(RE)CONCEPTUALISING THE EXPERTISE OF THE MATHEMATICS TEACHER EDUCATOR

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Furthering discussions emergent from working groups of the same topic at both PME43 and PME44 (Helliwell & Chorney, 2019; 2021) and building on PME working groups of the past (e.g., Goos et al., 2011), we continue to explore (re)conceptualisations of expertise of the mathematics teacher educator (MTE) that look beyond the boundaries of the individual to material and social elements of constitution and constraint. Currently, several descriptions of MTE expertise exist that make use of and extend descriptions of mathematics teacher knowledge. For instance, Chick and Beswick (2018, pp. 479-482) present a framework of 22 categories of Pedagogical Content Knowledge (PCK) for school mathematics teachers (which they label SMTPCK), each mapping to a corresponding category of PCK for mathematics teacher educators (which they label MTEPCK). In fact, category-based descriptions of mathematics teacher and mathematics teacher educator knowledge proliferate the literature on the subject. Chapman (2021), however, suggests that category-based perspectives on MTE knowledge can provide a simplistic view of what it is and that "research needs to give attention to other ways of representing it as a complex system or way of thinking" (p. 412). The aim of the present working group is to generate alternatives to category-based perspectives of MTE expertise that capture its complex nature. One suggestion is to frame MTE expertise by turning our gaze outward, by drawing on Hutchins' (1995) model of "distributed cognition" as a balance between knowledge and external agencies. Of particular interest is to explore and develop potential methodologies and methods that support these distributed frameworks.

At both PME43 and PME44, we established a foundation of inquiries and themes towards perspectives of non-centralisation that drew on notions of distributed cognition (Hutchins, 1995). From PME44, emergent issues included: 1) Ways of differentiating who and where MTEs are (e.g., university-based MTEs or facilitators of professional development); 2) What MTEs attend to in the moment of teaching mathematics teachers; and 3) The meaning of content in mathematics teacher education (e.g., ways of describing mathematics education). In terms of the present working group, we intend the subgroups formed to continue their conversations and develop ideas further as well as welcoming new participants.

AIMS OF WORKING GROUP

- To summarise some of the interests and questions from the participating community from the two previous working groups to lay foundations for further refinement and development in thinking about and researching MTE expertise.

2022. In C. Fernández, S. Llinares, A. Gutiérrez, & N. Planas (Eds.), *Proceedings of the 45th Conference of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 207-208). PME.

- To explore and develop research questions and potential methodologies that support researching these various interests and questions.

OUTLINE OF SESSIONS

Session 1

- Introductions and summary of previous discussions on MTE expertise. The presenters will share some personal experience of expertise that emerged from distributed activity. The presenters will engage in a method of reading each other's experience of expertise through a distributed lens as a potential model for group activities in session 1.
- Participants share in groups their experiences of MTE expertise discuss with others possible interpretations of these experiences.
- Whole group discussion with a focus on interpretations and what forms of distribution emerge. Themes will be noted for session 2.

Session 2

- Building off session 1, groups will be organised by interest, according to discussions in session 1. Groups will develop their own questions, but the leaders will provide prompts to support engaging with questions from a distributed approach.
- Each group will share responses and then discuss on next steps for future collaborations, including consideration of a joint output for participants such as a special issue for the *Journal of Mathematics Teacher Education*.

References

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Hutchins, E. (1995). *Cognition in the wild*. MIT Press.