

Report of Student Success Working Group 1D

To begin, we introduced each other and focused our thinking by suggesting a phrase or word that we each associate with at-risk math learners. In the early stages, we thought that we needed to define terms related to at risk learners – who they are, what they are at risk of, etc. We connected student success to issues related to teachers’ knowledge, attitude, and proficiency, real-life connections, students’ past experiences, work habits, and understanding, streaming (when and how), class size, and the pressure to “do calculus”. Once we considered more deeply what our hopes are for all learners and how we recognize students who are struggling, we decided we had captured the essence of the issue and realized that definitions related to student success are fluid and students move in and out over time. Our focus then narrowed to considering how we can best work towards success for all learners. We divided ourselves into four groups, each tasked to consider a piece of the puzzle.

Since the focus is on what WE can do to make a difference, one group considered classroom level interventions. In their report, they highlighted the importance of:

- quality interactions and relationships
- opportunities for and comfort with expressing a need for help
- journal writing, portfolios and open-ended questions to assess student understanding
- opportunities for students to correct errors that have been identified (movie math)
- use of past performance records and conversations with parents to identify student needs
- listening to and being responsive to students and encouraging them to share their feelings; using this to assess their needs
- math learning centre
- fostering a community of learners that encourages risk taking
- engaging questions that fosters thinking
- extra time and after school tutoring
- opportunities for students to reflect about their learning often and consider how they see themselves as learners with support from teacher as coach/model
- designing for and building on success

The group also considered the appropriate timing of interventions – sooner rather than later and concluded that the interventions listed are good for all students, not just at-risk students.

A second group considered the possible reasons why student disengage. In their report, they commented:

- The feedback that students receive tends to be negative. Success needs to be redefined so that it is not just getting the correct answer. We need to build on the positive.
- The hierarchy of math courses that is used by post secondary institutions to filter and sort applicants regardless of the relationship of the math learned to the needs of the program. If the student can do the mathematics, then it is valuable.
- Math field trips so students can “see” the math

- Communication in groups to foster the skills necessary for the work environment
- Support the construction of student generated algorithms and appreciate the understanding students develop
- Math labs, fairs and Olympics to engage students
- At-risk strategies for math need to be defined and available in all schools so that students get the interventions they need at the appropriate time

The third group considered broader issues of support and interventions. In their summary, they suggested:

- Teachers need to be wise and flexible in their use of technology; both for their own professional growth as well as to facilitate student learning
- We need to teach students to discover and communicate their own needs
- Smaller classes
- Improved assessment practices
- Ensure that teachers understand what curriculum is to be taught and when is the most appropriate time to teach the concepts
- Decrease the content and increase the emphasis on process in the curriculum
- Use of good math sites (MATHCENTRAL)
- Use of assessment of students to know where they are so that appropriate “bridging” activities can be designed

The fourth group considered teacher creativity and how it can be used to foster relationships and motivate learning. The group commented:

- On the importance of being sincere, personal and respectful
- It takes creativity and trust to observe how students learn, encourage their creativity, grab at connections and differences
- Teachers need to trust in their own creativity
- Teachers share their life, their style and their personality with students.
- Peer tutoring and exchange provides opportunities for students to be creative and support each other
- The need to be flexible within content
- Teachers face the challenge to turn things “upside down” in students’ heads to help them learn

These conversations set the scene for the wrap-up. The following actions were suggested:

- Political statement summarizing collective voice, including recommendations to be used to lobby for change to specific bodies
- Establish a place for the relaying of ideas and sharing of successes, concepts and concerns
- Marketing campaign to promote mathematics education and ideas for good practice and changes in practice
- Influence a publisher to create the right materials
- Models for follow-up conferences to continue the work begun with this conference
- Address national bodies to influence and advise appropriate bodies.

- Follow up forum specifically on early intervention
- Make mathematical resources available and accessible
- Expand dialogue between provinces
- Improve teacher education (teaching and mathematics)
- Divert funds from NCTM Journals to support this organization

There was a desire within the group to take action that would accomplish several goals:

- Improve attitudes towards mathematics
- Reduce math anxiety and the elitist mind set
- Connect with the world of students
- Provide opportunities for success in a mathematical endeavour
- Begin to get people thinking differently about what mathematics is necessary for life and further learning
- Be fun
- Put math in the spotlight

This discussion gave rise to the pursuit of a major national math event – a day or a week of preplanned math activities around a specific happening or theme (e.g., Olympics 2010) that would provide the opportunity for involvement of all students in all Canadian schools. Members of the Working Group 1D, representing most provinces and territories, embraced the idea and expressed interest in being involved with the planning of the event. The possibility of a preliminary event (one day) to be staged within the next 2 years was suggested and supported.

Stuart Craven and Anna Spanik committed to take leadership roles in this project.