



# Virtual Reality Simulations in Nigerian Primary Schools: Cognitive Development Impact After One Year

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## Abstract

Virtual reality (VR) simulations have shown promise in enhancing educational experiences, particularly for STEM subjects. In Nigeria, primary schools are increasingly incorporating VR into their science curricula to improve student engagement and learning outcomes. A mixed-methods approach was employed, combining quantitative data from pre- and post-assessments with qualitative insights gathered from classroom observations and interviews with teachers and students. Quantitative analysis revealed a statistically significant improvement in critical thinking skills among students who used VR simulations compared to those not exposed to VR. Qualitative findings highlighted increased student enthusiasm for science subjects and better engagement during lessons. VR simulations appear effective in enhancing cognitive development, particularly in improving students' problem-solving abilities and spatial awareness related to STEM subjects. This study provides evidence supporting the integration of VR into Nigerian primary school curricula. School administrators should consider integrating VR simulations as a regular teaching tool for science education, with recommendations tailored to ensure equitable access across different regions of Nigeria.

**Keywords:** *African Geography, Ethnography, Virtual Reality, STEM Education, Cognitive Development, Participatory Observation, Anthropology*

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