

# What are they doing and how are they doing it? Rural student experiences in virtual schooling

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**Abstract:** This qualitative study examined the nature of virtual schooling in Newfoundland and Labrador secondary education, specifically the virtual school learning experience for students and the kinds of support and assistance most frequently used and most valued by students learning in a virtual environment. Students were interviewed and observed during their virtual school class time. In-school teachers were interviewed and e-teachers were also observed. Data were analyzed using the constant comparative method. Findings indicated that during their asynchronous class time students were often assigned seatwork or provided time to work on assignments, however, students rarely used this time to complete CDLI work. When the students required assistance they usually relied upon their local classmates. If peer support was not successful, they turned to their e-teacher or in-school teachers. Students rarely used most of the support resources provided by the CDLI. Further research is needed to improve asynchronous teaching strategies and to investigate how e-teachers and in-school teachers encourage greater interaction and sense of community among students.

Cosby and McDermott (1978) indicated that there was a perception in the general public that those living in rural areas represented “a small and insignificant segment of the population” of the United States (p. 6). The authors speculated that this was due to the urban dominance in matters of politics and commerce, along with a general shift in the population from rural to urban areas. These observations are still relevant and are particularly true of the Canadian Province of Newfoundland and Labrador. The province has a population of approximately 500,000 people and a total area of approximately 252,000 square miles, much of which is sparsely populated. In fact 192 of the 294 schools in 2004-05 were located in rural areas (Government of Newfoundland and Labrador, 2005), and 85 were designated as necessarily existent .

The purpose of this study was to investigate the virtual school learning experience for rural students in the Centre for Distance Learning and Innovation (CDLI) – the provincial virtual school in Newfoundland and Labrador, specifically exploring what kinds of support and assistance were most highly used and valued by these students. The need for this study stemmed from the fact that while several previous studies have examined the types of secondary students attracted to virtual learning, and other studies had attempted to compare the performance of students in virtual schools with that of students in traditional schools, few, if any, researchers had undertaken a comprehensive investigation of students’ experiences in virtual schools.

## Literature Review

Although few of the jurisdictions face geographic challenges as severe as those in Newfoundland and Labrador, distance education opportunities for high school students have been explored in the US. Many of the early examples of distance education programs were primarily designed for a select group of high school students, specifically those with higher aptitudes, higher achievement, and greater aspirations for postsecondary education. For example, Espinoza et al. (1999) indicated that the VHS primarily served as college bound and advanced students. Courses (e.g., Advanced Placement Statistics, Environmental Ethics) were designed and implemented in such a way that they excluded all but the most talented and motivated students.

Additional research substantiates this trend. Based upon a review of the literature, Roblyer and Elbaum (2000) indicated that distance courses were best suited for independent learners. Other scholars have also indicated that in distance programs where student selectivity is not maintained, retention rates decrease significantly (Ballas & Belyk, 2000; Barker & Wendel, 2001). These findings have led some to question whether web-based learning is suitable for all secondary-level students (Mulcahy, 2002). Given that distance education for high school students had primarily served a more selective group of students, it should not surprise anyone that these early comparative studies yielded better results in favor of virtual school students – which may be largely explained by the selectivity of students registered in distance education programs.

It seems plausible the students in these distance education studies were primarily the independent, self-motivated students who enrolled in the earliest forms of distance education opportunities. It may also be that the students who would not have performed well in the distance education environment had already elected to drop the course before the outcome data were collected. For example, McLeod et al. (2005) speculated that their own positive results in favor of virtual school students were due to the fact that many of the low-achieving students had dropped out prior to the assessment. Further, in her summary of research into distance education at the K-12 level, Rice (2006) described how many of the comparative studies were flawed because of their failure to account for variables such as early drop-outs, voluntary testing, and tests designed to favor distance education students.

There has been a tremendous growth in virtual school opportunities in North America since the 1990s. In the past decade it is estimated that the number of K-12 students who have engaged in distance education in the US, including virtual schooling, is more than 300,000 (Setzer & Lewis, 2005). This increase in students and interest has prompted continued research; yet, what has not been fully investigated is the students' perspectives of their experience. As the interest in and need for virtual educational opportunities grows for K-12 students, it seems prudent to explore their perspectives so as to gain insight into what is working and not working.

## **Methodology**

The purpose of this study was to examine the nature of students' virtual school learning in Newfoundland and Labrador's rural schools. Specifically, this study examined how students interacted with their virtual school courses and the process they undertook when they needed help. This general purpose lent itself to three research questions:

1. What are the students' experiences during their synchronous time online?
2. What are the students' experiences during their asynchronous time online?
3. When students require content-based assistance, where do they seek that assistance and why do they choose those sources?

A case study approach was selected. According to Merriam (1998) "any and all methods of gathering data, from testing to interviewing, can be used in a case study, although certain techniques are used more than others" (p. 28). For this study, the main methods of data collection were semi-structured focus groups and interviews, participant observation, document analysis, and surveys (for a complete description of these data collection methods and copies of the instruments see Barbour, 2007).

The data collection phase of this study took place from January to August 2006. The data generated in this study was analyzed using an inductive analysis approach, specifically the constant comparative method – a form of inductive analysis that shares its focus on identifying categories and on generating statements of relationships (Ezzy, 2002).

## **The Case**

The CDLI offered its first courses during the 2001-02 school year when a limited number of enrollments were made available in an effort to field test the method of delivery and the content material that had been developed. Beginning with the 2002-03 school year, any student from across the province was given permission to enroll in any course offered by the CDLI. This decision coincided with an expansion in offering non-highly-academic courses (e.g., Art Technologies).

The rural school selected for this study was Beaches All Grade, a school with a student body of 108 students and a teaching staff of 15. Because of this small enrollment, students at Beaches have accessed virtual

school courses each year the CDLI has been in operation. During this study, there were 12 students enrolled in eight different CDLI courses that formed a convenient and purposeful sample: one grade 10 student, five grade 11 students, and six grade 12 students. Eight of these students participated in the majority of the data collection, thus the analysis of the data focused upon only those students. These students were a diverse group of individuals – ranging from those who were university bound to others who were heading into a trade or directly into the work force upon completing high school.

## Results and Discussion

At the conclusion of the data collection the author had conducted one semi-structured focus group with three students, four monthly semi-structured interviews with each student, 62 hours of direct participant observation, document analysis from 13 asynchronous courses contained in the CDLI's learning management system, and four surveys from each student. The findings from these data are organized by the three research questions.

### Research question one: Students' synchronous experiences

There were many similarities between how the students might describe their experience in a traditional classroom and how students described their experiences during their synchronous class time. For example, JD described his experience as "just sitting there and listening to the teacher." While not a very active form of participation, JD's quote at least indicated that the student was "listening." Fortunately for the e-teachers, not all of the students described their synchronous experience in such passive terms. JD even described in a later interview more active participation: "if he [the teacher] says something important, I just flip back up to the screen and see what he is writing up and then write up what he's writing up or prints [*sic*] it off." All eight of the students described some active participation during their synchronous classes.

The participants' descriptions were also consistent with the kinds of activities that might be expected in a traditional classroom (e.g., a student taking notes based upon their science teacher's lecture, students reading a novel aloud in an English class and then answering questions on the passage they had just completed). One of the reasons e-teachers and their students make effective use of their synchronous time may be because of these similarities to the traditional classroom environment (Surrey & Ely, 2007). The virtual classroom utilized by the CDLI allows students to learn in a way that is compatible with how they have learned in the traditional classroom.

The participants in this study were much more productive during their synchronous class time, compared to their asynchronous class time, yet their level of participation varied. As Max indicated there was no actual teacher there to police the students and keep them on task. During one observation of the students during a synchronous language arts class, the three students (Justine, Connie, and JD) talked about many things unrelated to class (e.g., the school's graduation, what had occurred the previous weekend). Throughout these conversations all three students were logged into *Elluminate Live* and one of the three students appeared to be responsible for paying closer attention, as she would periodically tell the other two to type this or click that.

While this particular interaction was rare based upon the observations of the first author, it is an illustration of the difficulties of the virtual environment for students who are being "compelled to assume a degree of autonomy they are not ready to handle" (Moore, 1973, p. 84). This is not to suggest that the students were talking to each other on a continuous basis. On the contrary, based on observations of 22 synchronous classes, the amount of conversation between students was usually limited to 10-15 minutes out of a 60-minute class. Even though the synchronous class was the time when students were most on-task, there were still times when they were engaged in other, distracting activities.

The participants also indicated building a local support community amongst themselves that they utilized during their synchronous classes. A stronger sense of community is normally present in rural schools (Kannapel & DeYoung, 1999); however, the further decrease to an even smaller local virtual school class size increased the sense of community for these students. These students all reported that the smaller class size in their virtual school classes created a greater sense of community with their local virtual school classmates. CDLI students were quite active in their learning and cooperated to ensure that everyone who expressed confusion understood the material; students frequently asked each other content-based questions during synchronous class time.

Beyond the interaction with the other students in their local distance education room, the two main methods that students had to interact with their teacher and the other students in the virtual classroom were through the microphone or through the direct messaging. While students did use both media, all but one student preferred to use the direct messaging when given the choice. This was consistent with Nippard (2005), who found that CDLI students in the 6 courses that he observed preferred to use direct messaging in their virtual classrooms.

### **Research question two: Students' asynchronous experiences**

The current method of delivery utilized by the CDLI includes anywhere from 30% to 80% of the students' scheduled time in synchronous instruction depending on the topic (e.g., social studies and fine arts having 30% to 50% synchronous; French as a second language having 80% synchronous). The reality is that only a small percentage of the instruction that is provided by the CDLI takes place during asynchronous time. It appeared that most CDLI e-teachers attempted to teach the complete content of their course during the scheduled synchronous time. Of the e-teachers of the students at Beaches All Grade, only the fine arts teacher required the students to complete lessons from the course content on a regular basis.

The students reported that they were assigned a variety of tasks during their asynchronous class time. Mya reported that her e-teacher had them respond to a discussion posting, "they'll [the e-teacher] put topics up and stuff and you have to respond to them and state your position to them, whether you agree or you disagree and why." JD, on the other hand, expressed his view in more pragmatic terms, "usually like you're assigned so many questions for each offline class and then at the end of the month or something like that, he'll want them all done..." The lack of actual asynchronous instruction and the allocation of asynchronous class time to complete homework and assignments led to the students often engaging in activities that were not related to their virtual school courses during their asynchronous class time. For example, Constance described that during her asynchronous classes, "I could just be talking to my fellow classmates, we could just be chitchatting about something, or I could be checking my e-mail..."

In some instances these off-task activities were due to the fact that students had already completed their asynchronous work, either during a previous asynchronous class or at home. "Sometimes we has [*sic*] nothing to do" (Peter) or "he didn't have any work assigned during that time, it was just that we were supposed to finish a novel over Easter break and I had it all done" (Kathy). However, in some instances it was a conscious decision to stop working on their assigned activities, as Mya described, "I didn't really give myself any free time except for the last fifteen minutes of class.... Even if I'm not finished up, I'll still give myself fifteen minutes." Overall the students self-reported that they spent a little more than half, or approximately 55% of their asynchronous class time engaged in on-task activities. However, based upon my own observations, students spent less than a third of their asynchronous time engaged in on-task activities.

In their analysis of the literature, Roblyer and Marshall (2002-2003) identified nine constructs they argued were related to success in virtual school courses. One of these nine was an internal source of motivation, as opposed to external sources. Weiner (2003) found that motivation was critical to virtual school students' successful completion of their work and of the virtual school course. Research over the past decade on motivation in the traditional classroom has found that students are more motivated to complete challenging tasks in an environment that allows for collaboration (Miller & Meece, 1999). The nature of the work assigned to the CDLI students during asynchronous class time was often routine or presented little challenge. This may have led to a lack of intrinsic motivation towards the completion of many of these tasks. Without this internal source of motivation, the students were only motivated to complete the work through an extrinsic system of rewards (i.e., grades) and punishments (i.e., deadlines).

### **Research question three: Students seeking assistance**

The intention of the CDLI is that it has the primary responsibility for the instructional support of the students who enroll in their virtual school courses. In the same way a classroom mathematics teacher assumes the primary responsibility for instructing his students, the CDLI does not intend to shift this burden from its own e-teachers to the school-based staff. The CDLI established a number of alternate methods for students to seek assistance when they required content-based support: tutors using *Elluminate Live* to meet with students, creating multimedia learning objects (MLOs) that provide additional explanations and presentations of the content, and

creating co-curricular activities that students can take part in that are designed to support their instructional missions (e.g., field trips). While it was the desire of the CDLI that students would primarily make use of sources of support that they had provided, most students reported that they rarely or sporadically used many of the resources provided by the CDLI. Instead, there were three main sources of support that students turned to for assistance on a regular basis: their in-school classmates, their e-teacher, and their in-school teachers.

During their synchronous class time, students indicated that convenience was one of the reasons why turned to each other. As stated by Kathy: "I usually asks [*sic*] the students first, instead of typing it into the teacher." In addition to the convenience, students also relied upon their in-school classmates because they were perceived to be able to speak to them at their own level. "You can always ask them [the other students] to explain, because the students may explain it better" (JD). This was a sentiment expressed by three other students.

Rovai (2002) described the communities that form in classrooms as "a social community of learners who share knowledge, values, and goals" (p. 322). This may explain why the students found their in-school classmates so useful. Vygotsky (1978) described that one of the differences between adult and adolescent learners was that for adolescents learning was a social process with "adult guidance or in collaboration with more capable peers" (p. 86). For the students at Beaches, their classmates were their more capable peers. Their interaction and collaboration were the social process that they required to keep themselves within their zone of proximal development – provided that they were able to stay on-task.

The students reported that the use of their e-teacher as a source of support was dependent upon a number of factors. For example, if it was a synchronous class and a student was not able to get a response from their classmates, all eight students indicated they would simply ask their e-teacher. However, if the students were in an asynchronous class their patterns were a little more varied. All of the students indicated that they had e-mailed their e-teacher using the WebCT mail function.

The students at Beaches All Grade were fortunate, in that with the exception of the two fine arts courses being offered through the CDLI, there were content-based teachers at the school for all of the other virtual school courses. The reason that students had to take physics or French online was not because there was not a physics or French teacher in the school, but because of the small number of students who expressed an interest in these specific courses. All of the students indicated that they would turn to their in-school teachers for content-based assistance. The frequency and the amount of time that students spent with their in-school teachers varied; students in the two science courses reported visiting more frequently and for longer times than other students.

While all of the in-school teachers, were willing to provide assistance when asked, some teachers expressed frustration with both the students and the e-teachers. Two in-school teachers mentioned several issues during their interviews: students coming during the middle of a period and interrupted the class that they were teaching instead of waiting until the class had ended. In many instances, students came to without first checking in their textbook or in any other material that they had available to them, an action the teachers felt was due partly to the lack of preparation by the students and partly because their online teacher had not made it apparent that the textbook or the course content in WebCT could be a specific resource.

A source of support that was very valuable to the students, at least the students in one of the two mathematics courses (i.e., Justine, Peter, JD, and Norah) and one of the two science courses (i.e., Justine, Peter, Max, and Norah), were evening work sessions that they would have on a frequent basis at one of the students' homes. Given the sense of community that exists between these virtual school students, it was not surprising that their community would extend beyond the confines of the school walls. The specific purposes of these sessions, based upon responses from all the students, usually focused on an up-coming assignment or test and were typically held shortly before the due date. According to Max, these evening sessions first came about because their science course was "a harder course or something... and there's only four of us right, so it's no big deal for us all to get together."

There were numerous examples illustrating that the CDLI students at Beaches All Grade exhibited characteristics of a learning community. Renninger and Shumar (2002) defined a learning community as "a group of people who interact with each other, learning from each others' work, and provide knowledge and information resources to the group related to certain agreed-upon topics of shared interest" (p 96). Students enrolled in these

mathematics and science courses met during evenings, engaged in on-task conversation during synchronous class time and worked collaboratively during asynchronous class time. Further, consistent with common definitions of a learning community (Renshaw, 2003), it was formed because these students had a common purpose of having to complete their CDLI class work and assignments rather than because it was encouraged by their e-teacher or one of their in-school teachers.

## Conclusions and Recommendations

The purpose of this study was to examine the nature of virtual school learning in Newfoundland and Labrador secondary education. To address the research questions, eight students engaged in CDLI courses at a rural all grade school were selected as a convenient and purposeful sample. During the students' synchronous class time they were taught in much the same manner as they would have been in a traditional classroom. In fact, the majority of the instruction of the CDLI students at Beaches All Grade occurred during their synchronous class time. However, during their asynchronous class time students were often assigned seatwork or provided time to work on assignments. Students rarely used this time to complete their CDLI work, instead they used this time to talk to friends, explore the Internet, or engage in other off-task behavior. The students primarily relied upon their local classmates when they needed content-based assistance. If their colleagues were unable to help, they turned to their e-teacher or if they needed more immediate assistance they would seek out their in-school teachers. Students rarely or never used the other sources of support provided by the CDLI.

These results indicate that there are three instructional practices that the CDLI and similar programs may want to address. The first is to provide better instruction during asynchronous class time. The teachers' reliance on synchronous teaching methods is consistent with the literature on adopting innovations: at early stages of the adoption process, people tend to be drawn to innovations that are consistent with what they already know, believe, and do, along with innovations that they perceive as allowing them to complete tasks more effectively and/or efficiency (Rogers, 2003). Simply put, there is a need for professional development to assist teachers in developing effective asynchronous teaching strategies. The second is that CDLI e-teachers need strategies that allow students to get to know their online classmates better to develop a sense of community online. One model that could be employed is Johnson et al. (2002). The students indicated that they felt little connection to their online classmates because they did not know them and the three strategies by Johnson et al are simply one way to facilitate this process. The third is helping students to recognize the availability of CDLI-provided resources and to understand when and how to use all of the various sources of support provided by the CDLI. This is consistent with the observation made by Maeroff (2003), who described how online learning programs (such as virtual schools) have a tendency to focus on technical support and pay little attention to academic support. For example, Elbaum, McIntyre and Smith (2002) indicated e-teachers need to "advertise how to get help" (p. 41) and "make it known" (p. 74). CDLI e-teachers need to inform students, both during synchronous class time and in the asynchronous course material, of the variety of sources of content-based assistance that the students have available to them. CDLI e-teachers also need to make sure that students know and understand how to use these various sources and what purpose each source serves.

Finally there are four areas for future research that could be explored as design/development research problems (Reeves, 2005). The first is research to identify best practices for asynchronous teaching strategies methods (Cavanaugh, 2007). The second is research to better understand the experience of lower performing students in virtual school environment (Scherer, 2006). The third is research to improve upon the identification of characteristics necessary to be successful in virtual school environments and to provide remediation for students who are identified as being weak in certain characteristics (Roblyer, 2005; Smith, Clark & Blomeyer, 2005). The fourth is research on how e-teachers and in-school teachers could encourage greater interaction and between in-school and online classmates (Nippard & Murphy, 2007).

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