Designing Technological Solutions for Remote Learning in Rural Kenya: A Methodology Approach

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Abstract

The digital divide in rural Kenya exacerbates educational disparities, necessitating innovative solutions for remote learning. A mixed-methods approach combining surveys with experimental trials was employed. Data collection included quantitative assessments and qualitative interviews, ensuring comprehensive understanding of user needs and technological feasibility. The implementation showed a significant improvement ($p < 0.05$) in student engagement (mean participation rate: 82%) compared to pre-intervention levels, indicating the effectiveness of our design principles. This study underscores the importance of iterative prototyping and user-centred design in developing EdTech solutions for underserved communities. Further research should explore scalability and long-term impact of these technologies while addressing potential integration challenges with existing educational infrastructures.

Keywords: *Kenya, Geographic Information Systems (GIS), Participatory Action Research, Blended Learning, E-learning, Quantitative Methods, Qualitative Inquiry*

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