

DEVELOPING NEW MATHEMATICS TEACHER LEARNING IN SCHOOLS AND THE STEM AGENDA

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Short description of the Discussion Group: aims and underlying ideas

The juxtaposition of school centred teacher preparation with shortages of well-qualified mathematics and science teachers at primary and secondary level in our countries raises big questions.

The main purpose of this Discussion Group is to draw together international perspectives in exploring what can be learned about successful teaching and learning of mathematics-related fields by teachers, beginner teachers and teachers seemingly teaching ‘out of field’; and to consider challenges for practice. The intention is to find ways of supporting the preparation of teachers in schools where reality is that expertise may be thin on the ground. We draw upon stimulus material from tertiary education and from informal learning, and this experience comes from practice, from policy, from research and from scholarship.

Outcomes include a sense of direction in the reality of preparing new mathematics teachers through school-centred approaches; international networks that sustain and lead to collaborative intervention projects; ways for mathematics teacher educators to position their work alongside policy and practice in schools.

Planned structure:

Tuesday, 16.30-18.00:	Topic	Material / Working format / presenter
16.30 – 16.40	Introduction <ul style="list-style-type: none"> • How do we support our teachers more in mathematics and science • How do we provide opportunities to experience expert teaching? 	Short presentation and big framing questions for discussion group: Pat Drake
16.40 – 16.45	Can Action Learning instigate rich mathematical dialogue through open ended questioning and facilitate a collaborative supportive culture? What	Stimulus input: Action Learning with teachers. Lin Phillips

	about silence?	
16.50 – 16.55	In what ways can lesson study help pre-service teachers learn science content and develop inquiry-based pedagogy?	Stimulus input: Lesson study Barbara Black
17.00 – 17.05	If ‘Mindset’ relates to positive/negative attitudes what are some possible interventions for pre-service teachers working in schools?	Stimulus input: Mindset with Attitudes Jeanne Carroll
17.10 – 17.15	The pros and cons of context, and professional development opportunities for teachers teaching out of field are outlined.	Stimulus input: ‘Out of field’ as a resource in school-based teacher learning of mathematics. Pat Drake
17.15 – 17.40	Discussion	Discussion of issues raised. Chair Pat Drake
17.40 – 17.45	‘This works for me’	Participants invited to bid for 5 minute slot for the second session. Also continued via Twitter/ICME-13 App
17.45 – 18.00	Summarize issues to take forward	

Friday, 16.30-18.00: Planned timeline	Topic	Material / Working format / presenter
16.30 – 16.45	<ul style="list-style-type: none"> How can effective partnerships be developed that connect national priorities with practice on the ground? Can successful local practice be ‘scaled up’, i.e., is anything generalizable from the specifics of local experience? 	Summary of issues brought forwards
16.45 – 17.30	‘This works for me’ speakers from bids for time and discussion	Development of STEM and schools ideas.
17.30 – 17.45	Response from policy perspective	Celia Hoyles
17.45 – 18.00	Next steps	