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Teachers' belief and implementation of ICT in early childhood education classroom

Reza Edwin Sulistyaningtyas [1]* Febru Puji Astuti [1], Prasetyo Yuliantoro [2], Qisthi Alhazmi Hidayaturrohman [3]
[1] Universitas Muhammadiyah Magelang, Indonesia.
[2] Institut Teknologi Telkom Purwokerto, Indonesia.
[3] Saga University, Japan.
* Corresponding Author. E-mail: reza.edwin@unimma.ac.id

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ABSTRACT

Technology has a vital role in every aspect of life. Early childhood education also requires technology in its learning. This study aims to analyze teacher beliefs and explain the application of ICT in Early Childhood Education (ECE) classes. This research uses mixed methods, questionnaires, and interviews as data collection tools. Questionnaires were used to obtain data related to ICT used in ECE and teacher beliefs, while interviews were used to obtain data on the implementation of ICT in ECE classrooms. The sample was 132 ECE teachers in Magelang, Central Java, and Yogyakarta. The sampling technique used is a simple random sampling technique. Regression analysis is used in this study's data analysis technique. The results obtained include 1) 40% of teachers use laptops in class, 2) 26.67% of teachers never involve children in using ICT, and 3) there is a relationship between educational background and ICT implementation beliefs in class. Implication This study aims to hold workshops for ECE teachers to apply ICT in learning activities involving children in their use.

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INTRODUCTION

In today's era, they are quickly taking advantage of modern technology to meet the needs of human life. Every aspect of human life will be increasingly diverse in technology used in education. This dramatically affects the learning process conducted by schools during the COVID-19 pandemic. The learning process is carried out at home, so teachers must develop strategies so that learning can occur even if they do not interact face-to-face with their children. Therefore, the education ministry's policy in Indonesia recommends using technology as a bridge so that the learning process can proceed well. Schools welcomed the policy to be able to conduct learning activities through video conferencing, Zoom, educational shows on TV, and WhatsApp Group/WAG features (Aprianti & Sugito, 2022). Until the end of the COVID-19 pandemic, which has decreased and started to

normalize, technology in learning became a variation in teaching activities between teachers and students. The learning process is becoming more exciting and varied. In addition, the application of technology in learning will provide teachers with the challenges of providing children with the skills and knowledge needed to develop today and in the future (Fox-Turnbull, 2019).

All levels of education must be involved and take advantage of technological advances (Hatzigianni, 2018). This is because education is a lifelong process with no definite beginning or end, and new technology penetrates everything we do in 21st-century life. ICT utilization is also included in early childhood education levels. Information and Communication Technology (ICT) is widely used in education, policy, and practice research. In recent years, the communication dimension of ICT has been considered equally important. ICT can be defined as anything that allows us to get information, communicate with each other, or influence the environment through electronic or digital equipment.

The term ICT may include a type of hardware and software, including television, video, digital camera, radio tape recorder, smartphone, computer, internet, interactive blackboard, projector (Kamaruddin et al., 2017), digital gameplay (CD), laptop computer (Hu & Yelland, 2017) and augmented reality and electronic book (Sulistyaningtyas et al., 2023). These technologies can be applied to early childhood learning activities. Based on literature studies conducted by Undheim (2022), technology can be incorporated into mathematics learning activities using computers or interactive blackboards to teach children numeracy and addition and literacy learning activities using iPads and digital picture book applications. This reading activity allows children to communicate, collaborate, explore, and create meaningful products. It also includes exploration activities using tablets, digital microscopes, and trace cameras to encourage children to observe and discover objects in the neighborhood.

The use of ICT in early childhood education is still a pros and cons. Based on the results of a study conducted by Romero-Tena (2020), the use of ICT in Early Childhood Education still needs to be improved. Many factors affecting ICT use in Early Childhood Education include age, gender, teacher confidence in ICT use, ICT accessibility, and ICT training (Hasbi et al., 2020). The research conducted by Susanti (2020) aims to describe the use of technology for early childhood both in the family and school environments. Involving 20 parents who have 3-6-year-olds, the result is that children use their cell phones more often at home, and many parents still need to give control over their use.

Such practices make parents and teachers feel that early childhood does not need to be introduced to technology from an early age. Some literature suggests at least three reasons for the importance of ICT in early childhood education: 1) ICT has influenced people and the environment around children's learning, 2) it offers new opportunities to strengthen many aspects since early childhood education practice, and 3) there has been supporting and interest throughout education integrates sectors for ICT development and integration into educational policies, curriculums, and practices (Hasbi et al., 2020). In addition, technology emphasizes products, processes, competencies, and institutions, and children are encouraged to consider environmental and political issues when involving technology (Hatzigianni, 2018). However, the use of technology in learning at the early childhood education level has yet to be discussed.

The use of technology in the classroom depends on the role of the teacher. With its pedagogical capabilities, entry into the digital age is not an allergy. Educational competencies are included in the competence called "Teacher of the 21st Century" (Ghavifekr et al., 2016). Of course, teachers have more complex technology-related abilities. This media is expected to be innovative and support children's development from various life, social, and cultural aspects. Some research literature and disciplines state that digital technology can be used as a means of critical thinking to document children's learning and that all levels of education must be involved and utilize these technological advances. ICT is important in early childhood education because of the opportunities and potential offered in this sector. It includes opportunities to 1) support and enhance children's learning and playing experiences; 2) support and strengthen the learning and development of practitioners' professionals; 3) support and strengthen relationships and communication between children, parents, and others connected to early childhood education (Yang & Hong, 2022).

Confidence and equality of teacher satisfaction influence their practice of combining ICT in their teaching process with traditional pedagogy and, consequently, the child development process. Since preschool teachers make several decisions in early education settings, it is essential to emphasize teachers' approaches and views. An important factor in integrating ICT into learning depends on the teacher's skills and attitudes toward ICT (Kerckaert et al., 2015). Teachers' positive approach to new technologies in early education can accelerate ICT integration. Teachers who believe that the value of ICT education can lead children to technology-related activities and integrate these activities into the preschool curriculum.

A study conducted by Konca & Erden (2021) related to the use of digital technology by preschool teachers in the classroom involving 167 preschool teachers in the central region of Turkey found that although teachers have sufficient technology resources and positive attitudes towards using these devices in classroom activities, their use of technology is limited to several types of activities. Unfortunately, the study did not explain teachers' beliefs in the use of technology in early childhood. At the same time, teacher beliefs are one of the factors for implementing technology in the classroom. The following study conducted by Hoareau et al., (2021) involving 214 kindergarten teachers in Northern France found that teachers needed more confidence in using technology in the classroom. The use of applications in the school for the learning process is also low. The study describes teachers' beliefs in using technology and applications in early childhood learning. However, more in-depth data is needed to strengthen the results of the questionnaire that has been obtained. So, teacher confidence in technology, both hardware and software and its implementation need to be studied further to get more in-depth results on using technology in learning in ECE classrooms.

Teachers' beliefs in the use of technology are one factor in implementing technology in classroom activities. This shows the importance of studying teacher beliefs and using technology as a data source to improve or change teacher beliefs to be positive. Technology will be used effectively and efficiently depending on teachers' beliefs as facilitators of children in the classroom. Unfortunately, studies on teacher beliefs in technology use in early childhood classrooms are still minimal. Therefore, the study aimed to determine teachers' beliefs in using technology in ECE classrooms during learning. This research also explores the implementation of technology in learning in ECE, hoping to contribute positively to developing more effective and efficient technology usage strategies in early childhood education.

METHOD

The type of research used is a mixed method by combining quantitative research with qualitative. The population in this study is teachers who teach at Early Childhood Education (ECE) institutions, among them kindergarten, playgroup/preschool, and Daycare in Magelang and Yogyakarta. The research sample is 132 teachers. The sampling technique used is a simple random sampling technique.

The data collection techniques used are questionnaires and interview sheets. The demographic data from respondents' identities include respondents' initials, age, educational background, length of teaching, and type of institution to teach. The data collection related to the application of technology used by teachers adopted a questionnaire (Zaki, 2013). Aspects of the questionnaire related to ECE teachers' beliefs regarding implementing technology in learning included preschool teachers' beliefs, comfort with ICT, and current use of digital technologies. The teacher's confidence level in applying technology in learning was adopted (Nikolopoulou, 2015).

Analysis of this research data uses descriptive statistical analysis by calculating the mean, percentage, and amount. Data was obtained from the descriptive statistical analysis results by presenting respondents' demographic data, ICT utilization questionnaire data, and teacher perception. It was also analyzed using regression analysis.

Furthermore, qualitative data analysis using thematic analysis by presenting data descriptively from interviews with teachers and data obtained from descriptive statistics on teacher utilization and perception in implementing ICT in ECE learning.

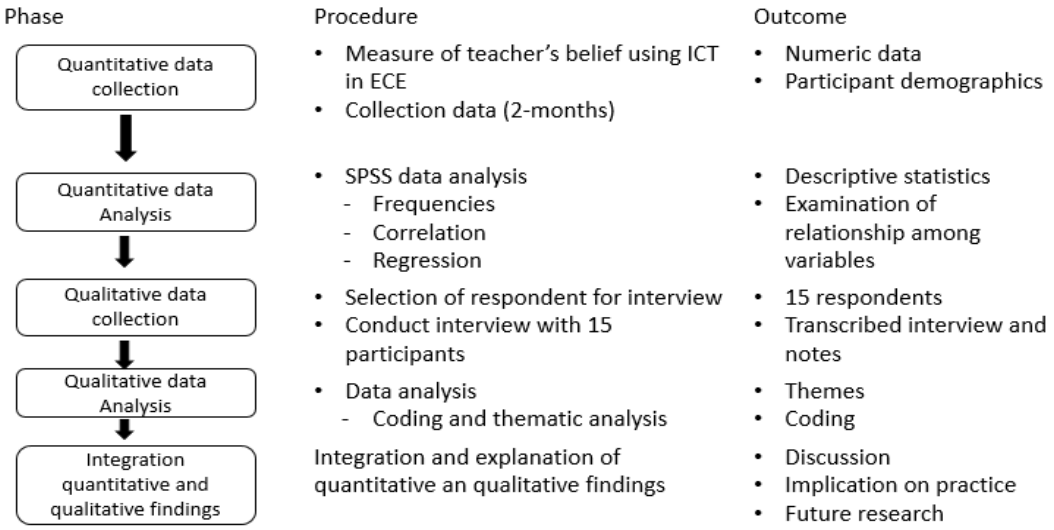

Figure 1. Design Mixed Methods

RESULTS AND DISCUSSION

Results

This study aims to explain the implementation of Information and Communication Technology (ICT) in early childhood learning. Data collection methods are questionnaires and interviews with instruments used by questionnaires and interview sheets. Questionnaires were randomly given to early childhood teachers aged 0-6 years. Next, the interview is done online. Techniques spread lift and interview using Survey Monkey. Demographic Data obtained from the questionnaire distribution can be seen in Table 1.

Table 1. Data Demographic

No.	Aspect	Description	Percentage	Aspect	Description	Percentage
1	Gender	Male	3.13	Teaching to Children Aged	2-3 years	6.25
		Female	96.87		3-4 years	46.88
					4-6 years	46.88
2	Age	<20	3.13	Number of Class Students	1-5	16.67
		21 – 25	15.63		10-15	30
		26 – 30	31.25		16-20	23.33
		31 – 35	21.88		21-25	20
		35 – 40	9.38		>26	10
		41 – 50	15.63			
		>51	3.13			
3	Teacher's Role in the Classroom	Class Teacher	84.38	Teachers' Years of Teaching Experience	<3	18.75
		Assistant Teacher	15.63		4-8	25
					9-13	37.5
					14-18	18.75
4	Teachers' Years of Working in Current Workplace	<3	25	Teachers' Educational Level	Master	3,13
		4 – 8	37.5		Bachelor	65.63
		9 – 13	25		Diploma	3.13
		14 – 18	12.5		High School	28.13
5	Number of computers in the classroom	none (0)	60	Number of computers in the school	None (0)	6.67
		1	33.33		1-2	60
		2	6.67		3-4	13.33
					5-6	13.33
					>6	6.67

Based on The answers given by the respondents in Table 1, 96.87% of the teachers who filled in were female. The age range is 26-30 years, with a percentage of 31.25%. The highest educational background at the bachelor level is 65.63%. The role of teachers in the classroom is mostly class teachers, with a percentage of 84.38%. The number of computers owned by the school mostly ranges between 1 and 2, with a rate of 60%. Furthermore, the number of computers in the classroom is mainly answered no with a percentage of 60%.

Frequency of ICT Used in Class Early Childhood Education

The questionnaire results from the respondents showed the frequency of various technologies in the classroom. In addition to the technology used in the school, the frequency of using technology in software is also presented in this study. In addition, data related to technology implementation in the classroom was obtained from respondents, both technology activities carried out by teachers and children, between teachers and children, and between children and children.

Table 2. Technology Used in the Classroom

No.	ICT	Percentage (%)
1	Desktop computer	16.67
2	Laptop	40
3	Netbook	3.33
4	Tablet (iPad)	3.33
5	TV	33.33
6	Interactive Whiteboard	0
7	LCD	26.67
8	DVD	13.33

Table 2 shows that the most used technology in the classroom is laptops (40%), followed by televisions (33.33%) and LCD (26.67%). The least used technology was netbooks and tablets (3.33%), and the least used technology was interactive whiteboards (0%).

Table 3. Frequency of the use of ICT in the Classroom (n=132)

No.	Indicator	Every day (%)	All day (%)	Several days once (%)	Not every week (%)	Never (%)	Do not have in the Classroom (%)
1	Playing Educational Games (Online Educational Websites)	5	0	20	35	15	25
2	Searching the Web for Teachers	50	5	25	10	0	10
3	Searching the Web by Child	5	0	10	25	35	25
4	Master typing by using a Program (such as Microsoft Word or WPS)	50	0	30	10	0	10
5	Child Typing using a Program (such as Microsoft Word or WPS)	0	0	10	5	55	30
6	Drawing by utilizing a Program Conducted by the Teacher	0	5	20	25	30	20
7	Drawing by utilizing a Program Conducted by the Child	5	5	10	20	45	15
8	Other Programs	0	5.56	16.67	27.78	33.33	16.67
Average		**14.38**	**2.57**	**17.7**	**19.73**	**26.67**	**18.95**

Table 3 shows the frequency of the activities done by the teacher and the child using technology in software. All activities using ICT that children do are rarely done in school. It can be seen that the percentage of the item t has the highest value. In contrast to the use of ICT by teachers, almost all items have a high-frequency rate every day, and every few days, search activities are done

through the web and typing using programs (such as Microsoft Word or WPS). However, using a teacher program, the highest frequency percentage is never done in the drawing activity (30%).

The interview results related to the activities carried out using ICT obtained various responses. There are 4 out of 15 who use ICT involving children. One of the opinions of educators:

"When showing children about erupting volcanoes, they look more excited" (Yu, W 5, 2023)

Another opinion:

"Looking for answers to questions given by children so that children can get concrete answers with children's images" (Bu, W 5, 2023)

Next, 10 teachers out of 15 use ICT for administrative purposes. One of the teacher's opinion:

"Using ICT is very helpful when we have to present and process learning activities. As our reference material when less able to make props and soon."(Is, W 5, 2023)

Another opinion:

"Using ICT to search for ideas for teaching materials" (Ti, W 5, 2023)

Table 4. Teacher's Report about the Frequency of the Practice of ICT in the Classroom (n=132)

No.	Indicator	Every day (%)	All the day (%)	Some days (%)	Not every week (%)	Not ever (%)
1	A Discussion Directed by the Teacher about how to get Information through the Web	10	0	25	25	40
2	Small Group Discussion Directed by the Teacher about how to get Information through the Web	0	0	20	30	50
3	Taught in Particular the Ability to Search the Web	0	0	15	25	60
4	Children Lead a Demonstration with Classmates about how to use Technology	0	0	5	25	70
5	Children Initiated the Discussion with the Teacher about how to Find Information	5.26	0	10.53	26.32	57.89
6	The Child-Teacher Interacts in Front of a Computer	0	0	30	30	40
7	The Child-Teacher Interacts by doing a Web Search	0	5	15	30	50
8	Children Interact in front of a Computer	0	0	20	35	45
9	Children Interact Together and Perform a Search using the Web	0	0	10	25	65
10	Individual Child in front of a Computer	0	0	10	15	75
11	Individual Children do a Search using the Web	0	0	5	10	85
12	I am combining DiffeRent Sources of Information Search (e.g., Books, Brochures, Internet).	5	10	25	40	20
Average		**2**	**1**	**16**	**26**	**55**

Report to teachers about the frequency of the practice of ICT and the Internet in the classroom. According to Table 4, the results show that a percentage of the most frequent teachers only do some of the activities related to the practice of ICT and the internet with the child in the classroom. However, some teachers report doing it frequently, once every few days or not every week. However, combining various sources of the information search is the highest frequency, although only some weeks (40%). Some never do it. Teachers dominate the activity, so the percentage varies in each frequency.

The results of interviews conducted by early childhood teachers about the perception of teachers related to the application of ICT in early childhood learning have obtained various

responses. Some teachers support the application of ICT in learning, but some teachers need to keep technology in the classroom. There are 11 of the 15 teachers interviewed agreed with the application of ICT in learning. One of the teachers ' opinions in favor of the presence of technology in the classroom:

"Teachers need to introduce ICT in early childhood, to be technologically literate. As an aid to learning media." (En, W 2, 2023)

Another opinion:

"It is easy for teachers to give activities that can be packaged interestingly." (Ros, W 2, 2023)

There are 4 out of 15 teachers disagree with the existence of ICT to be applied in the classroom. One of the opinions of teachers who do not support the existence of technology in learning:

"Using a computer will reduce the interaction of children with each other because children will only focus on the computer screen in front of them." (Is, W 2, 2023)

Another opinion:

"For children of early age, the application of ICT is not so important." (Ar, W 2, 2023)

Another teacher's opinion about the lack of support for Technology:

" ICT for early childhood education is not too important to let children socialize with friends and the environment first" (Lu, W 2, 2023)

Teachers' beliefs about the application of ICT in Early Childhood

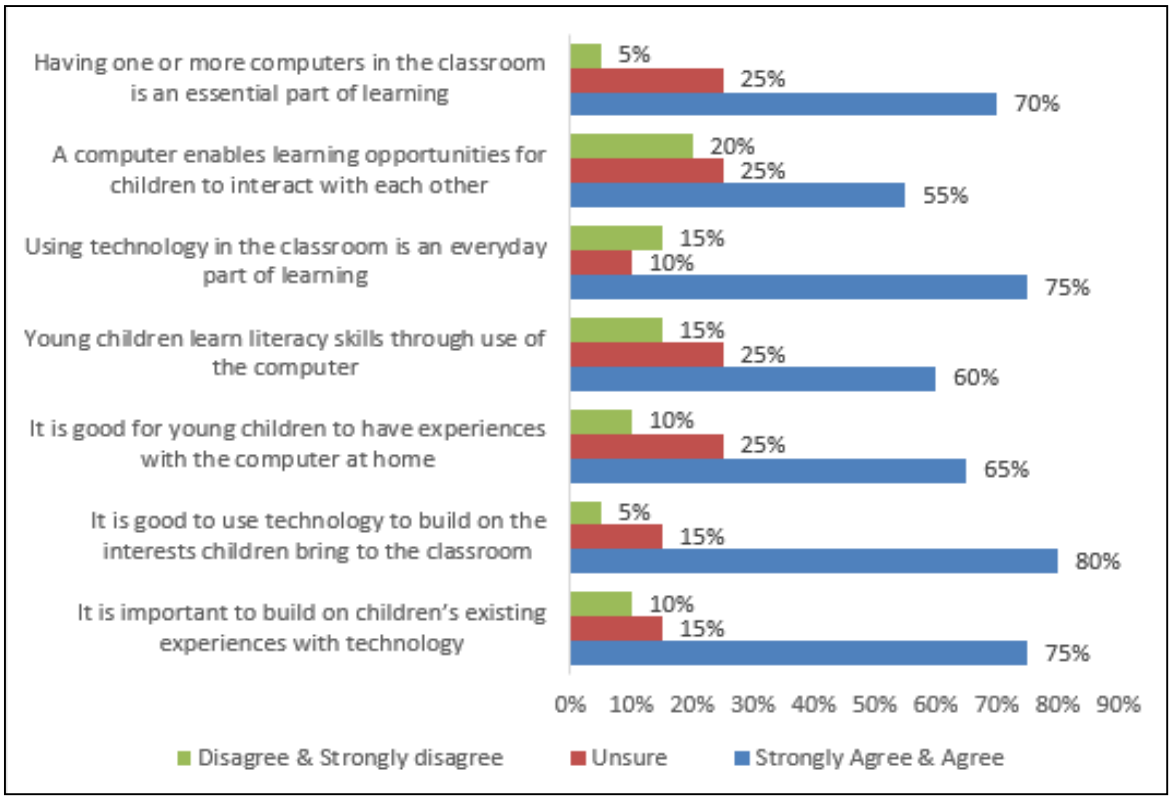

Figure 2. Teachers' Positive Belief in ICT

Based on Figure 2, data related to teachers' positive belief in implementing ICT in classroom learning was obtained. Almost all teachers agree with the implementation of ICT in the classroom. 55% of teachers agree that computers provide learning opportunities for children to interact with each other and that having one or more computers in the school is part of learning (70%). That early childhood can learn literacy through computers (60%). Teachers consider it good when children have computer experience at home (65%). Teachers also respond well to the use of technology in the classroom as part of learning (75%), developing children's interests (80%), and building children's experiences with technology (75%).

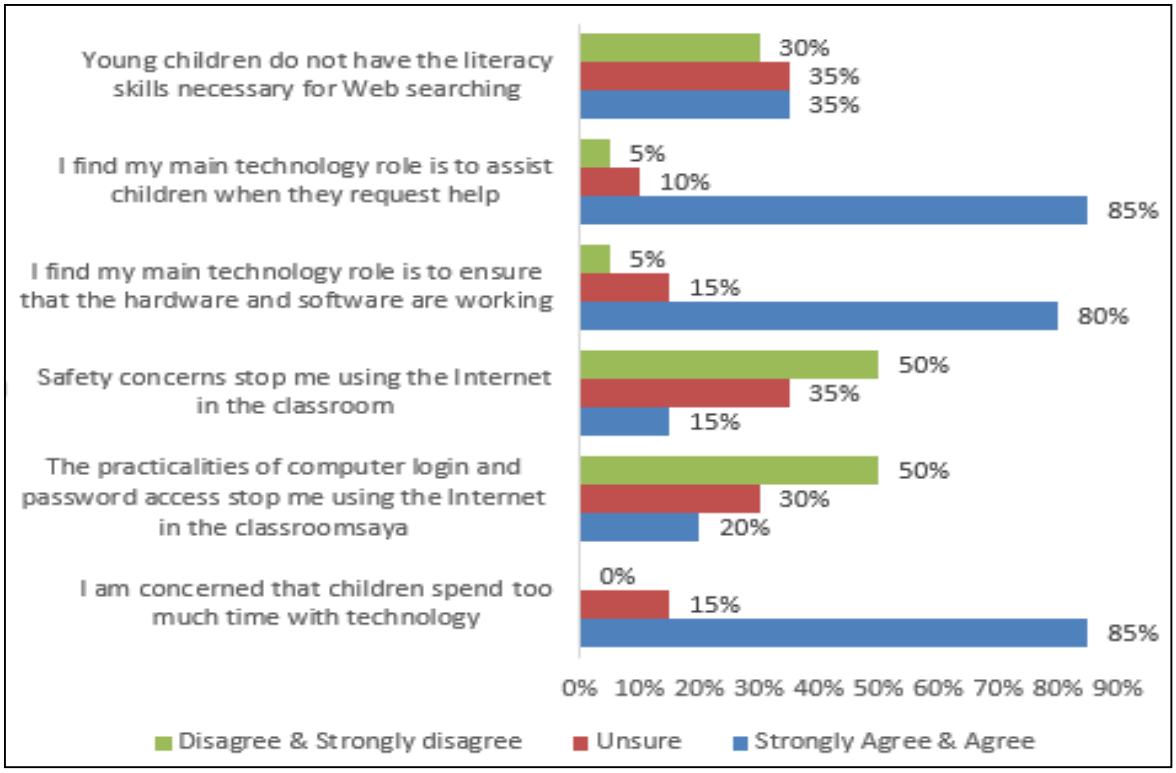

Figure 3. Barriers to the Application of ICT in the Classroom

The results obtained are related to the barriers to the application of ICT in the classroom, which can be seen in Figure 3. The data obtained showed that teachers agreed on their concerns related to children's being able to spend too much time with technology (80%). However, these concerns encourage teachers to be essential in implementing ICT. It can be seen that teachers agree on the role of helping children when asking for help (85%) and ensuring that hardware and software can function (80%). In a statement related to technology problems, as many as 50% of teachers disagree if security problems and the implementation of computer login and password access make teachers stop using the internet in class. However, on the statement that children do not have the literacy skills needed to search the Web, teachers have different opinions namely teachers who disagree as much as 30% are hesitant, and as much as 35%.

Findings from the interview show differences of opinion on questions related to the proper application of ICT in early childhood education. Six teachers out of 15 gave good feedback on using ICT properly in the classroom. One of the statements given:

"Its use for the media when learning introducing something that was not yet brought directly to school."(Yu, W 4, 2023)

Another opinion:

“Technology just for reference or ideas of activities in the classroom to make it fun” (Ti, W 4, 2023)

Nine teachers should have responded excellently to using ICT properly in the classroom. Another opinion that does not agree with the existence of ICT in the classroom

“Children just need to be limited because they do not need to be introduced to ICT” (Lu, W 4, 2023)

Teachers' opinions about the application of ICT in the classroom vary. However, all teachers agreed to give the opinion that the use of ICT in everyday life and at school (preparing learning and teacher administration) impacts ease. One opinion that offers:

“ICT plays an important role in supporting learning activities today to achieve the desired learning goals” (Af, W 5, 2023)

Another opinion that supports:

“It is essential for the work of early childhood learning and administration” (Tr, W 5, 2023)

Table 5. Multiple Regression Analysis Related to Age, Educational Background, Teachers' Years of Teaching Experience, Teachers' Role in the Classroom, and ICT Implementation Beliefs in Class

No.	Indicator	1	2	3	4	5
1	ICT Implementation Beliefs in Class	-				
2	Age	.473				
3	Educational Background	.002	.496			
4	Teachers' Years of Teaching Experience	.391	.005	.081		
5	Teacher's Role in the Classroom	.451	.033	.216	.036	-

Table 5 shows that confidence in ICT implementation in the classroom was influenced by educational background (0.002<0.05). However, age, teaching length, and classroom role did not affect the confidence in ICT implementation.

Discussion

This study aims to analyze the implementation of technology used in early childhood education institutions and teachers' perceptions of utilizing the technology used in schools. The results obtained have given a general idea of the use of ICT by early childhood teachers; the use of ICT in the form of hardware and software is relatively low. Technology in the form of hardware The results of the study obtained the highest is a Laptop (40%), each little technology used is netbooks and tablets (3.33%), and technology that does not exist is an interactive whiteboard (0%). Based on the findings obtained, no one uses an interactive whiteboard in the existing institutions in Magelang and Yogyakarta. According to Baharudin et al. (2020), the use of interactive whiteboards (IWB) can change children's attitudes and ways of learning to be more positive, which can create student-centered learning and provide opportunities for children to be actively involved because children will interact with the equipment itself so that children's confidence and ability to solve problems can increase in a fun environment. Another finding is that IWB supports learning activities both individually and in groups. The interaction between teachers and children and between children and activities with IWB allows children to work together to solve the problems displayed (Bourbour, 2023). The results of experimental research involving children aged 4-5 years by applying IWB in math learning showed that children who used IWB obtained a higher assessment than children who did not use IWB (El et al., 2016). IWB used in learning provides motivation, active involvement, and encouragement to children during learning activities.

Findings in a systematic review research related to the use of technology in learning in Asian countries in 2015-2022 found that the application of technology used includes Augmented Reality, computers, interactive whiteboards / interactive whiteboards (IWB), tablets, cameras, *CD stereo recorders*, and *MP3 players*, while for software used in learning in classes include e-books, and computer games (Sulistyaningtyas et al., 2023). In addition, based on a previous study involving teachers registered with NAEYC, it was found that the technology used included digital cameras, videogame, computers, tablets, iPod/MP3s, internet, light table, iPod touch, smartphone, E-reader, TV/DVD, smart board (Blackwell et al., 2014). The findings obtained by the technology in the form of hardware used include desktop computers, laptops, netbooks, tablets (iPad), television, LCD, and DVD. In contrast, the software technology provides computer programs for typing (*Microsoft Word/WPS*), *computer games*, and computer programs for drawing. However, the use of technology in the classroom still does not involve children, so the use is still widely done by teachers to help prepare learning and administrative activities. This is supported by the results of the average teachers' report on the frequency of ICT and Internet practices in the classroom, which obtained the highest percentage of teachers who mainly never implement ICT by involving children (55%).

The application of ICT in the classroom is closely related to the perception and beliefs of teachers regarding the implementation of ICT in the school. According to Koç (2014), if teachers have a negative attitude, they may inhibit the use of ICT, while a positive attitude increases the effectiveness of the use of ICT. The barriers teachers face in implementing ICT into learning in

PAUD are the lack of practical ICT training and professional development in implementing ICT. (Dong, 2018). The findings obtained in this study show that most teachers have a positive perception of implementing ICT in the classroom. However, some still oppose the use of technology; teachers feel that children need more hands-on experience and opportunities to develop socially and emotionally, which is achieved through interaction with peers while playing. Teachers are particularly concerned about children becoming addicted to technology and the lack of creativity that can develop when technology is given in the classroom. Teachers believe that children already spend much time using technology at home, so there is no need for the use of technology at school anymore. The literature review study conducted by Undheim (2022) states that the implementation of technology in learning is not only children and teachers using existing technology, but children need to know and explore its functions and uses before using it. The use of technology in the classroom is not only playing *games* with computers or *iPads*; teachers can introduce children to writing, drawing, and searching for information with computers or other technology.

Barriers to using technology in the classroom include teachers' limited knowledge and ability to utilize technology (Voogt and Mckenney, 2017). Another opinion states that it is not a lack of pedagogical skills or technology acceptance. However, teachers do not consider technology a tool that can support learning throughout the curriculum in the context of early childhood (Vidal-Hall et al., 2020). The findings obtained by Vidal-Hall et al. are different from those in this study in that many teachers consider technology in the classroom essential and support the existence of ICT in early childhood classes. However, some teachers disagree with the existence of technology in the school for the ability to use less technology not yet needed for early childhood. However, more teachers support technology because the use of technology in the classroom helps teachers concretize abstract material and attract children's attention to singing, dancing, and playing, which can support various aspects of child development. The use of technology in learning activities can help multiple children's abilities. It is proven in Kervin's (2016) research that digital games with carefully selected applications can provide active, practical, engaging, and empowering learning opportunities. Digital games (iPad apps) can support language and literacy learning activities. Children's literacy experiences can be facilitated by reading, writing, listening, and communicating through various scenarios and activities. Another finding is that technology can support children's skills in math, robotics, STEM, and literacy (Dorouka et al., 2020).

Based on the findings obtained, this study is a new thing because, based on previous research findings, there has been no research related to teachers' beliefs and implementation in the use of technology in early childhood learning in Indonesia. In addition, based on the findings in this study, teachers' beliefs about the application of technology in learning are positive. However, the application of technology involving children is almost nonexistent. This finding reveals that classroom practice using hardware and software technology still needs to be improved. This aligns with research conducted by Ogegbo and Aina (2020), who found that teachers understand the benefits of incorporating technology in early childhood education and have a positive mindset about using ICT in the teaching and learning process in early childhood education. However, teachers' acceptance of ICT use appears low due to barriers such as poor parental and school support, lack of technology resources, common teacher knowledge, and lack of practical training on using developmentally appropriate technology. Regarding parental support, different findings were obtained from a study conducted by Gjelaj et al. (2020), which mentioned that most parents suggested that early childhood children be exposed to various digital technologies. Based on the findings obtained, the factor that affects the teacher's confidence in the implementation of ICT in early childhood education is the educational background of teachers. Higher education teachers also believe positively in implementing ICT in early childhood education. This can be attributed to the teacher's experience in using ICT in the classroom during school years while pursuing a bachelor's or Master's degree. The research results by Konca et al. (2016) show that the teacher's educational background also influences ECE teachers' attitudes toward ICT. In addition, educational background is not an entirely important factor; the interview mentioned that teachers with a high educational background also have a less favorable response to the application of ICT in learning. This requires training to support effective learning and professional development programs so teachers can apply a broader range of pedagogical strategies to help young children use ICT (Dong, 2016).

CONCLUSION

The findings presented data on ECE teachers' beliefs about implementing ICT in the classroom. Teachers have positive beliefs about the use of technology. However, this belief is only related to the use of technology in helping teachers complete their work. This is also supported by the results obtained from interviews showing that technology is only used by teachers and without involving children. This shows a gap between the practice in the field and teachers' beliefs. Therefore, the findings obtained can be used as input by policymakers in providing workshops for ECE teachers to apply ICT in learning activities involving children in their use. In addition, the curriculum also needs to support the use of technology in learning.

The implication of this study is to provide training to PAUD teachers related to the use of technology in learning. Each school institution will need assistance from policymakers to support the realization of the use of technology in the classroom. In addition, the use of technology needs to be discussed with parents so that the understanding related to technology implementation in learning can be agreed upon and the practice can run well.

The limitation of this study is that it only uses respondents in certain regions in Indonesia, so it cannot be generalized to other areas. It is also necessary to investigate the use of ICT in teaching literacy, cognitive, social-emotional, and other skills. In addition, using different instruments in addition to the existing findings related to teachers' beliefs related to the use of technology will be more varied. Exploring teachers' knowledge related to integrating technology into learning or TPACK (Technological et al. Knowledge) can be one of the issues for further research.

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