

## Stakeholder Summary

### **Numeracy skill development, assessment in Ontario higher education doesn't add up**

At a time when numeracy is an essential skill for work and life in general, the development and evaluation of numeracy skills in Ontario's college and university students doesn't add up, according to a new report from the Higher Education Quality Council of Ontario (HEQCO).

*Emphasizing Numeracy as an Essential Skill* finds that postsecondary students in non-math or non-science-based disciplines often have limited opportunities to develop numeracy skills, while postsecondary institutions know little about the numeracy skills students bring to or acquire in higher education. And while Ontario student numeracy scores have been relatively stable over the last decade, an increasing number of other jurisdictions are outperforming the province.

#### **Project description**

The report examines current data on numeracy performance from a variety of sources including the OECD, the International Association for the Evaluation of Educational Achievement, Ontario's Education Quality and Accountability Office, and the College Mathematics Project, an initiative of the York-Seneca Institute for Mathematics, Science and Technology Education. Government guidelines for curriculum content are also examined using the Ontario Qualifications Framework.

#### **Findings**

Although literacy is spread throughout the curriculum both in high school and in postsecondary institutions, numeracy is too often segregated in particular courses, according to the report. Numeracy should be treated like an essential skill on par with literacy. It should be integrated throughout postsecondary courses of study in Ontario's colleges and universities, rather than isolated in math classes, ensuring that all students are exposed to content that further develops and enhances their numeracy skills, regardless of their major.

The data present a mixed assessment of Canadians' and Ontarians' numeracy skills overall. While some show a slight deterioration in numeracy skills since 2003, others suggest relative stability in numeracy skills over the last decade. But if Ontario students' scores have not changed significantly over time, other jurisdictions are gaining ground.

The provincial data also point to a considerable skill deficit among students taking applied-stream math courses in high school as compared to students taking academic-stream math courses. And while the College Math Project's findings are limited to math skill levels of first-year students, incoming university students are not even assessed.

#### **Recommendations**

Evaluating the direct effect of postsecondary education on essential and discipline-specific skills is difficult given the limited information currently being gathered on students' skill levels at admission and graduation. The report says that postsecondary institutions should begin assessing the numeracy skills of incoming and outgoing students to fill this data gap. Incoming information could also be used to ensure that the appropriate supports are available to students as they begin their course of study, while outgoing assessments will provide new data to assess the value added of a postsecondary education on numeracy skills.

Part of HEQCO's continuing examination of learning outcomes in Ontario's postsecondary sector, the report follows on an examination of [literacy skills](#), which found that Ontario students headed to college or university might not have the literacy skills they need to be successful. The report said that postsecondary institutions need to define the literacy standard they expect of students and should be evaluating entering and exiting literacy skills as part of a comprehensive assessment of the achievement of desired learning outcomes.

*Author of [Emphasizing Numeracy as an Essential Skill](#) is Nicholas Dion, HEQCO researcher.*