

## OVERVIEW OF PROFESSIONAL DIGITAL COMPETENCE OF TEACHERS IN THE DKI JAKARTA REGIONAL MOBILIZING ECCE UNIT

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### ABSTRACT

Information and Communication Technology (ICT) is becoming an inseparable part of human life today. Its use gives hope for the rapid improvement of various aspects of human life, including education. The use of ICT in education can support the achievement of learning outcomes, and mass dissemination of knowledge, improve the quality of learning and accelerate educational services, and strengthen communication and coordination with new people or working groups. This is the background of the school digitization program. The success of school digitalization at least requires the availability of technological devices, internet networks, and teachers' digital competencies. This study aims to determine the level of professional digital competence of teachers in the driving PAUD unit in the DKI Jakarta area. The research method used is quantitative descriptive. The study population is teachers in the driving ECD unit located in DKI Jakarta Province. The sampling technique used was multistage sampling so a sample of 73 people was obtained. Data collection using questionnaires shared via Google Forms. Most respondents were in the East Jakarta area as many as 24 people (32.9%), South Jakarta as many as 23 people (31.5%), the West Jakarta area as many as 17 people (23.3%), and the North Jakarta area as many as 9 people (12.3%). With a working period of 0-10 years as many as 43 people (58.9%). Based on the results of the analysis, it is known that the value of teachers' professional digital competence is seen from three aspects, namely technological proficiency with an average value of 40.42, pedagogical compatibility with an average value of 42.15, and social awareness with an average value of 21.81. Thus, it can be concluded that teachers in the driving PAUD unit in the DKI Jakarta area have mastery of aspects of technological proficiency, pedagogical compatibility, and social awareness is very good.

**Keywords:** Professional Digital Competencies; ECCE Teachers; Driving Schools

### Introduction

Information and communication technology is an inseparable part of modern society (Vahedi et al., 2021) and plays an important role in improving the quality of human life (Fernández-Batanero et al., 2022). ICT has an impact on changes in various sectors of life including education (Adams Becker, S., Cummins, M., Davis, A., Freeman, A. & Giesinger, C., 2017; Brown & Englehardt, 2019; Starkey, 2020). The use of information and communication technology in education can support the achievement of learning outcomes (Cueva & Inga, 2022; Sudarti et al., 2020), mass dissemination of knowledge, improving the quality of learning, and accelerating education services (Vivek & Bhattacharjee, 2021), strengthen communication and coordination with new people or work groups (Romero-Tena et al., 2020).

The use of technology in education gives great hope to improve the quality of education and to produce a wise and knowledgeable generation who will manage the country in the future (Hasin & M Nasir, 2021). This is the background of the birth of the school digitization program in Indonesia (Keminfo, 2019). Digitalization is seen as the ability to leverage digital technology to produce, process, share, and transact information, and have positive impacts including more efficient administration, reduced workload, better access to information, better management of school resources, and improved report quality (Mwambela & Mwendia, 2019).

The success of school digitalization at least requires the availability of technological devices, internet networks, and teachers' digital competencies (Gudmundsdottir & Hatlevik, 2017; Majid & Kouser, 2020; Starkey, 2020). Digital competence is the knowledge, skills, and attitudes necessary to use technology critically and reflectively in the process of building new knowledge (Instefjord, 2015). On the other hand, the results of the study found more than 60% of teachers do not use Web 2.0 tools in their teaching work and although more than 90% of them have received ICT training, more than 70% feel they are not ready to use these technologies for education (Cortina-Pérez et al., 2014). Moreover, Munawar et al., (2021) surveyed 122 kindergartens in Semarang and found that only 27 kindergartens have integrated digital literacy education in schools, while 95 kindergartens do not have integrated digital literacy education in schools. Based on the results of the research above, it is explained that the use of technology in learning, especially at the ECCE level, is still rarely done (Johnston et al., 2018). It also shows that ECCE teachers' digital skills are lacking.

Digital competence can be defined as the knowledge, skills, and attitudes necessary to use technology critically and reflectively in the process of building new knowledge (Instefjord, 2015). Teachers' digital competencies are distinguished from other technology users based on their focus on education and teaching, in addition to everyday digital competencies in using technology for personal, social communication, and entertainment purposes (Krumsvik, 2008). Starkey, (2020) divides teachers' digital competencies into general digital competencies, digital teaching competencies, and professional digital competencies. Lund et al., (2014) Define professional digital competence as the ability to integrate and use technology for educational purposes by involving a common set of skills suitable for all situations, both personal and professional, as well as specific skills of the teaching profession.

Based on the explanation above, researchers are interested in knowing the level of professional digital competence of ECCE teachers consisting of aspects of technological proficiency, pedagogical compatibility, and social awareness (Instefjord & Munthe, 2015). Teachers in the mobilizing ECCE unit were respondents in this study, as mobilizing schools received school digitalization interventions from the government to use various digital platforms in their activities by principals, teachers, and education staff. This intervention makes the mobilizing ECCE unit a priority in receiving ICT

assistance from the Directorate of ECCE of the Ministry of Education and Culture (Ministry of Education and Culture, 2020), to later become a model for other schools.

### Research Method

Based on the purpose of the study, this study uses quantitative descriptive methods. As the opinion Sudjana, (1997) that descriptive research methods with a quantitative approach are used to describe or explain events or an event that occurs at the present moment in the form of meaningful numbers. This study aims to provide an explanation or description of the dependent variable, namely the professional digital competence of teachers, where the results of the study are obtained from the calculation of research variable indicators and then presented in writing by the author.

The population in the study was PAUD teachers in the PAUD Mobilizer unit in 4 (four) DKI Jakarta areas, namely 337 people from 61 schools. The sampling technique used is *Multistage Sampling* so a sample of respondents was obtained from as many as 73 teachers. Data collection using questionnaires developed by researchers based on professional digital competency theory proposed by Insteffjord & Munthe, (2015) and Starkey, (2020), then the questionnaire was distributed to respondents through *Google Forms*. This measurement of professional digital competence uses the Likert Scale which consists of 4 answer choices

### Result And Discussion

#### Results

The data analysis used was descriptive statistical analysis using SPSS on the results of data collection to measure the professional digital competence of teachers in the PAUD Penggerak unit in the DKI Jakarta area.

**Table 1. Distribution of Respondent Frequency by Region in DKI Jakarta**

No.	Region	Sum	Percentage
1	West Jakarta	17	23,3%
2	South Jakarta	23	31,5%
3	East Jakarta	24	32,9%
4	North Jakarta	9	12,3%
	Total	73	100%

*Source: Primary Data (2023)*

Table 1 shows that the largest total respondents were in the East Jakarta area as many as 24 people (32.9%), then the South Jakarta area as many as 23 people (31.5%), followed by the West Jakarta area as many as 17 people (23.3%), finally the North Jakarta area as many as 9 people (12.3%).

**Table 2. Distribution of Respondents' Frequency by Length of Work**

No.	Length of Work	Sum	Percentage
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1	0 – 10 Years	43	58,9%
2	11 – 20 Years	15	20,5%
3	21 – 30 Years	12	16,4%
4	31 – 40 Years	3	4,1%
	Total	73	100%

Source: Primary Data (2023)

Table 2 shows the length of work of most respondents under 10 years with a presentation of 58.9%. Based on the data above, it can also be known that there are respondents who have a working period of more than 30 years (4.1%). If the frequency distribution data based on length of work is presented in the form of a bar graph, as follows:

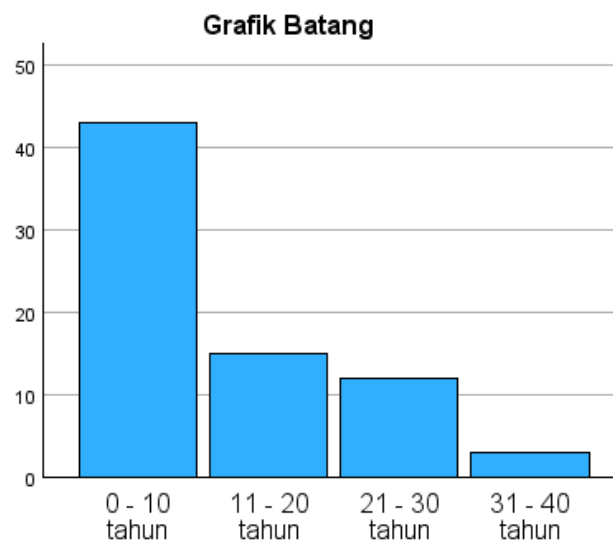


Figure 1. Bar Graph Working time

Source: Primary Data (2003)

**Table 3. Descriptive Statistical Results of Professional Digital Skills of ECCE teachers in DKI Jakarta Area**

No	Descriptive Size	Professional Digital Competencies		
		Technology Proficiency	Pedagogical compatibility	Social Awareness
1	Mean	40,42	42,15	21,81
2	Median	41,00	43,00	23,00
3	Mood	48	48	24
4	Std.Deviation	6,238	6,191	2,331
5	Lowest Score	18	13	15
6	Highest Score	48	48	24

Source: Primary Data (2003); Descriptives statistic

Based on the results presented in Table 3, it is known that the value of professional digital competence of teachers in driving ECCE units in the DKI Jakarta area is seen from three aspects, namely technological proficiency, pedagogical compatibility, and social awareness. The highest score for technology proficiency was 48, the lowest score was 18, the average score (M) = 40.42, the standard deviation (SD) = 6.238, and the Mode (Mo) = 48. In the compatibility aspect, the highest score was 48, the lowest score was 13, the average value (M) = 42.15, the standard deviation (SD) = 6.191, and Mode (Mo) = 48. In the aspect of social awareness, the highest score was obtained at 24, the lowest score at 15, the average value (M) = 21.81, standard deviation (SD) = 2.331, and Mode (Mo) = 24. The assessment obtained has the meaning that the data is normally distributed when the mean, median, and mode values have a small difference or values that are close to each other.

### *Discussion*

Digital competence is a collaboration between the knowledge, skills, and attitudes needed to use technology critically and reflexively to build new knowledge (Instefjord, 2015). However, digital competencies for teachers are focused on education and teaching in addition to everyday digital competencies in using technology for personal, social communication, and entertainment purposes (Krumsvik, 2008). Starkey, (2020) Dividing teachers' digital competencies into general digital competencies, digital teaching competencies, and professional digital competencies. Professional digital competence can be interpreted as the ability to integrate and use technology for educational purposes by involving a common set of skills suitable for all situations, both personal and professional, as well as the specific skills of the teaching profession (Lund et al., 2014). In line with Gudmundsdottir & Hatlevik, (2017) Professional digital competencies cover various aspects of a teacher's job that can involve the use of digital devices including assessment, data administration, and communication.

Professional digital competence covers three aspects: technological proficiency, pedagogical compatibility, and social awareness (Instefjord & Munthe, 2015). Technology proficiency is understood as the technical competence and confidence of teachers in using technology. Based on the results of the analysis in Table 3.1, it can be seen that the technological proficiency of ECCE teachers in the driving ECCE unit has an average score of 40.42. This value when compared to the highest value and mode value has values that are close to each other, this indicates that the teacher's technological proficiency is very good. The category of excellent means that the teacher always

Pedagogical compatibility or pedagogical suitability is a congruence between the pedagogical knowledge and beliefs of the teacher, knowledge of content, and technology. Pedagogical compatibility of teachers based on the results of the analysis obtained an average score of 42.15, with the highest score of 48 and the most frequent score of 48. This also indicates that the pedagogical compatibility of ECCE teachers in the ECCE mobilizer unit is very good.

Social awareness is the teacher's understanding and ability to negotiate the socio-cultural aspects of the school. A teacher's social awareness makes them able to negotiate and solve problems to successfully integrate digital technology into their teaching and learning. Social awareness in the results of the analysis got an average score of 21.81 with the highest score of 24 and the most outgoing value was 24. This also signifies the teacher's social awareness is very good.

Digital competence is one of the competencies that must be possessed by all professions in today's digital era, including teachers. For ECCE teachers, this digital competency is needed to promote good technological practices to students, in addition to supporting performance as teachers. However, in early childhood education, the use of technology is still a debate today, considering the adverse effects that are feared to have an impact on the development of early childhood health itself. *Media and Young Minds (American Academy of Pediatrics Council on Communications and Media, (2016)* Identify potential health problems with digital technology and recommend minimizing the use of technology. The use of digital technology in early childhood is considered to affect their health such as sleep disorders, cognitive, language, and social/emotional delays, behavioral problems, and increased obesity. In line with *the British Educational Communications and Technology Agency, (2014)* Yang mentioned many teachers' concerns about the negative effects shown on the usefulness of technology to improve teaching and learning including the impact on children's health, resistance to change, and negative attitudes due to interaction with technology. This is an inhibiting factor in the use of technology in early childhood education classrooms.

### Conclusion

Based on the results of research that has been conducted, teachers driving PAUD units in the DKI Jakarta area have mastery in aspects of technological proficiency, pedagogical compatibility, and excellent social awareness. Garzón-Artacho et al., (2020) mention Digital competency development is influenced by age variables, teacher training, and school type. Sekolah Penggerak is a school that focuses on developing student learning outcomes holistically by realizing the Pancasila Student Profile which includes competencies and characters starting with superior human resources (principals and teachers). Driving schools get five interrelated and inseparable interventions, namely 1) consultative and asymmetric assistance, 2) strengthening school human resources, 3) learning with a new paradigm, 4) data-based planning, and 5) school digitalization. School digitization aims to reduce complexity, increase efficiency, and approach customized by utilizing a variety of platform digital. Thus, teachers in ECCE units get more intervention than other schools in mastering digital competencies. It may be different if the research is carried out in a non-mobilizing ECCE unit. Therefore, further research can be done to see what affects teachers' digital competence. In addition, measurement instruments of technological proficiency aspects can be developed to a higher level of technological mastery.

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