
▲ COLLEGE MATHEMATICS PROJECT 2007

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More than one-third of all first semester Ontario college students who take a mathematics course either fail or barely scrape through with a D, thus placing themselves “at risk” of not completing their chosen program. That is the troubling conclusion of the College Mathematics Project (CMP) annual report, recently released by Seneca College. And if we look separately at those who have graduated from Ontario secondary schools within the past few years and those who are

either older or have come from other jurisdictions, the news does not get any better: 36.5% of the recent Ontario graduates are at risk, compared with 24% of the second group.

The report is not all bad news however: it also recounts the major efforts being made by all colleges and school boards to increase student success and the focus of the project’s recommendations is entirely on how we can work together to this end. This update is designed to highlight the major CMP findings and suggestions for action – readers who would like more information can download the report free at www.ysimste.ca.

CMP conducted a pilot study in 2005-2006 which was reported a year ago in *Ontario Mathematics Gazette* (vol. 45, #4, pp. 33-34). In 2007, the study was repeated with 6 GTA colleges (Centennial, George Brown, Georgian, Humber, Seneca and Sheridan) in collaboration with the corresponding District School Boards. CMP was undertaken by researchers from the York/Seneca Institute for Mathematics, Science and Technology Education (YSIMSTE) based at Seneca College and supported by the School-College-Work-Initiative (SCWI) and its GTA Regional Planning Team.

Here, then, in a nutshell, is the story of the College Mathematics Project 2007.

What CMP Did

In 2007, CMP reviewed the files of over 20,000 students entering the 6 GTA colleges in the Fall of 2006. Of these, 10,743 (53%) took a first semester mathematics course and, of this group, 7,538 (70%) were recent Ontario graduates (ROGs). Four of the six colleges tested students after admission and placed them either in a regular college-level mathematics course or, where their backgrounds required it, into a preparatory or remedial mathematics course. Achievement in these courses was examined separately.

We also linked the students’ college files with their secondary school transcripts (from their college applications) so that we could relate college achievement both with the “mathematics pathway” they had taken through secondary school and with the identity of the boards and schools from which the students came. As far as we know, CMP is the first study ever to give systematic feedback to boards and secondary schools about the postsecondary success of their graduates. (Readers in a GTA Board can find out about the college mathematics achievement of their school’s

graduates by consulting with their board's mathematics coordinator who has access to the CMP database.)

What CMP Found

As noted at the beginning of this article, CMP found that 66% of the overall cohort achieved good grades (A, B & C) in first-semester college mathematics, while 34% achieved D, F or withdrew (resulting in CMP labeling them "at risk"). These results were similar for students in both Business and Technology programs in college. Other highlights of the research are as follows:

- Over 40% of students taking MAP4C and who go on to take college mathematics were found to be at risk; this dropped to 30% if the students took MCT4C.
- Grade 11 courses selection was also found to be important, with nearly 50% of those who took MBF3C becoming at risk in college, compared with 20-30% of those taking MCF3M or MCR3U.
- Over 50% of those who had taken Grades 9 and 10 Applied mathematics were at risk in college, compared with fewer than 30% of those who had taken Academic Mathematics.

How CMP Used the Results

This research raised as many questions as it did conclusions. CMP does not seek to point fingers or lay blame but to help colleges and schools find solutions and improve student success. We convened a Deliberative Forum in October 2007 and invited mathematics specialists and student success leaders from colleges and school boards, along with the Ministry and other interested provincial organizations. The CMP team presented the research data and analyses and both college and school board representatives described initiatives already under way aimed at increasing student success. The Forum then broke into four discussion groups focused on mathematics, guidance, student success, and provincial/board/college policy to respond to questions raised by the research and to suggest useful ways forward. These deliberations were very productive and the final CMP recommendations are based on what we learned at this Forum.

What CMP Recommended

There are two general conclusions of CMP and eight concrete recommendations, two each for students and parents, colleges and college faculty, schools and teachers, and the Government of Ontario. The general conclusions of CMP are that student achievement in first-semester mathematics in Ontario colleges needs to be significantly

improved and that this requires action by all stakeholders.

The recommendations call for: students to select courses most appropriate for their postsecondary goals and to inform themselves early in their secondary school careers about colleges and college programs, colleges to strengthen their commitment to student success and to inform themselves better about effective strategies, schools to place equal value on college as university destinations for students and to show this by ensuring that all college-preparation courses are available to students, and the Government to adopt a K-16 vision of student success (i.e. to see students' postsecondary achievement as part of the overall goal of the school system).

Where CMP is Going Now

CMP has recently received funding from the Ministry of Education to continue through 2008. It has expanded to include 11 colleges corresponding to over 50% of the overall provincial college enrolment and will expand the range of research questions to be studied. Ultimately, we would like to be able to include all colleges and school boards and be able to provide feedback to every secondary school in the Province. We also look forward to reporting at the OAME conference and in the *Gazette* on a regular basis. ▲



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