Developing Technological Frameworks for Remote Learning in Ugandan Rural Areas: A Methodological Approach

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Abstract

Remote learning in rural Ugandan areas faces significant infrastructure challenges such as limited internet connectivity and outdated technology. A mixed-methods approach combining qualitative interviews with quantitative surveys to assess user satisfaction and system performance. Statistical models will be used to predict system adoption rates based on socio-economic indicators. The preliminary findings suggest a positive correlation between internet access speed and the likelihood of adopting the remote learning platform, indicating that moderate-speed connections are sufficient for basic educational needs. The framework demonstrates potential for improving educational outcomes in rural Uganda by leveraging existing technology infrastructure with targeted support mechanisms. Investment in community Wi-Fi hotspots and training programmes for teachers is recommended to ensure wide-scale adoption of the remote learning platform. 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.

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This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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