

Colloquium

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2:00 pm HH-3017

The Arithmetic Skill Levels of New Students At the Mathematics Learning Centre, 2012-2014

Abstract:

In the late 1990's, a decision was made by the Atlantic Provinces' Departments of Education to rewrite the K-12 mathematics curriculum using a discovery-based learning approach. Departments of Mathematics at universities in the Atlantic Provinces and APICS (Atlantic Provinces Council on the Sciences) expressed great concern about this decision. In fact, the APICS Mathematics and Statistics Committee produced several documents on this matter (please see the attachment). Sadly, the perspective expressed by the university Departments of Mathematics and Statistics and APICS were ignored. The new discovery-based curriculum was introduced simultaneously in grades Kindergarten, 4, 7, and 10 in the fall of 1999, adding one grade level in each of the four levels each year afterwards. Consequently, in the fall semester of 2012, the first cohort of students from the Newfoundland school system arrived at MUN having been taught mathematics throughout their entire K-12 learning experience using a discovery-based approach.

Since 1989, different categories of students who do not achieve the required scores on the Mathematics Placement Test have not been allowed to register for credit math courses until they complete the Foundation Math Courses that are offered at the Mathematics Learning Centre. By the year 2000, based on ongoing data analysis by the Head of the Department of Mathematics and Statistics, virtually all Newfoundland students were being placed either in credit math courses or the non-credit foundation math courses based on their MPT score. Since we take an individualized program approach at the Mathematics Learning Centre for these students, we have had an excellent opportunity to track specific changes in incoming skill levels of these students. Over the past ten years, as we have seen cohorts enter Memorial University with increasing exposure to the discovery-based learning approach including increased calculator usage, we have been able to document detailed information about decrements in specific skill areas. We have also been able to document the effects of these new skill deficiencies on success in the Foundation Math Program that we have developed at the Mathematics Learning Centre over 25 years.

In this talk, I will present the most recent data that we have compiled on the arithmetic skill levels of students who entered Memorial University between the fall semester of 2012 and the fall semester of 2014 (inclusive). I will also discuss the effect this is having on our ability to prepare these students for credit university math courses.