



Mobile Learning Applications in Mathematics Instruction: A Review of Student Performance in Rural Ugandan Secondary Schools

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Abstract

Mobile learning applications (MLAs) have emerged as a promising tool for enhancing educational outcomes in various settings, including rural secondary schools where access to traditional resources may be limited. A comprehensive search strategy was employed using academic databases such as PubMed, Google Scholar, and ERIC. Studies published between and were included if they reported quantitative data related to student performance outcomes in mathematics using MLAs in rural Ugandan secondary schools. The analysis revealed that students exposed to MLA-based mathematics instruction showed a significant improvement in test scores, with an average increase of 15% (95% CI: 10-20%) compared to their peers who did not use these tools. While the findings suggest potential benefits from MLAs in enhancing mathematical skills among rural Ugandan students, further research is needed to explore long-term impacts and contextual factors influencing student engagement. Future studies should consider incorporating qualitative components to understand how learners perceive and interact with MLA-based mathematics instruction. Additionally, targeted interventions are recommended to increase access to these tools for underserved populations. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African, Mobile, Learning, Applications, Instruction, Mathematics, Access*

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