

Success Profiles of Multicontextual Mathematics Learning Approaches: A Meta-Analysis

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ABSTRACT

This study aims to determine the overall impact of successful multicontextual mathematics learning approaches and test moderator variables to explore their consequences. Databases from ERIC, Publish or Perish, Scindirect, Taylor & Francis, Springer publications, Scopus, Web of Science, Google Scholar, and PubMed were used to identify empirical data. This study examined 56 effect sizes from 28 individual studies conducted in the past decade, involving 6194 students. The estimation procedure was according to the random effects model using R studio software. The findings showed an overall effect size of 0.74; $p < 0.0001$, meaning that the multicontextual approach contributed significantly and strongly by 74% to successful mathematics learning. Analysis of moderator variables showed that the application of this multicontextual learning approach would be more efficient when considering the sample size and learning combination. This finding emphasises the importance of considering variables that influence the effectiveness of these approaches. In addition, comparisons were also made between multicontextual approaches in different countries and a discussion of the limitations of this study. The information from this comparison and discussion is considered important as a basis for further research and development of multicontextual approaches in mathematics learning.

Keywords: Meta-Analysis, Multicontextual Approach, Mathematics Learning, Effect Size, Moderator Variables

