

# Practice Knowledge of the Use of Teaching Technology Materials among Preschool Teachers

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## Abstract

Knowledge, attitudes, and skills are very important to teachers. As the world of education is always evolved around, where we will always experience changes and improvements with the wishes and needs of people. Now, as we see technology and multimedia takes a lot of part of our life. Even education in preschools also experiences the changes. In this regard, this article focuses on identifying the knowledge, attitudes, and skills of preschool teachers in using information and communication technology in preschool teaching. Thus, this study uses a survey method and a quantitative approach by using a questionnaire as the data collection instrument. Random sampling is being chosen to be used to fulfill the criteria needs of the study. Therefore, the data that is collected through the questionnaire are counted and analyzed using Statistical Package for Social Sciences version 27.0. The study findings that teachers' knowledge, attitudes, and skills are high.

**Keywords:** Knowledge, Attitudes, Skills, Preschools Teachers, Information and Communication Technology

## Introduction

The era of the development of information technology or Information and Communications Technology (ICT) has greatly influenced various aspects of life in Malaysia and also education. Children who are 4 and 5 years old, need to follow a Preschool Education program that provides learning skills within 1 year before entering Year One of primary school (Kementerian Pendidikan Malaysia, 2019). Preschools are one of the fields that are popular and always get mentioned by the government. Therefore, it also benefits from the effects of the use of technology ICT.

Preschool education is also not only focused on government preschools but also on private preschools that are increasingly gaining a place in the community. With the era that keeps moving forward, the method of teaching is also changing. The use of ICT and media can make it compatible with pedagogy and also a teaching method that will support the students to achieve progress in this 21<sup>st</sup> century (Rahim & Abdullah, 2017).

Teaching and learning techniques involving computers were first introduced in Malaysia several years ago. In the early 1980s, computers first played an important role in education and began to be used and reserved for use in schools for the younger generation in the future (Bransford et al., 2000). Where the quality of teaching and learning can now be

improved with the use of technology that offers various ways and methods. Technology integration in teaching and learning involves education playing an important role nowadays. Through software that is interactive, innovative, and able to challenge the minds of preschool children can explore various experiences with the use of computers.

This is because teaching and learning can be delivered more clearly and meaningfully with the appropriate use of teaching aids, so it is important for teachers to explain teaching and learning to preschool kids (Balanadam & Hamid, 2021). This will allow knowledge to be expanded as well as give them the opportunity to practice teaching methods and theories for the teachers. Therefore, based on the latest technology, teachers need to have personal skills, especially those involving teaching and learning methods. Kementerian Pendidikan Malaysia (2012) also encourages teachers or educators to improve their skills or equip themselves with skills involving appropriate technology. Therefore, it is important for teachers to control computers because they are an important and necessary asset for teachers.

### **Research Objective**

The research objectives are as follows

- To identify the level of preschool teachers' knowledge of the use of technology materials.
- To identify the level of attitude of preschool teachers towards the use of technology materials.
- To identify the teacher's skill level in using technology materials in teaching and learning.

### **Methodology**

The research design that is being used is a descriptive survey using a quantitative approach where the questionnaire was used to collect the data from the respondents. The quantitative approach is used because it is suitable for examining and achieving the objective of the study which is to identify the knowledge, skills, and attitudes of practice use of teaching technology materials among preschool teachers. The use of a questionnaire can reduce the waste of time and it is easy to be supervised by the researcher himself in research (Idris, 2013). This study involved 80 respondents from Hulu Langat, Selangor. Where the respondents will give feedback by referring to a 5-point Likert scale option. Besides, the findings for this study were analyzed using the Statistical Package for Social Science (SPSS) Windows Version 27.0. The percentage and mean values were in descriptive analysis and the results of the respondents' demographic, knowledge, skills, and attitudes toward the practice of using teaching technology materials.

### **Instrument**

The questionnaire was reviewed by three experts, namely three university lecturers that are experts in technology and information science for content validity. The study questions for the survey were adapted from (Le Yee & Mohamed, 2021) study for section B. Section C is adapted from the study of (Rahman et al., 2013) and section D is from (Madzlan & Abu Bakar, 2022) and a combination of (Rahman et al., 2013). The questionnaire consists of 4 main sections, section A involves demographics, followed by sections B, C, and D which consist of 3 main objectives that are teachers' knowledge, skills, and attitudes. The classification of teachers' readiness according to their knowledge, skills, and attitude was determined as shown in Table 1.

Table 1

*Mean Score Interpretation*

Mean Score Value	Interpretation
0.00 - 2.33	Low
2.34 - 3.66	Average
3.67 - 5.00	High

Source: (Zainun et al., 2019)

**Results****Demographic Information**

Table 2 shows the findings on the participation in terms of gender, age, race, academic qualification, occupational class, experiences as teachers, school location, and type of kindergarten.

These items in section A: demographic are analyzed based on frequency and percentage. This study involved 80 respondents in Hulu Langat Selangor. The first terms that are being analyzed are respondents' gender, there are a total of 11 males (13.8%) and 69 females (86.3%). This shows that the number of female teachers is higher than male teachers. In the second term, there are five age categories, 20 – 30 years old, 31 – 40 years old, 41 - 50years old, 51 – 60 years old, and 61 years old and above. There is a total of 49 teachers (61.3%) which mostly fall age 20 -30 years old, followed by 25 people (31.3%) in categories of 31 – 40years old, then there are 4 (5%) teachers in age between 41 - 50 years old and the lowest is 51

– 60 years old with 2 (2.5%).

In the third term Ethnicity, only Malay ethics answer this questionnaire with results of 100 (100%) meanwhile Indian and Chinese both with 0 (0%). The fourth item is school location with the result with 69 (86.3%) located in Urban areas and 11 (13.8%) in Rural areas. There is a huge difference as we see in both two school locations. In the fifth item, a total of 47 (58.8%) with a Bachelor's Degree as the highest participation, and the lowest participation in educational level question is Certificate with 5 (6.3%). Apart from that, for analysis items for occupational class and experience as a teacher please refer to Table 2.

Table 2

*Analyses on Demographics of Participants (N = 80)*

Item	Category	Frequency	Percentage(%)
<b>Gender</b>	Male	11	13.8
	Female	69	86.3
<b>Age</b>	20 - 30 years old	49	61.3
	31 - 40 years old	25	31.3
	41 - 50 years old	4	5
	51 – 60 years old	2	2.5
	61 years old or above	0	0
<b>Ethnicity</b>	Malay	100	100
	Indian	0	0

	Chinese	0	0
<b>School Location</b>	Urban	69	86.3
	Rural	11	13.8
<b>Educational Level</b>	Certificate	5	6.3
	Diploma	18	22.5
	Degree	47	58.8
	Masters	10	12.5
	PhD	0	0
<b>Occupational class</b>	Government	22	27.5
	Private	57	71.3
	Work by yourself	1	1.2
	Not working	0	0
	Others	0	0
<b>Experience as teachers</b>	Less than 3 years	40	50
	4 – 7 years	37	46.3
	8 – 11 years	2	2.5
	12 years or above	1	1.2

### Teacher Knowledge in Implementing Technology Materials in Teaching and Learning Methods

Table 3 shows data analysis for teachers' knowledge in implementing technology in terms of implementing technology in their teaching and learning. based on the data that are collected in this study, the overall Mean is 4.21 and Standard Deviation is 0.412. This section consists of 8 items and its shows that teachers' knowledge is at a High level.

Table 3

*The Level of Knowledge of Preschools Teachers*

No	Items	Mean	Standard Deviation	Interpretation
1.	I am able to turn the computer on and off properly.	4.75	.490	High
2.	I can control and use the mouse well and correctly.	4.72	.476	High
3.	I know how to connect RGB LCD wire connection to a computer.	3.76	.733	High
4.	I know and am confident in my ability to connect the cables to get the computer working.	3.92	.631	High
5.	I know the function of computer components.	3.92	.651	High
6.	I know how to find information by using the Internet.	4.67	.497	High
7.	I am good with interactive CDs	3.93	.681	High
8.	I am proficient in using LCD for Teaching and Learning purposes.	4.03	.645	High
<b>Overall</b>		<b>4.21</b>		<b>High</b>

Based on Table 3, shows that the highest Mean is at the first item, where teachers can properly turn on and off the computer (mean = 4.75, SD = 0.490, N = 80). Meanwhile, in item 2, the researcher finds that teachers also can control and use the mouse well and correctly (mean = 4.72, SD = 0.476). Teachers have knowledge of technology where 3 items are at a very high frequency or strongly agree and 5 items are at a high frequency or agree. This shows that preschool teachers have basic and good knowledge of the use of ICT technology materials. In addition, the fifth item also shows that teachers are able and know computer functions (mean = 3.92, SD = 0.651, N = 80). They also know the function and are able to use it for Teaching and Learning purposes.

Moving to the third item, teachers do have the capability for connecting the wire with Mean = 3.76, SD = 0.733, N = 80 which is also at a high level, and it shows that teachers are confident in their ability to connect the cables to get the computer working at the high level which is Mean = 3.92, SP = 0.631. Aside from that, the findings also show that they know how to use the interactive CD with Mean = 3.93, SD = 0.681 in item 7, and the use of LCD (mean = 4.03, SD = 0.645) in item 8 for Teaching and Learning purposes as teaching aids. Overall, it shows that the teachers do know the function of the computer and know how to find a piece of information on the computer using the internet in general with Mean = 4.67, SD = 0.497.

**Discussion**

In this era, the method of teaching is changing from what it is before. Teachers with good pieces of knowledge of technology can help prepare the kids for the future as stated in

*'Kurikulum Standard Prasekolah Kebangsaan'* (KSPK) (Kementerian Pendidikan Malaysia, 2023). This study aims to find and explore the knowledge, attitude, and skills of teachers about technology ICT. Through the findings above, the overall score for the level of knowledge of the preschool teachers about technology material is at a high level which is 4.09 (0.32) and the score for each component of skills, knowledge, and attitude is at a high level too.

Based on the analysis, preschool teachers do have the knowledge of using ICT for teaching purposes at a high level. In other words, the teacher does have what it takes in using the technology, and as stated by past researchers that teachers are capable and skilled in using computers but lack confidence in applying them while teaching (Zainudin & Abu Bakar, 2021). This is because they fear that the goods or technology materials used will be damaged and they should be responsible for the damage. Not only that, teachers also show fears of collaborative activities and a lack of confidence to manage and educate children in different ways (Rashid & Ti Wong, 2023). However, it does not stop the teachers from having bits of knowledge related to ICT.

Knowledge can be defined as an understanding of something by someone through information, skills, or learning. Based on the analysis, the majority of the teacher does have a high level of knowledge regarding the use of technology like Microsoft Word and Microsoft PowerPoint. This is because Microsoft Word and Microsoft PowerPoint are easy to use and easy to learn since it does not take a lot of time. It is also supported by the findings of a study Le Yee & Mohamed (2021) which states that 52.5% of teachers are proficient in using Microsoft Office Word and 43.75% of teachers are proficient in using Microsoft PowerPoint. However, when it comes to other apps it shows that teachers are still at a moderate level. So, teachers need to understand the teaching and facilitation process more deeply as one of their efforts to produce more effective teaching by combining their knowledge and skills (Rashid & Ghani, 2023).

The second aspect that would be discussed is skills, where teachers do fairly have the skill to use not only computers but also smartphones to find the material that they need. For example, interesting and age-appropriate illustrations of pictures and videos. Interesting illustrations or videos are able to attract children's interest. By using interesting illustrations and videos it can help students to focus and pay attention in the class. However, even though the overall mean for the skills aspect is high it is still the lowest compared to the mean score of knowledge and attitude. This is clear that even though the teacher does have skills but the skills are only applied to apps that they are already familiar too and do not to new apps. This is because teachers find it hard for them to learn and use new apps and applied them in Teaching and Learning as it takes time constraints and other task loads are among the problems faced by teachers in providing materials using technology (Zainudin & Abu Bakar, 2021).

Furthermore, based on the study teachers do have a good attitude and also have a high interest in the use of technological material. They find that using technology can help and make the lessons more interesting as the students always get excited and happy during lessons. These findings are supported by Jimoyiannis & Komis (2006) in their study of the impact of ICT courses on teacher perceptions and attitudes towards ICT in education, found that most teachers had a positive attitude towards the importance of using ICT as a teaching tool. However, the teacher also declines when asked in the survey whether they use computers in Teaching and Learning in class, and the mean score and standard deviation for it is 3.60 (0.77) resulting in a moderated level.

Furthermore, this study also found that 72% of teachers agree that teaching objectives are easily achieved by using computers. This is the same as stated in KSPK where Teaching and Learning activities need to be varied and balanced so that student learning is more effective and meaningful. It also stated that the use of technology in teaching can assist and contribute to more efficient and memorable learning (Kementerian Pendidikan Malaysia, 2023). However, this study also found that teachers do not really use the computer if they are forced or asked by the administration. This is because the use of technology makes the teacher's responsibility increase thus causing the teacher's workload to increase. The high workload of teachers can cause teachers to become less motivated and become a challenge for them in providing effective Teaching and Learning to children (Madzlan & Abu Bakar, 2022). However, teachers' initiative to be able to use the technology or application in Teaching and Learning is seen to have made teachers feel happier to socialize throughout the Teaching and Learning process. This is supported by (Alqahtani et al., 2018) that stated shows the level of effectiveness of using the WhatsApp application in Teaching and Learning English subjects is high.

Overall, the practice uses of technology among preschool teachers in terms of knowledge, skills, and attitude is on a high level and crucial to the education system. The application of ICT not only encourages students to be creative but also makes Teaching and Learning more interesting and fun and improves the quality of learning. Therefore, it is important to teacher learn about technology so they can teach and guide the students about the important and positive about technology while delivering information in a more creative way.

### **Conclusion**

This study found that teachers have the skills, knowledge, and ability to use computers. Awareness of the importance of using ICT in attracting children's interest during learning can help their development as well as the teachers involved. Therefore, preschool teachers should make ICT one of the important approaches in preparing children for the future. In general, the majority of teachers do understand and know how to use the computer. However, there is still a lack of skill when it comes to learning a new application. Therefore, teachers need to be provided with workshops or seminars related to learning new technology or applications and teachers also need to be open-minded and always learning new things.

Knowledge, skills, and attitude are important for teachers to fill the need or requirement that is needed while educating children. Where knowledge and information are acquired in a particular area and skills in order to demonstrate learned abilities. Teachers do have knowledge and skills in using ICT and they also have the initiative to learn more about ICT. So in order to motivate them to change their behavior or attitude cooperation between all parties will be able to strengthen (reinforce) behavior into habit, and reinforcement should be given in the form of notification that what is being done is right in any positive behavior change towards the desired goal. Behaviorism focuses on the idea that all behaviors are learned through interaction with the environment (Western Governors University, 2020).

So based on this study, we can see that the process of learning ICT is influenced by the surroundings and it is not only applied to students but also to teachers. This is important so that teachers won't give up using ICT just because they are afraid of making mistakes or overloaded work, but with the help of others, teachers can use the knowledge and skills that they have in teaching students as well as change their attitudes so they can exchange



opinions between co-worker and strengthen the teamwork between teachers. Therefore, this article was useful in understanding the factors that affect them. As time goes on, may this help the parties needed in the future.

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