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Digital Beginnings: The Cognitive and Creative Consequences of Screen Time in Early Childhood

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Abstract: ***This narrative study explores the lived experiences of parents and early childhood educators concerning the influence of screen time on toddlers' memory and creativity. Through storytelling and first-hand accounts, the research captures the nuances of digital exposure in the formative years of children. The study aims to humanize the data and paint a holistic picture of how digital media intersects with imagination, memory, and early learning. This study comprise of 12 parents and three playschool teachers. The narratives reveal a delicate balance where screens act as both enablers and inhibitors shaping young minds in complex ways. The narratives revealed that excessive screen time significantly influenced toddlers' cognitive learning abilities, particularly in the areas of memory and recall. Parents and educators often described children as quick to pick up facts from videos or apps, but struggling with everyday remembering tasks.***

Keywords: Screen time, toddlers, creativity, memory, digital media, early childhood, narrative research, parental perspective, educator experiences

I. INTRODUCTION

In today's homes and classrooms, screens are no longer a novelty they are a presence. For toddlers born into this digital age, swiping a tablet is as natural as flipping a book once was. While screens promise access to knowledge and engagement, they also raise questions: What happens to the stories children create when most stories are streamed? How does a child's memory evolve when content is instantly replayable? The advent of digital devices has redefined the early years of childhood, introducing a complex mix of opportunities and challenges. Screens are now embedded in daily routines used for learning, entertainment, and even parenting support. However, the impact of screen time on early development is far from straightforward. Recent research suggests that screen exposure in early childhood carries both positive and negative consequences across multiple developmental domains, including cognitive, linguistic, physical, and socio-emotional (Panjeti-Madan & Ranganathan, 2023).

While some level of digital interaction can foster learning particularly when content is age-appropriate and co-viewed with caregivers, the risks of excessive or unsupervised screen time are significant. Studies indicate that prolonged screen exposure may alter brain structure and impair emergent literacy skills, with negative implications for attention and executive functioning (Dumuid, 2020). Moreover, the context in which screens are used matters greatly. Age-inappropriate content and background television are known to negatively affect toddlers' cognitive processing, whereas interactive use involving caregivers has shown to support better learning outcomes (Mallawaarachchi et al., 2024). Additionally, early screen habits can extend into later childhood, contributing to increased sedentary behavior and decreased physical activity both of which are detrimental to overall development (Dumuid, 2020). Experts now recommend zero screen time for children aged 0–2, and a maximum of 60 minutes per day for ages 3–8, ideally with parental engagement (Panjeti-Madan & Ranganathan, 2023).

Recent research consistently demonstrates that excessive screen time negatively impacts multiple domains of child development. Studies show that prolonged screen exposure is associated with impaired cognitive functioning, including reduced attention, memory, and executive function, which subsequently affects academic performance (Muppalla et al., 2023; Goswami & Parekh, 2023; Jannesar et al., 2023). Language development is particularly vulnerable, as excessive screen time reduces quality caregiver-child interactions essential for linguistic growth (Muppalla et al., 2023; Jannesar et al., 2023). Physical and mental health consequences include increased obesity risk, sleep disturbances, and elevated rates of depression and anxiety (Muppalla et al., 2023; Goswami & Parekh, 2023). Social-emotional development suffers through impaired emotion recognition and increased aggressive behavior (Muppalla et al., 2023). While screens can provide educational benefits in appropriate contexts, the majority of evidence supports limited, monitored exposure (Karki & Sravanti, 2021; Goswami & Parekh, 2023). Effective management strategies include parental controls, co-viewing, and modeling appropriate screen behaviors to promote healthy development outcomes (Muppalla et al., 2023; Karki & Sravanti, 2021).

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Importantly, the role of parental mediation is highlighted as a key factor in shaping children's relationship with screen-based media. As Swider-Cios et al. (2023) emphasize, the emotional tone, content selection, and level of co-engagement by caregivers deeply influence how screen time impacts children's developmental trajectories. These findings set the foundation for this study, which aims to explore how digital beginnings especially screen interactions in early childhood affect toddlers' creativity, memory, and broader cognitive growth, as experienced and narrated by those closest to them.

This study journeys into the real-life experiences of parents and teachers who witness the impact of screen time on toddlers every day. It does not aim to quantify behavior, but to listen to the stories, anxieties, and hopes of those guiding these digital beginnings.

II. METHODOLOGY

A narrative inquiry approach was adopted to explore how screen time affects young children's memory and creativity, using personal stories as data. The sample comprise of 15 participants were purposively selected in that 12 parents and 3 preschool teachers. In-depth interviews were conducted in person and via video calls.

A. Data Analysis

Stories were transcribed, coded, and organized into themes reflecting the cognitive and creative outcomes.

B. Narratives and Themes

Themes	Description
Screen Time	Screen time has both positive and negative effects depending on how it is used, highlighting the need for a balanced approach.
Parental involvement vs solitary viewing	Outcomes are shaped by whether screens are used alone or interactively with caregivers, co-use is often beneficial.
Cognitive Development and Screen Time	Excessive screen time may impair brain function and literacy skills; meaningful screen use can support cognitive development.
Creativity Versus Consumption	Children exposed to screens often imitate rather than create, limiting imaginative play and originality.
Screen time vs No screen	Long screen exposure reduces physical activity and may hinder emotional and social development.
Age-Appropriate Limits and Guidelines	Experts recommend strict time limits based on age to protect developmental needs and ensure healthy screen habits.
Parental Mediation as Digital Gatekeeping	Parental involvement in screen time determines children's digital behaviors and long-term relationship with media.

Table:1 Various Narrative Themes

III. FINDINGS

The above figure illustrates the frequency of parents' and teachers' opinions across five major themes, highlighting that their perspectives were largely aligned. On the theme of rote memory versus real-world recall, both parents and teachers unanimously agreed that children tend to retain screen-based facts but struggle with practical recall. For scripted imagination, 11 parents and 2 teachers observed that children often reproduce screen narratives instead of creating their own. Regarding digital dependency, nearly all parents expressed strong agreement, reflecting their experiences of children becoming restless without gadgets. Similarly, on the theme of shallow attention, 12 parents and 2 teachers agreed that prolonged screen exposure leads to fragmented focus. Finally, for guided digital interaction, 9 parents and 2 teachers emphasized its value, acknowledging that co-viewing and parental involvement make screen time more

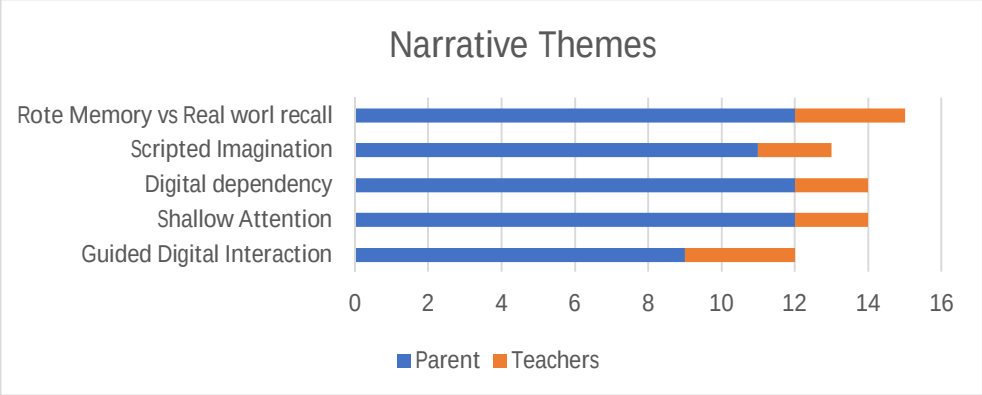


Figure 1: Narrative Themes and its frequency

meaningful and constructive. Overall, the data reveal a clear consensus between parents and teachers on most themes, underscoring shared concerns about the impact of screen time on children's cognitive and creative development.

1) The Double-Edged Screen: Opportunities and Risks

Many parents and educators recognize that screen time can aid learning (like teaching colors or alphabets), but also acknowledge its downsides particularly when used excessively or without supervision.

"He learned all the planets from YouTube, but can't remember where he kept his shoes," a parent's reflection.

2) Imitation Over Imagination

Children often replicate what they watch on screens, limiting their own creative expression. Educators observed that imaginative play has shifted from open-ended stories to reenactments of digital content.

"Play used to be a jungle. Now it's just the same superhero lines over and over."

3) Passive Viewing vs. Guided Engagement

A recurring theme was the contrast between passive screen time (which led to boredom, irritability, or shallow focus) and interactive screen use with adults, which supported learning and creativity.

"When I sit with her and talk about the video, she starts imagining her own endings."

4) Displacement of Physical and Social Activity

Parents noticed that screen time often replaced outdoor play or peer interaction, which affected toddlers' physical movement, social bonding, and emotional regulation.

"The more time on the tablet, the less interest in playing outside or even talking to other kids."

5) Cognitive Strain and Memory Fragmentation

Several stories indicated that frequent screen exposure impacted memory retention. Children struggled with everyday instructions or tasks, even while displaying strong digital recall.

"He remembers every YouTube character, but forgets his school bag and where he kept his crayons."

6) Parental Guilt and Digital Dependency

Many caregivers admitted using screens as a "digital babysitter" during work or household chores. While screens provided relief, it often came with guilt and worry about long-term effects.

"We needed silence. The tablet gave it... but it also took something away."

7) Role of Parental Mediation

The presence (or absence) of caregiver involvement during screen use deeply shaped outcomes. Those who co-watched, asked questions, or set boundaries saw more positive behaviors.

"It's not the screen. It's whether we're there with them while they use it."

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IV. CONCLUSION

The narratives revealed that excessive screen time significantly influenced toddlers' cognitive learning abilities, particularly in the areas of memory and recall. Parents and educators often described children as quick to pick up facts from videos or apps, but struggling with everyday remembering tasks. For example, while some toddlers could recall the names of cartoon characters or songs, they frequently forgot basic routines such as where they kept their belongings or following multi-step instructions.

Another consistent observation was the emergence of a disturbed or restless mindset when children were without gadgets. Several parents noted that toddlers became irritable, anxious, or bored quickly if screens were unavailable, suggesting an early dependency on digital devices for stimulation. This pattern not only affected their ability to focus but also raised concerns about how reliance on gadgets might shape their long-term learning habits.

Overall, the findings highlight that while screen time can facilitate rapid information learning, it often compromises deep memory retention, focus, and emotional balance, making it necessary to regulate usage and promote alternative forms of engagement.

V. DISCUSSION

"Digital Beginnings" is a tale of contrasts. The children in this study live in a world where the boundaries between play, learning, and technology are blurred. Their minds absorb, adapt, and repeat but the question remains: Are they creating, or merely consuming? Their minds absorb, adapt, and repeat but the question remains: Are they creating, or merely consuming?

This narrative research urges parents and educators to rethink screen time not as a villain, but as a tool that needs mindful use. This narrative research urges parents and educators to rethink screen time not as a villain, but as a tool that needs mindful use. It invites more stories, more listening, and a collective approach to shaping digital childhoods with care.

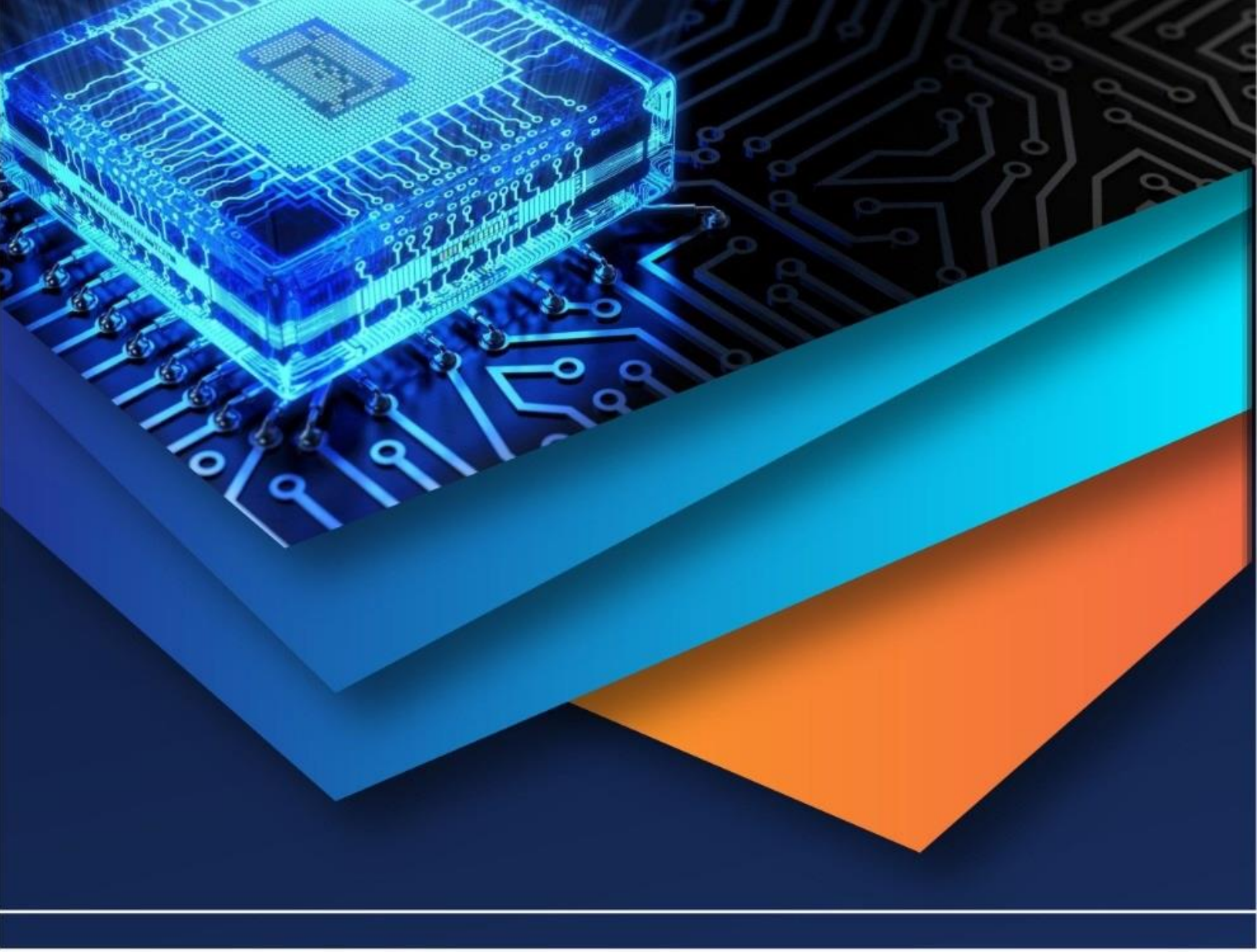
VI. RECOMMENDATIONS FOR PARENT AND TEACHERS

To foster healthier developmental outcomes, it is important to promote screen-free imaginative play every day, allowing children to explore creativity beyond digital boundaries. At the same time, when screens are used, caregivers should be encouraged to co-view and engage in discussions, making digital experiences more interactive and meaningful. Screens should not be treated as substitutes for boredom, as boredom itself often sparks creativity and problem-solving skills. Furthermore, training caregivers and educators in media literacy for early years is essential so they can guide children toward balanced digital habits. Finally, digital content should be purposefully designed to encourage open-ended responses and real-world applications, ensuring that technology complements, rather than replaces, holistic child development.

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