

## A FRAMEWORK FOR MATHEMATICS TEACHER EDUCATION: LINKING TEACHER PERSPECTIVES TO MATHEMATICS TEACHING COURSES

Gulseren Karagoz Akar

Ali Delice

Nicola Hodkowski

Boğaziçi University

Marmara University

University of Colorado

Emin Aydın

Tim Rowland

Stefan Zehetmeier

Marmara University

University of Cambridge

University of Klagenfurt

Esra Bukova-Guzel

Bulent Guven

Pat Thompson

Dokuz Eylül University

Karadeniz Teknik University

Arizona State University

### **Short description of the Discussion Group: aims and underlying ideas**

*The focus of the discussion group will be two-fold: First day, the discussion will be centered on introducing and discussing mathematics teachers' perspectives. For that, we plan to discuss and define each of the perspectives on teaching. Then, we plan to discuss Knowledge Quartet framework and how perspectives framework differ from other notions in the field such as beliefs, dispositions, etc. Finally, we plan to discuss how perspectives framework may assist mathematics teacher educators and how it could be studied with the account of practice methodology. The second day, the discussion will focus on fostering teachers' advances along the perspective continuum. For that, we plan to discuss how quantitative reasoning framework might contribute to math teacher education and what research has been done in Turkey to foster progress toward the Progressive Incorporation Perspective (PIP): In particular, we plan to discuss the i) quantitative reasoning ii) tasks focusing on logico-mathematical and empirical learning processes, iii) conceptual analysis, and iv) clinical interviewing as a possible four-column base framework for the development of PIP in the methods and practice teaching courses. Therefore, our aim will be to strategize with each other, to consider how best to encourage and facilitate such integration. Another aim linked to this, will be to share our experiences, both successes and failures, in efforts to develop and promote such integration.*

### **Planned structure:**

Tuesday, 16.30-18.00: Planned timeline	Topic	Material / Working format / presenter
5 minutes	<i>Welcome</i>	Gulseren Karagoz Akar

*Last names of the organisers*

20 minutes	<i>Overview of Simon/Tzur/Jin's framework (US and China studies)</i>	Nicola Hodkowski
20 minutes	<i>Overview of Rowland's Knowledge Quartet and of a Perspective Framework to guide prospective mathematics teacher education</i>	Tim Rowland
10 minutes	<i>Discussant responses to key Perspective ideas</i>	Gulseren Karagoz Akar
10-15 minutes	<i>In what way is the notion of Perspective different than other notions used in the field (e.g., beliefs, dispositions, etc.)?  How may this notion assist mathematics teacher educators?</i>	Whole Group
10 Minutes	<i>Overview of a methodology (Account of Practice)</i>	Ali Delice
20 Minutes	<i>Why is interweaving of classroom observation and teacher interviewing needed to account for her/his perspective?</i>	Whole Group

Friday, 16.30-18.00: Planned timeline	Topic	Material / Working format / presenter
5 minutes	<i>Welcome and Recap of First Session</i>	Gulseren Karagoz Akar
20 minutes	<i>Overview of a Thompson's Framework on Mathematical Understandings – Quantitative vs. Numerical Operations</i>	Pat Thompson
20 minutes	<i>How might Thompson's framework contribute to math teacher education?  What kind of data collection and analysis of teachers' mathematical reasoning is involved/needed?</i>	Small Groups
20 minutes	<i>Overview of Teacher Educators' work (Turkey) to foster progress toward the Progressive Incorporation Perspective</i>	Stefan Zehetmeier Gulseren Karagoz Akar Esra Bukova Guzel Emin Aydin Bulent Guven

20 minutes	<i>Do the perspective frameworks provide a learning trajectory to guide math teacher development? In what sense are the different perspectives ordered developmentally?</i>  <i>What lessons could we glean from the work done in Turkey?</i>	Small Groups
10 minutes	<i>Conclude - key points discussed and possible next steps</i>	Gulseren Karagoz Akar Whole group

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