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A Qualitative Study of the Efficacy of Teaching for Conceptual Understanding to Enhance Confidence and Engagement in Early Mathematics

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Abstract : Research suggests that the pedagogy we utilize when teaching mathematics contributes to a negative attitude towards the discipline. Worried by this, we have explored teaching mathematics for understanding, fluency, and confidence. We investigated strategies to engage students with the beauty of mathematics, moving them beyond mimicry and memorization. The result is an integrated pedagogy and curriculum arrangement which combines concept-based mathematics with Number Talks, Visible Thinking Routines, and Teaching for Understanding. Our qualitative research shows that students self-report greater self-confidence and heightened engagement with mathematical thinking. Teacher reflections on student learning echo this finding. As a result of this, we advocate for teacher training in the implementation of a concept-based curriculum supplemented with Number Talk strategies.

Keywords : mathematical thinking, teaching for understanding, student confidence, concept-based learning, engagement
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