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AN INTEGRATED CODEBOOK TO REALISE GUIDELINES FOR TECHNOLOGY ENHANCED REALISTIC MATHEMATICS EDUCATION

Abstract:

Effective Mathematics teaching and learning remains a priority globally, but particularly in South Africa. Practicing Mathematics teachers in South Africa have a need for effective and meaningful support and training on relevant content and pedagogy. A circular process of coding allows for the integration of current research literature and empirical data. During a systematic literature review, a codebook was created, reviewed and revised for the relevant context when applied to two further sets of data. The aim was to generate guidelines on how technology can be used to implement the principles and characteristics of Realistic Mathematics Education. Stratified purposive sampling was used to select participants from in-service teachers enrolled for post-graduate studies in Mathematics education. Qualitative design-based research was applied to collect three sets of qualitative data, which included a systematic literature review, individual interviews with participants and focus-group interviews following an intervention phase. All data were coded, sorted and summarised into themes using computer assisted qualitative data analysis software (CAQDAS), ATLAS.ti™. The integrated codebook assisted in creating theoretically and empirically grounded guidelines for employing technology in the implementation of the Realistic Mathematics Approach in teaching practice.

Keywords:

Mathematics Education, Realistic Mathematics Education (RME), codebook, technology, design-based research, ATLAS.ti™.