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TRANSFORMING MATHEMATICS EDUCATION: LESSON STUDY AS A PATHWAY FOR FUTURE TEACHERS

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ABSTRACT

In an era where the complexities of science, engineering, and societal challenges demand an ever-evolving educational paradigm, the preparation of future teachers must transcend traditional methods. This study explores an innovative approach to teacher education, integrating active and challenging strategies within an interdisciplinary framework to cultivate educators capable of fostering meaningful and dynamic learning environments.

Grounded in the principles of theory-informed lesson study, this research examines the pedagogical development of prospective primary school teachers. By adapting learning study methodologies to the specific context of teacher preparation, the intervention aimed to bridge the gap between theoretical knowledge and practical application. Seventeen participants engaged in collaborative task design, reflective practice, and iterative refinement. This structured engagement facilitated a discernible transition from conventional expository teaching methods towards student-centred, inquiry-driven pedagogical practices, fostering an understanding of mathematics applied in scientific contexts.

The findings underscore the transformative impact of this approach. Participants demonstrated a significant evolution from merely replicating traditional instruction to adeptly designing lessons that demonstrably stimulate engagement, ignite curiosity, and cultivate critical thinking within their future professional practice. Furthermore, the study highlights the crucial role of structured collaborative reflection in enhancing educators' confidence and pedagogical adaptability.

By aligning mathematical instruction with interdisciplinary applications, this research contributes to the broader discourse on education reform, advocating for methodologies that prepare teachers to meet contemporary educational challenges. The implications extend beyond the domain of mathematics education, offering a scalable model for fostering educator development across disciplines. This study serves as a call to action for embracing evidence-based, reflective teaching strategies that empower future teachers to shape the next generation of learners.

Keywords Lesson study · Prospective teachers · Mathematics

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