The Influence of Learning Technology on Early Childhood Literacy Development in Indonesia

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ABSTRACT

Background. In the era of information and communication technology, the use of learning technology in Indonesia is increasingly widespread, including among young children. Today's children not only grow up in a technological environment, but also actively interact with digital devices from an early age. Early childhood literacy is key in understanding the influence of learning technology on their development.

Purpose. The main aim of this research is to investigate to what extent and in what ways learning technology influences the literacy development of early childhood children in Indonesia. Through a quantitative approach and involving education students, this research seeks to provide a comprehensive picture of the positive and negative impacts of learning technology and identify factors that influence early childhood literacy.

Method. The research employs a quantitative approach through a survey method, targeting 30 education students with a profound understanding of children's developmental stages. A questionnaire was crafted and disseminated through Google Forms to gather insights into students' perceptions and experiences related to the utilization of learning technology and its influence on the early childhood literacy development. The acquired data will undergo quantitative analysis techniques, emphasizing data reduction, presentation, and the derivation of conclusions.

Results. The research results show that students have positive experiences in using learning technology, actively utilizing it, especially in the context of early childhood education. Positive perceptions also emerged regarding the influence of learning technology on literacy and motivation of young children. Its social and emotional impact is considered positive, contributing to the emotional well-being and social interactions of early childhood.

Conclusion. The conclusion of this research is that learning technology has a positive role in enriching the experience of early childhood education in Indonesia. These positive impacts include increasing literacy, learning motivation, as well as social and emotional aspects of early childhood.

KEYWORDS

Early Childhood, Indonesian Literacy, Learning Technology

INTRODUCTION

The growth of information and communication technology has given rise to a profound transformation in.

various aspects of life, with an inevitable impact felt in various sectors, including the world of education (Dwivedi et al., 2020) Indonesia, like other countries in the world, is seeing these changes reflected in the integration of learning technology as an integral part of the education process, especially at the early childhood level (Szymkowiak et al., 2021). Today's children are not only growing up in an era of technology; they also become key actors in the technology ecosystem from an early age (Benitez et al., 2020). This is what makes an in-depth understanding of the influence of learning technology on early childhood literacy development very important, considering that this phase plays a key role in forming the basis of children's language and thinking skills (Mertala, 2019).

When we enter this digital era, children no longer only consume media conventional (Twenge et al., 2019). They are exposed to various forms of electronic media, including educational applications, interactive software, and online platforms (Denden et al., 2021). All of this has great potential to enrich children's learning experiences and positively shape their literacy skills.

However, along with this positive potential, various challenges also arise that need to be overcome, especially in the context of technology use in early childhoo (Fazey et al., 2020). These challenges include a lack of adequate supervision, unequal accessibility of technology, and the potential negative impact on children's development.

Early childhood literacy development involves a range of basic skills, including speaking, listening, reading, writing, and understanding basic language concepts (Brodin & Renblad, 2020). The importance of literacy at this stage is not only related to language mastery, but also to the ability to understand the world around us and communicate effectively. This is where aspects of early childhood psychology become very relevant. Children's thinking patterns, emotional development and social interactions at this stage are critical elements that form the basis of language skills (López-Faican & Jaen, 2020). Therefore, research on the influence of learning technology on early childhood literacy not only requires a deep understanding of aspects of technology, but also requires deep insight into the psychology of child development.

It is important to realize that the use of technology in the context of early childhood education is not just about provide appropriate hardware and software (Atiles et al., 2021). Moreover, it is necessary to understand how technology can be effectively integrated into children's learning environments, ensuring that their digital experiences are educational and support literacy development in a positive way.

As a country with cultural and geographical diversity, Indonesia has unique challenges in dealing with the impact of technology on early childhood literacy development (Fatmawati, 2021). Factors such as unequal technological accessibility in various regions, cultural differences in accepting technology, and diverse educational policies are an integral part of the background that requires special attention in the context of this research (Lembani et al., 2020).

With this deeper background understanding, it is hoped that this research can open the door to comprehensively exploring the influence of learning technology on the literacy development of early childhood in Indonesia (Wanof, 2023). Involving aspects of child psychology, cultural diversity, and educational infrastructure challenges will contribute significantly to our insight into how technology can be an effective and inclusive tool for improving early childhood literacy.

The fundamental question that arises is to what extent the influence of learning technology influences literacy development early childhood in Indonesia (Sari, 2020). Why is this a significant problem? The growth of technology opens up new opportunities to enrich early childhood learning experiences, however, along with it, challenges arise related to supervision, accessibility, and the potential impact on children's development.

How to overcome these problems? Solutions to optimize the use of learning technology in early childhood involve collaboration between educators, parents and technology developers (Light et al., 2019). A holistic approach is needed that ensures that children are not only exposed to technology, but also receive the right guidance to utilize it positively in the learning process. In addition, regulations and guidelines are needed that support the safe and effective use of technology in early childhood (Cowan et al., 2019).

This research brings innovation by exploring in depth the influence of learning technology on the development of early childhood literacy in Indonesia (Purnama et al., 2022). By focusing on aspects of early childhood psychology, this research seeks to provide a comprehensive understanding of how technology can shape children's thinking patterns and language skills at this critical stage of development.

The main contribution of this research is to provide a deeper view of the role of technology in children's literacy. early learning, as well as providing practical recommendations for optimal learning approaches. Thus, this research is not only an observation of a phenomenon, but also provides concrete guidance for increasing the effectiveness of the use of learning technology among young children.

In this research, the primary objective was to develop a viable and dependable instrument for assessing digital-age literacy to enhance the learning process. The necessity for this instrument arises from the diverse backgrounds of regions, tribes, and genders involved in the study. The digital-age literacy framework, comprising eight constructs, namely basic literacy, scientific skills, economic skills, information skills, technology skills, visual skills, various cultural skills, and global awareness, was meticulously developed. The survey involved the selection of 650 respondents through a stratified and random sampling method, targeting students at Universitas Terbuka while ensuring a balanced representation based on gender and ethnicity. The collected data were subjected to internal consistency analysis using SPSS 23.00 version for Windows. The results indicated that all questionnaire constructs were both valid and reliable, evidenced by a notably high mean reliability value of Cronbach Alpha ($0.816 > 0.6$). Each item within the constructs exhibited a high individual value ranging from 0.778 to 0.841. Consequently, these findings affirm that the research has successfully produced a high-quality instrument capable of evaluating students' proficiency in digital-age literacy within the learning context at Universitas Terbuka, particularly in the Asian context and specifically in Indonesia (MUJTAHID et al., 2021).

This chapter delves into an exploration of the Duolingo App's role in enhancing children's linguistic intelligence, defined as the proficiency in effectively and efficiently applying vocabularies. Duolingo, operating on the Android platform, is designed to aid children in mastering languages by providing opportunities for them to practice speaking, reading, listening, and writing through a playful interface. Given that children in early childhood engage in spontaneous play, this period is crucial for linguistic and symbolic development, closely intertwined with the acquisition of speech and vocalization abilities. The utilization of the Duolingo App in this context is integrated with the gamification method, where game-based mechanics, aesthetics, and thinking are employed to engage, motivate, promote learning, and problem-solving. This chapter serves to illustrate how gamification, specifically applied through the Duolingo App, can effectively stimulate linguistic intelligence. The discussion is substantiated by a case study conducted in Indonesia, shedding light on the practical implications and potential benefits of incorporating gamified language learning applications in the early childhood educational context (Fadhli et al., 2022).

This correlational study investigates the use of Information Communication Technology (ICT) in English Language Teaching (ELT) within higher education settings in Indonesia. The

study, conducted with 280 English lecturers from various universities, reveals that over 60% of respondents have above-average ICT literacy levels and frequently use ICT in teaching. Despite this, challenges such as internet issues and a lack of ICT training persist. The research establishes a significant correlation between teachers' ICT literacy, training experiences, internet usage, and ICT integration in language teaching. The majority of English lecturers are ICT literate and willing to integrate these skills into their teaching, emphasizing the need for more training and policy support for greater ICT integration, especially in ELT (Hafifah & Sulistyo, 2020).

From the three previous studies that have been reviewed, the conclusion can be drawn that the use of learning technology, both in measuring digital literacy in early childhood, in stimulating children's linguistic intelligence, and in teaching English in Indonesian universities, has a significant impact. Although technology makes positive contributions, challenges such as lack of infrastructure, adequate training and policy support still need to be overcome. This conclusion confirms the urgency of careful attention to the development of learning technology to support early childhood literacy development in Indonesia, in line with the main aim of this research.

Several previous studies have tried to answer questions regarding the relationship between learning technology and children's literacy development. The results of these studies paint a mixed picture, with some highlighting the positive impact of technology in improving children's language and literacy skills, while others express concern regarding potential negative impacts, such as impaired social development or dependence on screens.

In response to these mixed findings, This research will build and expand the knowledge base by accommodating the local Indonesian context. This involves considering cultural factors, educational infrastructure, and policies that may influence the use of learning technology in Indonesia. Thus, this research is not only a repetition of existing findings, but also seeks contextual answers to the challenges and opportunities faced in Indonesia.

This research is closely related to previous research in an effort to understand the impact of learning technology on the literacy development of young children. early. However, the connection becomes more specific when we place this research in the Indonesian context. Various factors such as culture, infrastructure, and educational policies that are unique to Indonesia can provide new dimensions to our understanding of how technology can interact with early childhood literacy development in this country.

The main goal of this research is to investigate to what extent and in what ways Does learning technology influence the development of early childhood literacy in Indonesia? Through a careful approach, this research aims to provide a clear picture of the positive and negative impacts of technology, as well as identifying influencing factors.

RESEARCH METHODOLOGY

The research design adopted to answer this research question is a quantitative approach using survey research methods (Story & Tait, 2019). The focus of this research is to explore the perceptions and experiences of education students, which have deepened learning related to educational psychology, especially at the child's developmental stage. Using a quantitative approach, this research aims to systematically measure the impact of learning technology on the development of early childhood literacy in Indonesia, involving 30 students as respondents.

The objects of this research are 30 education students who have studied educational psychology and have a deeper understanding in depth about the stages of child development. The selection of students as respondents was carried out with the consideration that they had a relevant educational background and a deeper understanding of the psychology of child development. It is

hoped that this will provide a more detailed and qualified view regarding the influence of learning technology on early childhood literacy.

The research process was carried out through the preparation of a questionnaire which was prepared based on a theoretical framework and research objectives. The questionnaire was designed to collect data about students' perceptions and experiences regarding the use of learning technology and its impact on early childhood literacy development. The questionnaire was then adapted into an online form using the Google Forms platform to facilitate distribution and data collection. The next step was to distribute the questionnaire to the WhatsApp group consisting of 30 education student respondents who were research subjects. In the process of distributing questionnaires, this research maintains the privacy policy and confidentiality of respondent data. As an ethical step, respondents will be provided with information regarding the purpose of the research, their rights as participants, and that their participation is voluntary.

After the questionnaires have been collected, the data will be analyzed using quantitative data analysis techniques. In this case, the data analysis method used refers to the Miles and Huberman approach which includes three main stages, namely data reduction, data presentation, and drawing conclusions. Data reduction involves organizing, filtering, and shrinking data so that it can be processed further (Raskind et al., 2019). Next, the data will be presented in the form of tables, graphs or descriptive statistics to provide a clear and comprehensive picture.

Finally, conclusions will be drawn to answer the research questions and identify significant patterns or findings. This research methodology was chosen with the consideration of obtaining strong and relevant data regarding the influence of learning technology on early childhood literacy development. The use of survey research methods with questionnaires on the Google Forms platform is expected to provide speed in data collection and facilitate systematic analysis. In addition, a quantitative approach allows this research to obtain a broader picture and produce findings that can be measured statistically.

RESULT AND DISCUSSION
Experience with Learning Technology

'Experiences with Learning Technologies' encompasses a multidimensional dimension involving complex interactions between individuals and the various forms of technology used in learning contexts. In this context, the discussion involves a deep understanding of how individuals interact with technological devices and applications, how they respond to the use of technology in the teaching-learning process, and how these dynamics can influence the overall learning experience (Lobschat et al., 2021).

First of all, the subjective aspect in ' Experience with Learning Technology' includes an individual's comfort level in using technology. This relates to the level of technological skills possessed by each individual, where the level of expertise can influence the level of comfort and confidence in utilizing learning technology (Fazey et al., 2020). Apart from that, learning preferences are also a key factor, where each individual has a unique way of responding and utilizing technology according to their personal learning style.

Second, an in-depth analysis was carried out on individual responses to learning technology. This involves understanding the extent to which individuals actively engage with devices and applications, as well as the extent to which they are able to integrate these technologies into everyday learning practices. This response can include the level of satisfaction, motivation and effectiveness felt by the user regarding the learning experience with technology. Third, the role of technology in creating a dynamic and interactive learning environment is the focus of discussion.

This includes an exploration of how technology can facilitate communication, collaboration, and active engagement in the teaching and learning process.

By involving these elements, technology can be considered as an assistive tool that not only supports the achievement of learning objectives, but also provides additional dimensions that enrich and broaden the learning experience (Bernacki et al., 2020). Thus, 'Experiences with Learning Technology' are not simply an individual's response to technology, but also details how these interactions can shape, modify, and enrich the learning process. Through this in-depth analysis, a more holistic understanding can be gained, enabling improved design and implementation of learning technologies that are more effective, relevant, and comprehensive.

After distributing a questionnaire to 30 students regarding their experiences with learning technology with the question, The first question is: How often do you use learning technology in the context of early childhood education? With answer options: Very Rarely, Rarely, Sometimes, Often and Very Often. With the following answer results:
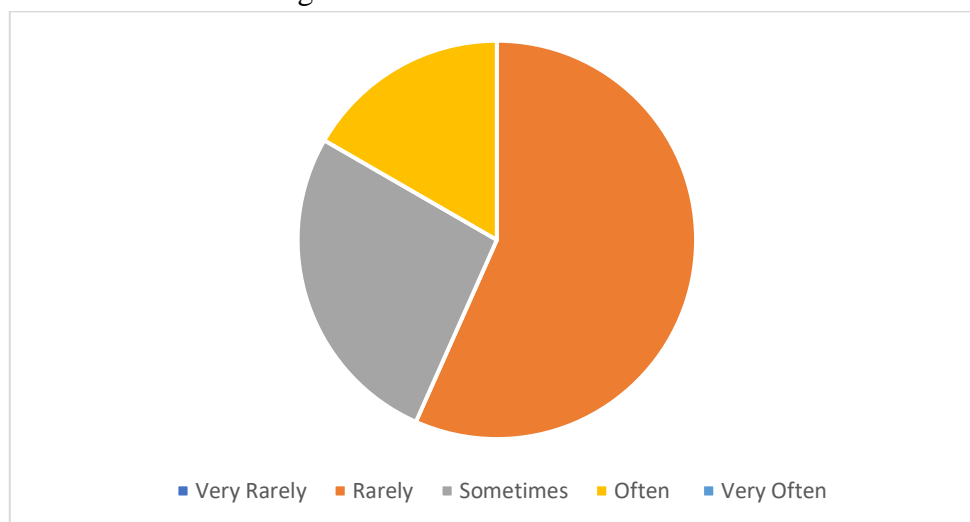

Figure 1. How often do you use learning technology in the context of early childhood education?

Based on the results of a questionnaire distributed to 30 students regarding their experience with learning technology, 17 respondents stated that they used learning technology frequently. This condition indicates that the majority of students actively integrate technology in the context of early childhood education. In other words, they tend to regularly utilize various educational applications, online platforms, or digital resources to support the learning process. This frequent use of technology may reflect their understanding of the benefits of technology in improving the quality of early childhood learning, as well as the potential to create a more interactive and interesting learning experience.

On the other hand, there were 8 respondents who indicated the use of learning technology with occasional frequency. sometimes. This shows that there are groups of students who choose to use technology more selectively, perhaps integrating it according to specific learning needs or topics. The choice of frequency of occasional technology use may be influenced by various factors, such as the type of assignment or learning material at hand. Meanwhile, 5 respondents admitted that they rarely use learning technology, reflecting the diversity in their preferences and experiences regarding the use of technology in the early childhood education process. Analysis of these results can be a valuable basis for developing learning strategies that are more diverse and appropriate to student needs in optimizing the potential of learning technology.

Next question, What type of learning technology do you often use? With the following answer options: Educational Applications, Interactive Media (example: interactive CD, DVD), E-book or Digital Book, Learning Software and Online Learning Platform (example: Google Classroom). With The answer results are as follows:
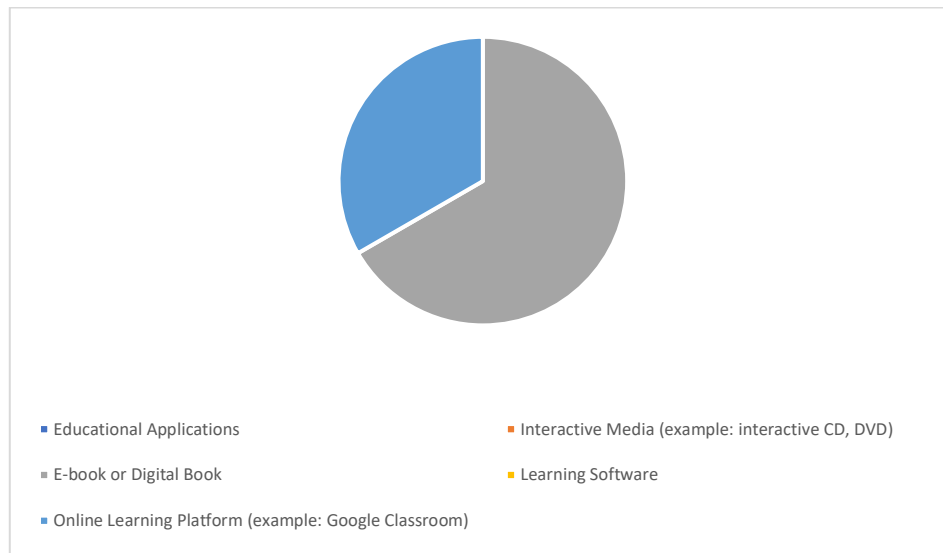
Figure 2. What type of learning technology do you often use?

Based on responses from 30 students regarding the type of learning technology they often use, the results of the questionnaire showed that 20 respondents were more likely to use E-books or Digital Books as the main learning tool. This reflects students' tendency to rely on digital learning resources that can be easily accessed via their electronic devices. This choice may be driven by the ease of access, portability, and flexibility offered by E-books or Digital Books.

On the other hand, 10 respondents stated that they often use Online Learning Platforms, such as Google Classroom. These results indicate that there are groups of students who choose to use online learning platforms as a forum for their learning activities. The use of Google Classroom or similar platforms can make it easier to distribute materials, communicate and collaborate online, which is increasingly relevant in the modern educational context that prioritizes distance learning.

This analysis provides further understanding of student preferences regarding the type of learning technology they choose . The results of this questionnaire can be a basis for identifying general preferences and combining learning technology that suits students' needs and expectations in optimizing the learning process.
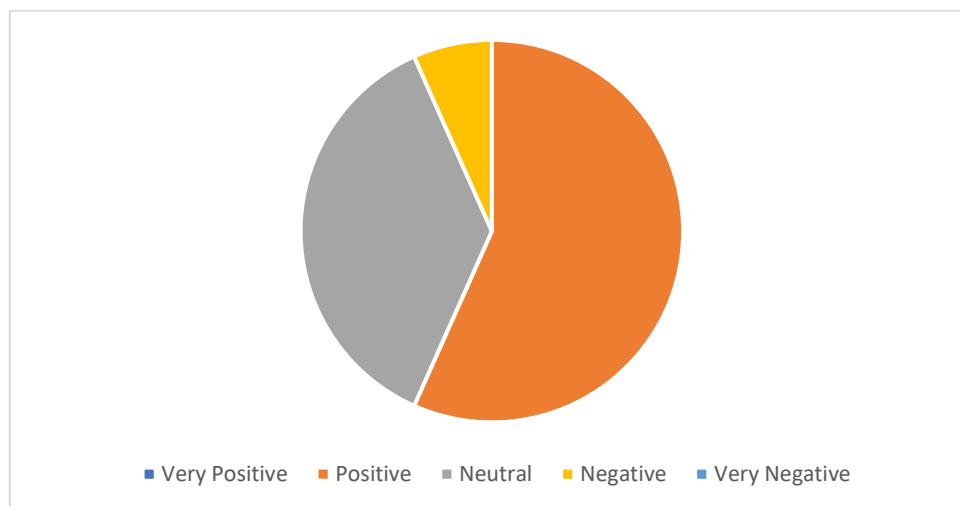
Perceptions of the Influence of Learning Technology

Perceptions of the influence of learning technology are an important aspect in understanding how individuals, especially in the educational context, respond to the impact of technology on the teaching and learning process (Tsai et al., 2019). This perception involves the individual's subjective understanding of the benefits, challenges and added value provided by the use of technology in learning (Acheampong et al., 2021). First, individuals can perceive technology as a tool that provides positive benefits for learning. In this case, technology is considered a tool that enriches course material, provides access to a wider range of resources, and increases student engagement. This positive perception can motivate users to be more open to the integration of technology in the learning process.

On the other hand, perceptions of learning technology can also include the challenges faced by individuals (Szymkowiak et al., 2021). Some may experience discomfort or resistance to change, especially if they are unfamiliar with the use of technology in learning. Technical challenges such as internet connection problems, inability to use a device, or lack of digital literacy can also influence negative perceptions of technology use (Bernacki et al., 2020).

Perceptions of social and emotional impacts are also an important part of this analysis. The extent to which technology can impact an individual's social interactions and emotional well-being is a key consideration (Smith et al., 2021). Although technology can facilitate communication and collaboration, while creating a more inclusive learning environment, it is also necessary to pay attention to its potential impact on social isolation or dependence on technology.

Thus, analyzing perceptions of the influence of learning technology requires a holistic understanding of views, attitudes, and individual experiences in facing changes in the direction of technology in education (Núñez-Canal et al., 2022). A deeper understanding of these perceptions can provide valuable insights for learning design that better suits individual needs and preferences, and creates optimal learning environments.

The first question related to perceptions of the influence of learning technology with the question, How do you assess the influence of learning technology on the speaking abilities of young children? With answer options: Very Positive, Positive, Neutral, Negative and Very Negative. With the following answer results:

Figure 3. How do you assess the influence of learning technology on the speaking abilities of young children?

 Based on responses from 30 participants who responded to questions regarding perceptions of the influence of learning technology on young children's speaking abilities, the results of the questionnaire showed quite significant variations in views. A total of 17 respondents expressed a positive view of the influence of learning technology on young children's speaking abilities. This positive understanding may reflect their belief that the use of technology in early childhood learning can provide effective support in developing speaking skills.

On the other hand, 11 respondents expressed a neutral view of the influence of learning technology, indicating that some students may not feel completely convinced or not sure whether the use of technology has a significant impact on the speaking abilities of young children. This

neutral state could be caused by an understanding that is not yet fully formed or diverse experiences regarding the use of technology in the context of early childhood learning.

However, 2 respondents expressed a negative view of the influence of learning technology on the speaking abilities of early childhood. This view may reflect concern or distrust regarding the effectiveness of technology in supporting aspects of speaking skills in early childhood. This analysis provides a fairly comprehensive picture of various student perceptions regarding the influence of learning technology on young children's speaking abilities, and can be the basis for further discussion regarding optimizing the use of technology in this context.

Next question, To what extent do you think learning technology can improve the reading skills of early childhood? With the following answer options: Not Improved, Slightly Improved, Moderately Improved, Improved and Very Improved. With the following answer options:
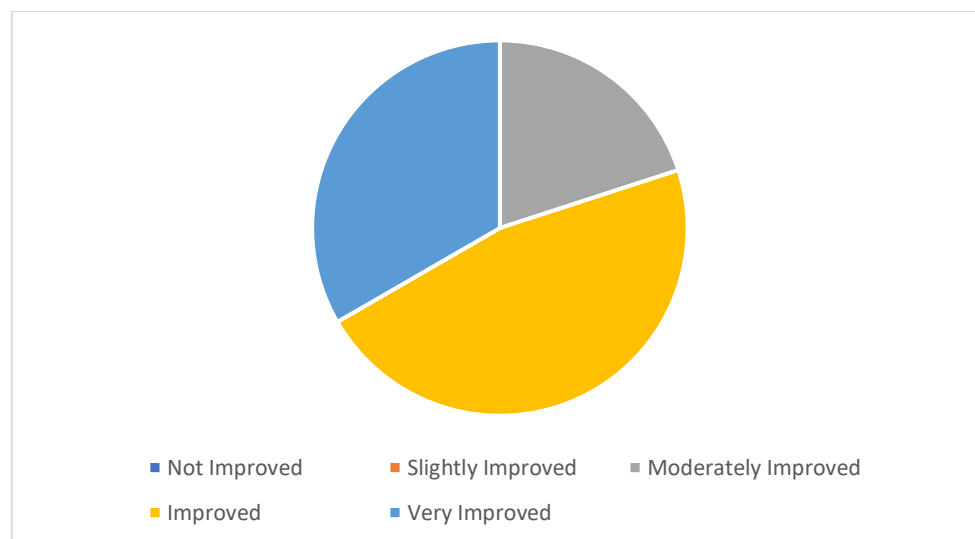
Figure 4. To what extent do you think learning technology can improve the reading skills of early childhood?

Based on the results of a questionnaire that asked questions regarding perceptions of the extent to which learning technology can improve the reading skills of young children, the data shows a positive attitude from participants. A total of 10 respondents stated that in their opinion, learning technology greatly improved the reading abilities of young children. This view reflects the belief that the use of technology can have a significant impact on the development of reading skills in early childhood. In addition, 14 respondents stated that learning technology improves the reading skills of early childhood. These results indicate that the majority of students see a positive contribution from technology in improving early childhood literacy. This understanding may be based on their experience or general knowledge of various applications and digital resources specifically designed to improve reading skills in children. Apart from that, 6 respondents stated that learning technology sufficiently improved the reading skills of young children.

This view reflects a more moderate attitude, where although it is considered useful, the impact of technology is not considered very significant in the context of literacy development in early childhood. Overall, the results of this questionnaire create a positive picture of student perceptions of the potential of learning technology in improving the reading skills of young children. This analysis can provide a basis for the development of more effective and responsive learning strategies in the context of technology use at this important stage of development.

Next question, Do you believe that learning technology can motivate young children to learn? With the following answer options: Do not believe, lack of confidence, neutral, believe and strongly believe. With the following answer results:
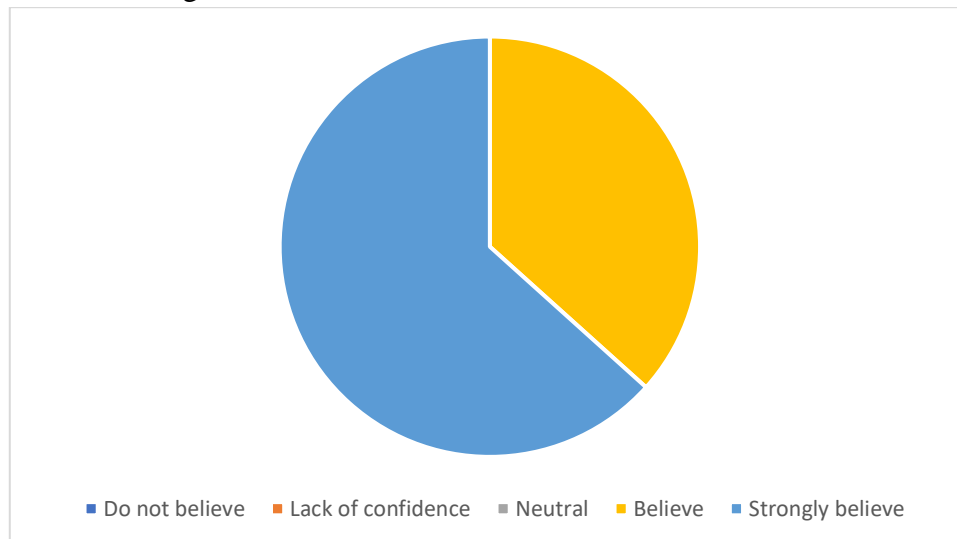

Figure 5. Do you believe that learning technology can motivate young children to learn?

Based on the results of a questionnaire asking about participants' beliefs about the ability of learning technology to motivate young children to learn, the data shows that the majority of respondents expressed positive beliefs about the motivational role of technology. A total of 19 respondents stated that they strongly believe that learning technology can be a strong motivator for young children to learn. This view reflects a deep belief that the use of technology, such as educational applications or interactive learning games, can create an interesting learning environment and stimulate children's interest in being actively involved in their learning activities.

Furthermore, 11 respondents stated that they believe that learning technology can motivate young children to learn. Although this level of belief may not be as strong as that of respondents who strongly believe, it still indicates a positive view of the motivational potential of technology in early childhood learning contexts. Overall, the results of this questionnaire provide an optimistic picture of student perceptions of the role of technology as a driver of motivation in early childhood education. This belief can be considered as a positive basis for designing learning strategies that better integrate technology as a motivational tool, so that children can be more enthusiastic and enthusiastic in their learning process.

Social and Emotional Impact

The social and emotional impacts arising from the use of learning technologies play a central role in detailing the consequences of individuals' interactions with technological tools and applications in educational contexts (Criollo-C et al., 2021). This aspect includes the extent to which technology shapes social dynamics and influences the emotional well-being of individuals in the teaching and learning process.

First, in terms of social impact (Grix et al., 2021), learning technology can contribute to the creation of a more inclusive learning environment. Through features such as online discussion forums, virtual collaboration, and shared projects, technology opens up opportunities for social interactions involving diverse perspectives and experiences. However, it is important to critically consider the potential impact on the quality of real-life social interactions, as well as the risk of social isolation that can arise from reliance on online interactions (Scott et al., 2021). In terms of

emotional impact, learning technology can bring significant benefits. Interactive learning content, user-friendly learning platforms, and flexibility of time and place can create a more positive learning experience and support emotional well-being. However, it is important to remember that challenges such as digital fatigue, technology stress, or even digital insecurity can be negative impacts that impact an individual's emotional well-being (Pangrazio et al., 2020).

Thus, in detailing the social and emotional impact, it is important to consider the broader context and complex dynamics . The use of learning technology must be directed at creating an environment that supports meaningful social interaction and at the same time maintains individual emotional balance (Lee & Kim, 2020). An in-depth analysis of these impacts can help design wiser and more effective technology implementation strategies that consider social and emotional aspects as an integral part of the holistic learning experience.

The first question is related to social and emotional impacts. In your opinion, does the use of learning technology influence the social development of early childhood? With the following answer options: No Influence, Slight Influence, Some Influence, Influence and Very Influence. With the following answer results:
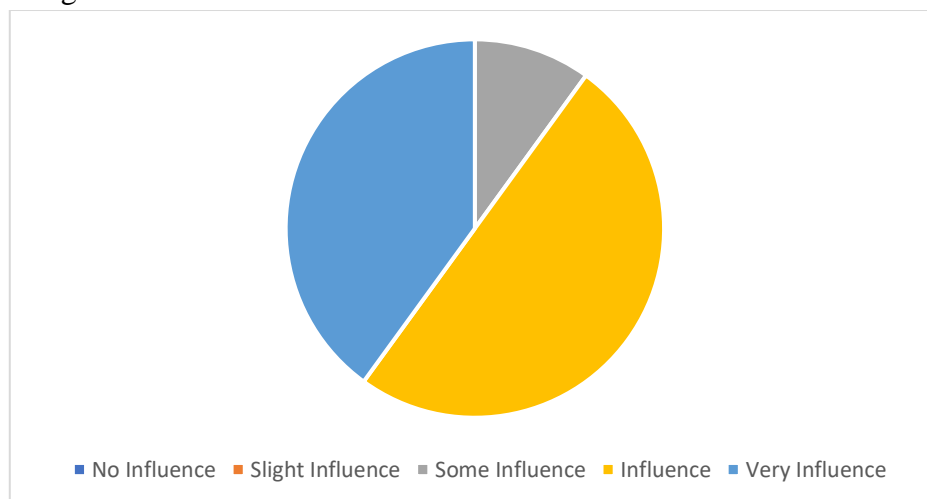
Figure 6. In your opinion, does the use of learning technology influence the social development of early childhood?
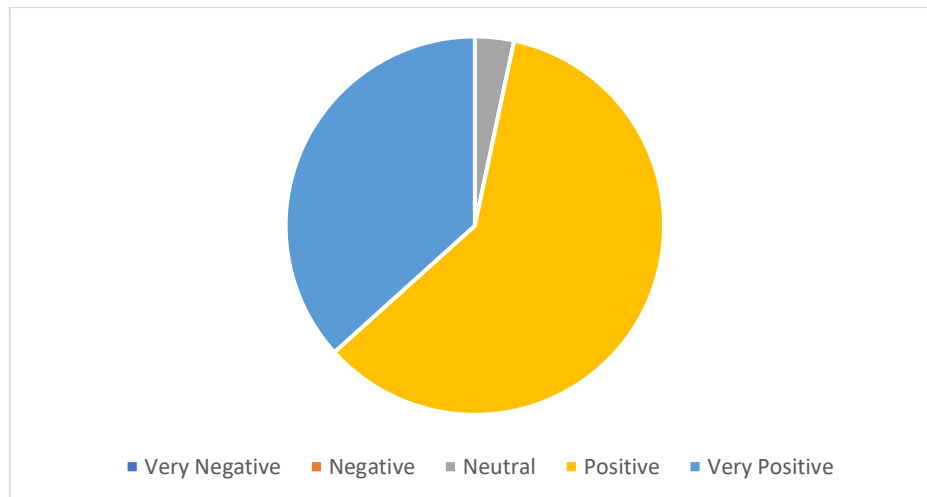
Based on responses from participants to questions regarding the social impacts of early childhood caused by the use of learning technology, the results of the questionnaire show quite a variety of views. A total of 12 respondents stated that they strongly believe that the use of learning technology greatly influences the social development of early childhood. This belief reflects the view that children's interactions with technology can have a significant impact on their ability to interact socially, both in virtual and real-world contexts.

In addition, 15 respondents stated that they believe that their use of learning technology in general influences social development of early childhood. Although this belief is positive, it is not as strong as respondents who strongly believe in the positive impact of technology. Meanwhile, 3 respondents stated that the use of learning technology had quite an impact on the social development of early childhood. This opinion reflects a more moderate view, where technology is considered to have an impact, but not too significant in the context of early childhood social development.

The results of this questionnaire create a deeper understanding of the various views of students regarding the social impact of technology use in early childhood. This analysis can be the basis for better understanding the complex dynamics between technology and the social

development of early childhood, as well as providing a basis for planning wiser use of technology in the context of early childhood education.

How do you assess the impact of the use of learning technology on the emotional aspects of early childhood ? With the following answer options: Very Negative, Negative, Neutral, Positive and Very Positive. With the following answer:

Figure 7. How do you assess the impact of the use of learning technology on the emotional aspects of early childhood ?

Based on the results of participants' responses to questions regarding the impact of using learning technology on the emotional aspects of early childhood, the data shows that there is a generally positive view of the emotional impact of learning technology in this age group. A total of 11 respondents stated that they were very positive in assessing the impact of using learning technology on the emotional aspects of early childhood. This view reflects the belief that learning technology can provide positive learning experiences, stimulate children's interest, and overall support their emotional well-being.

Furthermore, 18 respondents expressed a positive view of the emotional impact of learning technology. Although this level of belief may not be as strong as that of very positive respondents, the majority still see that the use of technology can have a positive impact on the emotional aspects of early childhood. Only 1 respondent stated that he was neutral, indicating a more moderate attitude or perhaps uncertainty regarding the emotional impact of using learning technology in early childhood.

The results of this questionnaire provide a positive understanding of students' perceptions of the emotional impact of using technology in early childhood. This analysis can help design a more holistic approach to the use of learning technology, considering children's emotional aspects as the main focus.

CONCLUSION

The results of the questionnaire highlight students' positive experiences in using learning technology, especially in the context of early childhood education. The majority of respondents actively utilize the technology, indicating significant engagement with digital learning tools. Students' perceptions of the influence of learning technology are especially prominent in improving young children's reading abilities and their learning motivation. This positive view provides an

indication that learning technology is able to have a meaningful impact on early childhood literacy, and encourage a higher enthusiasm for learning.

Meanwhile, in the aspect of social and emotional impact, students see that the use of learning technology makes a positive contribution to development early childhood in terms of emotional well-being and social interactions. Although there are variations in views, the majority of respondents believe that technology can stimulate children's interests, create engaging learning experiences and support their social development. Overall, the questionnaire results provide an optimistic view of the role of learning technology in enriching early childhood education experiences, with a positive impact on literacy, learning motivation, and social and emotional aspects.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.
Author 2: Conceptualization; Data curation; In-vestigation.
Author 3: Data curation; Investigation.
Author 4: Formal analysis; Methodology; Writing - original draft.

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