Research Note

Student Perceptions of Telecommunications Technologies for Accessing Learning Opportunities in Two Northern Canadian Schools

Della Healey and Ken Stevens
Telelearning and Rural Education Centre
Faculty of Education
Memorial University of Newfoundland

The potential of telecommunications technologies for the education of students in small schools in rural communities has been the subject of many studies (Barker and Hall, 1995; Barker, Hall and Wood, 1995; Hughes, 1993; Nevens,1996). In Australia (Lundin, 1994; Stevens, 1994), New Zealand (Stevens,1995), Canada (Garlie, 1995) and many of the Nordic countries (Meisalo, 1996; Stefansdottir, 1993) telecommunications have been used to provide new opportunities for rural students. In these countries small rural schools are increasingly seeking to provide senior students with increased access to information and communications technologies to expand access to learning opportunities.

Recent research in two small rural schools in Northern Canada has found that students value telecommunications technologies according to the level of access they have to them. Students with ready access valued telecommunications technologies to a greater extent than their peers who had less access.

The study was conducted in the Canadian province of Newfoundland and Labrador in two small, isolated centres, identified by the pseudonyms "North Community" and "South Community". Both North Community and South Community are located in coastal Labrador, the northern part of the province, and in each centre fishing is the basis of the local economy. North Community was described as the centre of government services to the north coast of Labrador. Accordingly, it has several federal and provincial agencies. South Community can be described as the administrative centre for communities of the Labrador Straits area. It too has several federal and provincial agencies. The North Community population of approximately 1100 people is predominantly Innuit while most of the 500 people in South Community are of British descent.

The all-grade school at North Community has an enrolment of approximately 400 students and a staff of thirty teachers. Instruction is provided in both English and the local language, Inukitut. Enrolment has remained stable in recent years. Students have some introductory computer courses available to them within the school and limited access to the Internet. Two or three distance education courses are offered each year within the school for senior students for whom there is no local teacher in a particular subject (eg advanced Chemistry, advanced Mathematics).

The school at South Community serves

students from two other surrounding communities. This school has a population of approximately 200 students and a teaching staff of thirteen. Enrolment has been decreasing in recent years. The South Community school has a computer laboratory which is used to teach introductory courses in computing. Two or three distance education courses are offered each year in subjects in which there is no local teacher. Students do not have access to the Internet services at this school. Teachers, but not students, have limited access to the Internet and there are many technical difficulties in getting "on line".

Between the two schools 22 participants were randomly selected for the study (North Community N= 9; South Community N=13), which included 20 Level Two and Level Three students and one school administrator from each site. (Level Three students are those who are in their final year of secondary education while Level Two students are those who are in their second last year). One administrator from each school was asked to assist in the selection of the subjects for the study and to advise on the categorisation of each student as "high" or "low" in terms of his or her access to telecommunications technologies.

Three criteria were used to identify students as having high or low access to information technologies:

1. A student who had access to distance education courses, as opposed to one who did not have access to distance education courses, was considered to have high access to telecommunications technologies.
2. A student who had access to the Internet as opposed to one who did not have access or who had very limited access, was considered to have high access to telecommunications technologies.
3. A student who had unlimited access to a computer (eg at home) compared to one who could only access a computer at school in specific time periods, was considered to have high access to telecommunications technologies.

Accordingly, 10 high access students (North Community, N = 4; South Community, N = 6) and 10 low access students (North Community, N = 4; South Community, N = 6) were chosen.

The study found that telecommunications technologies were valued differently by each category of student in these isolated Canadian communities. Both high access and low access students agreed that technology was vital in the functioning of their schools. However, the degree of importance of telecommunications technologies, (computers, the Internet) varied. Students who had low access to telecommunications technologies valued the computer in pragmatic ways; as a tool for preparing them for workplaces in which they expected to use computers and as a tool for the preparation of assignments. A low access student from North Community remarked:

> In computer classes, students are taught how to use and apply computers for different tasks. Students are more prepared to enter the workforce where computers are becoming more widely used.

Another low access student from South Community noted: "It is a way for us students to type up assignments;" while yet another from South Community said, "Classes in Micro-computers and Computer Applications helped me get a grasp on the use of computers and different programs."

Students who had high access to telecommunications technologies placed more emphasis on the opportunities they provided for learning at a distance. Furthermore, high access students identified computers with connections to the Internet and the "Information Highway" for extending and enriching their studies rather than as simply a means of preparing assignments and answering teacher-prepared tests. The students in the study expected that those who had high access to technology would pursue an academic secondary education. Those who

had low access to technology were expected to complete a basic secondary education. A high access student from South Community commented:

> This year I am in third level Chemistry at my school. This course would not normally be offered but it is through distance learning. Now I will have a better opportunity to succeed at Chemistry while pursuing a secondary education.

Participants who had high access to telecommunications technologies were more likely to perceive them as having a positive impact on their education than their peers who had low access.

All students in this study were very isolated in geographical terms through the location of their homes in small Labrador communities, but, through the use of telecommunications technologies in their education, some were less isolated than others. Students with high access to telecommunications technologies believed that they had increased opportunities for post-secondary school education and less difficulty gaining entry to courses in tertiary educational institutions. A high access student from North Community acknowledged:

> Current technology in this education system is valuable to me. With the Internet open to me, research becomes a lot easier. Also the Advanced Math 2201 class I'm taking through distance education has created new opportunities for me and others.

Another high access student from South Community pointed out:

> The introduction to computer courses has opened up a new world for me. It has given me the opportunity of pursuing a post secondary education in this field perhaps.

A fellow high access student from South Community remarked:

> Current technology in the education system is valuable to me. I do third level chemistry through distance education. If distance education wasn't available to this school, I wouldn't be able to do this course because there is no teacher available with the qualifications to teach this course effectively. Distance Education means a lot to me in this sense because I'm really interested in studying chemistry after high school.

Students with high access to telecommunications technologies felt that they had similar opportunities to their peers in larger, usually urban schools in other parts of Canada. A high access student from South Community commented: "Distance education courses allow students to compete with other students from all over the province."

Another student from South Community explained:

> It gives us a chance to compete with students in larger centres. Due to our location, for many years, people felt that because we were not from a larger centre our education system was inferior. With the advancements in technology, people who felt this way are beginning to realise that students in isolated places, such as South Community, have the opportunity to receive just as good an education as others.

Students with low access to telecommunications technologies did not express as much optimism about competing with students in schools in larger communities as their peers who had high access.

This research study will investigate the extent to which these perceptions of telecommunications technologies influence the post-secondary school educational and vocational choices of these students.

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Della Healey *is a research student in the Faculty of Education at Memorial University of Newfoundland, St. Johns, NF, Canada, AIC557.*

Ken Stevens is Professor of Education, Chair of Telelearning and Rural Education at Memorial University of Newfoundland, St Johns, NF, Canada, AIC557. All correspondence about this paper should be addressed to him. email: stevensk@morgan.ucs.mun.ca