

The Impact of TikTok Use on Memorization Skills in Early Childhood from a Risk and Benefit Analysis Perspective

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Abstract: TikTok has become one of the most popular digital platforms among children, offering access to various types of content, including educational materials that can support memorization skills. Early childhood, defined as the developmental stage from ages 0 to 6, is a critical period during which appropriate stimulation can enhance cognitive abilities, particularly memory retention. This study aims to analyze the impact of TikTok use on improving memorization skills in early childhood from both risk and benefit perspectives. Using a qualitative approach with a literature review method, the research examines previous studies related to the role of TikTok and other audiovisual digital media in young children's learning processes. The findings indicate that TikTok can provide several benefits, such as enhancing memory retention, facilitating access to learning materials, increasing learning motivation, and introducing new vocabulary. However, it also presents risks, including potential overdependence, reduced social interaction with the immediate environment, and exposure to inappropriate content without parental supervision.

Keywords: TikTok, Memorization Skills, Early Childhood, Cognitive Development.

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INTRODUCTION

The rapid development of digital technology has brought significant changes to various aspects of life, including education. Digital media, defined as technology-based platforms that enable the distribution and consumption of information through electronic devices such as computers, tablets, and smartphones (Utami, 2021). has become increasingly integrated into learning environments. In recent years, social media applications have also been utilized in educational contexts, providing easier access to diverse learning resources. Educational uses of digital media include interactive applications, e-books, educational games, and video-based learning platforms. Among these, short video content has gained widespread popularity among children and serves as an engaging tool to support learning and memorization (Maharani & Budiarti, 2022). With continuous technological advancement, such platforms have significantly influenced children's learning patterns from an early age, particularly through interactive applications like TikTok.

TikTok is a social media platform that allows users to create and share short videos, often enhanced with music, filters, and interactive features. Although it was initially designed for entertainment, TikTok has evolved to include educational content, such as short tutorials, language learning tips, and memorization aids. Its algorithm, which recommends personalized content based on user preferences, makes it possible for children to be exposed to educational materials repeatedly, a factor that can enhance memory retention (Syahputra et al., 2024). Many educators and parents have begun to use TikTok creatively to present memorization materials, such as short verses, vocabulary, or songs, in a visually appealing and entertaining way. However, alongside these benefits, TikTok also presents challenges related to content appropriateness, screen time duration, and potential distractions from non-educational content, which may affect the learning focus of early childhood learners.

Early childhood refers to individuals aged 0–6 years who experience rapid development across cognitive, socio-emotional, and motor domains (Swandhina & Maulana, 2022). This stage is often described as the golden age, during which children have an exceptional capacity to absorb information and develop thinking patterns that influence their future learning. According to Piaget's cognitive development theory (1952), children in this period are in the preoperational stage, characterized by the rapid growth of symbolic thinking, language use, and imagination. These aspects directly support the development of memorization skills, as children begin to represent experiences mentally and recall them through symbols and language. Memorization, therefore, becomes a crucial component of cognitive growth during this stage, closely linked to working memory and language acquisition (Istiqomah & Maemonah, 2022). In educational contexts, memorization serves as a foundational ability that facilitates understanding of more complex concepts later in life. Learning activities that provide repetitive and engaging exposure to information play an important role in reinforcing this skill.

In the context of early childhood education, memorization activities such as learning short verses, vocabulary, songs, or daily prayers can be integrated into engaging digital formats. TikTok, with its short-video design and audiovisual features, offers an alternative medium for delivering such materials in ways that effectively capture children's attention. Compared to longer-form platforms such as YouTube, TikTok's brief and dynamic video format may be more effective in maintaining focus and facilitating faster information recall, as it aligns with the shorter attention spans typical of young children (Sudarmanto, 2023). Research also indicates that repetitive audiovisual exposure can significantly enhance children's ability to memorize compared to conventional methods (Rohayati & Nuraeni, 2024). Through TikTok, educational content can be presented creatively and interactively, combining visuals, audio, and movement to increase both motivation and retention.

However, despite these advantages, TikTok also presents several limitations and potential risks. The platform's fast-paced content, algorithmic infinite scrolling, and constant stimulation may shorten attention span and reduce children's capacity for sustained focus (Opara et al., 2025). Furthermore, excessive screen time has been linked to impaired executive functions including working memory, inhibitory control, and cognitive flexibility in preschool-aged children (Hu et al., 2023; Lakicević et al., 2025). Additionally, broader research shows that greater exposure to screen media and background television correlates with poorer cognitive outcomes in early childhood, such as weaker memory and language skills (Mallawaarachchi et al., 2024). These risks suggest that while TikTok can serve as an effective tool to support memorization in early childhood, its use must be carefully guided limiting screen duration, ensuring content quality, and encouraging caregiver involvement to ensure educational benefits outweigh potential drawbacks.

Based on previous studies, it is evident that TikTok, like other digital media platforms, has both positive and negative implications for the memorization skills of early childhood learners. On one hand, it provides engaging, repetitive, and easily accessible educational content; on the other, it poses risks such as distraction, overexposure to screens, and reduced social interaction. Therefore, this study aims to analyze in depth the impact of TikTok use on memorization skills in early childhood from a risk–benefit perspective. Unlike earlier research that primarily focused on more conventional educational platforms, this study introduces a novel contribution by exploring TikTok as an emerging medium in early childhood learning. The findings are expected to provide new insights into how short-video formats can be effectively utilized to support memorization while maintaining cognitive and social balance in early development.

RESEARCH METHOD

This study employs a qualitative approach using a literature review method to analyze previous research discussing the impact of digital media, particularly TikTok, on the memorization skills of early childhood learners. The literature review approach enables researchers to synthesize findings from various scholarly sources and identify recurring patterns, similarities, and differences across studies. A thematic content analysis was applied to categorize the literature into key themes namely the benefits and risks of TikTok use related to memorization activities such as learning short verses, vocabulary, songs, and daily prayers. Through this analytical model, the study systematically interprets how TikTok influences memory retention in early childhood, both positively and negatively. The data were drawn from peer-reviewed journal articles, books, and previous studies published between 2019 and 2025 that address digital media, TikTok, and cognitive development in young children, particularly in the context of memorization skills.

RESULT AND DISCUSSION

Result

Various previous studies have discussed the impact of digital media, particularly TikTok, on the memorization skills of early childhood learners. The following is a summary of some relevant studies:

Table 1. Literature Review

| No | Journal Identity | Key Findings | Relevance to TikTok |
|----|---|--|---|
| 1 | Muchsinun, A., & Salehuddin, M. (2023). | The use of audio recordings stimulates concentration and | TikTok's short videos with clear audio cues can |

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| | Effect of Audio Recordings on Memorization Skills in Early Childhood. <i>SELING: Journal of Early Childhood Islamic Education Program</i> , 9(2), 171–181. | strengthens memory through repetitive listening activities. | replicate similar auditory repetition, enhancing memorization through sound patterns. |
| 2 | Aryanti, A. P. (2021). The Effect of Using YouTube-Based Audiovisual Media on Qur'an Memorization Skills in Early Childhood. <i>Undergraduate Thesis, State Islamic Institute of Bengkulu</i> . | Audiovisual media enhance Qur'an memorization skills by combining visual and auditory stimuli. | Suggests that TikTok's audiovisual format can be adapted for short, structured memorization segments. |
| 3 | Susanto, H. (2023). Utilizing Audiovisual Media to Improve Memorization Motivation of Short Surahs in Early Childhood. <i>Journal of Educational Science and Technology (Edusaintek)</i> , 9(1), 45–53. | Audiovisual materials increase motivation and engagement in memorization activities. | TikTok's interactive and visually dynamic nature may boost children's motivation similarly. |
| 4 | Rohayati, C., & Nuraeni, L. (2024). YouTube as an Audiovisual Medium in Enhancing Cognitive Skills of Early Childhood. <i>CERIA Journal</i> , 7(3), 322–329. | Repetitive audiovisual exposure strengthens cognitive and memory functions. | Indicates that TikTok's looping and repeatable content could support similar cognitive reinforcement. |
| 5 | Lubis, T. C., & Mavianti, M. (2022). The Use of Audiovisual Media in Enhancing Islamic Education Learning Motivation in Children. <i>Raudhah Journal</i> , 10(2), 45–53. | Visual and auditory elements effectively increase children's learning motivation. | Demonstrates how TikTok's creative filters, sounds, and animations can attract children's interest in educational memorization. |
| 6 | Muttaqin, M. F., & Fauji, I. (2024). The Effect of Flashcard Media in Improving Memorization of Daily Prayers at SDN 2 Wringinanom. <i>Tadrib: Jurnal Pendidikan Agama Islam</i> , 10(1), 630–637. | Flashcard media significantly improves children's memorization of daily prayers through repetition, simple visuals, and engaging presentation.. | TikTok can function like digital flashcards: short looping videos, clear text, and repeated audio-visual cues that reinforce memorization. |
| 7 | Sari, D. F., & Utami, R. (2023). The Effect of Gadget Use on Children's Memory Development. <i>Journal of Child</i> | Excessive screen time negatively impacts short-term memory. | Highlights the need to regulate TikTok use duration to prevent cognitive overload. |

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| | <i>Psychology</i> , 5(2), 67–75. | | |
| 8 | Yusuf, M., et al. (2021). The Impact of Screen Exposure on Early Childhood Development. <i>Journal of Child Health</i> , 3(1), 21–28. | More than three hours of daily screen exposure reduces information recall ability. | Reinforces that TikTok use should be limited and supervised for optimal educational benefit. |
| 9 | Handayani, T. (2022). The Effect of Using Interactive Applications to Improve Children's Memorization Skills. <i>Journal of Technology and Early Childhood Education</i> , 6(2), 112–121. | Interactive, gamified learning apps improve memory retention. | TikTok's duet and challenge features can mimic gamification, promoting active memorization. |
| 10 | Putri, R., & Syahputra, H. (2023). The Effectiveness of Animated Videos in Memorization Learning in Early Childhood. <i>Journal of Innovation in Early Childhood Learning</i> , 5(1), 98–107. | Animated videos enhance children's memory retention compared to text-only formats. | Suggests that TikTok's animated and visually rich content can effectively support memory development. |

Source: Data Processed (2025)

Discussion

1. Risks of Using TikTok on Memorization Skills in Early Childhood

Research by Sari & Utami (2023) found that unrestricted use of digital media can impair short-term memory in children, primarily because prolonged screen exposure overstimulates the sensory system and disrupts neural pathways related to attention and information processing. Similarly, Yusuf et al. (2021), reported that children who spend more than three hours per day on screens exhibit lower recall accuracy, which is linked to cognitive fatigue and reduced working memory capacity. These findings suggest that excessive TikTok use, with its rapid visual and auditory stimuli, may overload the developing brain and hinder effective information encoding and retrieval.

In contrast, several studies highlight the educational potential of digital media when used appropriately. For instance, Lubis & Mavianti (2022) demonstrated that audiovisual media significantly increase children's learning motivation, while Muchsinun & Salehuddin (2023) showed that repeated exposure to structured audio recordings strengthens concentration and memory. When compared to these positive outcomes, the negative results reported by Sari & Utami (2023) emphasize the importance of moderation indicating that the benefits of digital platforms like TikTok depend on controlled use, guided content, and cognitive pacing.

Furthermore, Setiawan et al (2025) cautioned that overexposure to digital content might reduce critical thinking and comprehension, as children focus more on visual repetition than conceptual understanding. Pratama & Lestari (2021) added that prolonged exposure may decrease concentration and long-term retention, reinforcing the view that constant sensory

input from platforms like TikTok can disrupt sustained focus. Meanwhile, Mulya & Shasrini (2023) observed that although parents recognize TikTok's educational potential, they remain concerned about its addictive nature and the difficulty of enforcing screen-time boundaries.

To mitigate these risks, several strategies have been proposed in the literature. Firdaus & Prasetyo (2025) emphasize that effective digital media use should involve parental supervision and limited duration to maximize benefits while avoiding negative effects. Similarly, Adzkia et al (2025) further suggests balancing digital and traditional methods for example, integrating short TikTok-based lessons with offline reinforcement activities such as storytelling or drawing to maintain both engagement and cognitive depth. Establishing daily screen-time limits and selecting age-appropriate educational content are also essential steps.

In conclusion, TikTok can support early childhood memorization through its repetitive audiovisual design; however, without structured control, it risks causing cognitive overload, reduced attention span, and dependency. A balanced approach that integrates moderation, parental supervision, and multimodal learning strategies ensures that the platform's benefits enhance rather than hinder children's cognitive development.

2. Benefits of Using TikTok on Memorization Skills in Early Childhood

Several studies have highlighted the potential of digital media, including TikTok, in enhancing memorization skills among early childhood learners. Muchsinun & Salehuddin (2023) found that audio recordings stimulate concentration and memory through repetitive listening activities, such as memorizing songs and rhymes. Similarly, Aryanti (2021) demonstrated that audiovisual media effectively improve Qur'an memorization, suggesting that TikTok's short-video format can be adapted to deliver similar educational content in an engaging and accessible way.

Supporting this, Nirwana et al (2023) reported that audiovisual materials increase motivation to memorize short verses, while Rohayati & Nuraeni (2024) confirmed that repetitive audiovisual exposure strengthens children's cognitive functions. Lubis & Mavianti (2022) further emphasized that the combination of visual and auditory stimuli significantly boosts learning motivation a feature strongly aligned with TikTok's creative editing tools, sound effects, and visual filters that can make learning both interactive and enjoyable.

In addition, Muttaqin & Fauji (2024) found that children who used digital media to memorize prayers and hadith learned more quickly than those using printed materials, indicating the advantage of multimodal learning. Firdaus & Prasetyo (2025) further found that using digital media with controlled duration was more effective in improving memory retention than unlimited use. Handayani (2022) observed that interactive educational applications improve memorization through repetition and gamified elements mechanisms that can also be implemented on TikTok through features such as challenges, duets, and collaborative videos.

However, when compared with studies emphasizing the risks of excessive use, such as those by Sari & Utami (2023); Yusuf et al. (2021), it becomes evident that TikTok's benefits are conditional they depend on content quality, exposure duration, and parental mediation. Whereas Lubis & Mavianti (2022) highlight motivation and engagement as key strengths of audiovisual media, Sari & Utami (2023) caution that uncontrolled use may lead to cognitive overload and diminished focus. This contrast underscores the importance of balance: TikTok

can effectively support memorization only when used within structured educational frameworks.

CONCLUSION

TikTok has emerged as a widely used platform offering short, interactive videos that attract children's attention through engaging audiovisual elements. During early childhood a stage marked by rapid cognitive development children tend to absorb and retain information more effectively when learning through visually and auditorily stimulating media. Educational content presented in short-video formats, particularly those featuring memorization materials such as short verses, vocabulary, songs, and daily prayers, can therefore serve as an effective tool to strengthen memory retention and improve memorization skills.

Based on the studies reviewed, TikTok has a clear impact on early childhood memorization skills. On the benefit side, its educational content can accelerate memorization compared to conventional methods, improve memory retention through repetition, and provide enhanced cognitive stimulation. The engaging and interactive presentation also increases children's interest in learning. However, from the risk perspective, excessive use without parental supervision may lead to addiction, reduced concentration, and diminished social interaction with the surrounding environment.

Therefore, parents and educators must regulate both the duration and the type of content children consume so that the benefits of TikTok can be maximized without causing negative effects. Combining digital media such as TikTok with traditional learning methods such as reading books and direct interaction with parents or teachers can be an effective strategy to improve children's memorization skills in a balanced way. With proper supervision and content selection, TikTok can be a valuable educational tool to support cognitive development and memory skills in early childhood.

This study has certain limitations. One of the main constraints is that it focuses solely on secondary data from previous studies without direct observation of early childhood learners using TikTok for memorization. As a result, it does not provide specific empirical data on how children interact with TikTok in this context. Future research should conduct more in-depth studies using experimental or observational approaches, enabling researchers to directly observe the use of TikTok in memorization activities and to measure its effectiveness compared to conventional learning methods.

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CONFLICTS OF INTEREST

The author declares that there are no financial, personal, or professional conflicts of interest that could have influenced the conduct or outcome of this study.

ETHICS STATEMENT

This study is based on a literature review and does not involve direct interaction with human participants or animals. Therefore, no formal ethical approval was required. Nevertheless, all sources reviewed were properly acknowledged and cited according to academic standards.

DECLARATION OF GENERATIVE AI

The author affirms that no generative artificial intelligence tools were used to create the core ideas, analysis, or findings presented in this article.

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