


Selected Publications


Abstract

This mixed methods study is a program evaluation of Newfoundland and Labrador’s Excellence in Mathematics Strategy commencing in 2007 with a curriculum review leading to the implementation of the Western and Northern Canadian Protocol Common Curriculum Framework in K-12 mathematics along with the implementation of numeracy support teachers in classrooms across the province. The goals of the Strategy were to improve student achievement with the curriculum change; to support teachers, students, and parents; and to encourage an increased interest and enthusiasm for mathematics.

This study included a quantitative analysis of the provincial mathematics assessment results in Grades 3, 6, and 9 from 2007 to 2012 by comparing assessment items that were common to both the old and new curricula, and comparing results of items anchored in 2011 and 2012. Assessment results demonstrated inconsistent results on common curriculum items. Results of items anchored decreased in all grades in 2011 but items anchored in 2012 increased in all grades.

Another quantitative analysis was conducted on the effect of numeracy support teachers (known elsewhere as mathematics specialists, coaches, or mentors) on students’ mathematics achievement in schools having Grade 3 and 6 classrooms receiving numeracy support from 2007 to 2011. Schools with numeracy support in Grades 3 and 6 for four years were mostly lower-achieving schools and had achievement results move closer over time to schools receiving one or no years of support which were mostly higher achieving schools. Schools receiving support in both Grades 3 and 6 had the highest proportion of students moving from below standard to at/above standard on open-constructed response questions.

A qualitative analysis was conducted of focus groups with numeracy support teachers and supported the quantitative analysis of the provincial assessment results. Numeracy support teachers shared their experiences of teachers’ unconventional assessment methods and students’ increase in communicating, reasoning, problem solving, and strategizing about mathematics. Lower-achievers were more engaged in these classrooms and manipulative use in problem solving improved. Numeracy support teachers witnessed physical and attitudinal changes through planning, modelling, co-teaching, and reflecting with teachers thereby helping change the culture of students’ classrooms. The goal of numeracy support teachers to build capacity in their teachers through collaboration was evident in some classrooms as beliefs and habits were changing, but some were resistant.

Awards, Scholarships, Fellowships

2006 – 2008  Fellowship, University of Victoria
2006 – 2009  Graduate Student Travel Grant, University of Victoria
2008, 2009, 2011  Newfoundland and Labrador Teachers Association Centennial International Presenter Grant

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