Virtual Reality in Child Nutrition Education: Evaluating the Impact on Pre-Schoolers in Rwanda

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Abstract

Virtual reality (VR) technology has shown promise in education settings, enhancing engagement and learning outcomes among diverse populations. This study focuses on its application in child nutrition education within pre-schools in Rwanda, a context where such interventions are underutilized. A mixed-methods approach was employed, involving a pilot study followed by a randomized controlled trial (RCT) with both control and experimental groups. Pre- and post-test assessments were conducted to measure learning outcomes, while qualitative data on participants' engagement levels were collected through interviews and observations. VR training significantly increased participant engagement in the educational sessions compared to traditional methods, with an average of 75% higher participation rates observed across all age groups. Post-intervention surveys revealed a notable improvement in nutritional knowledge among children exposed to VR (30% increase) relative to those in control groups. The findings suggest that VR can be effectively utilised as a tool for enhancing child nutrition education, particularly in pre-school settings where traditional methods may struggle to engage young learners. Future research should explore scalability and cost-effectiveness of VR interventions. Given the positive outcomes observed, further development and implementation of VR training programmes are recommended for wider adoption in Rwandan pre-schools. Additionally, ongoing support and resources for educators should be provided to maximise programme impact. Virtual Reality, Child Nutrition Education, Pre-Schoolers, Rwanda

Keywords: *Rwanda, Virtual Reality, Pre-School Education, Nutrition Knowledge, Cognitive Engagement, Intervention Studies, Educational Technology*

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