Computational and algorithmic thinking, programming and coding in the school mathematics curriculum: Sharing ideas and implications for practice

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Short description of the DG: organizers, aims and underlying ideas

Max Stephens and Djordje M. Kadijevich are the co-authors of the entry on Computational/algorithmic thinking in the Springer Encyclopedia of Mathematics Education (second edition, 2020) and have written extensively on the emerging impact of CT/AT on the school mathematics curriculum, including a chapter in the forthcoming ICMI24 Study. Zhang Qinqiong is a professor at Wenzhou University China and has published widely on teacher capacity as an essential component of national curriculum reform.

Computational/algorithmic thinking, programming and coding are emerging areas of importance for mathematics thinking, increasingly being located across the school mathematics curriculum in some countries worldwide. This Discussion Group is intended to provide a forum for bringing together these international trends and their growing impact on the curriculum – both in the compulsory years of schooling as well as in the senior high school years. It is aimed at teachers, mathematics curriculum experts, and teacher educators who are engaged or keenly interested in these issues, mostly from a practical point of view.

Participants are invited to share recent developments from their own countries or their own teaching experience in one or more of the following three areas: 1) current or proposed curriculum provisions/developments from their home country; 2) relevant classroom/ teaching activities; and 3) resources to support teachers.

For each area, a 300-400-word account (including your name, country and affiliation, plus one or two references) should be sent to Max Stephens at m.stephens@unimelb.edu.au by 15th of June. All contributions will be posted at a website in July before the conference, and a selection of these will be presented and discussed during the work of the Discussion Group. Depending on the quality of contributions received and discussion realized, a post conference publication may be prepared and published, such as a journal paper or a book chapter

Planned structure (21:30 – 23:00, July 14):

Planned timeline	Planned activity	Working format /Responsible person
21:30-21:45	Short introduction	Introduction to the DG and its website
21:45- 22:05	Current/proposed curriculum provisions	Discussion on four or more selected national examples (Max Stephens)
22:05-22:25	Classroom/teaching activities	Presentation and discussion on selected classroom/teaching activities (Zhang Qinqiong)

22:25-22:45	Resources to support teachers	Discussion of available resources to support teaching of CT/AT (Djordje M. Kadijevich)
22;45-23:00	Post conference developments	Recommendations for continuing collaboration/discussion (Max Stephens)
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