African Robotics and Autonomous Systems

Enhancing Digital Literacy in Southern Sudanese Primary Schools: An Impact Assessment on Exam Scores in Namibia

Kwangwa Mokotlho[1,2], **Khama Mutati**[3]

[1] Department of Artificial Intelligence, Namibia Agriculture Research Institute (NARI)

[2] Department of Software Engineering, University of Namibia (UNAM)

[3] Department of Cybersecurity, University of Namibia (UNAM)

Published: 28 August 2009 | **Received:** 19 April 2009 | **Accepted:** 24 July 2009

Correspondence: kmokotlho@yahoo.com

DOI: 10.5281/zenodo.18892908

Author notes

Kwangwa Mokotlho is affiliated with Department of Artificial Intelligence, Namibia Agriculture Research Institute (NARI) and focuses on Computer Science research in Africa.

Khama Mutati is affiliated with Department of Cybersecurity, University of Namibia (UNAM) and focuses on Computer Science research in Africa.

Abstract

This study addresses a current research gap in Computer Science concerning Digital Literacy Programs for Primary School Students in Southern Sudan: Impact on Exam Scores in Namibia. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A mixed-methods design was used, combining survey and interview data collected over the study period. 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. Digital Literacy Programs for Primary School Students in Southern Sudan: Impact on Exam Scores, Namibia, Africa, Computer Science, original research This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. 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: *Digital Literacy, Sub-Saharan Africa, Mobile Learning, E-Learning, ICT Integration, Quantitative Research, Curriculum Evaluation*