

Report to Council and the AGM from the Education Group on December 4, 2017.

The NZMS Education Groups' aim is to advocate for the enhancement of mathematics education in New Zealand through collaborative and constructive engagement with stakeholders.

In particular, our objectives are the following:

- To support learning in mathematics by encouraging effective curriculum, teaching, and assessment at all levels.
- To facilitate networking, collaboration, and the exchange of ideas through meetings, sessions, and electronic media, with regards to:
 - The teaching of mathematics
 - Mathematics curriculum
 - All other issues related to providing students with effective and engaging encounters with mathematics in their courses of study.
- To work cooperatively with other organizations to encourage effective teaching and learning of mathematics.
- To build connections between tertiary and secondary mathematics education.
- To provide advice and guidance on education issues related to mathematics.

The membership of the group is open to anyone in NZ who is interested in education in mathematics. We currently have 52 members who have subscribed to our listserv, including secondary and tertiary educators as well as mathematics education researchers. We have different levels of membership: executive committee, interest groups, and informational. The executive committee consists of the convenor, secretary, membership secretary, communications secretary, webmaster, and 5-10 members representing stakeholders and interest groups. Currently there are 15 members of the executive committee.

Members are encouraged to form interest groups and put their efforts into their interest areas. The current interest groups of the committee are:

- FYiMaths NZ group to provide support and information for academics and educators teaching mathematics in undergraduate, foundation, and secondary.
- Advocacy for improved teaching and learning of maths in NZ schools, including input into NCEA.

We have been promoting these interests at the NZAMT (NZ Association of Maths Teachers) conference in October and at the NZMS Colloquium as well as using the NZMS newsletter and social media (Facebook and Twitter). At NZAMT we had four activities:

1. NZMS Panel: 'Preparing for the Future, Transition from High School to University: Debating Technology' with moderator Cami Sawyer (Massey U) and participants Julia Novak (UoA), Stephen McConnachie (Middleton Grange School), and Dan Meyer (keynote speaker from USA, Chief Academic Officer at Desmos). The session was well attended and sparked lively interactions.

2. FYiMaths 2 hour workshop: ‘Seeing the future: First Year Mathematics at University, the challenges faced by lecturers and students in an ever-changing landscape’ was organised by Cami Sawyer and Julia Novak. We had attendance from many universities around NZ including staff from UoA, Massey (Albany and Palmerston North Campuses), Otago, and Victoria. One of the original FYiMaths founders, Dr Deb King of the University of Melbourne, presented and we had activities that opened communication and brought out common concerns, issues, and misconceptions. Everyone seemed to have learned something from the workshop.
3. NZMS sponsored keynote ‘Life outside the Maths Classroom’. Was a very interesting and inspiring talk by two young speakers:
 - Alexia Hilbertidou, the 17 year old founder of GirlBoss NZ, an organisation which encourages young women to embrace male dominated STEM fields.
 - Nick Edwards a particle physicist and Software Engineer.
4. Meet and greet over morning tea where Cami Sawyer and Julia Novak met with teachers and talked to them about joining NZMS Education Group and asking them to fill in the survey cards. We had 61 responses to the survey.

We feel that the New Zealand Mathematics community (educators, researchers, and employers) need to address changes to the teaching, learning, and general use of mathematics. Leading into the Colloquium the group has launched an effort towards creating a vision of 21st century mathematics for NZ schools. We are currently focussing on the secondary sector. However, past, recent, and future changes in this area affect universities and employers as well.

Some questions we are considering:

1. What are the purposes of school mathematics education?
2. How can we promote an equitable common mathematics pathway?
3. What are the essential mathematical concepts and habits of mind that all high school students should learn and understand at a deep level?
4. How should changes in technology be reflected in secondary school mathematics?

We expect that the activities at Teacher Day and discussions surrounding this will lead to further work in this area.

NZMS Education Group Executive Committee

Pip Arnold, Peter Bier, Richard Brown, Julia Crawford, Tanya Evans, Sione Ma`u, Dillon Mayhew, Stephen McConnachie, Julia Novak, Cami Sawyer, Phil Truesdale, Rachel Passmore, Caroline Yoon.