

ESM 3: Structure of the study group meetings (M #)

Welcome & Introduction		
Activities of algebra (Kilpatrick et al., 2001; Kieran, 2007) – presentation (M #1) or a brief revisit (M #2 – M #7)		
Engagement with Problems (as indicated in Table 1) & Sharing solutions		
Various Activities	M #1	<p>Problem #1 (Tripathi, 2008)</p> <p>Types of representation system (Lesh et al., 1987); The notions of ‘translations among’ and ‘transformations within’ representations (Lesh et al., 1987; NCTM, 2014)</p> <p>Application of the notion of translations among representations (Lesh et al., 1987) to Problem #1</p>
	M #2	<p>Problem #2 (Ito-Hino, 1995)</p> <p>Paper discussion: simultaneous linear equations with two variables, informal and formal strategies to solve them (Ito-Hino, 1995)</p> <p>Application of the notion of translations among representations (Lesh et al., 1987) to Problem #2</p>
	M #3	<p>Problem #3 (Musser et al., 2008)</p> <p>What is a representation? (a brief revisit)</p> <p>Pedagogical representations (Cai, 2005; Author, 2022)</p> <p>Application of the notion of translations among representations (Lesh et al., 1987) to Problem #3</p>
	M #4	<p>Problem #4 (Star & Seifert, 2006)</p> <p>Application of the notion of transformations within representations (Lesh et al., 1987) to Problem #4</p> <p>Teaching strategies for improving students’ algebra knowledge: have students evaluate and compare different strategies for solving problems</p> <p>The development of flexibility in equation solving (Author, 2021; Star & Rittle-Johnson, 2009)</p>
	M #5	<p>Problem #5 (Star & Seifert, 2006)</p> <p>Application of the notion of transformations within representations (Lesh et al., 1987) to Problem #5</p> <p>The development of flexibility in equation solving (Author, 2021; Star & Rittle-Johnson, 2009); The comparison strategy (Rittle-Johnson & Star, 2007)</p>
	M #6	<p>Problem #6 (Kieran, 1992)</p> <p>Paper discussion: the development of algebraic symbolism (Kieran, 1992)</p>

	Solutions to Problem #6 in relevant literature (Author et al., 2022)
M #7	Problem #7 (Kieran, 1992)
	Paper discussion: the use of letters to express the general (Kieran, 1992)
	Procedural vs. structural conception of algebra (Kieran, 1992)

Reflections/thoughts, Negotiating next meeting & Closing

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