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The Integration of Technology in Early Childhood Education: An Investigation of Teachers' Perceptions of Its Implementation and Impact

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Abstract:
The perception of educators regarding the significance of integrating technology in early childhood learning exerts a considerable influence on the manner in which technology is integrated into learning at early childhood education. Accordingly, the objective of this research is to elucidate the perceptions of early childhood teachers in Banjarmasin with regard to the integration of technology in learning. this research employs a mixed-methods approach. The data was collected through closed and open questionnaires to a sample of 232 teachers. Subsequently, the data was subjected to descriptive and thematic analysis. The findings of this research demonstrate that the findings of the research indicate that the majority of early childhood teachers in Banjarmasin perceive the integration of technology to be of significant importance. It is perceived that the integration of technology offers a range of benefits for teacher's perception delivery and evaluation of learning. It is believed that technological advancements can assist in developing children's learning styles, facilitate their learning processes and enhance their enthusiasm for learning. Additionally, technology can foster teacher professionalism in the classroom. However, concerns regarding the suitability of technology for children's age and development, the potential negative impact of technology on children's development, teacher competence and the limited facilities in paud institutions present significant challenges.

Keywords: Technology Integration, Teacher's Perception, Early Childhood

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Introduction

Despite the growing accessibility of computers and mobile devices in people's daily lives, including for educational purposes, the appropriate utilization of technology in the classroom remains a rarity (Clarke & Svanaes, 2014), particularly in the context of early childhood education (Blackwell Et Al., 2013; Plowman, 2016). Moreover, when technology is employed, it is frequently integrated in conventional, non-transformative ways, rather than being utilized in meaningful, student-centered approaches (Yap, 2016). Other research indicates that teachers utilise technology primarily for communication with parents or the preparation of materials, rather than for the purpose of facilitating student learning (Tondeur Et Al., 2019).

Two distinct categories of barriers impede the effective integration of technology in education: extrinsic and intrinsic. extrinsic barriers impede teachers' utilization of technology, primarily due to a dearth of resources, including access, time, training and support, and professional development. The intrinsic barriers that impede teachers' utilization of technology are associated with their practical teaching experiences, comfort with technology, and the perceived utility of technology for student learning (Blackwell Et Al., 2013).

Some researchers posit that intrinsic barriers exert a greater influence on teachers' perceptions and utilizations of technology in education than extrinsic barriers. In recent years, there has been an increase in access to technology, as well as training and professional development opportunities (Ertmer & Ottenbreit-Leftwich, 2013;Mcknight Et Al., 2016). However, research continues to demonstrate that teachers' efforts to integrate technology into the classroom are less effective. (Instefjord & Munthe, 2017; Lim Et Al., 2013). Indeed, individual attitudes and confidence or anxiety about technology use are found to correlate with actual use. Teachers who prefer technology are thus more likely to adopt technology in their classrooms (Aldunate & Nussbaum, 2013; (Karaca Et Al., 2013). Furthermore, pedagogical practices also exert an influence on the utilization of technology. Those who adopt a student-centered approach to education are more likely to employ technology in innovative and effective ways, in comparison to teachers who adhere to more traditional didactic practices (Ertmer & Ottenbreit-Leftwich, 2013)

A substantial body of research indicates that the reluctance of teachers to integrate technology in early childhood education environments is rooted in ongoing debates about the relevance of technology use for children. Nevertheless, research indicates that the utilization of efficacious educational media can enhance children's learning outcomes (Buckingham, 2013); Ul-Amin, 2013). The national association for the education of young children (Naeyc, 2012) advocates for the integration of technology that is developmentally appropriate for young children in early childhood education settings.

In contrast, other studies have identified potential adverse effects associated with the use of technology. In particular, there is a correlation between television viewing and gaming and the development of aggressive and anti-social Behavior (Abbas Et Al., 2021; (Talaee & Noroozi, 2019). In light of these considerations, the american academy of pediatrics Siddiq & Grainger (2015) advises that children under the age of two should not be exposed to screens, while older children should be permitted limited screen time. Nevertheless, it is unfeasible to evade the technological advancements that have permeated all aspects of human life, including the domain of early childhood education. In light of this, further research is required to ascertain perceptions regarding the integration of technology in early childhood education practices, with a view to re-

actualising the curriculum, particularly in relation to the integration of technology in learning in paud institutions.

Method

This article employs a mixed-methods embedded design approach. The primary focus is on quantitative methods, with qualitative methods serving a supplementary role in the development and enhancement of quantitative findings. The data is collected concurrently, ensuring that each data point is independent and separate. The research involved educators from various PAUD institutions across Banjarmasin city. According to data from the Indonesian central statistics agency for Banjarmasin city in 2020, There are 374 early childhood education and development institutions in the city, with a total number of teachers or a population of 1,545 people. The sampling strategy employed in this research was informed by the guidelines set forth by Isaac Michael's table, with a desired significance level of 10%, resulting in a sample size of 232 individuals. The sampling procedure entailed the random selection of subjects, who were then invited to complete a questionnaire. the data were collected via a survey comprising both closed and open-ended questions, with respondents being asked to provide answers to 8 statements. The data analysis of the closed questionnaires will be presented in descriptive statistics, including an explanation of the mean value and standard deviation of each item statement. The data analysis of the open questions was conducted using a thematic approach, as proposed by Green Et Al., (2007). Thematic analysis involves a number of stages, including coding, searching and reviewing themes, naming and grouping themes, and finally preparing a report.

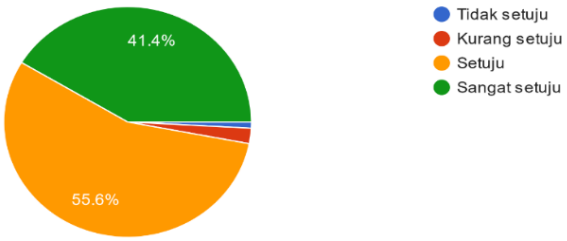
Results and Discussion

A teacher's beliefs about the utility and challenges associated with integrating technology into the classroom directly influence their decision to utilize it in their teaching practices (Carver, 2016; Johnson et al., 2016). This belief can also influence an individual's perception of an object or situation, whether positive or negative, straightforward or challenging, and whether or not they possess the capacity to perform other tasks (Wahyuni & Setiyani, 2017). The findings of this research indicate that the average percentage of respondents who expressed a positive perception of integrating technology in early childhood learning in the city of Banjarmasin was 34.03% (strongly agree), 58.96% (agree), 5.82% (disagree), and 1.2% (strongly disagree) if technology is integrated in early childhood learning. This indicates that the majority of teachers in Banjarmasin hold a favourable view of integrating technology in early childhood learning. These findings align with those presented by Yuniarni (2022), who also demonstrated that kindergarten teachers in Pontianak perceive ICT to be a crucial element in kindergarten learning, encompassing preparation, implementation, and evaluation. (Yuniarni, 2022). The findings of this study indicate that both PAUD teachers in Banjarmasin City and Pontianak City hold favourable perceptions of technology integration in PAUD learning environments. The subsequent section will elucidate the perceptions of teachers at PAUD institutions in Banjarmasin City regarding technology integration in learning, based on eight statement items submitted to respondents.

1. *The integration of technology and digital media into the learning process has the potential to facilitate the development of children's learning strategies*.

   The integration of technology and digital media in accordance with the principles of child development has been demonstrated to significantly enhance the learning process, facilitating a more effective and seamless acquisition of knowledge

(Zahro et al., 2022). Similarly, in terms of facilitating the development of children's learning methods. The majority of PAUD teachers in the city of Banjarmasin concur that integrating technology and digital media can facilitate the development of children's learning processes. This is based on the data, which indicates that 41.4% (96 respondents) strongly agreed, 55.6% (129 respondents) agreed, 2.2% (5 respondents) disagreed, and 0.9% (2 respondents) strongly disagreed.



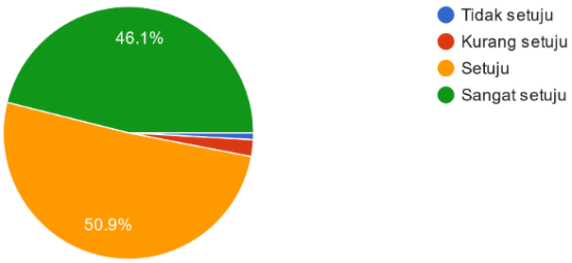
The use of digital devices in the classroom, including laptops, LCDs and speakers, to display a variety of objects through images and videos, is perceived by educators to facilitate children's learning processes. This is consistent with the findings of research presented by Shoimah, which indicates that the utilisation of audio-visual media, including video, LCD and speakers, is a crucial aspect of early childhood learning. However, Shoimah also indicated that in this case, the teacher must consider several factors to ensure optimal learning outcomes. These include the selection of an appropriate video, the management of audio, the clarity of images and text, the suitability of colours, and the appropriateness of the content for the intended audience and context (Shoimah, 2023).

Furthermore, the utilisation of digital media affords educators the opportunity to enhance their pupils' cognitive abilities, including the processes of thinking, imagination, communication and idea exchange. This is made possible by the incorporation of diverse features and applications, such as educational game applications, video call menus and voice message sharing. This assertion was corroborated by Yumarni, (2022), who disclosed that technological advancements have yielded a plethora of ingenious and demanding gaming options. These diverse educational games can facilitate the growth of children's learning in numerous ways. Many children diagnosed with ADHD can benefit from these games due to their elevated levels of creativity and challenge. Similarly, the utilisation of digital media has been demonstrated to enhance children's communication abilities (Rahayu, 2019). For instance, audio can be employed to augment children's vocabulary. This may entail the utilisation of digital media in the form of words, numbers and songs, children's fairy tales, digital books, or interactive digital comics. Such methods can engender a sense of happiness in children and facilitate the acquisition of new vocabulary without their conscious awareness.

Nevertheless, it is evident that the use of technology that is not appropriate and in accordance with its principles will actually impede children's language development (Hasanah & Nor, 2023). When children access digital devices, for example to play games and watch videos, they do not engage in meaningful interaction. They are merely passive receivers of information, with minimal opportunity to learn to express or communicate a language. Consequently, children encounter delays in speech development. It is therefore incumbent upon adults, including parents and educators, to play a pivotal role in the selection, supervision and limitation of children's use of technology and digital media. One such recommendation is that digital devices should not be provided to children under the age of two (Santoso et al., 2013).

2. *The integration of technology and digital media into the educational process has the potential to enhance children's motivation and engagement with learning.*

In terms of teachers' perceptions regarding the integration of technology and digital media in learning, the results of this research indicate that 46.1% (107 respondents) expressed strong agreement, 50.9% (118 respondents) indicated agreement, 2.2% (5 respondents) expressed disagreement, and 0.9% (2 respondents) expressed strong disagreement. This is corroborated by a number of studies that emphasise the importance of integrating technology in early childhood learning. A number of studies have indicated that the integration of technology can have a beneficial impact on the learning process, particularly in terms of enhancing children's engagement, motivation and enthusiasm (Fitrianai & Watini, 2022; Diantari & Agung, 2021;Fessakis et al., 2013).



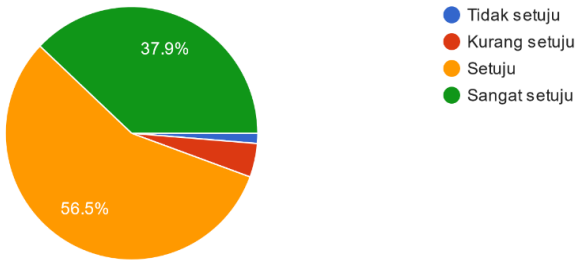
Furthermore, educators hypothesize that the integration of digital devices in the learning process can enhance children's self-confidence and problem-solving abilities. When children successfully complete a game, they are motivated to challenge themselves to continue trying to complete and win the game. This is corroborated by the findings of the research conducted by Maharani and colleagues, which demonstrate that the utilisation of technology in classroom learning, particularly in the context of game-based learning, has been shown to enhance children's self-confidence, thereby facilitating their potential development (Maharani et al., 2020). Furthermore, research conducted by Rofiyarti & Sari (2017) indicates that integrating technology in learning using the Kahoot platform can foster a competitive and collaborative spirit in children. The collaborative nature of gaming activities allows for social interaction, which can help to mitigate the risk of developing an unhealthy attachment to technology.

Nevertheless, research indicates that children's excessive enthusiasm can also result in the creation of an unproductive learning environment (Kusminar, 2020). When the instructor utilizes a laptop to view a learning video, the pupils display keen interest, positive affect, and a desire to approach and view the video. This subsequently impairs the child's ability to see clearly and causes them discomfort. Moreover, research corroborates the assertion that the utilisation of technology, particularly in the context of gaming, is conducive to a loss of temporal awareness and an increase in aggressive behaviour(Adiningtiyas, 2017). Upon the conclusion of the designated play period, children often demonstrate a reluctance to cease their activities, a lack of attention, and a proclivity for emotional outbursts, such as anger and tears, despite the teacher's reminders and warnings. It is therefore incumbent upon teachers to establish rules and agreements with their pupils prior to the commencement of play activities, in order to prevent such occurrences.

3. *The integration of technology and digital media into the learning process can assist educators in facilitating the diverse learning styles of their students.*

Each child is a unique individual with a distinct learning style (Fawcett & Watson, 2016). It is thus imperative that the learning process in early childhood education be capable of facilitating the diversity of children's learning styles. The findings of this

study indicate that educators perceive the integration of technology into learning as a means of facilitating the diverse learning styles of children. This is evidenced by the survey results, which indicated that 37.9% (88 respondents) strongly agreed with the statement, while 56.5% (137 respondents) agreed, , 2,2% (5 respondents) disagreed, and 0,9 (2 respondents) strongly disagreed. This perception has been corroborated by the findings of Lestari, (2018) research, which demonstrated that the utilisation of technology as a pedagogical tool, including radio, television and video, can be employed to facilitate students' diverse learning styles. It is postulated that the utilisation of technology in the learning process can assist in meeting students' learning requirements, which may be constrained only by temporal and spatial limitations(Ottenbreit-Leftwich et al., 2010).

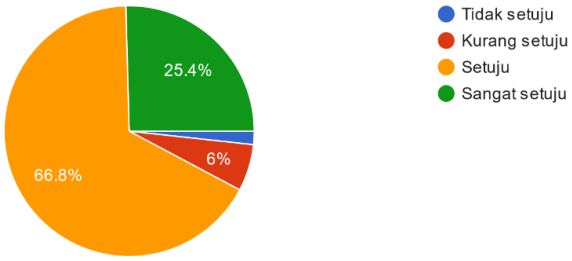


In addition, educators believe that providing students with access to digital devices in the classroom can facilitate independent exploration. For example, when they are instructed and trained in the operation of computer devices. The children are able to perform the actions required to operate the computer, open MS Word and then type their own name independently, although they still require guidance from the teacher. This assertion was corroborated by Pirani and Hussain in their research, which indicated that learning through technology can facilitate opportunities for children to gain knowledge in accordance with their preferences and develop greater autonomy in learning about the world (Pirani & Hussain, 2019).

Nevertheless, the integration of technology is not the only potential avenue for consideration. In order to facilitate children's diverse interests and learning styles, educators may utilise a variety of pedagogical models for early childhood education, such as the centre model. A learning model that can enhance student engagement in learning activities, facilitate the growth of various aspects of children's development, including religious and moral values, physical-motor, cognitive, language, social-emotional, and artistic aspects, while providing diverse centres that children can select according to their needs (Werdiningsih, 2022)

4. *The use of technology and digital media in children's development is deemed appropriate due to the audio-visual effects they contain, which are known to attract children's attention.*

The findings of this study indicate that 25.4% (59 respondents) of the respondents expressed strong agreement, 66.8% (155 respondents) indicated agreement, 6.0% (14 respondents) stated disagreement, and 1.7% (4 respondents) expressed disagreement with the assertion that technology and digital media are inappropriate for children's development due to their audio-visual effects that capture their attention.



It is a common assumption among educators that the visual effects presented in educational pictures and videos provided to children during the learning process are always presented in bright colours so that children spend a long time listening. Additionally, the musical compositions utilized for children predominantly employ jubilant and spirited melodies, which instantly captivate the young audience, prompting them to unintentionally reiterate the lyrics being sung. This assertion is corroborated by a number of studies which posit that each colour exerts a distinct psychological influence on humans, with bright colours capable of attracting children's attention(Zharandont, 2015). The use of bright colours in pictures and videos has been demonstrated to be an effective method of capturing children's attention and maintaining their focus. This is because colour plays an important role in stimulating children's development (Hendraningrat & Fauziah, 2022). Similarly, in children's songs, simple musical compositions with cheerful rhythms, lyrics that are easily comprehensible and not excessively lengthy, can stimulate children's enthusiasm for singing and moving to the rhythm of the music, thereby creating a happy atmosphere conducive to learning (Gutama, 2020).

The utilisation of a video visualisation enables educators to elucidate a specific phenomenon or process occurring in nature to their pupils, despite their physical location being within the confines of the classroom. This may encompass the visualisation of the day-night cycle, the growth of plants, or the lifestyle of a bee, to name but a few examples. Children continue to experience difficulty in differentiating between concrete and abstract concepts due to the limitations of their cognitive structures. They remain unable to distinguish between reality and non-reality (Khairani, 2016). Consequently, when introducing new concepts, children require a direct visualisation of the object in question. Video-based teaching materials can circumvent the constraints of the senses, space and time, as they are capable of conveying a concrete visualisation within the context of classroom learning (Anugerah et al., 2020). Consequently, by merely playing the desired educational video, teachers and students can learn a multitude of concepts without having to wait for an opportune moment or to bring in objects that are not feasible to present in front of the students.

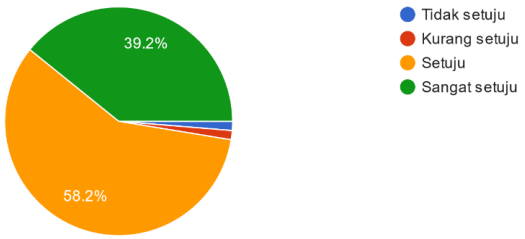
Additionally, the educator indicated that the language utilized in educational videos is straightforward, with a focus on vocabulary that is age-appropriate and concise sentences. This is consistent with Kustiawan's assertion that in the creation of learning media for early childhood, designers must consider the use of simple, concise, structured sentences with clear meaning (Kustiawan, 2016). This is to ensure suitability for young children with limited cognitive abilities.

Nevertheless, if this is repeated on a daily basis without any temporal constraints, it will have an adverse impact on their social development. Children have limited opportunities to interact with others, which can result in a lack of social engagement and a tendency to be indifferent to other activities. Additionally, prolonged exposure to digital devices may lead to inattention to other stimuli. Furthermore, prolonged and close access to digital devices has been linked to adverse effects on

children's eye health. Additionally, a teacher posits that an individual's attention is inherently directed towards digital screens, which can impede a child's capacity for concentration and cognitive processes associated with learning. However, teachers who are not in favour of integrating technology into the learning process maintain that the use of technology in learning can also have negative consequences if it is not accompanied by clear supervision and rules before learning. Children who are overly engaged in watching or playing games may lose track of time due to a desire to persist, and may also become indifferent and disinclined to engage in other activities. This finding is corroborated by several studies (Zaini & Soenarto, 2019); (Nurhayati et al., 2023); (Sanjiwani et al., 2021) which indicate that excessive and prolonged use of digital devices by children can impede their ability to concentrate. Such children are often passive, lazy, rebellious and selfish, engaging in conflict with their parents and displaying disturbed health. They also exhibit a lack of interest in forming social relationships with others, including their peers. This is because they perceive digital devices, particularly gadgets, to be the most significant and engaging for them. It is therefore incumbent upon those who interact with children, particularly parents, to act as the primary barrier against excessive technology use.

5. *The integration of technology and digital media into the learning process can facilitate the development of professional skills among educators.*

One of the key factors in evaluating a teacher's professionalism is their proficiency in information and communication technology (ICT) (Astini, 2019). The results of this research indicate that 39.2% (91 respondents) strongly agreed, 58.2% (135 respondents) agreed, and only 1.3% (3 respondents) disagreed with the assertion that integrating technology and digital media into learning can facilitate the development of professionalism among teachers.



The majority of teachers also perceive the use of technology and digital media as a significant facilitator of their work. When they wish to plan a lesson, they can search for creative ideas related to interesting and updated strategies, methods and media on search engines available on digital devices. Similarly, a plethora of learning materials, including images, audio, and video, are readily accessible and can be downloaded at any time. These materials can be integrated into the classroom setting in various ways, such as displaying a printed image, playing a song through a speaker, or displaying a video on a school laptop or LCD display.

In addition to their role in lesson planning, teachers also utilise digital devices to facilitate the implementation of learning. The integration of laptops and LCDs has been observed to enhance the delivery of engaging and enjoyable learning material for children. Furthermore, teachers engage in the preparation of various reports, including daily, weekly, and semester planning files, child development reports, and files or data that support the school's progress. This practice has been perceived as a means of enhancing the effectiveness and efficiency of the teaching process. Furthermore, the teacher indicated that social media can facilitate communication between various

stakeholders in early childhood education, including teachers, parents, children, and other individuals involved in the field. This allows for the exchange of information regarding the latest developments in education, the implementation of children's activities, and child development reports. The information is readily accessible and can be easily conveyed to the relevant parties.

Similarly, H.R Budiana et al., (2015) asserted that ICT can facilitate the learning process, thereby enhancing the efficacy of both teaching and learning activities within and beyond the classroom. It is therefore evident that teachers must attain proficiency in ICT in order to enhance their professionalism. In light of the role of technology in fostering teacher professionalism, Pramudyani & Rohmadheny, (2019) devised a training programme on the utilisation of Microsoft Office applications in pedagogy for PAUD educators at PCA Mantrijeron, with the objective of enhancing professional competence, particularly in the domain of technology-enhanced learning.

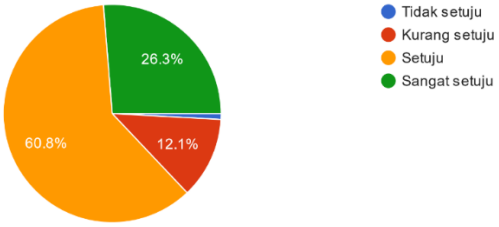
Another finding that emerges from the analysis of teachers' perceptions is that, while digital media offers numerous opportunities to enhance teacher professionalism, this becomes less significant if it is not accompanied by the availability of supporting facilities and a lack of teacher competence in operating digital devices. Similarly, numerous research findings have also emphasised the significance of integrating technology into the learning process. The lack of facilities and competence among teachers is consistently identified as a significant challenge in the integration of technology in the classroom (Hardiyant & Alwi, 2022); (Ghavifekr & Rosdy, 2015); (Bastudin, 2021). Furthermore, the research indicated that the absence of male teachers, who are generally more technologically literate, in PAUD institutions contributes to teachers' reluctance to utilise technology. This is due to the lack of available resources for them to seek guidance and assistance in addressing any technical issues they may encounter. Despite the abundance of research indicating the dearth of male participation in the teaching profession in PAUD institutions, there has been a notable absence in the literature on the role of teacher absence as a factor influencing PAUD teachers' reluctance to integrate technology in learning.

6. *The integration of technology and digital media into the learning process can facilitate the assessment of children's developmental stages by educators.*

The assessment of children at early childhood education institutions serves to ascertain the extent of development achieved in a number of key areas, including moral and religious values, language, social-emotional development, physical motor skills and cognitive abilities. Correctly conducted assessments facilitate the improvement of developmental aspects that have not been achieved, thereby optimising children's development (Sari et al., 2022).

In response to the question of the benefits of technology integration in providing convenience in assessing children's development, 26.3% (61 respondents) indicated that they strongly agreed with the statement, while 60.8% (141 respondents) indicated that they agreed, 12,1% (28 respondents) disagreed, and 0,9 (2 respondents) strongly disagreed. The advent of digital devices, particularly laptops, has greatly facilitated the compilation of indicators and instruments for assessing children's development. Furthermore, the assessment and preparation of development reports have become more straightforward. The ability to type, save and print results immediately, without the need for transcription or recapping, is a significant advantage. The necessity for teachers to complete assessments by hand on paper or in large books is no longer a requirement, as there is a risk of the book being misplaced, damaged or rendered unusable due to factors such as moisture, tearing or wear and tear.

Furthermore, educational institutions are required to provide adequate storage solutions to safeguard the books and facilitate their retrieval when necessary (N. R. Hidayat & Rohita, 2023).

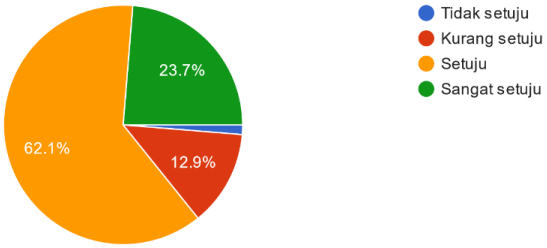


In contrast with the previously stated opinion, 12.1% (28 respondents) indicated disagreement, while 0.9% (2 respondents) stated that they disagreed due to the absence of supporting facilities. The institution lacks the requisite facilities to enable the utilisation of digital devices within the educational context. The absence of essential digital resources, including laptops, LCDs, TVs, and radios, is a significant limitation. While speakers are the only digital device currently available to support children's activities, the number of computers and laptops is insufficient to meet the needs of the student population. Furthermore, the limited availability of these devices restricts their use to a single individual at a time.

The capacity of educators to operate digital devices remains limited. A considerable proportion of kindergarten teachers lack the requisite technical proficiency, a consequence of their failure to engage with ICT-related training and the reluctance of more experienced colleagues to acquire these skills. One respondent even posited that the utilisation of digital devices in PAUD institutions required the presence of specialised personnel to assist teachers. This finding is consistent with the conclusions of Hardiyant & Alwi, (2022), who reported that PAUD teachers still demonstrate limited proficiency in using digital devices and applications in their daily lives. This is evidenced by the limited range of devices and applications that can be operated in both a personal and professional capacity by teachers. Teachers' competence in integrating digital technology into learning is relatively low. This can be attributed to a lack of knowledge and uncertainty regarding the learning model in PAUD, which is primarily focused on play while learning.

7. *The availability of digital learning spaces is a significant aspect of educational institutions.*

A digital corner in an educational setting represents an innovative pedagogical approach that enables children to engage with technology in a manner that is both instructive and motivating. Digital media represents an invaluable resource for educational purposes, facilitating the investigation of subject matter, the acquisition of information and the acquisition of new knowledge in an engaging and enjoyable manner. The use of information technology-based media has been demonstrated to have several positive impacts, in addition to introducing children to technology from an early age. Such applications also serve to enhance children's interest, facilitating an engaging visual and auditory learning environment. The use of audiovisual materials that align with children's preferences helps to prevent them from becoming bored with the same material being repeated (Nisa, 2012).



In the contemporary era, the integration of technology is a necessity. In terms of respondents' perceptions of the availability of digital corners in PAUD institutions, 23.7% (88 respondents) indicated a strong agreement, while 62.1% (131 respondents) expressed agreement, 12,9% (10 respondents) disagreement and 1,3 % (3 respondents) strong disagreement. This is because digital corners can be utilised by teachers to educate students on the operation of digital devices, including the functions and benefits of the devices themselves. Furthermore, children are able to observe shapes, interact with digital devices and utilise them in a direct manner with the guidance of their educators. The objective of early childhood learning is to facilitate optimal growth and development. This is because the optimisation of learning through the use of information and communication technology is a promising avenue for facilitating young children's discovery of their own world in a positive and enjoyable manner (Hardiyana, 2016).

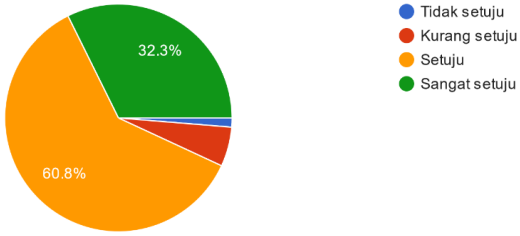
Some respondents proposed that the availability of digital corners in PAUD institutions should be adjusted in accordance with the capabilities of each institution. A total of 12.9% (10 respondents) expressed disagreement, while 1.3% (3 respondents) indicated that teaching digital device literacy was a less crucial aspect, citing the need for substantial financial resources to procure the necessary tools and the challenge of managing time during the learning process. Bastudin's research findings indicate that the primary obstacle preventing teachers from integrating technology into early childhood education is the limited availability of digital tools in educational institutions (Bastudin, 2021). Indeed, as Hidayat et al. have observed, the lack of facilities and equipment that support ICT-based learning media should not impede teachers' ability to utilise these media effectively. Teachers are not required to await the provision of these facilities and resources; alternative options, such as videos, films or VCDs, can be employed in the learning process (H. Hidayat et al., 2021). Consequently, it is imperative that educators enhance their creative abilities and proficiency in utilizing technology in an optimal manner within the classroom setting. In the context of digital learning in early childhood, it is anticipated that teachers will demonstrate creativity in the utilisation of existing digital technologies.

8. *The integration of technology and digital media into the learning process is an appropriate and beneficial practice at all levels of education, including pre-school, elementary school, lower and upper secondary education, and college.*

The extensive use of information and communication technology (ICT) devices in modern society, coupled with projections that ICT will become a dominant force in our lives in the future, makes it appropriate to introduce ICT devices to young children. The mastery of ICT will be a crucial determinant of a nation's future success (Situmorang & Maesya, 2015). A variety of approaches and innovations have been employed in the delivery of learning activities, particularly within the context of early childhood education. This is due to the fact that the learning process in PAUD differs

significantly from that observed in elementary, middle, and even high school settings. The characteristics of early childhood children are unique according to their age stages, and us efforts are required to facilitate their development through learning through games (Sholihatun et al., 2020).

The results of the closed questionnaire indicated that 32.3% (75 respondents) strongly agreed and 60.8% (141 respondents) agreed, 5,6% (13 respondents) disagreed, and 1,3% (3 respondents) strongly disagreed that the integration of technology and digital media into learning was suitable for all levels of education. It is becoming increasingly evident that even young children are becoming familiar with digital technology in their daily lives. It is of the utmost importance to educate children on the responsible use of the internet when seeking out information, as this will facilitate a more enjoyable and engaging learning experience. Furthermore, the integration of technology is regarded as a necessity to prevent institutions from being left behind and to reduce the likelihood of parents choosing a school for their children based on their lack of interest in technology. Furthermore, Widyawati posited that digital media will become a ubiquitous aspect of childhood in the future. It is therefore crucial to identify strategies that will optimise the positive consequences of these new media. It is therefore possible to posit that digital media can enrich children's play experience, rather than impeding it. The utilisation of technology in the learning process is beneficial for children when employed in an appropriate manner (Widyawati, 2021).



In light of the preceding considerations, it is imperative that educators engage in the ongoing development of their knowledge and skills, ensuring that they remain aligned with the evolving learning requirements of the contemporary educational landscape. This opinion is supported by that of Febrianti, who states that teachers must remain current. Presently, educators are required to demonstrate creativity and innovation in the implementation of technology-enhanced learning methodologies (Febrianti et al., 2023). It is imperative that teachers engage in the process of knowledge and skill development in order to ensure that they remain current and able to adapt to the evolving learning needs of their students.

A total of 13 respondents (5.6% of the total sample) and 3 respondents (1.3%of the total sample) expressed disagreement with the statement that the integration of technology and digital media into learning is appropriate at all levels of education, particularly in early childhood education, on the grounds that children at this age are too young to understand technology. Such individuals lack the requisite knowledge of the rules and the ability to utilise ICT in an optimal manner. The respondents indicated that early childhood should be characterised by unstructured play and exploration of the surrounding environment. Consequently, they perceive ICT as a less crucial tool for reviewing learning in this age group. It is anticipated that the integration of technology and digital media into learning will commence at the primary school level, and subsequently at the secondary school and post-secondary education levels. This is consistent with the findings of Rahmalah's research, which indicates that the utilisation of digital media in early childhood has an impact on the formation of

character. The character of children is adversely affected when they are subjected to prolonged exposure to digital media, as evidenced by the findings of Rahmalah, et al., n.d. (2019).

Furthermore, Pebriana posited that technology is no longer regarded as a luxury item, but rather as a necessity for all age groups. The growth and development of technology is occurring in parallel with the growth and development of children. While technology can offer numerous advantages and engaging learning opportunities for children when employed judiciously, its use inappropriately can impede children's growth and development (Pebriana, 2017).

Conclusion

The majority of PAUD teachers in Banjarmasin recognise the importance of integrating technology into the field of education. This is proofed with data that indicates that the majority of respondents (34.03%) strongly agree, 58.96% agree, 5.82% disagree, and 1.2% of respondents disagree with the integration of technology in early childhood education learning. Those respondents who had a perception that they did not agree or disagree with the integration of technology in learning in early childhood institutions held the view that in early childhood, children focus more on how to develop the five aspects of basic development, namely moral and religious development, language, cognitive, and social-emotional. Furthermore, the development of physical motor skills is also a key aspect. It is evident that children must interact extensively with their surrounding environment and have direct contact with the objects they are studying. Therefore, providing concrete objects is undoubtedly the most effective method of assisting children in their learning process. Conversely, there is a concern that the utilisation of ICT in PAUD institutions may distract children from more crucial aspects of their development, potentially impeding their growth and progress. The early childhood period is regarded as a time when children are still developing their understanding of appropriate behaviour and the effective use of ICT. The negative effects that result from children frequently accessing digital devices are also a contributing factor to the reluctance of some to endorse the integration of digital devices in early childhood learning. These effects include, but are not limited to, children forgetting about time, becoming lethargic, unresponsive, and inattentive to activities outside of their digital interactions. Furthermore, there is evidence that excessive screen time may contribute to speech delays, decreased concentration, and problems with children's eye health. Furthermore, the absence of adequate facilities and teacher proficiency represents another significant deterrent to educators' willingness to integrate digital devices into their pedagogical practices. In light of the findings of this research, it is recommended that future studies examine the extent to which PAUD institutions provide support for teachers to enhance their competencies in integrating technology into the learning process.

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