

Teachers' Perceptions of Interactive Digital Media in Developing Young Children's Language Skills

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Abstract

The use of interactive digital media has become one of the learning methods for children's language skills. This study aims to understand teachers' perceptions of the use of interactive digital media in early childhood language learning in early childhood education. Through a qualitative approach with a phenomenological design, this study explores teachers' views and experiences regarding the effectiveness of digital media and the challenges faced in its application. Data were obtained through interviews and observations of PAUD teachers at TPP Al Firdaus Surakarta, then analyzed using Miles and Huberman's interactive analysis technique. The results showed that teachers had a good understanding and positive attitude toward interactive digital media because it was considered capable of increasing children's participation, focus, and language skills through interesting and enjoyable activities. However, teachers also face obstacles in the form of limited facilities, internet connections, and the need for supervision to ensure that media use is not excessive. Therefore, improving teachers' digital literacy, providing supporting facilities, and cooperation between schools and parents are key to optimizing the use of interactive digital media in early childhood education.

Keywords: teacher perception, digital learning media, children's language skills

Introduction

Early Childhood Education (PAUD) based on Law Number 20 of 2003 (Indonesia, 2003) concerning the National Education System, article 26 explains that non-formal education is a service that functions as an alternative, complement, and support to formal education in order to realize lifelong education. It begins with providing pedagogical encouragement that strengthens the physical and mental support of children from birth to six years of age to ensure that they continue to further education. Early childhood education refers to a structured form of guidance offered to children from birth to six years old, intended to provide educational stimulation that supports their physical and psychological development in preparation for subsequent levels of education. (Fatmawati et al., 2022).

Given the importance of developing language and cognitive skills from an early age, learning approaches need to be adapted to the times in order to be more effective and appealing to children. The right approach not only helps children understand basic concepts such as numbers, but also stimulates critical thinking and language skills through stimulation appropriate to their stage of development. In this context, the use of technology is one relevant solution to support a more dynamic learning process that is adaptive to children's needs.

The rapid growth of digital technology has significantly influenced educational practices, including those in early childhood education (PAUD). In today's digital age, learning is no longer limited to conventional media, but has evolved towards the use of interactive digital media. Ministry of Education Regulation No. 16 of 2007 concerning Academic Qualification Standards and Teacher Competencies indicates that there are two competencies related to ICT: the first is in pedagogical competence, namely utilizing ICT for learning purposes, and the second is in professional competence, namely utilizing ICT for communication and self-development.

Media such as educational applications, animated videos, and educational games are now being used in the teaching and learning process in early childhood education to support children's development, including language skills. A similar opinion was expressed by Ekayani (2021), who stated that support from an attractive learning environment—including students' perceptions or impressions of that environment—can make it easier for them to remember and understand the material presented by the teacher. Therefore, in preschool education, it is important for teachers to make optimal use of learning media so that children can receive information well and experience behavioral changes in line with the expected skills, knowledge, and attitudes.

Language development is considered one of the key domains in early childhood growth. because they form the basis for reading, writing, and communication skills in the future. Child language development is a complex process that involves

biological, cognitive, and social aspects, and shows stages from prelinguistic sounds to complex sentences (Atqia et al., 2024). Wahidah & Latipah (2021) state that language reflects the integration of children's thinking, emotional, and motor skills, as well as its role as the primary means of communication between children and society. Therefore, learning methods that can attract children's interest and suit their playful and exploratory nature are needed. Interactive digital media has the potential to be a fun and effective learning tool in developing children's language skills, provided it is used appropriately.

The application of digital media in early childhood learning does not only depend on the sophistication of available technology, but mainly on how teachers interpret and integrate it into the learning process. Teachers have a central role as designers of learning experiences, managers of classroom activities, and decision makers in selecting digital media that is relevant, safe, and appropriate for children's developmental needs. Along with the rapid flow of digitalization, educators are required to be able to adapt and provide meaningful and enjoyable learning for early childhood, as emphasized by Winarti (2022). In this context, teachers' comprehension of digital media characteristics is essential for effective implementation.

Furthermore, teachers' perceptions of the ease, usefulness, and relevance of digital media greatly influence the extent to which this technology can be optimally utilized in the classroom. Teachers who have positive perceptions, adequate understanding, and confidence in the benefits of digital media tend to be more creative, confident, and ready to integrate it into various learning activities, including the development of children's language skills. Therefore, it is important to examine how teachers assess, understand, and apply digital media in their daily practice. This study helps ensure that technology truly functions as an effective pedagogical tool and is capable of supporting learning objectives in early childhood education settings.

Previous studies have focused more on the effectiveness of digital media in improving children's language abilities, such as vocabulary mastery, storytelling skills, and phonological skills. Although these findings show the benefits of using digital media, studies on how teachers understand, assess, and perceive the use of interactive digital media in learning practices are still limited. In addition, most studies have been conducted overseas, while research in the context of Indonesian PAUD—which has diverse characteristics in terms of facilities, technological readiness, and teacher digital competence—has not been explored in depth. Research related to the obstacles experienced by teachers, such as device limitations, digital literacy, and concerns about the impact of technology on children, has also not been comprehensively studied.

This research gap indicates the need for studies that specifically explore teachers' perceptions of the use of interactive digital media in supporting the language skills of early childhood. Therefore, this study aims to describe ECE teachers' perceptions of the use of interactive digital media in language learning, describe teachers' views on the effectiveness of these media, and identify various obstacles encountered in their application. Through these objectives, this study is expected to provide a comprehensive picture of how teachers view, utilize, and respond to the challenges of using interactive digital media as a means of supporting the development of language skills in early childhood.

Methodology

A qualitative phenomenological design is employed in this study to explore the underlying meaning of the phenomenon, perceptions, and subjective experiences of teachers regarding the use of interactive learning media. The phenomenological design was chosen to gain an in-depth understanding of how teachers experience and interpret the use of digital media in teaching practice. According to (Nasir et al., 2023), phenomenology focuses on revealing the essence of experiences directly experienced by participants without being influenced by prior assumptions or theories. This approach is considered appropriate for exploring the authentic experiences of teachers in the context of both offline and online learning. In line with (Helaludin, 2018), phenomenological research emphasizes understanding the meaning of events experienced by individuals in certain situations based on existing realities.

This research will be conducted at TPP Al Firdaus Surakarta, located in Banjarsari, Surakarta. This location was chosen based on preliminary observations showing that the institution has been using interactive learning media in its learning process. The research will be conducted in the odd semester of the 2025/2026 academic year, namely from October to November 2025. The object of this research is teachers at TPP Al Firdaus who use interactive digital learning media in teaching and learning activities. Meanwhile, the subjects of the research are teachers at TPP Al Firdaus who provide information related to the data needed in this study.

Data collection in this study was conducted through three main techniques, namely interviews, observation, and documentation. The data collection stage was crucial because data is the main element that determines the results of the study. Interviews were conducted in a semi-structured manner, where the researchers prepared a list of questions aimed at exploring the understanding, experiences, perceptions, and challenges faced by teachers in using interactive digital media in learning (Ardiansyah et al., 2023). Observations were conducted by directly observing the participants' activities and situations related to the research topic, both in real environments and in prepared settings (Ardiansyah et al., 2023). Meanwhile, documentation techniques were used to obtain data from various relevant documents, archives, and other written materials, such as notes, reports, letters, books, and other official documents (Ardiansyah et al., 2023).

The data were analyzed through Miles and Huberman's interactive data analysis framework, which was carried out continuously from the beginning until data saturation was achieved. The analytical process was carried out in three stages:

data reduction, data presentation, and conclusion development. In the reduction stage, data from interviews and documentation were selected, simplified, and focused according to the research objectives. Next, the reduced data were systematically organized to make them easy to understand. The final stage of drawing conclusions was carried out continuously by reviewing field notes and findings to ensure the validity and objectivity of the research conclusions.

Result and Discussion

Understanding and Perception of Interactives Digital Media

Based on interviews conducted with three school teachers from different grade levels, it was found that they had an understanding of interactive digital media. All seven teachers reported having substantial experience in utilizing digital media in early childhood education activities. One participant described interactive digital media as a learning tool that allows children to actively engage in the learning process, for example by matching pictures or pressing icons in educational games. Meanwhile, the informant also added that digital media now allows children to interact directly through typing, clicking, and searching for information in accordance with the learning theme. This view shows that teachers understand interactive digital media not only as a visual aid, but also as a medium that encourages children's direct interaction and involvement in the learning process.

These findings show that teachers have a good level of acceptance and adaptation to advances in educational technology. This is in line with the opinion of Oktari & Ayuni (2024), who stated in their research that most early childhood teachers have a positive perception of the use of interactive digital media because it is considered to be able to increase children's interest in learning and make learning more interesting. Teachers' experiences in utilizing various forms of digital media also show a paradigm shift in learning from conventional methods to more participatory technology-based learning. In addition, these findings reinforce the view of Rasmani et al. (2023) that interactive digital media can stimulate children's senses through a combination of visuals, audio, and movement, thereby strengthening their understanding of the material presented. In the context of early childhood education, teachers act not only as users of technology but also as facilitators who create an active and enjoyable learning environment. A similar opinion was expressed by Ekayani (2021), who stated that support from an attractive learning environment—including students' perceptions or impressions of that environment—can enhance learners' ability to retain and understand the material presented by the teacher.

From the interview results, the interviewee also interpreted interactive digital media as a learning tool that allows children to actively participate, for example by matching images or pressing icons in educational games. The interviewee then added that digital media now enables children to interact directly through typing, clicking, and searching for information related to the learning theme. This view shows that teachers understand interactive digital media not only as a visual aid, but also as a medium that encourages children to interact and engage directly in the learning process.

This understanding is in line with the definition put forward by (Wilantoro et al., 2024), that interactive multimedia is a combination of text, images, sound, animation, and video designed to enable users (children) to be actively involved in the learning process. This interactivity means that children are not just passive recipients of information, but subjects of learning who explore. Furthermore, Rahayu et al. (2022) state that interactive digital media is effective in stimulating children's speaking abilities, improving their pronunciation, vocabulary, and courage in communicating.

Teachers' positive understanding of interactive digital media also demonstrates an awareness of the significance of learning approaches that are suitable for the characteristics of children in the digital age. This is in line with the views of Nurjanah & Mukarromah, (2021), who emphasize that the utilizing of digital media is the answer to the challenges of 21st-century education. Children raised in the digital era demonstrate higher responsiveness to technology-based media, making interactive learning approaches relevant and effective for developing their language skills.

This shows that teachers have a positive perception of the use of interactive digital media in early childhood language learning. This is supported by Vygotsky's interactionism theory, which emphasizes the importance of social interaction in children's language development. Through interactive digital media, children have the opportunity to learn collaboratively—both with teachers and peers—in a meaningful context. The interactivity of media also supports the concept of the zone of proximal development (ZPD), where children are able to gain a higher level of understanding with the help of visual and auditory stimuli provided by digital media (Etnawati, 2022).

Thus, teachers' perceptions of the benefits of interactive digital media demonstrate a strong understanding of the potential of technology in enhancing the development of children's language skills. According to Mutmainah & Khaerunnisa (2024), teachers' perceptions of the use of technology-based learning media are greatly influenced by various factors, including their skills in operating technology, previous experience in utilizing educational devices or applications, and the support provided by schools through the provision of adequate facilities and training. Teachers see digital media not merely as a teaching aid, but as a means of enlivening the learning process, strengthening interaction, and enriching children's learning experiences in the digital age.

Practice of Using Interactive Digital Media

The interview results showed that teachers have utilized various interactive digital media in learning activities. The interviewee mentioned the use of applications such as Khan Academy Kids, Lingokids, ABCmouse, and educational videos from YouTube Kids to introduce letters, numbers, and new vocabulary to children. The interviewee then added that the school provides technological facilities such as computers, projectors, and iPads in each classroom to support learning activities.

This shows that teachers do not rely on just one form of media, but are able to combine various digital media to suit the needs of children and learning objectives. This is in line with the opinion of Wilantoro et al. (2024), who state that interactive multimedia is a combination of text, images, sound, animation, and video designed to actively engage students. The use of various media not only enriches the learning experience but also helps accommodate children's different learning styles. (Rasmani et al., 2023) also states that interactive digital media provides multisensory stimuli that can strengthen children's understanding of learning materials. In the context of language skill development, the variety of media used by teachers allows children to gain a broader learning experience. According to (Jumiati et al., 2022), media is designed to create an interesting and enjoyable learning experience through the integration of various elements such as text, images, sound, and animation. Research conducted by Ningrum & Wardhani (2022) also states that video-based learning materials can be an alternative option because they can increase students' interest when they are involved in the learning process.

However, the interview results also show that the utilizing of digital media is significantly affected by the availability of facilities and the policies implemented by the school. Schools that provide facilities and training support tend to have teachers who are more innovative in creating digital media-based activities. Therefore, the success of interactive digital media implementation depends not only on teacher creativity, but also on school support in providing adequate resources. The informants revealed that schools have played an active role in supporting the improvement of teacher competence through various training and mentoring programs. The training includes the creation of learning videos, the use of Zoom and CapCut applications during the pandemic, and On the Job Training (OJT) programs for new teachers. School support is also demonstrated through the provision of devices such as laptops, projectors, and internet networks to support learning activities.

This shows that training and support from educational institutions play an important role in improving teachers' ability to use digital media. This view is in line with the theory of Oktari & Ayuni (2024), which emphasizes that teachers are not only users of media, but also designers and evaluators of learning. Therefore, improving teachers' capacity through training is a crucial aspect so that they are able to select and manage digital media effectively aligned with the developmental characteristics of early childhood.

In addition to strengthening teacher competencies, institutional support also influences the sustainability of digital-based learning practices. (Nurjanah & Mukarromah, 2021) emphasize that the successful implementation of interactive digital media in early childhood education is highly dependent on the readiness of the education system to provide infrastructure and ongoing training. With systematic support, teachers can be more confident in innovating using technology without neglecting pedagogical values. Therefore, training and institutional support are crucial in maximizing the effective use of interactive digital media in early childhood education. Without such support, teachers will find it difficult to adapt to the ever-changing developments in technology. Therefore, synergy between teachers, schools, and policymakers is needed to create a conducive learning environment for the implementation of digital-based learning.

In addition to the utilizing of media, the results of interviews and observations in the classroom showed that children responded very positively to the utilizing of interactive digital media in learning activities. Informants also revealed that children appeared to be more focused, enthusiastic, and quick to understand the material presented. They also showed improvement in speaking skills, courage to express opinions, and mastery of new vocabulary. The results suggest that interactive digital media is both visually engaging and effective in facilitating children's language development. Mayer's Multimedia Learning theory emphasizes that learning is more effective when visual and auditory elements are combined. (Dhitya & Setiyowati, 2024)

Another study also states that the use of digital media in early childhood language learning has a significant effect on improving listening, speaking, and reading skills. The results of this study confirm that the use of digital media such as interactive videos and educational applications not only increases children's motivation to learn but also makes it easier for them to understand language concepts more concretely. (Aulia & Nopriansyah, 2025)

From Piaget's cognitive theory perspective, interactive digital media plays a role in supporting children's preoperational stage by providing concrete visual and auditory stimuli. Children learn through symbolic representations, such as moving images and sounds, which help them understand language concepts more easily (Hidayat, 2023). Thus, the interactivity of digital media provides a multisensory learning experience that is relevant to the learning characteristics of early childhood. Therefore, it can be concluded that children's positive response to interactive digital media is an indicator of the successful application of such media in language learning. The appropriate use of media can increase children's motivation to learn and support their overall language development.

Challenges and Obstacles in the Utilizing of Digital Media

Although teachers have a positive perception of interactive digital media, the interview results show that there are still a number of challenges and obstacles in its implementation. Respondents mentioned the main obstacles as limited facilities, unstable internet connections, and differences in children's abilities to use digital devices. Meanwhile, one respondent also revealed that The utilization of digital media may negatively affect children's motor activity development if not balanced with real-world activities, so teachers must be able to balance digital learning and physical activities.

These obstacles indicate that the readiness of infrastructure and teachers' digital competence are still determining factors for the successful implementation of digital media in early childhood education. This is in line with the findings of Oktari & Ayuni (2024), which confirm that even though teachers have a positive perception, limitations in equipment and digital skills often become obstacles in the implementation of technology-based learning. Additionally, Nurjanah and Mukaromah (2021) emphasize the importance of teachers' digital literacy so that the use of digital media is not only consumptive but also productive and educational.

From Piaget's cognitive theory perspective, this challenge is also related to children's readiness to accept technology-based learning. Early childhood children are in the preoperational stage, where they still need concrete experiences to understand concepts in depth. Therefore, digital media needs to be used proportionally as a complement, not a substitute for direct experience (Hidayat, 2023). With this in mind, it is understandable that the application of interactive digital media in early childhood language learning must be accompanied by careful pedagogical planning. Teachers need to ensure a balance between technology and exploratory activities so that children's cognitive, social, and motor skills continue to develop harmoniously.

To overcome various challenges in the utilizing of interactive digital media in early childhood education, systematic efforts are needed that focus on improving teacher competence, providing infrastructure, and providing continuous institutional support. Teachers play an important role not only as users, but also as designers and evaluators of digital learning media (Oktari & Ayuni, 2024). Therefore, continuous professional training is necessary to ensure that teachers have adequate digital literacy skills and are able to integrate interactive media in accordance with children's developmental characteristics. In addition, schools need to ensure the availability of supporting facilities such as digital devices, stable internet networks, and clear media usage policies to support the implementation of technology-based learning. This is in line with the views of Rasmani et al. (2023) and Wilantoro et al. (2024) that interactive digital media designed with the integration of visual, audio, and animation elements will be more effective if supported by adequate infrastructure and good teacher skills in managing them.

In addition to improving teacher competence, parental involvement is also an important factor in optimizing the use of interactive digital media. Based on Vygotsky's interactionism theory, the learning process of early childhood is greatly influenced by social interaction and adult guidance in the zone of proximal development (Etnawati, 2022). Therefore, collaboration between schools and parents is necessary to ensure that the use of digital media remains under supervision and is not excessive. This approach is in line with the views of Nurjanah and Mukaromah (2021), who emphasize that the use of digital media must be proportional so as not to reduce children's direct learning experiences. Thus, a comprehensive solution includes improving teacher capacity, strengthening school infrastructure, and creating synergy between teachers and parents to create effective, enjoyable, and age-appropriate digital learning for early childhood.

Conclusion

The findings reveal that teachers at TPP Al Firdaus Surakarta demonstrate positive perceptions regarding the use of interactive digital media for language learning in early childhood education. Digital media is seen as an effective means of increasing interest in learning, enriching vocabulary, and training children's speaking skills through interactive and enjoyable learning experiences. However, its implementation still faces challenges such as limited technological facilities, internet connection, and the need for supervision so as not to reduce children's physical activity. Therefore, efforts to optimize the use of interactive digital media need to be made through improving teacher competence, supporting school infrastructure, and collaborating with parents. With proper implementation, interactive digital media can be an important instrument in supporting the development of early childhood language skills in the digital age.

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