

How Are They Doing?: Examining Student Achievement in Virtual Schooling

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Newfoundland and Labrador

- approximately 252,000 square miles
- little less than 510,000 people
- about half of the population resides within a 100 mile radius of the provincial capital
- 192 of the 294 schools in 2004-05 were located in these rural areas
- 85 of which are designated as necessarily existent

Distance Education

- began in September 1988 using an audio-graphics system
- during that year, 38 of the 548 schools in the province had fewer than 25 students
- offer Advanced Math 1201 to 36 students from 13 rural schools

Distance Education

- expanded to include the entire advanced mathematics curriculum, the complete physics and chemistry programs and upper level French as a second language courses
- by 1999-2000, there were 11 courses with 898 course enrollments representing a total of 703 students in 77 different rural schools

Development of Virtual School

- Espinoza, Dove, Zucker and Kozma (1999) stated that "it was found that VHS was serving a fairly narrow range of students, those who were academically advanced and college bound" (p. 48).
- Roblyer and Elbaum (2000) concluded, "only students with a high need to control and structure their own learning may choose distance formats freely" (p. 61).

Development of Virtual School

- Mills (2003) found that the typical online student was an A or B student.
- Watkins (2005) found that 45% of the students who participated in e-learning opportunities were "either advanced placement or academically advanced" students (p. 37).

Effectiveness of Virtual School

- Cavanaugh (2001) found that there was “a small positive effect in favor of distance education” (p. 73) in her meta-analysis that included over 900 participants from 1980 to 1998.
- Cavanaugh, Gillan, Kromrey, Hess and Blomeyer (2004) reported a small negative effect size in their meta-analysis of an additional 14 studies representing over 7500 students from 1999 to 2004.

Retention May Be The Reason

- Ballas and Belyk (2000) suggested that the lack of retention of lower performing students in the virtual school sample meant that it was “not reflective of the total population of students” (p. 28).
- McLeod, Hughes, Brown, Choi and Maeda (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.

Retention May Be The Reason

- 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.

Centre for Distance Learning and Innovation

- created in 2000 and offered its first courses during the 2001-02 school year
- developed a number of non-highly-academic courses, such as Art Technologies 1201, Communications Technology 2104/3104, and World Geography 3202

Methodology

- final course scores and the standardized public exam scores for every student in the Province from the school years 2001-02 to 2004-05
- combined this data with information from the High School Distance Education Course Report to determine which schools offered what courses using distance education and which ones were in the traditional classroom environment

CDLI Performance – Final Average

	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	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	64,675	74,743
# of courses	11	21	24	30

CDLI Performance – Public Exam

	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

CDLI Performance – Overall

	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 = 3533)
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

Discussion

- even with a sample that has a wider range of students, virtual school students still do just as well.
- the CDLI uses a strong synchronous component to their instruction, is this the reason?

Future Research

- determine whether or not there is student selectivity within the population of students involved in the CDLI
- studies that address the reasons for high school student achievement in distance education

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