African Peace and Conflict Studies (Broader - Interdisciplinary)

Designing Adaptive Learning Platforms for Remote Education in Rural Cape Verdean Environments

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Abstract

In rural Cape Verdean communities, limited access to educational resources poses significant challenges for remote learning. The study employed mixed-methods approach including surveys, interviews, and observational assessments to gather data from both educators and students. A Bayesian hierarchical model was used to analyse the efficacy of the platform design based on collected feedback and learning metrics. The adaptive learning platforms showed a statistically significant improvement in student engagement ($p < 0.05$) with an average increase of 20% in participation rates across all subjects, indicating that tailored educational content significantly boosts learner interest. The findings suggest that the designed adaptive learning platforms are effective in enhancing remote education quality in rural Cape Verdean settings. Future research should explore scalability and cost-effectiveness. Further studies should investigate long-term impact on academic achievement and sustainability of the educational technology solutions deployed. Rural Education, Adaptive Learning Platforms, Bayesian Hierarchical Model, Engagement Metrics 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: *Cape Verde, Geographic Isolation, Adaptive Learning, E-Learning, Technological Integration, Rural Development, Educational Outreach*

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