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The Perception Of Prospective Early Childhood Education Teachers On The Impact Of Screen Time On Children's Development In The Digital Era

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Abstract

This study examines how prospective Early Childhood Education (ECE) teachers perceive the impact of screen time on children's development in today's digital era. The research aims to understand how future educators interpret both the potential benefits and the challenges that digital media brings to early learning. A qualitative descriptive approach was used, with data collected through semi-structured questionnaires and in-depth interviews involving prospective ECE teachers from several teacher education institutions. The findings show that most participants hold a balanced and reflective view of screen time. They do not see digital media as inherently harmful but rather as a valuable learning resource when used appropriately, under adult supervision, and aligned with the developmental needs of children. Many participants highlighted the advantages of interactive educational media-such as learning videos and digital games—that can foster children's cognitive growth, language skills, and creativity.At the same time, the participants expressed genuine concerns about the negative effects of excessive and unsupervised screen exposure, including reduced social interaction, lower physical activity, and shorter attention spans. These insights reflect an awareness of the need for balance and responsible media use, emphasizing the shared role of teachers and parents in shaping healthy digital habits. Overall, the

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study stresses the importance of embedding digital literacy and pedagogical technology skills into teacher training programs. By doing so, future educators will be better equipped to guide children in using technology responsibly and meaningfully to support holistic development.

Keywords: Screen Time, Early Childhood Development, Digital Literacy, Teacher Perception, Educational Technology.

INTRODUCTION

In today's digital age, technology continues to advance at an extraordinary pace and has reshaped almost every aspect of daily life, including education and the way children grow and learn. From an early age, many children now interact with digital devices such as smartphones, tablets, televisions, and computers. This use of digital tools—commonly known as *screen time*—has become a normal part of everyday routines. While technology provides valuable opportunities for learning, exploration, and entertainment, too much exposure to screens has raised growing concerns among educators and researchers about its possible effects on children's physical, cognitive, social, and emotional well-being.(Shoshani, Anat, and Michelle Slone,2021:45

Early childhood represents one of the most crucial stages in human development. During these years, children's brains develop rapidly and require rich stimulation through play, movement, interaction, and exploration of the real world.[2] However, as screen exposure increases, children spend less time engaging in these essential, experience-based activities. Studies have shown that excessive screen time may hinder important developmental processes, including language growth, attention control, emotional regulation, and the ability to build healthy social relationships.[3] This issue has encouraged educators—especially future early childhood teachers—to better understand how digital media affects children's learning and overall development.(Piaget, Jean. *The Psychology of the Child, 169:78)*

The perceptions held by prospective Early Childhood Education (ECE) teachers are particularly important, as they are the ones who will guide and shape children's first learning experiences.

`Teachers' beliefs strongly influence how they design classroom activities, manage learning, and choose teaching strategies.(Koehler, Matthew J., and Punya Mishra, 2009:70) When teachers possess a sound understanding of how digital exposure influences children's growth, they are more likely to use technology thoughtfully and in ways that support development. However, if teachers hold limited or inaccurate views about screen time, they may unknowingly

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support habits that are not beneficial for young learners. Thus, exploring how future teachers perceive the role of screen time is essential for improving teacher education programs that prepare them for the realities of modern classrooms.(Christakis, Dimitri A, 708:12)

Teachers' perceptions are also influenced by the cultural and educational environment in which they are trained.[5] In Indonesia, for example, digital transformation has advanced quickly, especially after the COVID-19 pandemic accelerated the shift toward online learning. Many early childhood institutions began using digital devices as part of teaching, although not all teachers received adequate preparation in digital literacy.(Plowman, Lydia, and Joanna McPake, 2013:108) This development has brought both opportunities and challenges. On one side, technology can make learning more engaging and accessible. On the other, without proper supervision and pedagogical guidance, it can lead to excessive and unproductive screen use among young children.

From a developmental psychology perspective, screen time cannot be viewed in simple terms of "good" or "bad." Instead, it should be understood through several factors: the *quality* of digital content, the *amount of time* spent, the *context* in which screens are used, and the *role of adults* who guide children during screen activities. For instance, interactive and educational programs that involve parents can help develop literacy and numeracy skills, whereas passive screen use—such as watching entertainment content for long periods—may reduce children's creativity, imagination, and social interaction.Understanding how future teachers interpret these aspects will reveal how prepared they are to help parents and children manage technology wisely.

Another aspect worth noting is the gap between what teacher education programs teach and what happens in real classrooms. Many training institutions emphasize play-based and holistic learning approaches, yet in practice, technology is often used excessively without a clear developmental purpose.[9] This mismatch highlights the importance of examining not only what pre-service teachers *know* about screen time but also what they *believe* about its role in learning. Building digital literacy among ECE teachers should go beyond technical skills—it should also develop their ability to reflect critically on how technology affects children's growth, ethics, and social interactions.(Livingstone, Sonia, and Alicia Blum-Ross, 2000: 145)

Research has categorized the effects of screen time on children into different areas of development. Physically, excessive screen use can contribute to reduced activity, sleep problems, and eye strain. Cognitively, it may affect focus, memory, and problem-solving skills if not properly guided.[12] Emotionally and socially, children who spend long periods on screens may show reduced empathy, slower emotional expression, and difficulties building friendships. These findings underline the importance of teacher awareness, since teachers play a vital role in shaping

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balanced digital habits and providing guidance to both children and parents.(Indonesian Ministry of Education, 2022: 15)

In addition, pre-service teachers' personal experiences with technology influence their perceptions. Most of them are part of the so-called "digital native" generation—people who have grown up surrounded by screens and digital connectivity.[14] While this background often makes them confident in using technology, it can also cause them to overlook its potential negative effects. Effective educators must find a balance between enthusiasm for technology and understanding the developmental needs of young children. A teacher who views screen time as entirely positive may underestimate the importance of hands-on, sensory, and social learning, while one who sees it only as negative may avoid useful innovations that could enhance learning experiences.(Linebarger, Deborah L., and Dale Walker, 2005:624)

Considering these complexities, this study aims to explore and understand how prospective early childhood education teachers perceive the impact of screen time on children's development in today's digital era. The goal is to uncover their awareness, attitudes, and preparedness in managing challenges related to technology use in early education. The study also seeks to provide insights that can guide teacher training institutions in creating curricula that emphasize digital ethics, responsible media use, and strategies for supporting children's holistic development.(Hirsh-Pasek, Kathy et al,2016:102)

In summary, as digital technology continues to influence how children learn and grow, early childhood educators hold a key role in guiding that process. The way future teachers view screen time reflects how they will approach the balance between innovation and child-centered development. Understanding their perspectives provides valuable input for improving educational policy, curriculum design, and teacher training programs suited to the needs of the digital generation.(Pajares, Frank, 1992:103)

METHODS

This study employed **a** descriptive qualitative approach aimed at exploring and understanding the perceptions of prospective Early Childhood Education (ECE) teachers regarding the impact of *screen time* on children's development in the digital era. This approach was chosen because it allows the researcher to gain a deep understanding of the participants' views, thoughts, and experiences, rather than relying solely on numerical or statistical data.(Creswell, J. W, 2018:70)

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Research Subjects

The subjects of this study were prospective ECE teachers who were in their final semester at a teacher education institution in Indonesia. They were selected because they had completed courses related to **c**hild development, educational technology, and early childhood pedagogy.A total of 30 participants took part in the study. These participants were considered capable of providing meaningful insights into how future educators interpret the role and impact of digital media on young children's development.(Merriam, S. B, 2009:20)

Sampling Technique

This study used a purposive sampling technique, which involves selecting participants based on specific criteria relevant to the research objectives. In this case, participants were chosen because they possessed basic knowledge and understanding of child development and the use of technology in learning processes.(Patton, M. Q, 2015:39)

Data Collection Techniques

Data were collected using two main methods:
Semi-structured questionnaires, containing open-ended questions designed to capture participants' general views on *screen time* and its influence on children. In-depth interviews**,** conducted with selected participants to gain a deeper understanding of their personal experiences, perspectives, and interpretations regarding *screen time* and its developmental impact.

Data Analysis

The data were analyzed using the Miles and Huberman model**,** which consists of three key stages:

a. **Data reduction,** selecting, focusing, and simplifying data relevant to the main research themes.
b. **Data display,** organizing the findings into descriptive narratives that illustrate the participants' perspectives.
c. **Conclusion drawing,** interpreting the patterns and meanings that emerge from the data to form comprehensive conclusions about participants' perceptions of *screen time*. To ensure the validity and reliability of the findings, **triangulation** was applied by

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comparing data from questionnaires, interviews, and supporting theoretical references.(Cohen, L., Manion, L., & Morrison, K, 2018:20)

Expected Outcomes

This study is expected to provide a clear and comprehensive picture of how prospective ECE teachers perceive the impact of *screen time* on children's development. Furthermore, the findings may serve as valuable input for teacher education institutions in developing training programs that emphasize digital literacy, responsible media use**,** and balanced teaching strategies that integrate both technology and real-world interactions in early childhood education.(Ary, D., Jacobs, L. C., Sorensen, C., & Walker, D, 2014:25).

FINDINGS AND DISCUSSION

The results of the study reveal that most prospective Early Childhood Education (ECE) teachers hold a balanced perception regarding the use of screen time among young children. They do not immediately perceive screen exposure as entirely negative but rather view digital media as potentially beneficial when used appropriately, under adult supervision, and aligned with the child's developmental stage. These future teachers recognize that, in today's digital era, it is unrealistic to completely separate children from technology; instead, they should be guided to use it in educational and developmentally supportive ways.

Based on the questionnaire and interview findings, prospective teachers believe that digital media can serve as an engaging, interactive, and enjoyable learning tool for early childhood education. They noted that various educational applications, learning videos, and interactive educational games can enhance children's language, cognitive, and creative abilities. For instance, children tend to learn letters, numbers, and colors more quickly when lessons are presented through appealing visual and auditory media. This indicates that prospective teachers possess a pedagogical awareness of the positive potential of screen time when it is integrated through constructive and well-designed learning approaches.(Shoshani, Anat, and Moran Slone, 2001:24)

Furthermore, these teachers acknowledge that technology has become an inseparable part of modern life. Therefore, they consider it important to introduce technology to children from an early age so that they can adapt to the demands of the times. However, they also emphasize the crucial role of both teachers and parents in supervising children's use of technology to ensure it is not limited to entertainment but serves as a meaningful learning experience. They believe

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that maintaining a balance between the digital world and real-life activities is essential for children's social and emotional development.(Hirsh-Pasek, Kathy, 2020:14)

This view aligns with constructivist learning theory, which emphasizes that children learn through direct experience and active interaction with their environment. When digital media is used interactively and combined with play-based learning, children can gain richer learning experiences without losing opportunities to develop their social and emotional skills. Thus, screen time should not be completely avoided but managed effectively so that it becomes a positive part of the learning process.

On the other hand, many prospective teachers also express concerns about the negative impacts of excessive screen time. They believe that prolonged screen exposure may interfere with children's concentration, reduce social interaction, and decrease physical activity. Some respondents observed that children who frequently watch television or use gadgets tend to become passive, easily distracted, and less engaged with peers. These findings reflect a critical awareness among prospective teachers of the importance of managing screen time to maintain a healthy balance in children's daily lives.(Lauricella, Alexis R, 2013:35)

In-depth interviews revealed that many prospective teachers associated these issues with the reduced opportunities for children to engage in outdoor play and exploration. Active play has a vital role in supporting motor, social, and emotional development. Children who spend too much time interacting with screens tend to show lower empathy, have difficulty interpreting others' emotions, and struggle to resolve social conflicts independently. This suggests that uncontrolled screen time can hinder early childhood socialization processes and emotional maturity.(Piaget, Jean, 1971:67)

The teachers' concerns are consistent with recommendations from the American Academy of Pediatrics, which advises that young children should not spend more than one hour per day using digital media and should always be supervised by adults during use. The participants in this study seemed to understand this principle well, emphasizing the joint responsibility of teachers and parents in ensuring that children's screen time is healthy, purposeful, and developmentally appropriate.

Another significant finding from the study highlights the awareness of ECE prospective teachers regarding the collaborative roles of parents and educators in managing children's screen time. They believe that the responsibility for guiding children in their use of technology should not rest solely on schools or families but must be a shared effort based on communication and mutual support. In the Indonesian context, these future teachers understand that not all parents possess

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adequate digital literacy. Therefore, ECE teachers are expected to play an active role in educating parents about the effects of screen time and strategies for its proper use.

In addition, the prospective teachers suggest that schools should integrate digital literacy into classroom activities while maintaining a healthy balance between online and real-world experiences. For example, short educational videos can be used as learning triggers, followed by role-playing, drawing, storytelling, or outdoor exploration. This approach helps children understand the connection between digital learning and tangible, real-world experiences.(Rideout, Victoria, 2020: 47)

The participants' perspectives demonstrate a deep understanding of holistic education, where technology is positioned as a supportive tool rather than a substitute for real-world experiences. Therefore, ECE teachers need to possess digital pedagogical literacy — the ability to integrate technology effectively, responsibly, and meaningfully into early childhood learning processes.

Overall, the findings confirm that prospective ECE teachers have a well-balanced perception of children's screen time. They recognize the potential of digital technology as an engaging learning medium but also acknowledge its risks when misused or excessive. These insights provide an important foundation for teacher education institutions to strengthen their curricula, particularly in the areas of digital literacy, media ethics, and the balanced development of young children in today's increasingly digitalized world.

CONCLUSIONS

This study shows that future Early Childhood Education (ECE) teachers have a balanced and thoughtful view about the effects of screen time on children's development in today's digital age. They understand that technology itself is not something bad — it can actually be useful when used wisely, with adult guidance, and in ways that match a child's stage of growth. Many of them believe that when used properly, screen time can help children learn language, think more creatively, and stay engaged through fun and interactive activities.

However, the participants are also aware that too much screen time, especially without supervision, can bring negative effects. They mentioned problems like less physical activity, limited social interaction, shorter attention spans, and slower emotional development. This shows that these future teachers already have a sense of responsibility in helping children use technology in a healthy, balanced way — combining digital learning with real-life experiences.

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Another important point is the need for strong cooperation between teachers and parents. Both sides share the responsibility to guide children in using technology wisely. The teachers believe that parents also need to be supported in improving their digital literacy, especially those who may not yet be familiar with technology.

From an educational perspective, this research suggests that teacher training programs should give more attention to digital literacy and how to use technology in teaching. It is not enough for future teachers to know how to use digital tools; they also need to understand how to choose and apply them in ways that truly support children's overall development — intellectually, emotionally, and socially.

In conclusion, the prospective ECE teachers in this study see technology as both a challenge and an opportunity. Their balanced way of thinking shows maturity and awareness of the real situation in early childhood education. These insights can help education institutions design teacher training programs that promote responsible technology use, ethical digital behavior, and teaching approaches that keep a healthy balance between screen-based learning and real-world interaction.

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