AI in Storytelling and Interaction for Early Childhood Education

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Abstract:

With the rapid advancement of technology, Artificial Intelligence (AI) is increasingly being integrated into educational settings, including early childhood education. This research explores the role of AI in interactive storytelling, focusing on its impact on language development, creativity, engagement, and socio-emotional skills. A mixed-methods approach is used, combining both quantitative and qualitative data. The study involves two groups of children (ages 3-6): an experimental group using AI-driven storytelling tools and a control group exposed to traditional storytelling methods. Quantitative data, including pre- and post-assessments of language skills, socio-emotional development, and creativity, will be analyzed alongside engagement metrics such as interaction frequency and session duration. Qualitative data will be gathered through interviews with parents and educators, as well as observations of the children's experiences during storytelling sessions. Preliminary findings from the pilot phase suggest that children in the experimental group exhibited higher levels of engagement and creativity compared to the control group, with more frequent interactions and longer session durations. Early language assessments showed slight improvements in vocabulary and sentence structure, particularly in expressive language abilities. Observations also revealed more positive socio-emotional interactions, though these differences were less pronounced than improvements in language and creativity. The study will also address ethical considerations, including content appropriateness and developmental alignment of AI tools, and use statistical analyses and thematic analysis to provide insights into how AI can enhance early childhood education.

Keywords:

Artificial Intelligence (AI), Early Childhood Education, Storytelling Systems.