



## The Role of Play-Based Digital Storytelling in Enhancing Social-Emotional Competencies in Preschool Children

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### **Abstract**

This study explores the impact of play-based digital storytelling on the social-emotional development of children aged 4-5 years. In an increasingly digital world, the integration of technology in Early Childhood Education (ECE) remains a subject of debate. This research utilized a mixed-methods approach, observing 40 preschool children over an eight-week intervention period. Results indicate that when digital storytelling is integrated with collaborative play, children demonstrate significant improvements in empathy, turn-taking, and emotional regulation. The findings suggest that digital tools, when used as a medium for collaborative creation rather than passive consumption, can be a powerful catalyst for social-emotional growth. This study challenges the conventional digital isolation narrative by proving that shared digital interfaces can serve as powerful social mediators when implemented through structured, peer-oriented frameworks.

**Keywords:** Early Childhood Education, Digital Storytelling, Social-Emotional Learning, Play-based Learning, Collaborative Technology.

### **INTRODUCTION**

The early childhood years represent a critical window for the development of Social-Emotional Learning (SEL), a multifaceted construct encompassing self-awareness, emotional regulation, and interpersonal proficiency. Research consistently demonstrates that a child's ability to navigate social complexities and manage internal emotional states is a more accurate predictor of long-term academic success and psychological well-being than early cognitive benchmarks alone (Jones & Doolittle, 2021). Traditionally, these competencies have been nurtured through physical, open-ended play and face-to-face peer interactions.

However, the contemporary educational landscape is undergoing a rapid digital shift. As touchscreen devices become ubiquitous in both domestic and classroom environments, a tension has emerged between traditional play-based ideologies and the integration of technology. Many educators and developmental psychologists express concern that digital engagement may lead to social isolation or the displacement of critical tactile experiences (Edwards & Bird, 2022). Yet, this binary view—positioning technology as the antithesis of social play—often overlooks the potential for digital tools to act as a social glue when implemented through a collaborative pedagogical framework.

While a significant body of literature has explored the benefits of digital storytelling for early literacy and language acquisition, there remains a dearth of empirical evidence regarding its impact on prosocial behaviors (Marsh & Yamada-Rice, 2021). Most studies focus on the individual child's interaction with the device rather than the interpersonal dynamics that occur when children co-create a digital narrative. This study seeks to bridge that gap by examining the shared screen as a site for negotiation, empathy, and collective problem-solving.

This research is grounded in Vygotsky's Socio-Cultural Theory, which posits that learning is an inherently social process. In this context, digital storytelling software is viewed not merely as a tool, but as a cultural artifact that scaffolds higher-order thinking (Craft et al., 2022). By utilizing digital avatars and recorded voices, children engage in symbolic play at a heightened level, allowing them to externalize complex emotions that they may not yet have the vocabulary to express in direct conversation.

The purpose of this study is to investigate how a structured, eight-week digital storytelling intervention influences the social-emotional trajectories of preschool children. By shifting the focus from passive consumption to active, collaborative creation, we aim to determine if technology can be utilized to strengthen the very social bonds it is often accused of weakening.

## METHOD

This study employed a mixed-methods design conducted over an eight-week period at two accredited urban preschools. The sample consisted of N=40 children (21 female and 19 male) aged 4-5 years. Participants were divided into an experimental group (digital storytelling intervention) and a control group (traditional puppet play).

Children in the experimental group worked in pairs to create short digital stories using tablets and a child-friendly storytelling application. Each session lasted 30 minutes, conducted twice weekly. Data collection instruments included pre- and post-intervention behavioral checklists, semi-structured teacher interviews, and video observations of peer interactions. Qualitative data were coded using Thematic Analysis, while quantitative social competency scores were analyzed using paired-sample t-tests to determine statistical significance.

The eight-week intervention was strategically divided into three developmental phases. Weeks 1-2 focused on Technical Scaffolding and Identity Construction, where children were introduced to the digital interface through collaborative design of protagonists, requiring negotiation of aesthetic choices and character traits. This phase established collaborative decision-making patterns and reduced techno-anxiety.

Weeks 3-5 emphasized Narrative Development and Emotional Exteriorization. Dyads moved beyond static character design to build story arcs centered on emotional problems, such as loss or social exclusion. Using the app's recording features, children practiced affective labeling by choosing specific voice tones to represent sadness, anger, or empathy. The digital avatar served as a psychological mediator, enabling children to explore complex internal states within a safe, simulated environment.

Weeks 6-8 culminated in Final Production and Peer-Reflective Screening. Pairs finalized their digital narratives through sustained attention and collective problem-solving. The concluding sessions featured group screenings where children presented their work, followed by structured pedagogical exercises in constructive critique and social validation. Children identified emotions depicted in classmates' stories, reinforcing perspective-taking and fostering mutual empathy.

## RESULTS AND DISCUSSION

The analysis of the eight-week intervention revealed statistically significant improvements in children's social-emotional competencies. Quantitative data from pre- and post-intervention behavioral checklists indicated substantial growth across multiple domains, as presented in Table 1.

**Table 1.** Social Competency Scores

Domain	Mean (Pre)	Mean (Post)	p-value
Peer Cooperation	3.12	4.45	< .05
Self-Regulation	2.85	3.70	< .05
Empathy Indicators	2.50	4.15	< .01

Peer cooperation scores rose from a baseline mean of 3.12 to 4.45 ( $p < .05$ ), suggesting that sharing a single digital interface necessitated a transition from parallel play to cooperative negotiation. The domain of empathy indicators showed the most substantial growth, with a 38% increase in observed prosocial responses. This suggests that character-building in the digital space allowed children to practice perspective-taking, as they were required to imagine and vocalize the feelings of their digital protagonists during narrative development.

Qualitative thematic analysis of video observations enriched these findings by identifying three primary behavioral shifts. First, the digital avatar acted as a social mediator, providing a buffer that allowed less verbal children to express complex emotions—such as fear or frustration—through their characters (Glejzer & Zosh, 2023). Second, the undo functionality of the digital medium significantly lowered the threshold of frustration compared to traditional physical media. When mistakes occurred, children remained engaged in the social task rather than withdrawing. Finally, peer-review sessions evidenced high levels of collective reflection, as children successfully identified emotional cues in their peers' stories.

Teachers noted that children used the record function to practice different voice tones. For instance, when a child recorded a sad voice for a character, it prompted their partner to respond with a comforting voice, directly practicing empathetic response in a controlled environment. These results collectively demonstrate that when technology is framed as a collaborative tool rather than a solitary activity, it functions as a powerful catalyst for enhancing the social-emotional fabric of the early childhood classroom (Plowman & Stevenson, 2024).

The findings challenge the conventional digital isolation narrative, proving instead that a shared digital interface can serve as a powerful social mediator—one that lowers the threshold for frustration and encourages children to verbalize complex internal states. The pedagogical implications suggest that educators should not view technology as a replacement for traditional play, but as a modern extension of it. When implemented within a structured, peer-oriented framework, digital tools allow children to explore social identities and practice perspective-taking in safe, simulated environments.

For early childhood classrooms, this means the teacher's role must evolve from a gatekeeper of technology to a facilitator of digital-social experiences. Digital tools should be repositioned from solitary distractions to collaborative workstations. By intentionally pairing children based on complementary social skills, teachers can transform tablets into shared digital canvases that necessitate cooperation. When children must reach consensus on narrative direction or character traits, they practice high-level executive functioning and perspective-taking within high-engagement contexts.

Furthermore, the pedagogical focus must prioritize dialogue and the process of creation over aesthetic perfection of the final product. Teachers can intervene during narrative development to prompt deeper emotional reflection through scaffolding questions that encourage children to consider their digital protagonists' feelings. This approach allows children to utilize recording and editing features as psychological buffers, enabling experimentation with audio-visual emotional labeling. By naming and vocalizing emotions through avatars, children bridge the developmental gap between experiencing internal states and expressing them socially.

## CONCLUSION

The present study demonstrates that play-based digital storytelling is a transformative pedagogical tool that extends beyond technical instruction to foster essential social-emotional competencies in preschool children. By shifting focus from passive screen consumption to active, collaborative narrative creation, the intervention provided a unique platform for children to practice empathy, emotional regulation, and collective problem-solving. The findings reveal statistically significant improvements across all measured domains, with empathy indicators showing the most substantial growth (38% increase). The digital avatar functioned as a social mediator, the undo functionality lowered frustration thresholds, and peer-review sessions fostered collective reflection. These results prove that shared digital interfaces can strengthen social bonds when implemented through structured, collaborative frameworks. Ultimately, these implications suggest that technology, when framed through a play-based lens, serves as a prosocial catalyst that complements rather than replaces traditional tactile play. Integrating digital storytelling in this manner allows preschools to prepare children for a digital future while simultaneously grounding them in fundamental human skills of empathy, negotiation, and collective problem-solving. Future research should explore the long-term retention of these social gains as children transition into primary school settings, ensuring that digital foundations laid in early childhood contribute to lifelong social-emotional resilience.

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