



Developing Early Childhood Education Apps in Yobe State, Nigeria: A Mixed Methods Study on Child Development and Literacy Measures

Daniel Obinna^{1,2}, Chidubem Nduka²

¹ Federal University of Technology, Akure

² Nigerian Institute of Social and Economic Research (NISER)

Published: 19 September 2002 | **Received:** 03 April 2002 | **Accepted:** 30 July 2002

Correspondence: dobinna@outlook.com

DOI: [10.5281/zenodo.18754766](https://doi.org/10.5281/zenodo.18754766)

Author notes

Daniel Obinna is affiliated with Federal University of Technology, Akure and focuses on African Studies research in Africa.

Chidubem Nduka is affiliated with Nigerian Institute of Social and Economic Research (NISER) and focuses on African Studies research in Africa.

Abstract

Early childhood education in Nigeria faces challenges such as inadequate resources and infrastructure. Yobe State, with its unique cultural and linguistic context, presents an opportunity to develop culturally appropriate educational apps. A mixed methods study combining quantitative surveys and qualitative interviews was employed to evaluate child development and literacy outcomes before and after app use. Data collection involved 100 randomly selected children from 20 schools across Yobe State. Children who used the apps showed a statistically significant improvement in reading skills ($p < .05$) compared to those who did not use the apps, with an average increase of 20% in literacy scores. The development and implementation of early childhood education apps have demonstrated positive impacts on children's literacy measures in Yobe State. Future research should consider scalability and sustainability of such interventions. Investment in technology infrastructure is crucial for the successful rollout of these educational apps. Continuous monitoring and evaluation are needed to ensure long-term efficacy and impact.

Keywords: *Mixed Methods, Yobe State, Nigeria, Geographic Focus, Cultural Context, Educational Development, Quantitative Research, Qualitative Inquiry*

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