



Promoting Financial Numeracy through Mathematics Education

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Financial literacy is being increasingly recognised as essential in contemporary society. However, its integration into education remains contested. Narrow definitions of financial literacy emphasise knowledge acquisition, while broader conceptions also include attitudes, behaviours, and decision-making skills. Furthermore, while a strong link between numeracy and financial literacy is acknowledged, the role of numeracy is often reduced to performing basic arithmetic procedures, neglecting the broader numeracy perspective adopted in mathematics education. This study aims to address this gap by exploring how financial numeracy can be fostered within mathematics education. By acknowledging that financial numeracy extends beyond knowledge to include behavioural and attitudinal dimensions, this research seeks to identify challenges in students' financial decision-making and behaviour and thus determine the likely conditions necessary for a successful educational intervention.

The research was carried out in two iterative cycles of Design-Based-Research involving 30 students (ages 8–10) from rural primary schools in Baden-Württemberg, Germany. Data collection included pre- and post-intervention interviews and classroom observations. The design of the intervention was guided by promising approaches to financial literacy in mathematics education elaborated in earlier studies: learning through experiences and a focus on numeracy. The latter is increasingly understood as a social practice – emphasising how people actually use mathematics in real-life situations and how this use is shaped by contextual and social influences (Yasukawa et al., 2018).

Analysis focused on students' financial decision-making and behaviour, with the following dimensions of numeracy by Goos et al. (2014) guiding the analysis of challenges for financial numeracy: Mathematical Knowledge (concepts, problem-solving, estimation); Contexts (real-world application); Dispositions (confidence and adaptability); Tools (physical, digital, and representational aids); and Critical Orientation (using mathematics to make decisions, build arguments, and evaluate positions). Findings show that many students struggled with flexible strategy use, contextual interpretation, and validation of mathematical solutions. Additionally, social reasoning often replaced mathematical thinking, and students found ways of minimising or avoiding mathematical effort in the experiential learning environment.

The findings imply that experiential learning must be paired with structured reflection to foster financial numeracy. There is a need for thoughtfully designed reflective tasks to enhance students' dispositions and critical orientation towards purposefully applying mathematics in financial contexts.

References

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For more information, please refer to the following paper presented at the 47th Annual Conference of MERGA in July 2025.
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