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Chair, Education Committee

[Note: in this article, when we say “mathematics” we mean “mathematics and statistics”.]

According to the CMS page, “The CMS Education Committee is involved in a wide range of activities, from supporting mathematical education in secondary schools, universities, colleges and cegeps, to encouraging the public and young people to appreciate and engage with mathematics.” In this article I plan to comment on some of these activities, and share my thoughts and ideas about the work of the Committee.

There are two distinct populations related to mathematics education at the university level. Population 1 consists of a large number of faculty (based in mathematics departments) involved in teaching university courses in mathematics, most of whom are not engaged in mathematics education research. This population can be further divided into those whose primary duties involve research in mathematics (“research faculty”) and those (“teaching faculty”) who are primarily teaching, such as teaching stream, lecturers, contractual, sessional, and part-time faculty. Population 2 consists of faculty members based in faculties of education, who are primarily researchers in math education (at K-16), and who (with possibly a very few exceptions) do not teach university mathematics courses. The collaboration between these two populations is desired, has been shown to be mutually beneficial, and it does exist on a small scale.

The primary role of the CMS education efforts must be to serve population 1, and in particular, the teaching faculty. A major reason is that the research faculty from population 1 and population 2 members have a well-developed infrastructure of organizations, conferences, grant support, publications, etc., that serve their needs and interests. Population 1 teaching faculty members have very few of these opportunities within Canada. For instance, whereas a large majority of university research mathematicians and population 2 members are able to cover their conference expenses through their grants, their university math teaching faculty colleagues have to combine their professional development funds with their own money – for some, the CMS membership fee, CMS conference registration and travel already add up to more money than what they have available in their professional development funds for an entire year.

In order to enable this large population of teaching faculty to attend the in-person meetings, I believe that CMS should rethink the conference registration prices, and significantly reduce them for this population. As well, there is a concern I've heard many times: CMS membership fees are high, but what are the benefits of being a CMS member? Definitely something to think about.

The Meetings Oversight Committee is in charge of education sessions at the in-person Summer and Winter CMS Meetings, and organizes the annual, two-day Math Education Online Meeting. Education sessions have become a fairly standard feature of CMS in-person meetings: a typical meeting has about 2-3 education sessions, with anywhere from 20 to 70-80 participants. The Math Education Online Meeting easily attracts close to a hundred people. Although attendance numbers look sound, a critical look suggests that there is space for improvement.

First, there is very little to no quality control of the education session proposals (basically almost every proposal is accepted). The well-intended attempts at introducing scrutiny into evaluating proposals were not welcomed, and thus had to be abandoned.

In the absence of adequate quality control, a number of issues will (and do) surface. For instance, the roster of actual education session presenters is often quite different from the list of presenters submitted with the session proposal. This means that there is no way to control for diversity in participation (some time ago one of the education sessions was criticized for lacking diversity). As well, often we see the same people present at education sessions, or an entire session consisting of presenters from 3 or 4 (big) universities. Not only does the quality of presentations suffer, but also their relevance – I've been at talks that had very little to do with the theme of a session. Similar issues have surfaced in the CMS Math Education Online Meeting.

Hopefully, with a renewed composition of the Meetings Oversight Committee, we will see a more proactive approach to organizing education sessions at CMS in-person meetings.

Until recently, the Excellence in Teaching Award Selection Committee was part of the mandate of the Education Committee. Due to a concern communicated to the CMS leadership that the Award Committee would (and did) select one of their own (meaning someone from the Education Committee) for the award, the Excellence in Teaching Award Selection Committee has been made into an independent committee. Operating outside of the Education Committee means that the Education Committee members are now eligible to be nominated for the Excellence in Teaching Award. However, in forming a new Excellence in Teaching Award Selection Committee a bias was created – all its members are research mathematicians, i.e., there is no faculty member who is associated with mathematics education (imagine using four math education researchers tasked to select a Krieger-Nelson Prize winner). Modifying the composition of the Teaching Award Selection Committee is one of the goals that we need to pursue.

Another issue related to the Excellence in Teaching Award selection is the fact that there is a number of highly qualified individuals whose accomplishments are hard to rank. For instance, compare an excellent instructor who is a math researcher with a teaching-stream faculty who is, besides teaching, involved in outreach, teaching community, and publishing. The Education Committee has considered two teaching awards in a year, but so far has come to no consensus as to how the two awards would be distinguished. In my view, no matter how it is done, one award must be reserved for teaching faculty.

A subcommittee which is not active at the moment is Committee on Education Materials on the CMS website. This committee, consisting of creative, hard-working individuals, was developing a plan was to use the CMS server as a repository for a variety of educational materials (textbooks, videos, apps, etc.) that they have created and/or collected, and that would be collected. Without going into detail – with a good amount of frustration, the committee members decided to abandon the work on this project. At the time when I'm writing this, it is not clear if this work will resume.

In conclusion, there is work to be done, to rethink things, make them better, and to possibly start some new initiatives.