The Impact of Online Educational Platforms on Dropout Rates and Graduation Outcomes in Rural Ethiopian Communities: An Analysis After One Year

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Abstract

This study examines the impact of online educational platforms on dropout rates and graduation outcomes in rural Ethiopian communities, focusing on computer science education. A mixed-methods approach was employed, combining quantitative data from surveys with qualitative insights from focus group discussions and interviews to evaluate the efficacy of online learning platforms in rural Ethiopian communities. Online educational platforms showed a statistically significant positive effect on reducing dropout rates by 20% ($p < 0.05$) compared to traditional face-to-face classrooms, with an average improvement of 15 percentage points in graduation outcomes among participants. This study provides empirical evidence that online learning can effectively enhance academic performance and retention rates in rural settings. Educational policymakers should consider integrating online platforms into their curricula to complement traditional classroom methods, especially in underserved areas with limited resources. Additionally, continuous professional development for teachers is recommended to ensure effective use of these tools. 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: *Rural Africa, Dropout Rates, Graduation Outcomes, Online Learning, Computer Education, Mixed Methods, Educational Assessment*

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