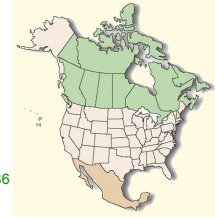


What Are They Doing? How Are They Doing It?



Newfoundland and Labrador

- the island is 43,359 square miles, while Labrador covers 112,826
- population was 505,469 in 2006 Census
 - 551,795 in 1996 / 568,350 in 1986
- 294 schools in 2005-06
 - 343 in 2000-01 / 472 in 1995-96
- 76,763 students in 2005-06
 - 110,456 in 1995-96 / 142,332 in 1985-86
- average school size is 220 pupils
 - 45% > 200 and 25% > 100



Centre for Distance Learning and Innovation

The CDLI was founded in December 2000 by the Department of Education, in response to the recommendations of the 1999 Sparks-Williams Ministerial Panel on Educational Delivery.



The vision of the Centre is to

- provide access to educational opportunities for students, teachers and other adult learners in both rural and urban communities in a manner that renders distance transparent;
- eliminate geographical and demographic barriers as obstacles to broad, quality educational programs and services; and
- develop a culture of e-learning in our schools which is considered to be an integral part of school life for all teachers and students.



Centre for Distance Learning and Innovation

CDLI Statistics					
	2001-02*	2002-03	2003-04	2004-05	2005-06
Number of courses	10	18	25	30	33
Number of teachers	5	18	23.5	25.5	27.5
Course Registrations	200	1000	1200	1300	1650
Percentage passes	N/A	88	90	90	88

Centre for Distance Learning and Innovation

Synchronous – Online

- 30% to 80%, depending on subject area
- taught via a virtual classroom (e.g., *Illuminate Live*)

Asynchronous – Offline

- remainder of their time
- taught via a course management system (e.g., *WebCT*)
- usually consists of independent work from posted homework or assignments or from their textbooks



Reviewing the Literature

- Rural schools are different from urban schools, particularly when it comes to their ability to offer the mandated curriculum to their students.
- Initially, rural schools have attempted to address these needs through consolidation, but in the past decade and a half turned to distance education (and more recently virtual schools).
- Across North America, virtual school students tend to be a select group of students who are highly motivated, independent in their learning, and have access to and facility with digital technology.

Reviewing the Literature

- The claims are that virtual schooling can allow rural schools to offer their students a wider variety of curriculum and access to highly trained teachers in specialized areas.
- However, the reality is that most virtual schooling opportunities are designed for only a select group of students and these opportunities are simply out of the reach of many rural school students.
- More research is needed into why some learners are more successful in online environments than others and the specific factors that may impact student achievement in these environments

Students' Final Course Averages Based Upon Delivery Model and Location by Year

	2001-02	2002-03	2003-04	2004-05
Web delivered rural	71.3 (n = 291)	68.1 (n = 886)	69.3 (n = 1,143)	69.6 (n = 1,132)
Web delivered urban ^[1]	64.2 (n = 12)	56.5 (n = 20)	67.5 (n = 10)	71.8 (n = 39)
Classroom delivered rural	68.2 (n = 11,233)	68.1 (n = 21,334)	68.5 (n = 26,601)	69.0 (n = 31,022)
Classroom delivered urban	67.1 (n = 13,390)	66.6 (n = 27,227)	67.8 (n = 35,555)	68.5 (n = 38,857)
# of missing cases	259 (1%)	464 (1%)	1366 (2%)	3693 (5%)
Total # of cases	25,185	49,931 ^[2]	64,675	74,743
# of courses	11	21	24	30

^[1] The designation of an urban area follows that definition utilized by Statistics Canada.
^[2] The dramatic increase in the number of cases was due to the increase in the number of courses offered by the CDLI. For example, adding Art Technology 1201 in 2002-03 increased the number of web-based cases by seventy-eight web-based cases and classroom cases by 1578, or English 1201 in 2003-04 which added 19 web-based cases and 5306 classroom cases.

Students' Public Exam Scores Based Upon Delivery Model and Location by Year

	2002-03	2003-04	2004-05
Web delivered rural	61.4 (n = 210)	60.5 (n = 323)	63.4 (n = 293)
Web delivered urban	71.0 (n = 1)	60.5 (n = 2)	66.4 (n = 8)
Classroom delivered rural	60.6 (n = 3,919)	64.5 (n = 4,907)	61.7 (n = 6,558)
Classroom delivered urban	61.4 (n = 5,623)	64.7 (n = 8,153)	62.6 (n = 9,304)
# of missing cases	40 (0.5%)	189 (1%)	800 (5%)
Total # of cases	9,793	13,574	16,963
# of courses with public exams	5	6	7

Students' Scores Based Upon Delivery Model and Location

	Public Exam	Final Course Average
Web delivered rural	61.7 (n = 826)	69.3 (n = 3,452)
Web delivered urban	65.7 (n = 11)	66.3 (n = 81)
Web delivered total	61.8 (n = 837)	69.2 (n = 3,533)
Classroom delivered rural	62.3 (n = 15,384)	68.5 (n = 90,190)
Classroom delivered urban	63.1 (n = 23,080)	67.7 (n = 115,029)
Classroom delivered total	62.8 (n = 38,464)	68.1 (n = 205,219)
# of missing cases	1,029 (2.6%)	5,650 (2.6%)
Total # of cases	40,330	214,402

Purpose of the Study

The purpose of this study was to examine the nature of web-based learning in Newfoundland and Labrador secondary education. Specifically, this study examined the how students interacted with their web-based courses and the process they undertook when they needed help. This general purpose lent itself to three research questions:

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

Participants

Student Pseudonyms	Gender	Grade	Community From	Courses Taken
Jasmine	Female	10	Cape Random	Fine Arts ^[1]
Justine	Female	11	Beaches	Language Arts ^[2] Mathematics Science
Constance	Female	11	Beaches	Language Arts
Jason	Male	11	Clarke's Bay	Language Arts Mathematics
Peter	Male	11	Beaches	Mathematics Science
Norah	Female	11	Beaches	Mathematics Science
Mya	Female	12	Beaches	Language Arts
Max	Male	12	Beaches	Language Arts Science Mathematics
Dayna	Female	12	Beaches	Language Arts
Darlene	Female	12	Clarke's Bay	Language Arts
Kevin	Male	12	Clarke's Bay	Fine Arts
Kathy	Female	12	Cape Random	Language Arts Science Mathematics

^[1] Fine Arts include courses in art and music.
^[2] Language Arts include courses in both English language arts and French as a second language.

Interviews

Student	Interview 1	Interview 2	Interview 3	Interview 4
Jasmine	X	X	X	X
Justine	X	X	X	X
Constance	X	X	X	X
Jason	X	X	X	X
Peter	X	X		X
Norah	X			
Mya	X	X	X	X
Max	X	X	X	X
Dayna	X			
Darlene	X	X	X	
Kevin	X	X		
Kathy	X	X	X	X

* Plus four teacher and administrator interviews.

Journal Entries

Student	Week 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Jasmine	X	X	X	X	X	X	X	X		X	X	X	X	X	X
Justine	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Constance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Jason	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Peter	X	X													
Norah															
Mya	X	X	X	X		X	X	X	X	X	X	X	X	X	
Max	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Dayna															
Darlene		X		X	X	X	X	X	X						
Kevin															
Kathy		X	X	X	X	X	X	X	X	X	X	X	X	X	X

Participant Observation – In School

Date	Fine Arts		Language Arts		Mathematics		Science	
	Synch	Asynch	Synch	Asynch	Synch	Asynch	Synch	Asynch
03 May			2		1			
04 May								
05 May								
08 May		1	1		1			1
09 May		1	1	1		1		
10 May							1	
11 May	1		1		1			1
12 May		1				1		
15 May	1							
16 May								
17 May							1	
18 May				1				
23 May	1	1			1		1	
24 May	1		1				1	1
25 May		1	1	1				1
26 May			1			1	2	
Total	5	5	7	4	4	3	6	4

Participant Observation - Online

Teacher/Tutor Pseudonyms	Content-Area	Asynchronous (WebCT)	Synchronous (Eliminate Live)	Tutorial
Bill Martin	Language Arts	2 different course areas	3 classes from 1 course	
Lori Green-Paul	Language Arts	3 different course areas	2 classes from 2 different courses	
Pamela Bond	Language Arts	2 different course areas	2 classes from 2 different courses	
Joe Cole	Science	2 different course areas	3 classes from 1 different course	
Megan Matthews	Science	2 different course areas	2 classes from 2 courses	
Dustin Nelson	Science			1 TWEP session
Norman Tiller	Social Studies	2 different course areas	4 classes from 1 course	
Pat Blake	Mathematics		7 classes from 3 different courses ^[1]	
Paul Murray	Fine Arts		4 classes from 1 different course	

[1] One of these synchronous classes was conducted by a substitute teacher.

Surveys

- Potential variables in transactional distance (Lowell, 2004)
- High school Internet education survey (Roblyer & Marshall, 2002-2003)
- Learning styles inventory (Barbour & Cooze, 2004)
- Online learning experiences (Barbour, 2006)

Trends



Synchronous Time

- where most of the instruction took place
- students tended to stay on task during this time (although not always)
- students tended to rely upon each other more than the online teacher for help
- students tended to communicate using text rather than audio

Trends

Asynchronous Time

- students primarily assigned seat work
- students decided to work less than half of the time
- when the students decided to work, they worked well
- students would complete work in a collaborative effort, particularly in the mathematics and sciences
- asynchronous time was easy to give up for other school related activities



Trends

Turning for Help

- students primarily relied upon each other for help
- local class size played an important role
- student colleagues, teachers (both online and school-based), and general Internet searches
- rarely used textbook, supplemental material in *WebCT*, a live tutor available in the virtual classroom



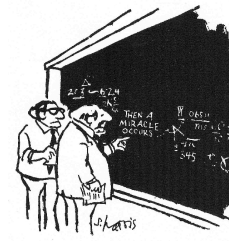
Implications for Practitioners

- effective asynchronous teaching strategies
- create communities - both online and local
- supporting students online



Implications for Research

- asynchronous teaching strategies
- lower performing students
- remediation of virtual school skills
- developing community with virtual school students
- quality of student learning experiences in virtual environments
- design-based or developmental research



"I think you should be more explicit here in step two."

Bibliography

- Barbour, M. K. (2006). *Secondary students perceptions of web-based learning*. Roundtable presented at the annual meeting of the Association for Educational Communication and Technology,.
- Barbour, M. K., & Cooze, M. (2004). All for one and one for all: Designing web-based courses for students based upon individual learning styles. *Staff and Educational Development International*, 8(2/3), 95-108.
- Lowell, N. (2004). *An investigation of factors contributing to perceived transactional distance in an online setting*. Unpublished Ph.D., University of Northern Colorado, Greeley, CO.
- Roblyer, M. D., & Marshall, J. C. (2002-2003). Predicting success of virtual high school students: Preliminary results from an educational success prediction instrument. *Journal of Research on Technology in Education*, 35(2), 241-255.

Your Questions and Comments





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