

The logo consists of a solid red square with the text "YSIMSTE" written in white, uppercase, sans-serif font, centered within the square.

College Mathematics Project

Oct 28, 2011 Provincial Forum

*Preparing Students for Success in the
21st Century Economy*

Questions for Deliberation

1. *Foundation Programs and Preparatory Mathematics Courses*

Table 4 shows a 30% increase in the numbers of students taking college foundation programs over the past three years and a 20% increase in the numbers taking preparatory mathematics courses (where these are offered). These compare with an 11.3% increase in overall college enrolment over the same period.

1.1 How do you interpret these changes?

CMP qualitative research shows that many of the mathematical skills and concepts taught in foundation programs and preparatory courses were first taught in Grades 6 through 9.

1.2 What are the implications of this finding for curriculum and assessment policy and practice in both the K-12 system and the college system?

Comments / responses/ discussion:

- Needs discovery: Reemphasize college goals and providing education to fill the gaps and help students through extra help and more initiatives
- Bridge the gap: earlier stage of development
- Provide support
- Achieve outcomes: getting into college and out
- Retention rate & persistence
- Math acting as a gatekeeper: lowers confidence and steem
- Decision making: offering/not offering
- Larger colleges in Toronto offering due to a per student funding and smaller ones not
- Attention spread: Foundation course s vs. diploma courses

- Availability of math courses in an effort to implement success
- Foundational pieces making up for what's required
- Funding: strategy to allow more access and resolve weaknesses
- Dual-credits: central school board lacking full implementation at this time
- Individualizing the program and reaching out to students
- Directions and credits should be provided
- Perceptions: College is lesser as supposed to different?
- Getting a blend of both college and university

Recommendations of the next round of change:

- Dual-credit is only targeted at “only at risk” or “at risk”: there are other participants also
- Should be implemented at a stronger level
- How to address deficiencies: what’s the outcome? Where is the action plan?
- Find ways to implement marketing needs and increasing awareness rather than changing the criteria

Questions for Deliberation

2. *Mathematics Achievement in College*

Figure 2 shows that mathematics achievement levels of first year college students have not increased significantly over the past three years. In addition, EQAO results have shown relatively modest increases in mathematics achievement at Grades 3, 6 and 9.

2.1 How do teaching and assessment methods used at both school and college levels affect student success? What other factors are at play here?

In particular, Figure 7 shows that the proportion of students taking college mathematics after only three mathematics courses in secondary school (the minimum required for secondary school graduation) has increased over the past three years to over 18%.

2.2 Does this data, along with the growing importance of mathematics for many careers, suggest that the number of mathematics courses required for graduation should be increased to four, or what other policy changes might be considered?

Comments / responses/ discussion:

- Students are not prepared as they approach college
- How far do students take their knowledge of Mathematics and how much do they use their knowledge?
- 11U Mathematics being the big trigger
- Students do not learn mathematics as a discipline any more

Comments / responses/ discussion:

- Applying the math in academic and personal life is very crucial in order to succeed
- Each program (ie. Chem, Math) placed in a separate silo
- Math is spread across all subjects: then why do some people say “I can’t do math”?
- What is the “content”?

Recommendations

- Offer 11U Mathematics in grade 12
- More complexity and depth
- Touch on the topics more throughout HS
- Hence, the “BIG IDEA” threads throughout the curriculum (Math and other subjects), avoiding inconsistency and closing gaps

Questions for Deliberation

3. Learning Skills

Participants at regional forums have often pointed out the importance of generic “learning skills” for student success in postsecondary education (and also in employment). The CMP 2010 Final Report references research from a variety of sources supporting this claim and both the Ministry of Education and the Ministry of Training, Colleges and Universities have policies stressing the importance of these skills.

- 3.1 What evidence is there that progress is being made at elementary, secondary, or postsecondary levels to enhance these skills?
- 3.2 What additional changes to policy and/or practice at all levels are required?
- 3.3 How can students and their parents become more aware that while marks on academic courses enable entry to postsecondary programs, learning skills can enable success at that level?

Comments / responses/ discussion:

- Math can help overcome challenges
- How can we help students understand this importance?
- Employability skill: Many are uncomfortable with it: basic math should be part of it
- Our group is unaware of evidence in relation to progress

Recommendations:

- Math should be introduced as a way to help them progress in life: should be seen as a tool that helps in decision making
- Relate to real life situations
- Rebrand MATH?!
- Provide more clarity in the relation between math and other subjects
- Grader 10 Numeracy test checking the ability to do mathematical calculations that would not negatively impact student confidence: being an exit point