

From Oral Traditions to Virtual Domains: The Role of Virtual Reality in Reviving Children's Storytelling

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Abstract - Storytelling has served as a central tenet of knowledge transmission, cultural preservation, and holistic human development. Due to globalization and media surfeit, the oral storytelling tradition is facing a decline. As storytelling has a salient influence on the linguistic, cognitive, and social growth of children, this decline should not be treated superficially, and the tradition must be preserved. Accordingly, this study aims to explore how novel technologies such as Virtual Reality (VR) can be integrated into storytelling contexts to serve both cultural preservation and holistic child development purposes. Based on secondary data and a qualitative exploratory approach, the study seeks to examine how VR-based storytelling applications can be implemented for the holistic development of children. Furthermore, it explores how library contexts can be deployed as knowledge hubs through which such implementation systems can be established. The findings suggest that immersive and interactive storytelling methods can enhance children's engagement, language skills, emotional intelligence, and critical thinking skills. Moreover, culturally adaptive storytelling can promote inclusivity and cultural preservation. Accordingly, the study proposes a dual framework: a multilayered child development model centered on VR-based storytelling and an implementation strategy framework positioning libraries as cultural and educational hubs. Nevertheless, counterproductive elements such as the high cost of equipment and software, accessibility issues, ethical and privacy concerns, and the need for trained staff remain significant challenges. The study concludes that, if the proposed frameworks are implemented while ensuring ethical and inclusive practices, VR-based storytelling can serve as a viable channel for cultural preservation and holistic child development in the contemporary era.

Keywords: Child Development, Cultural Preservation, Library Services, Storytelling, Virtual Reality

I. INTRODUCTION

Storytelling is one of the earliest practices of human culture, predating written language by several millennia. From early hunter-gatherer societies, narratives functioned as a means of transmitting survival knowledge, social values, genealogies, and cosmological beliefs (Foley, n.d.). In the absence of writing systems, oral storytelling served as the primary mechanism of cultural preservation, relying on performative speech, rhythm, repetition, and ritualized expression. Mnemonic strategies such as alliteration, repetition, and fixed descriptors enabled the accurate transmission of lengthy narratives across generations.

Oral tradition thus functioned as a living archive in societies where memory constituted the principal repository of knowledge and belief systems (Foley, n.d.).

Across cultures, storytelling evolved into structured social institutions and played a crucial role in preserving collective memory, linguistic continuity, and cultural identity (Ong, 1982; Vansina, 1985). With the documentation of oral narratives by monastic scribes, storytelling gradually transitioned into written form. Although writing supported textual preservation, it fundamentally altered the performative, communal, and interactive nature of storytelling. This transformation intensified following the invention and spread of the printing press in the fifteenth century, which shifted storytelling from a shared, participatory activity to a largely individual and silent practice.

The twentieth century introduced further changes through broadcast media such as radio and television, which enabled mass dissemination of narratives but in a predominantly passive format (McLuhan, 1964). As a result, audiences increasingly became consumers rather than active participants in storytelling, leading to the gradual erosion of its interactive dimensions. In the contemporary globalized and time-constrained world, traditional storytelling practices have further declined. Economic pressures and changing family structures have reduced opportunities for intergenerational storytelling, weakening the transmission of local identities, traditions, and cultural memory (Tomlinson, 1999).

Against this backdrop, emerging technologies, particularly Virtual Reality (VR), offer new possibilities for revitalizing storytelling practices. VR enables immersive and interactive narrative experiences that can enhance children's comprehension, creativity, critical thinking, and empathy. In this evolving context, libraries have the potential to function as dynamic hubs for VR-based storytelling, providing inclusive spaces where innovative technologies can be leveraged to sustain and rejuvenate the enduring human practice of storytelling.

A. Identification of the Problem

The progressive decline of traditional storytelling practices poses a critical threat to cultural continuity. As oral storytelling diminishes, the transmission of local identities, traditions, and worldviews is significantly weakened, creating a widening gap between younger generations and their cultural roots. This erosion of intergenerational knowledge sharing not only undermines linguistic, cognitive, and social development but also accelerates the risk of cultural homogenization in the face of dominant global media influences. Consequently, younger generations are increasingly distanced from the distinctive heritage of their communities, heightening the danger of cultural erosion and the eventual loss of unique cultural identities.

B. Research Objectives

Accordingly, two research objectives were formulated.

1. To create a framework for developing young children's cognitive and social skills through Virtual Reality-based storytelling, drawing on existing studies and theoretical foundations.
2. To examine how libraries can take initiatives in implementing Virtual Reality storytelling for cultural preservation and child development.

II. METHODOLOGY

A. Ontology

The present study is grounded in a constructivist ontological position, recognizing reality as socially and culturally produced rather than singular or objective. Storytelling traditions, cultural preservation, and holistic child development are inherently contextual phenomena that take diverse forms based on social, cultural, and technological influences. Consequently, multiple subjective realities coexist, each shaped by particular communal practices, values, and lived experiences. Within this landscape, augmented and virtual reality function as bridging tools that not only interact with but also reshape these constructed realities. This ontological standpoint therefore positions storytelling as an evolving construct sustained through continuous cultural negotiation and human interaction.

B. Research Design

An exploratory and developmental research design was employed, reflecting the emerging nature of VR applications in storytelling within library contexts. As the existing body of scholarship remains limited, particularly in relation to

cultural preservation and early childhood development, this design facilitates the identification of novel approaches and supports the construction of a conceptual framework adaptable to diverse library environments..

C. Research Method

Given the study's focus on understanding strategies for sustaining storytelling traditions through innovative technologies, a qualitative research approach was adopted. This approach allows for in-depth engagement with existing studies, enabling interpretive synthesis and cross-case analysis that illuminate patterns, implications, and potential applications.

D. Conceptual Design

The study seeks to develop a conceptual framework that positions libraries as hubs for culturally grounded, technology-enhanced storytelling practices. This framework emerges from the integration of findings across relevant literature and empirical case studies, identifying common themes and mechanisms that support child development and cultural continuity.

E. Data Collection Method

Secondary data served as the primary source of evidence, including scholarly studies on AR/VR applications in storytelling and documented initiatives undertaken by libraries. In addition to the literature reviewed earlier, five case studies were purposively selected based on their relevance, methodological clarity, and demonstrated outcomes related to immersive storytelling. These cases provided multimodal perspectives necessary for constructing a holistic framework for child development. The selected case studies are as follows:

1. Case Study 1: Children's Interactive Storytelling in Virtual Reality (Yamada-Rice, 2021)
2. Case Study 2: Interactive Storytelling for Children: Ethical Conversational AI (Chubb, Missaoui, Concannon, Maloney, & Walker, 2022)
3. Case Study 3: AI Media-Assisted Storytelling Therapy for Speech Delay (Chamalah, Azizah, Wulandari, & Wardani, 2025)
4. Case Study 4: "Wrapped in Anansi's Web": Generative AI Personalization and VR Immersion in Oral Storytelling
5. Case Study 5: Tinker Tales: An Interactive Storytelling Framework for Early Childhood Narrative Development and AI Literacy (Choi, Cyebukayire, & Choi, 2025)

III. RESULTS

The analysis of the chosen studies is as follows.

TABLE I ANALYSIS OF STUDY

Author/s (Year)	Title of the study	Sample	Methodology	Key findings	Conclusion
Yamada-Rice, (2021)	Children's interactive storytelling in Virtual Reality	20 children aged 8-12	Looked at how VR content supports children's interactive storytelling. Used a multimodal data collection (stop-motion animation and graphic narratives)	There are three phases of the user journey 1. Entering the virtual world 2. Being inside the virtual world 3. Affecting the story via interactive objects	VR storytelling can enhance children's creativity and narrative development
Chubb, Missaoui, Concannon, Maloney, Walker, (2022)	Interactive Storytelling for Children: A Case-study of Design and Development Considerations for Ethical Conversational AI	Design stakeholders, children and parents	Case study approach. Ethical issues were investigated via adult stakeholder perspectives	There is a necessity to embed ethical aspects into the design of storytelling systems. Involving both children and parents can make the AI's role transparent.	Successful AI based storytelling needs balance between technological innovation and ethical responsibility. Children with special needs should be included when designing AI storytelling systems.
Chamalah, Azizah, Wulandari, Wardani, (2025)	Artificial intelligence media-assisted storytelling therapy as a solution for handling speech delay in early childhood	Children aged about 6-8 who have speech delay.	Children with speech delay engaged in storytelling sessions guided by an AI system. It generated customized narratives and provided real-time responses for children's verbal responses to the narratives.	Children showed improvement in lexis, syntax and speaking abilities. Developed parental involvement with children.	Personalized AI content and responses can enhance children engagement.
Lau <i>et al</i> (2024)	Wrapped in Anansi's Web: Unweaving the Impacts of Generative-AI Personalization and VR Immersion in Oral Storytelling	48 participants	The participants experimented various combinations such as VR with personalization, VR without personalization, Non VR with personalization and Non-VR without personalization.	Customization/personalization enhances user engagement and cultural interest. VR usage increases the immersive experience, personal reflection and emotional connectivity.	Using VR with personalized narratives contributes to reconnect the youth with oral storytelling traditions and cultural heritage.
Choi, Cyebukayire, Choi (2025)	Tinker Tales:Interactive Storytelling Framework for Early Childhood Narrative Development and AI Literacy	Simulated children	The AI system lets children select elements of stories such as landscapes, characters and emotions via physical tokens and helps children in story creation. Later the story quality was assessed via simulated game sessions with child-AI agent.	Merging tangible tokens (physical tokens) with AI increases narrative development and AI literacy of children. The hybrid approach enhances children's engagement compared to screen-only methods.	Shifting from children only being consumers of AI storytelling to collaborating with AI systems as co-creators enhances children engagement. Staff must be trained to incorporate AI into learning effectively.

A. Counterproductive Elements

Based on the studies analyzed above, the following counterproductive elements were observed. Both VR equipment and software can be costly, restricting access in library contexts (Choi *et al.*, 2025). At the same time, children with disabilities may face challenges when using VR systems unless these are designed to accommodate their needs. Moreover, excessive screen time for storytelling

purposes may negatively influence attention span and physical interaction with the real world (Chubb *et al.*, 2022). Similarly, teachers, instructors, and librarians face a learning curve. Unless staff are trained to integrate VR meaningfully and effectively, the objectives of the storytelling practice may be compromised. However, training processes can be time- and resource-intensive (Choi *et al.*, 2025). Hence, solutions to address these challenges should be investigated.

IV. DISCUSSION

TABLE II MODE OF IMPLEMENTATION

Initiative	Mode of implementation
Cultural preservation, educational enrichment and inclusivity	<p>Deploying digitally archive folk stories, songs and traditions.</p> <p>Encouraging imagination, language and comprehension and social learning.</p> <p>Access for children with diverse abilities, languages and diverse cultural backgrounds.</p> <p><i>Suggestion:</i> Recording elders narrating folktales and embedding them in VR storybooks.</p>
Developing or Adopting VR tools	<p>Utilizing existing platforms for VR.</p> <p><i>Suggestion:</i> Pictures triggering animations or pre-recorded narratives when subjected to scanning.</p>
Assimilating VR into library programs and sessions.	<p>Initiating AR storytelling sessions where live reading is amalgamated with VR elements.</p> <p>Developing cultural story booths with VR posters that come to life with audios or animations.</p> <p><i>Suggestion:</i> Organizing workshops where children are allowed to create stories to develop creativity, collaboration and AI literacy.</p>
Seeking assistance of cultural experts and communities	<p>Alliances with storytellers for organizing authentic oral storytelling sessions.</p> <p>Linking up with universities and institutes for VR content creation.</p> <p>Working with cultural organizations to ensure smooth presentation.</p> <p><i>Suggestion:</i> Having multilingual VR storybooks that can be scanned and heard in multiple languages.</p>
Ethical and Inclusive aspects of designing	<p>Protecting children's data.</p> <p>Granting multimodal access for children with disabilities.</p> <p><i>Suggestion:</i> Audio narratives, narratives in sign languages and tactile imageries.</p>
Assessment and Refinement	<p>Continuous observations on children's engagement and understanding.</p> <p>Collecting feedback and conducting needs analysis based on relevance and accessibility.</p> <p>Observe the influences of VR storytelling on cultural awareness, language development and social skills.</p> <p><i>Suggestion:</i> Conducting qualitative research with the consent of the participants.</p>

In order to fulfill the first research objective and address the first research question, the following framework was developed to enhance holistic child development. The multilayered framework above addresses how VR-assisted storytelling can be incorporated to develop children's cognitive, linguistic, creative, and social and emotional

domains. In order to achieve the aforementioned holistic child development and address the second research question, libraries can take the following initiatives. If these frameworks are implemented simultaneously, both cultural preservation and child development objectives can be achieved in parallel.

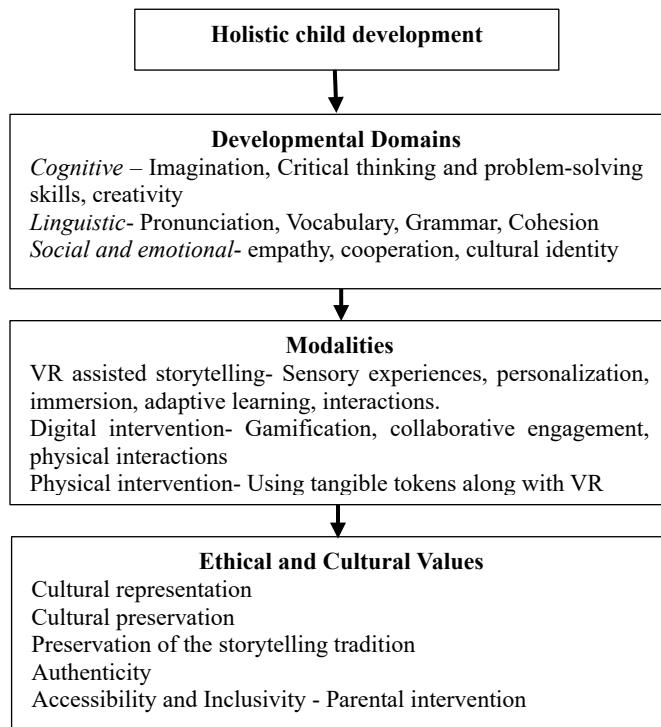


Fig.1 Holistic Child Development

V. CONCLUSION

Storytelling is one of the enduring cultural practices of humanity. It has evolved into various forms alongside technological advancement. Based on existing research findings, it has become evident that Virtual Reality can bridge the gap between the diminishing oral storytelling tradition and holistic child development. Recent studies show that Virtual Reality, in particular, offers immersive and interactive experiences that can contribute to the cognitive, linguistic, and social development of children. Libraries are recognized as key platforms that can act as mediators for this development. By integrating VR-based storytelling programs, libraries can preserve cultural heritage, promote inclusivity, and serve as community spaces for creative learning. Recording stories with the assistance of elderly community members, developing multilingual VR storybooks, organizing cultural workshops, and conducting consented research with participants as samples to enhance user experiences are among such initiatives. These efforts can nurture child development while preserving storytelling traditions and cultural practices. However, high implementation costs, accessibility challenges, the potential for excessive screen time, and the need for specialized staff training remain significant concerns. If these issues are addressed, both cultural preservation and holistic child development can be achieved. Further research is needed using larger samples and considering diverse demographic factors.

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