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Topic of Research: Understanding Classroom Processes in the Context of Teachers' Beliefs about the Nature of the Subject and its Practice

Findings

- Most teachers lean towards a constructivist view in mathematics, preferring inquiry-based, student-centred and group learning-based tasks where students actively construct knowledge. Interestingly, despite the constructivist preference, most teachers emphasised procedural understanding over conceptual understanding.
- Teachers showed mixed beliefs on whether mathematics is a fixed body of knowledge or an evolving discipline. Similarly regarding the philosophical nature of mathematics, mixed views were observed on whether mathematics is a discovered or created body of knowledge.
- Teachers' beliefs about environmental studies (EVS) and its teaching reveals a strong preference for an interdisciplinary approach, process-oriented learning, and including socio-cultural issues.
- Seven out of ten teachers viewed EVS as a comprehensive subject that encompasses environmental education.
- Five teachers believe that the study of EVS begins in classes 1 and 2 in an integrated manner, often supported by mathematics and language.
- While 7 teachers favoured having a single EVS textbook instead of separate science and social science textbooks, three teachers still preferred to keep the subject separate.
- Most teachers expressed a preference for theme-based teaching in EVS, which was evident in their classes where themes such as food or work served as organising principles.
- Eight out of ten teachers highlighted the importance of developing EVS skills, such as observation, classification, differentiation, and recording (Wilson, 2012; Scott, 2002). Nonetheless, only four teachers were observed using teaching strategies that actively promoted these skills in their classrooms.
- The engagement process worked well for teacher A, who was starting to adopt constructivist ideas. During interactions, she emphasised the importance of understanding student thinking, allowing for different approaches, and connecting mathematics to everyday life. Observations after the engagement showed her making efforts to act on these beliefs through hands-on tasks like A.M./ P.M. role play and valuing students' unique responses as chances for learning. This indicates that engagement supported her beliefs in using activities more in the classroom.
- Teacher B showed a gap between her stated belief and her actual practices. Although she

emphasised the importance of understanding concepts and exploration during interviews, her post-engagement practices were focussed mainly on teaching procedures, such as demonstrating how to use the subtraction algorithm.

- Teacher A tried student-centered activities, but there were challenges, like students talking to each other and her need to balance explanations with questions. Belief changes can start through reflection, but putting them into practice requires dealing with student behaviour, time limits and curriculum needs. For Teacher B, using procedural methods allowed her to manage large classes effectively. This may explain why she returned to teaching algorithms even though she valued exploratory methods; therefore, while incremental changes were possible (like adding reasoning questions), full implementation faced challenges.