

Literature review: Digital books in preschool period

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Highlights

- In Turkey, studies on digital books for young children started in 2012, and since 2019, the number of studies has significantly increased.
- In Türkiye, studies on digital books for young children started in 2012, and since 2019, the number of studies has significantly increased.
- The departments of visual arts and preschool education have both been more actively involved in this area of research than the department of instructional technologies.
- All research has been done on typically developing children; no studies have been done on families of children with special needs.
- There is limited research on children under 3 years old, with the majority of studies focused on children ages 4-6.

Abstract

The new generation of children, often referred to as digital natives, are growing up in a digital world, exposed to electronic gadgets and technology from an early age. Many everyday activities, including playtime, have shifted to digital environments. Digital picture story books, as a significant example, are becoming popular among children. While there are numerous studies on the positive effects of printed picture books on preschoolers' development, research on digital children's books is relatively limited. In Türkiye, 265 postgraduate thesis studies on digital books examined. Only 12 of these studies target preschool children. The analysis revealed that the first study on this subject was conducted in 2012, with master's level thesis in the department of early childhood education. However, there were no studies involving children with disabilities and their families. To improve the quality and quantity of research, it is recommended to include children with disabilities in future studies and explore the topic more thoroughly using data from families, teachers, and children through triangulation methods.

Article Info: Research Article

Keywords: *digital books, electronic books, electronic book, picture story books, children's books*

1. Introduction

The early childhood period holds immense significance in human life as it serves as a crucial time for language, cognitive, motor, social, and emotional development. It is during this period that the foundations for future life are established. Various external sources are utilized to positively influence a child's development during this critical stage. Among these external resources, children's literature plays a significant role in supporting children in multiple aspect (Perels, Merget-Kullmann, Wende, Schmitz and Buchbinder, 2009). Children's literary works aid in the development and organization of children's perspectives on life through stories, children have the opportunity to encounter characters who are both similar to and different from themselves, allowing them to broaden their understanding of the world

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(Gönen, 2017). Exposing children to characters who are similar to themselves can assist them in finding solutions to the challenges they encounter, while encountering characters who are different from them can help them develop diverse perspectives. Children's picture books have a positive impact on their interest and motivation to read during the preschool period, and they also play a significant role in fostering early literacy skills (Adams, 1990; Wells, 1985). Early literacy skills enable children to understand that communication can occur not only through spoken language but also through written symbols. Research indicates that children who develop early literacy skills tend to achieve better academically compared to their peers who do not possess these skills (Haden et al., 1996; Morrow, 1983; van et al., 1997; Senechal & LeFevre, 2002; Sylvia et al., 2011; Lonigan, Schatschneider, Westberg, & The National Early Literacy Panel, 2008).

There are various strong grounds for writing this article that examines postgraduate theses on digital children's books in Türkiye. First of all, such an endeavor makes it easier to identify gaps in an area of literature, offering data on subjects that have yet to be fully explored or call for more research in the context of Türkiye. Second, by examining these graduate theses, researchers are able to assess the quality and depth of their academic contributions to the field of digital children's books, demonstrating the depth and relevance of their graduate-level study. Additionally, it offers a comprehensive perspective of the developing field of digital children's books in Turkish academia, taking into account the appearance of fresh trends, technological advancements, and pedagogical approaches. The results can also help educators and politicians make decisions about developing curricula, promoting digital literacy, and incorporating technology into education. Insights gained from this investigation can also be highly beneficial for researchers and professionals in the domains of education and children's literature by providing practical applications advice on how to use digital books in classrooms. Additionally, it allows for a comparison with global research trends, serving as a benchmark for assessing Türkiye's advancement in the field of digital children's books and facilitating compliance with international standards. Last but not least, this effort assists in identifying prospective areas for further study, establishing the framework for subsequent research and the development of knowledge in this constantly evolving subject. In conclusion, the evaluation of Turkish postgraduate theses on digital children's books is a worthwhile attempt that will help academics better understand this rapidly developing field, expand academic discourse, inform policymaking, and establish the route for future research projects.

2. Literature

2.1. Children's Picture Books and Genres

Children's picture books play a crucial role in introducing children to the enjoyable aspects of reading and setting them on a positive path in life. These books not only satisfy children's curiosity and stimulate their imagination but also facilitate the development of new ideas. Moreover, they contribute to cognitive, social, and language development by offering different perspectives on the world. During the early stages of childhood, it is essential for children to have access to books as it broadens their horizons, deepens their understanding, and enhances their social awareness (Gönen & Veziroğlu, 2015; Seçim & Gönen, 2022). Children's picture books have a significant impact on the development of children, and they can be categorized into various genres based on factors such as age group, physical characteristics, content features, and literary genres. These genres include poetry books, baby books, interactive books, toy books, concept books, modern fantasy books, and biographical books (Gönen, 1984; Hillman, 1995; Cianciolo, 1997; Kiefer, et al., 1998; Temple et al., 1998; Ural, 2015). The interests and needs of children shape the types and contents of children's books. As a result, electronic books have become a prominent type of children's literature in recent years. The emergence of digital books can be attributed to the generation born in the digital age, who are accustomed to interactive technology such as touchscreens, sensor-activated lights, and automatic doors. This generation, referred to as digital natives by Prensky (2001), has grown up

surrounded by a digital world. Therefore, it can be inferred that digital children's books have been developed to cater to the interests and needs of this particular generation.

2.2. *Digital Children's Books and Their Effects on Children*

Digital books significantly contribute to both children's intellectual development and their parents' pedagogical involvement, according to researches (Şahin& Durak, 2023; Takacs, Swart, & Bus, 2015). According to a meta-analysis study conducted by Strouse et al. (2019), it has been found that digital children's books have a positive impact on children's learning. The study examined a total of 43 research papers, all of which focused on children between the ages of 3 and 10. The findings of the research indicate that children who engage with electronic books demonstrate better comprehension and storytelling abilities compared to those who interact with printed books through reading aloud (Takacs, Swart, & Bus, 2015). Matching verbal and non-verbal features in digital children's books enhance the learning process for children. The combination of listening to the story while experiencing animations, sound effects, music, and visual descriptions that align with the narrative helps children predict the flow of the story (Bus, Takacs, & Kegel, 2015; Mayer, 2005; Takacs et al., 2015). The utilization of digital books has been found to increase children's learning potential (Bus, Takacs & Kegel, 2015) and improve their phonological awareness (Chera & Wood, 2003; Flack, Field, & Horst 2018). E-books, like other forms of children's literature, should be of high quality in order to effectively support the development of children. Numerous research studies have indicated that e-books can be beneficial for children, but it is important to consider their developmental characteristics and needs. In order to engage children, e-books should incorporate interesting multimedia features such as sound, animation, and graphics (Anuradha & Usha, 2006, p. 663; Bozkurt Yukcu et al., 2019, p. 159). Therefore, it is crucial to explore the existing literature on digital books, particularly focusing on comprehensive and long-term studies conducted at the graduate level. The objective of this research is to investigate postgraduate-level thesis studies conducted in Türkiye that focus on digital children's books designed for pre-school children.

In this particular context, the research questions that have been identified are as follows:

1. What is the distribution of graduate-level studies focused on pre-school children and their relationship with digital books, categorized by years?
2. What is the distribution of graduate-level studies targeting pre-school children and related to digital books, categorized by departments?
3. How is the distribution of master theses and dissertations in this field?
4. Which research methods were employed in these theses& dissertations?
5. Who constitutes the sample group in experimental studies conducted in this area?
6. How is the distribution of studies involving children in the sample group based on gender?
7. What are the specific age groups targeted in studies where children form part of the sample group?

3. **Methodology**

3.1. *Research Model/Design*

In this particular study, a descriptive approach was employed, utilizing the document analysis method within the qualitative research tradition. Documents, which refer to written or visual materials available prior to and during the research process, were examined and analyzed (Patton, 1987). The document review involved scrutinizing written materials that contained relevant content pertaining to the cases under investigation (Yıldırım & Şimşek, 2018). This practice is commonly employed in qualitative research to enhance the data obtained. Documents are considered crucial resources for monitoring changes and developments in a given field (Bowen, 2009). In scientific research, it is important to note that documents can serve as a valuable data set. By thoroughly examining and analyzing these documents, researchers can obtain outputs that effectively uncover the specific facts they are targeting (Bailey, 1994).

The research focuses on master theses and Ph.D. dissertations that investigate digital books for preschool children. The scope of the study is limited to research conducted in Türkiye, and the YÖK Thesis Center database was used to obtain search results. The theses analyzed in this research are those that have full-text accessibility and are listed in the YÖK Thesis Center database until May 2023.

In this section, the research model/design should be explained. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce ac fringilla nisi. Vivamus nibh mi, pretium sed est sit amet, lacinia ultrices nunc. Aliquam laoreet ut massa vitae consequat. Nunc luctus nisi quam, vitae placerat justo vulputate ac. Donec iaculis eu nibh nec venenatis. Maecenas lobortis bibendum sem et interdum. Phasellus et egestas felis. Donec id sodales dui.

3.2. Data

In order to find the theses& dissertations examined in this research, the keywords "digital children's books", "electronic children's books", "picture children's books" and "electronic books" were searched in the thesis search engine of YÖK by selecting the different criteria specified below. Limitations will be sought in the research conducted: all; leave status: on leave; thesis type: made as a whole.

Table 1.

The number of theses conducted on digital books targeting preschool children until May 2023

Keywords	Number of Studies Accessed	Number of Studies Related to the Subject
digital children's books	0	0
electronic children's books	1	1
picture children's books	162	5
electronic books	102	9
Total Accessed	265	15

The access to theses has been influenced by the use of specific keywords, resulting in the experience of accessing similar theses under different keywords. Out of the total number of 12 theses examined, three of them were found to have used similar keywords.

3.3. Research Ethics

The entire research process, from planning to implementation, data collection to analysis, adhered to all the regulations outlined in the "Higher Education Institutions Scientific Research and Publication Ethics Directive." No actions that violate the principles stated in the section titled "Actions Contrary to Scientific Research and Publication Ethics" were taken. The writing process of this study followed scientific, ethical, and citation guidelines. The collected data was not falsified, and the study was not submitted to any other academic platforms for evaluation. Content analysis was conducted as part of the research. Theses used in content analysis were accessed from the YÖK Thesis Center system. Ethics committee approval was not obtained because the theses of the researchers who declared that their studies should be made accessible were examined.

3.4. Findings and Discussions

The content analysis of the examined theses was transformed into numerical data by creating data tables in line with the research questions, and some findings were obtained accordingly.

1. *What is the distribution of graduate-level studies focused on pre-school children and their relationship with digital books, categorized by years?*

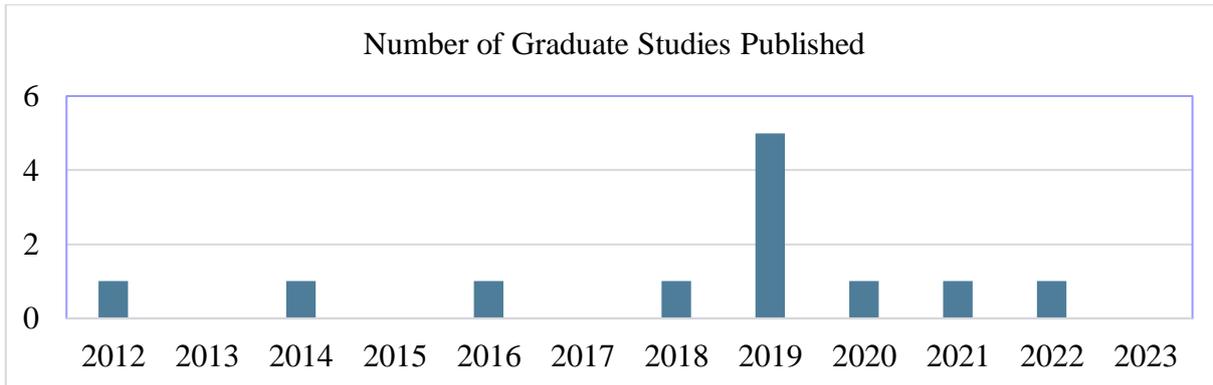


Figure 1. Distribution of theses targeting the pre-school period on digital books in Türkiye by years

According to the available research, the investigation into this subject began in 2012 and a total of 12 studies have been conducted thus far. Upon analyzing the thesis studies, it was determined that no research was carried out in the years 2013, 2015, 2017, and 2023. However, it is important to note that this information is based on the current data available and may change in the future. Notably, this particular study was conducted in May 2023. It can be inferred from the research that the number of studies on this subject has increased significantly in 2019. Furthermore, since 2019, there has been an annual publication of studies focusing on digital books for preschool children.

2. *What is the distribution of graduate-level studies targeting pre-school children and related to digital books by departments?*

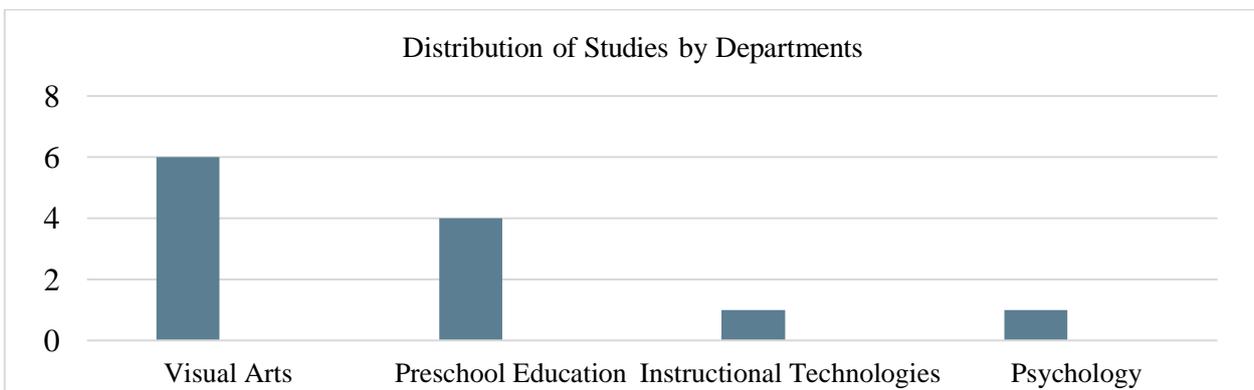


Figure 2. Distribution of theses& dissertations targeting the pre-school period on digital books in Türkiye by departments

Upon analyzing the research findings, it can be deduced that the Visual Arts Department has conducted the most extensive work. The Pre-School Department comes next in terms of quantity of studies conducted. It is worth mentioning that only one study has been carried out in the Department of Instructional Technologies, previously known as the Department of Information and Instructional Technologies. Lastly, the Department of Psychology follows in the order of quantity of research conducted.

3. *How is the distribution of master theses and dissertations?*

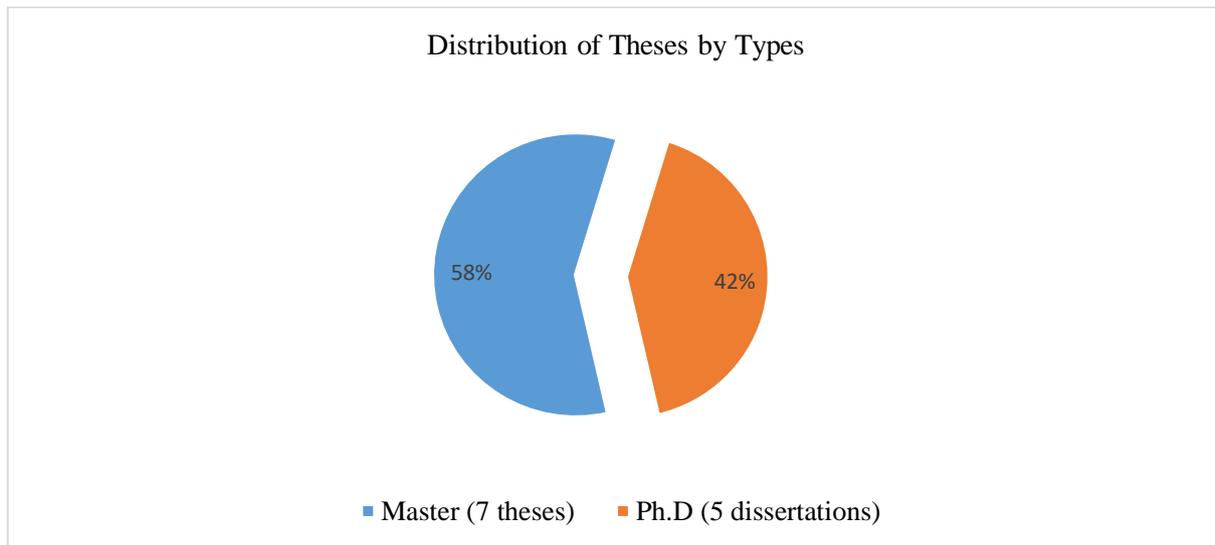


Figure 3. Distribution of theses targeting the pre-school period on digital books in Türkiye according to their types

When the theses are examined according to their types, there is no significant numerical difference between master's and doctoral studies. However, since doctoral studies are in-depth and long-term studies on the field, the number of doctoral studies on the subject is remarkable.

4. Which research methods were used in the studies?

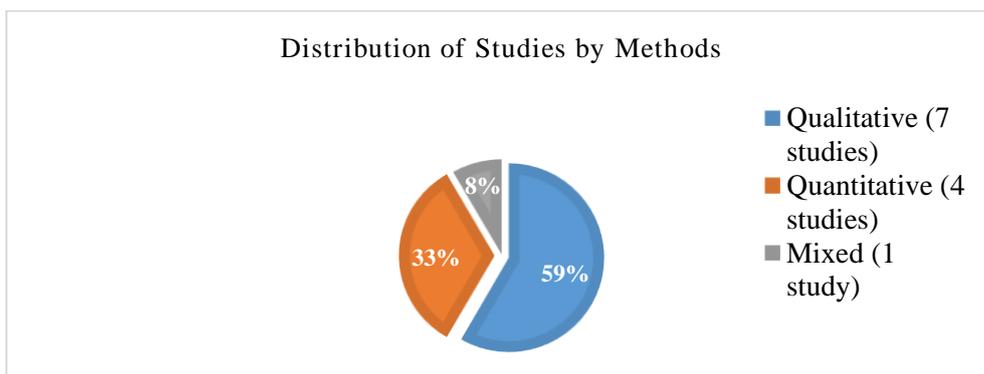


Figure 4. Distribution of theses targeting the pre-school period on digital books in Türkiye according to their methods

When analyzing the theses focused on digital books for preschoolers, it is evident that the qualitative research method is the most commonly utilized approach. Following this, quantitative research is ranked second in terms of preference. On the other hand, the mixed method is found to be the least employed research methodology in this context.

5. Who is the sample group in the experimental studies?

	Typically Developing Children	Children with Special Needs	Families with Typically Progressive Children	Families with Special Needs Children	Preschool Teachers	Field Experts
Study 1	✓	⊘	⊘	⊘	⊘	⊘
Study 2	✓	⊘	⊘	⊘	⊘	⊘
Study 3	✓	⊘	⊘	⊘	⊘	⊘
Study 4	✓	⊘	⊘	⊘	⊘	⊘
Study 5	✓	⊘	⊘	⊘	⊘	⊘
Study 6	✓	⊘	⊘	⊘	✓	✓

When analyzing the studies conducted on this subject, it is observed that out of the total 12 studies, 6 of them focused on pre-school children who have typical development. Only one study included a diverse group consisting of preschool teachers, field experts, and children together. However, it is important to note that these studies did not include children and families with special needs or families with typically developing children.

6. How is the distribution by gender in studies where the sample group consists of children?

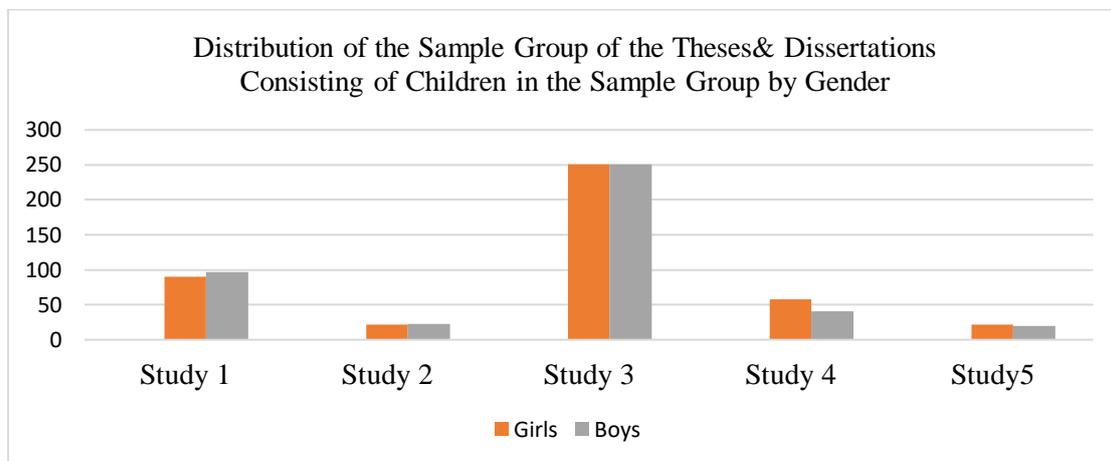


Figure 5. Distribution of the sample groups by gender in the theses& dissertations about digital books in Türkiye, which target the preschool period and whose sample group consists of children

When analyzing the theses focused on digital books for preschool-aged children, it is observed that the sample group in 5 studies consists of children. Upon examining the distribution of children in these sample groups based on their gender, it can be concluded that there are no significant differences between boys and girls.

7. What are the specific age groups targeted in studies where children form part of the sample group?

Table 2 presents the age groups of the sample groups in five theses focusing on digital books during the preschool period in Türkiye. These theses specifically target children, and upon analyzing the sample groups, it is evident that the majority of studies include children aged between 60-72 months.

Table 2.

The age groups targeted by the sample groups in the theses on digital books in Türkiye, which target the preschool period and whose sample group consists of children

Study	Months
Study 1	39-75 months
Study 2	60-72 months
Study 3	48-72 months
Study 4	48-72 months
Study 5	60 months

These studies primarily focus on children, and a detailed analysis of the participants reveals that the majority of them are in the 60 to 72-month age group. It's also important to highlight that none of the research studies included children aged 0 to 36 months in their samples.

4. Conclusion and Suggestions

In this study that analyzes graduate studies on digital books for preschool children, it was determined that the initial research on this topic was conducted in 2012 at the master's level within the department of preschool teaching. When examining the history of electronic books, it is evident that they have been in existence since the 1970s (Bozkurt & Bozkaya, 2013, p. 9). According to Lebert (2009, p. 66), the release of PDF 1.0 in 1993 allowed for the inclusion of text and images in electronic books. As e-books for preschool children typically contain both text and images, it can be inferred that research on this subject started relatively late in our country, considering the release date of PDF 1.0. Upon examining the studies conducted in this field over the years, it is observed that there were no graduate thesis or dissertations on the subject in certain years such as 2013, 2015, 2017, and 2023. The most surprising outcome of the research findings was that there was no significant increase in studies conducted on the subject after the pandemic period of 2019-2020. This is unexpected because it has been revealed that the use of digital tools in education, including e-books, has significantly increased during the pandemic (Alsadoon, 2020). The American Academy of Pediatrics (AAP) recommends that children aged 0-2 should not have access to technological devices, children between the ages of 3-5 should be limited to one hour of screen time per day, and that such devices should not be present in their bedrooms (Radesky, et. al, 2014). This could explain the scarcity of studies on digital books during the preschool period. Upon examining the research findings, it is evident that out of the five studies conducted with children in the sample group, only one focuses on the age of 3, while the others target the age range of 4-6. The fact that the researchers did not conduct studies involving the first 0-2 age range in the preschool period can be explained by the literature suggesting screen distance for 0-2 years old.

When analyzing the studies conducted on the subject, it becomes evident that the Visual Arts Department has conducted the highest number of studies, followed by the Preschool Department. Surprisingly, there is a limited number of studies conducted in the Department of Instructional Technologies, with only one study found. Upon examining the theses based on their types (master theses& dissertations), there is no significant

difference in quantity between master's and doctoral studies. However, it is worth noting that there are more master theses than dissertations conducted on this subject. When the theses on the subject are examined according to their methods, it is concluded that the qualitative research method is the most preferred method. Quantitative research follows the ranking. It is concluded that the mixed method is the least used research method. When the sample groups in the experimental studies on the subject are examined, it is concluded that only children with typical development, field experts and preschool teachers are included in the sample groups. It was concluded that children with special needs and their families were not included in the studies. However, when the literature is scanned, it is seen that digital books affect both typically developing children and children with disabilities positively (Boyle et al., 2019; Justice et al., 2005; Shamir & Baruch, 2012; Trussell et al., 2018).

In conclusion, this extensive scientific analysis provides a comprehensive overview of the historical progression of research on digital books for preschool children. It explores the influence of recommendations and guidelines on this topic and examines the methodological preferences and sample group compositions used in the studies conducted. These findings offer valuable insights into the current state of research in this field and identify areas that require further investigation to enhance our understanding of how digital books impact preschool children's development and learning outcomes.

- Since doctoral studies are in-depth and long-term studies on the field, it is necessary to increase the number of dissertations on the subject.
- Mixed method; it proposes a comprehensive, pluralistic, complementary and selective approach to the researcher's choice of method and designing about the research. Many research questions can be answered completely with the solutions offered by the mixed method (Johnson & Onwuegbuzie, 2004). For this reason, it is recommended to increase the number of mixed studies on the subject.
- Inclusion of children with disabilities and their families in the planned studies is important in terms of inclusiveness.
- The recommendation is to focus on utilizing digital books for preschool children in the research conducted within the Department of Instructional Technologies. Additionally, having a co-advisor involved in the planned studies will enhance the level of detail and effectiveness in the research process.

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