



Designing Interactive Learning Platforms for ESL Learners in East African Refugee Camps: Participation and Proficiency Growth Outcomes Analysis

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Abstract

This study addresses a current research gap in Computer Science concerning Designing Interactive Learning Platforms for English as a Second Language (ESL) Learners in East African Refugee Camps: Student Participation and Proficiency Growth Outcomes in Egypt. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A structured review of relevant literature was conducted, with thematic synthesis of key findings. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Designing Interactive Learning Platforms for English as a Second Language (ESL) Learners in East African Refugee Camps: Student Participation and Proficiency Growth Outcomes, Egypt, Africa, Computer Science, scoping review This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda \operatorname{Vert}\theta\operatorname{Vert}^2$, with performance evaluated using out-of-sample error.

Keywords: East African, Refugee Camps, Mobile Learning, Participatory Design, Language Proficiency, Technology Acceptance Model, E-Learning Platforms

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