DISTANCE EDUCATION POTENTIAL FOR A CANADIAN RURAL ISLAND COMMUNITY

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ABSTRACT

The purpose of the study was to investigate the potential impact of distance education on a small, rural, Canadian island community. Presently, the population of small, rural island communities on the west coast of Canada are facing numerous challenges to retain and to attract permanent residents and families and to provide support and direction for those residents who wish to pursue K-12 accreditation, post-secondary education, vocational/trades training and up-grading or life-long learning. A unique set of considerations confront many of these isolated communities if they wish to engage in distance education and training. This set ranges from internet access to excessive travel by secondary students to the lack of centralized facility. For this study, a group of 48 participants were interviewed to determine their perceptions of the potential for distance education to impact on the community's educational, both academic and vocational, life-long learning and economic needs.

The results indicated that there were four general areas of purported benefit: academic advancement, an improved quality of life, support for young families and a stabilizing affect on the local economy. Suggestions for the implementation of a suitable distance education resource are noted.

Keywords: **Distance education, rural community, island community, potential, academic advancement, local economy, obstacles**

INTRODUCTION

A rural, island community is faced with many obstacles in the provision of adequate and relevant education and training for its residents (Murthy & Mathur, 2008; Donge, 1999). Often, in addition to the reduced program offerings for children who are attending the local community school, the economic viability of such a community can be either threatened or subjected to significant pressures that result from families leaving the island for both short and extended periods to allow for specific educational needs (e.g., special education, advanced academic courses) or for trade accreditation or upgrading.

One strategy to address these needs is to determine how distance education support, however that might manifest itself, might be effective in mitigating or doing away with the various obstacles and even hardships that the island residents must wrestle with. To that end, a needs analysis was carried out on Hornby Island in the Straight of Georgia, British Columbia, Canada.

The island has approximately 900 permanent residents, a small, K-8 community school and is accessible by a 2 hour ferry ride from Vancouver Island. The focus was to investigate and to assess the potential for distance education to the residents on this small, Canadian, rural island community.

BACKGROUND

The situation with respect to the provision of educational and training programs for isolated communities has been addressed by a number of researchers (Anastasiades et al., 2008; Parrish, M. 2008; Cejda, B. D., 2007; Quilty et al., 1999; Donge, 1999). Specifically, many have taken a distance education perspective and have reported varying degrees of success. In Newfoundland, Canada, Brown et al. (2000) reported that the implementation of distance-delivered high school courses to remote areas of the province proved successful in that, as a result of the experimental program, the course offerings increased from very low participation to 11 courses with 898 course enrollments for the1999-2000 academic year. As a result of the initiative, a total of 703 students in 77 different rural schools were able to take one and sometimes two courses. This successful implementation was followed by a comprehensive initiative in 1999 when the Centre for TeleLearning and Rural Education at Memorial University initiated the Vista School District Digital Intranet (VDI) (Stevens, 1999). This project resulted in the development of a district-wide intranet to offer university-level (i.e., Advanced Placement [AP]) mathematics and science courses) for online delivery to the eight rural, secondary schools within the Vista School District. According to the author, students were taught in real (synchronous) time using audio, video and electronic whiteboards over the Internet, combined with independent (asynchronous) learning. Senior students were able to both interact with one another on-line as well as work off-line in their own community schools. The conclusion was that the refinement of the standards and course development template, in addition to ideas on how a combined asynchronous and synchronous delivery model could be implemented, was both effective and cost-efficient.

In India, Pradeep (2006) has suggested that E-learning centers, E-Information Centers and E-Life Centers be established as a strategic step to address the rural education needs as delineated in a set of governmental projects entitled the Millennium Development Goals. The suggestion was based on the fact that there is an ongoing rapid expansion in providing telecommunication facilities on the rural front of India and, in the near future, these centers will be the foundation for the offering the desired sociability and flexibility to the rural target groups with respect to their educational goals.

In New Zealand, Stevens (1994) acknowledged that distance education practitioners were faced with a difficult situation because potential learners who lived and worked in the more remote parts of the country faced double isolation: isolation from the rest of the world and isolation from other learners. In response to this double isolation of many rural New Zealand communities, links between new information and communication technologies and isolated schools were developed, making rural education one of the fastest changing and most exciting areas of education in the country. Distance education technologies and pedagogies were being introduced in two rural school networks in New Zealand in 1994, one in the North Island and the other in the South Island.

In 1994, both networks were at an experimental stage and had the function of being pilots for the development of more extensive school networking in future. Stevens (1994) concluded that the assessment to that point was that the two rural networks were filling a serious gap in the learners' option.

McKimmy (2005) cited a similar situation at The College of Education (COE) at the University of Hawai'i—Manoa, an academic and professional unit that provided teacher preparation to the vast majority of teachers in Hawai'i. The COE had offered teacher preparation to Hawai'i's neighboring islands in the past; however, the frequency of offerings was severely constrained by geographical distance and traditional delivery methods.

The technology-mediated delivery strategies that proved successful primarily because the learners were challenged successfully to become comfortable with technology-mediated instruction. They quickly discovered a reliance and appreciation for support structures such as a technology orientation and troubleshooting support. Based on students' reflections, McKimmy (2005) noted that the students viewed the challenge of increasing their own technology literacy as one that would benefit their future teaching endeavors. Additionally, while technology-mediated delivery changed the level of direct social interaction within the programs, students appeared to appreciate the flexibility it provides.

They also valued the improved access to programs that such delivery provided to Hawai'i's neighboring islands. Student feedback and reflection confirmed that the College had improved its ability to serve the island state of Hawai'i and affirmed technology-mediated delivery as an appropriate solution for addressing geographical challenges. These reflections resulted in the College's continued exploration of new strategies for technology-mediated delivery.

This study was carried out to investigate situations similar to the above and to focus on the potential of the integration of a distance education resource into a rural, island community. In this case, the target group was made up of residents on Hornby island on the west coast of Canada.

CHARACTERISTICS OF HORNBY ISLAND

Hornby island is one of a chain of small islands located among the Gulf Islands in the Straight of Georgia, British Columbia, Canada. The characteristics of the 900 or so full-time residents are reflective of any typical small community although the common perception of people who live on the Gulf Islands is that the islanders are strongly independent, non-conformists and, in many cases, renowned artists (e.g., painters, potters, writers, sculptors). With respect to education and training resources, there is a community school (kindergarten to grade 8), a public computer access center with internet access and a federally-funded, work-related support office ("Room to Grow"). Telephone, cable television and high-speed (ADSL) internet connectivity are available. One significant hardship that the community has to contend with is that children of secondary school age must travel by bus and by ferry to both middle and secondary schools in a middle-sized city on Vancouver Island and the travel time for the daily round trip for these students is 4 hours over and above their regular school hours. A small number of the secondary-aged students have completed a high school course or two that were offered by the North Island Distance Education School (N.I.D.E.S.).

METHODOLOGY

The purpose of the study was to investigate and to assess the potential for distance education to the residents on a small, Canadian, rural island community.

A case study approach was used (Creswell, 2007). Participants will be selected (N = 48) from among the residents of Hornby Island, the rural island community in question. Initially, the participants were to be chosen from 4 disparate categories: secondary students, potential or existing post-secondary students, tradepersons/ vocational students/apprentices and individuals who were interested in lifelong learning. With respect to the number of participants, it was not possible to engage an equal number of participants from each category; however, a reasonably balanced configuration was achieved. There were 15 males and 33 females who participated.Data were collected by means of a structured interview and transcripts were produced for subsequent data analyses. The time for each interview was approximately 45 minutes and there was a need for a small number of call-backs (4 participants) for clarification. Consent forms were completed by all participants and, in the case of those participants under the age of 18, the child's parent(s) or guardian was present.

Age/Gender Distribution

Table: 1 describes the breakdown of frequencies for gender and for age of the participants. Two interesting, although not surprising, characteristics of this sample are:

- the ratio of males to females and
- the proportion of participants who are over 41 years of age.

These sample characteristics are reflective of the population demographics for Hornby Island and are not uncommon in isolated communities in which there is little or no industrial activity and in which a significant number of the residents are retirees.

Table: 1
Gender and age frequencies (N = 48)

	Age Ranges					
	16-20	21-30	31-40	41-50	51-60	61+
Male	4	4	2	2	3	0
Female	4	6	5	12	5	1
Total	8	10	7	14	8	1

Distance education experience

Of the 48 participants, 8 had some type of involvement with distance education, albeit on a modest scale and non internet-based. With respect to technology, 39 participants were in possession of a home computer and 31 had ADSL connectivity.

RESULTS

The potential for the integration of distance education into this community is significant. Literally all of the forty-eight respondents indicated that they would be interested and could benefit from engagement with some type of distance delivered course or program. This result cut across both all age groups and the four types of potential education or training. Particularly strong was the interest in post-secondary, academic programs and in the desire for distance education programs that were offered in accreditation and upgrading for various trades and vocations. The primary reason for this is straightforward: residents would be able to pursue their academic and vocational goals without having to leave their homes for extended periods. With respect to the secondary school participants, their responses focused primarily the onus of spending 4 hours per day to travel from their homes by school bus and by ferry to attend classes at an urban high school on Vancouver island. Such a schedule required them to rise at 6 a.m. and return home 12 hours later. Of special concern was the inability to take part in extra-curricular activities (e.g., sports teams, music clubs, and student council) as they had to start their trek home immediately after classes were over.

One interesting suggestion from this group was the establishment of a set of academic core courses (e.g., English, mathematics, history, social studies) that would be offered by distance education at the community school on one or two days a week while the remainder of their elective courses would be taken at the urban high school on the remaining days.

This initiative would require either a certified teacher or a teacher's assistant on Hornby island to provide support for both the subject matter and the procedures to access on-line instruction.

Post-secondary interest:

As evidenced from Table: 2 below, a significant number of participants expressed a desire to pursue post-secondary, academics courses or programs of study from a distance. The total frequency of 56 responses exceeds the N because some participants had not yet decided which of the 4 disciplines were of interest to them from the program or degree perspective while others were in possession of partially-completed undergraduate degrees and had the option of taking elective courses from faculties other than the one in which they were program students to complete their degree requirements.

Table: 2
Frequencies for post-secondary disciplines

Discipline	Frequency
Sciences	11
Humanities	16
Social Sciences	12
Applied Sciences	17

One interesting feature of this frequency count is the balance across the 4 disciplines. For purposes of this study, the Sciences discipline included the physical (e.g., physics, chemistry) and life (e.g., biology, kinesiology) sciences, the Humanities included English literature, linguistics and languages, the Social Sciences included psychology, education, sociology and economics while the Applied Sciences included engineering, medicine and dentistry. This distribution speaks to the disparate interests of the island residents and to the highly varied and substantive nature of their intellectual interests.

Trades/vocational interest

Frequency counts for interest in trade accreditation and up-grading were lower than those for post-secondary education but this was not surprising. For the latter, the number and type of distance education offerings far exceeds comparable offerings for the tradesperson.

The reason is straightforward: the trades programs/courses typically call for a lengthy internship or apprenticeship that requires an on-site (shop or external location) participation. Thus, the interest for these participants focused primarily on the acquisition at a distance of those concepts and skills that were enabling competencies in their respective trade.

For example, the mastery of a set of mathematical concepts (trigonometry) is necessary to obtain a journeyman's certificate in carpentry and courses in this subject matter may readily be taken by distance education.

Table: 3
Frequencies for trades and vocations

Trade/vocation	Frequency
Plumbing	2
Construction	4
Electrical	3
Welding	2
Horticulture	2
Carpentry	7
Silversmithing	2

It should also be noted that 11 of the 22 responses were directed at the building and renovating of private homes. Some of this interest was driven by a recent requirement that municipal and provincial building codes were to be enforced on the island in addition to the buying up of existing homes by monied newcomers to the island who then proceeded to refurbishing the original home. Follow-up trades (e.g., plumbing, electrical) were areas where the homeowners might opt to do the work themselves.

Life-long learning interests

A fourth type of interest in distance education possibilities manifested itself in a large number of non-accredited courses that ran the gamut from hobbies to environmental offerings. Table: 4 here the list of life-long learning interests

- **Sewing**
- **Yoga**
- **Genealogy**
- **Wine making**
- **Art history**
- **Archaeology**
- **Paleontology**
- **Landscaping**
- **Woodworking**
- **Ecology**
- **Creative writing**
- **Bookkeeping**
- **Water management**
- **Weaving**
- **Photography**
- **Multimedia**
- **Web design**
- **Herbs**
- **Pruning**
- **Plant identification**
- **Horticulture**
- **Small business**
- **Bee keeping**

The wide range of interests reflected in table 4 is perhaps quite typical of any group of intellectually-curious, well-educated individuals. Beyond those interests that are tied to entrepreneurships, many speak to the widespread concern about nutrition and about the environment.

CONCLUSIONS

The results of this study strongly suggest that there is indeed great potential for the integration of distance education opportunities in the lives of the Hornby island residents. As delineated above, the potential runs the gamut from academic alternatives and advancement (secondary and post-secondary) to trades upgrading to informal learning for recreational and small business pursuits.

Another way of interpreting the results is to look for encompassing themes or threads that reside in the raw data and that encapsulate the broader and more substantive issues. In this study, it appeared that there were 4 overarching themes that surfaced and that captured the potential of distance education to address the needs and aspirations of the island residents.

Advancement

The desire to pursue academic studies from a distance at various levels was a major concern for many of the participants. Specifically, potential advancement included the possibility of the provision of a complementary enrolment mode for secondary students, the possibility to prepare for trades accreditation and the accessibility to informal learning. All of these were viewed as significant factors in the maintenance and nurturing of the high level of education and of training in the community.

In particular, student retention in distance delivered courses in rural schools has been shown to be higher than in similar schools that did not offer similar courses (Hannum et al., 2008). Additionally, students, including children and adults, who have participated in on-line learning reported that they found the instruction effective and the courses extremely valuable (LaPointe et al. 2008; Prensky, 2001) as was the case with administrators who oversaw an on-line, rural teacher certification programme (Rowland, et al. 1997).

Quality of Life

The availability of a distance education resource was seen to be instrumental in allowing many members of the population to remain on the island year around and not have to leave for the reasons delineated above.

The positive impact of the overall quality of life as a result was evidenced by the fact that many of the community roles, responsibilities and events would not have to be interrupted or even curtailed because of emigration by residents to other locales.

From a gerontological perspective, distance-delivered, informal learning was viewed as a beneficial vehicle to maintain intellectual curiosity among the elderly residents. The contingency of such availability to affect a sense of self-sufficiency and of motivation was also noted.

Young Families

One group of island residents that was very interested in the potential for a distance education resource in the community was young families. The effect on them would be threefold. First, the secondary students who opted for on-line courses could use the internet facilities in the community school as not all of them had home computers or an internet connection.

Second, a corollary to this was that the use of this facility would mitigate against the threat of closure of the community school, a not uncommon situation in rural areas when the cost of maintaining a low-enrolment community school is always a factor.

Third, the matter of extensive daily travel (as noted above) could be greatly reduced and, in conjunction with the timetabling changes made at the urban secondary school if such accommodations were made, would do away with up to 6 hours per week of bus and ferry travel.

Finally, parents who were overseeing the home schooling of their children could benefit if one of the parents were involved in a home-based commercial enterprise (Loh-Ludher, L. L., 2007).

Local Economy

As is the case in non-rural communities, much economic activity is dependent on a trained and qualified work force. For the workers, upgrading and accreditation bring the promise of higher wages and personal financial stability, an enviable state for the larger community also. By a significant degree, much of the economic activity on small islands is in residential home building and refurbishing although there is a strong service and hospitality sector. However, there is also a non-trivial proportion of the population that exists below the poverty line and there is evidence that a timely and well-design program of distance education support can beneficially impact on rural communities and even reduce poverty (Murthy et al., 2008)

In summary, the potential for distance education to provide the foundation or platform for a beneficial resource to a small, rural, island community has been given some measure of confirmation as a result of this study. The distillation of the participants' responses into four themes -- advancement, quality of life, young families and local economy -- suggests that the introduction and maintenance of a well-structured and reliable distance education resource would greatly benefit the island residents, regardless of age or of vocation. The design and implementation of such a resource would require further investigation but it seems likely that any future plans would require at minimum two components.

First, the community, with either local or provincial funding, would have to hire a resource person who has both knowledge of and experience in education and distance education. Ideally, this individual would have experience in the public school system and hold a credential in on-line learning. Second, situating any resource in the local community school would be advantageous for a number of reasons. The internet lab, the library and its geographical location on the island (close to the community centre and co-operative store) would make this a wise decision. This would allow for the easiest access for those who do not have internet connectivity at home.

A more comprehensive and more scholarly approach that would likely be more effective and have long term consequences would be to investigate the various variants on instructional design models that purport to take into account the idiosyncracies of the internet (Moller et al., 2008) and a more conceptual approach to open learning and home schooling (Danaher, 1998). The outcome of such efforts might be a generalizable model for learners and their families who have opted to live in remote areas.

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