboriginal students in the territory. If the instructor makes an effort to build a relationship with the students and the course remains flexible with dates and delivery methods, the students have a greater chance of success. In the Sahtu region instructors need to provide feedback to students as soon as possible to ensure students are on track.

Many of the challenges faced by Maureen Gross and the Aurora College adult educators in Deline, Tulita and Fort Good Hope reflect the unique challenges of their communities. The communities often request training opportunities on short notice based on available employment. For example, when a community is in need of a truck driver for a local employment opportunity, the college is approached to provide accredited driver training. The relatively small number of students in a remote community makes justifying the expense of bringing in an instructor difficult. As such, distance education is usually the most affordable option. The adult educators also indicate that the communities often approach the college to find out what courses could be offered in the community in addition to telling the college what courses it needs.

The Government of the Northwest Territories does not have Adult Basic Education (ABE) curriculum developed for distance delivery. Instead, the Department of Education, Culture and Employment contracted Chinook College in Calgary, Alberta, to provide these courses in the territory. Adult Basic Education includes six levels of study, ranging from basic literacy to coursework at the Grade 12 level. Courses in this programme enable participants to learn or relearn skills needed to meet employment, personal or educational goals. Participants in Adult Basic Education take a programme of study according to their personal needs and academic levels. Because of this individual approach, time spent in the programme will vary for each student.

Chinook College was chosen as all relevant courses were available online including “Cruising the Information Highway”, a course that introduces students to the internet. Chinook College, a department of the Calgary Board of Education, provides online high school courses using WebCT software. The Northwest Territories Department of Education, Culture and Employment negotiated the relationship with Chinook College and monitors course delivery through Aurora College.

As noted, prior to the internet-delivery provided by Chinook College, the success of print-based correspondence courses was essentially nonexistent in the Northwest Territories. The existing system was chosen as online learning can provide more external structure, prompt responses to questions and assignments and a sense of community among the students in different communities.

The relationship with Chinook College has been beneficial but challenges exist. As the delivery contract is between Chinook College and the Government of the Northwest Territories, a number of bureaucracies are involved in course delivery including the territorial government, Chinook College, Aurora College and the communities themselves. The organizations appear to work well together, but the multiple levels of bureaucracy has led to local frustration. The primary concerns voiced by students in the remote communities about the relationship between Chinook and the territory relate to course timelines imposed by Chinook College and the general lack of flexibility surrounding course delivery. In addition, if not ordered very early internet passwords often arrive from Chinook College late and books will arrive long after the course has started.

Other challenges faced by students in the Northwest Territories reflect those in other remote Aboriginal communities. Maureen Gross indicated that in the Sahtu region the internet connections are fairly reliable; however, many of the websites used to deliver courses are not user-friendly and are difficult for new students to navigate.

A common misconception of many students in the Sahtu region is that they will be able to obtain employment without finishing their education. Instead, students rely on short-term, community-based courses for employment-related training. As a result, many students underestimate the importance of foundation skills and the amount of time it will take to achieve their education goals. Maureen Gross believes that the skills that ensure a student is successful on the land, where instincts are followed, are not necessarily as useful in modern education and employment situations where the student must incorporate long-term goals and long range planning to achieve.

Students respond positively to education programmes where relationships with the instructor and other students are incorporated. As students in remote Aboriginal

communities assume they know everyone in their village, there is the requirement that the virtual classroom also be a small society. Enrolled in a distance education course with students from other communities, Aboriginal students need to have the ability to modify the class to create a small society. This sense of classroom community can be achieved by designing into the delivery the sharing of personal and community photographs, descriptions of communities, instructor-designed group assignments and other activities with the intent of developing a community sensation among the students.

Other challenges faced in the Sahtu region of the Northwest Territories are the lengthy turn-around time on assignments. Students often have to wait up to six weeks or longer to receive feedback on assignments from the instructor. Basic literacy skills are also low as is the level of computer skills in the communities. Access to reliable technology is also an issue. When software or hardware needs service, the adult educators in the communities can obtain telephone assistance from the information technology department at Aurora Campus in Inuvik, or the educators are on their own to try to fix the problem. When the solution is beyond their capabilities, the local adult educators have to send the computer to Inuvik for repairs, which can take days or even weeks to be returned.

The perception by students that they are being used as guinea pigs for course development was another challenge facing the delivery of distance education in the far north. Consequently, courses must be fully developed before being delivered to remote students, as students in these locations do not always have access to the technological and academic support necessary to overcome poor course design. The appearance of the internet site can also be a challenge as although animation can attract attention, too much can also be distracting for the student and can add to the already lengthy time needed to download the internet page.

According to Bernie Sheehan, Distance Education and Technology Coordinator for Aurora College in Fort Smith, the adult educators located in the communities are essential to the success of the courses. When asked directly about their role, the adult educators in the Sahtu region speak about the need for a wide range of skills. The adult educators assist in a variety of functions related to education and training but also find themselves working long hours assisting community members with such things as resume writing and job searches. The on-site support also serves as a motivator to the students as self-directed learning is a challenge for students who are only used to face-to-face learning methods.

Since many students lack study skills, assistance must be provided by the adult educator as most online courses have deadlines, assignments and exam requirements. Homework and assignments must be completed within the presented timeframes and in many cases no work is completed if the adult educator is not present. The challenge for the adult

educator then becomes one of supporting and encouraging the students, while not enabling them.

The dedicated work of the adult educators improves the success of the students. As facilitators, the adult educator's encouragement and support assists in overcoming barriers and makes the student and the community more comfortable with learning. The adult educators can also encourage the introduction of Elders into the learning process, which brings the culture, history and social atmosphere of education closer to traditional learning methods.

Each year Aurora College brings together the adult educators in each region to discuss issues and exchange information and ideas. As each region is unique, adult educators are encouraged to introduce their challenges and best practices on a local scale to share with others.

Faced with the mandate to provide education programmes to a region of 1,172,000 square kilometres with a population of only 42,083 people, of which approximately one-half are Aboriginal, the Government of the Northwest Territories recognised the need to present Adult Basic Education programmes but could not alone provide the solution. As a result, the territorial government, and consequently Aurora College, entered into an agreement with Chinook College in Calgary, Alberta, for the distance delivery of needed courses. These courses are delivered with the support of Aurora College and adult educators who are located in virtually all communities. The support provided by the college and the adult educators has proven essential for student success in the remote communities of Canada's far north and has proven that distance education is a successful delivery method.

From: McMullen and Rohrbach (2003)