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Measurement of Mathematical Modeling in Mathematics Education Context: A Systematic Literature Review

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Abstract

In recent years, the rise of mathematical modelling is well documented in the literature and curriculum like Australia, Germany, and Singapore because it helps students to tackle real-world issues using mathematics. The research presented in this article was a systematic review of the literature on assessment of mathematical modeling in the setting of mathematics education published in the previous five years. This research compiled the current best information from around the world to offer an overview of assessment of mathematical modeling for preservice mathematics teachers or mathematics teachers. We followed the approach used in Joklitschke et al. (2021), which involve 10 steps in systematic literature review (SLR). We accessed using Web of Science (WoS), Scopus and Journal for Research in Mathematics Education (JRME), Educational Studies in Mathematics (ESM), Journal of Mathematical Behavior (JMB), For the Learning Mathematics (FLM), Mathematical Thinking and Learning (MTL), Journal of Mathematics Teacher Education (JMTE), Zentralblatt für Didaktik der Mathematik (ZDM), and Mathematics Education Research Journal (MERJ). Based on a full-text analysis of 18 peer-reviewed papers published in English, it can be observed that most of the approach used to measure modeling competency were conducted by holistic. Finally, future trends and opportunities are discussed.

Keywords: *mathematics teachers, measurement, modeling competency, preservice mathematics teachers, systematic review*