ICT Platforms and Academic Achievement Among Ugandan Junior High School Students: A Two-Year Intervention Study

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Abstract

ICT platforms have been introduced to improve educational outcomes in developing countries, including Uganda. A randomized controlled trial was conducted with 500 participants across three schools. Pre- and post-intervention assessments were used to measure student performance in mathematics and science subjects. There was a statistically significant increase ($p < .05$) of 12% in average test scores for students who received the ICT intervention compared to controls, with confidence intervals ranging from 7% to 18%. The study also identified themes such as improved engagement and reduced absenteeism among participants. The use of ICT platforms significantly enhanced academic performance among Ugandan junior high school students over a two-year period. Schools should continue to integrate ICT resources into their curricula, with ongoing professional development for teachers to maximise the benefits of these tools. ICT Platforms, Academic Achievement, Junior High School Students, Uganda Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *African Education, Geographic Information Systems, Blended Learning, Digital Divide, Quantitative Research, Educational Technology, Hierarchical Linear Modelling*

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