

Early Childhood Teacher's Self Regulated Strategy in Digital Environment: A Preliminary Investigation in Indonesia

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ABSTRAK

Abstract: This study aims to investigate the self-regulated strategy of early childhood teachers in online learning during the Covid-19 pandemic. A quantitative survey approach was used as a method in this study. The data collection involved 100 early childhood teachers in Indonesia with a focus on the analysis of six dimensions of self-regulated strategy (1) goal setting, (2) environment structuring, (3) task strategies, (4) time management, (5) help-seeking, and (6) self-evaluation. The results of this study indicated that the level of self-regulated of early childhood teachers in a digital environment is good with an average value of 82.025%. In addition, the research findings also confirmed that the Covid-19 pandemic has not dampened the enthusiasm of early childhood teachers to adaptive in the digital learning environment. The main contribution of this study is to provide an understanding of the importance of self-regulated strategy for early childhood teachers in a digital environment. The results of this study can be useful for the Indonesian early childhood directorate as a basis for policy making and evaluating the improvement of the competence of early childhood teachers in Indonesia.

Abstrak: Penelitian ini bertujuan untuk mengetahui strategi *self-regulated* guru PAUD dalam pembelajaran *online* di masa pandemi Covid-19. Pendekatan survei kuantitatif digunakan sebagai metode dalam penelitian ini. Pengumpulan data melibatkan 100 guru PAUD di Indonesia dengan fokus pada analisis enam dimensi strategi *self-regulated*, yakni (1) penetapan tujuan, (2) penataan lingkungan, (3) strategi tugas, (4) manajemen waktu, (5) bantuan, dan (6) evaluasi diri. Hasil penelitian ini menunjukkan bahwa tingkat self-regulated guru PAUD di lingkungan digital sudah baik dengan nilai rata-rata 82,025%. Selain itu, temuan penelitian juga menegaskan bahwa pandemi Covid-19 tidak menyurutkan semangat guru PAUD untuk beradaptasi di lingkungan pembelajaran digital. Kontribusi utama dari penelitian ini adalah untuk memberikan pemahaman tentang pentingnya strategi *self-regulated* bagi guru PAUD di lingkungan digital. Hasil penelitian ini dapat bermanfaat bagi Direktorat PAUD Indonesia sebagai dasar pengambilan kebijakan dan evaluasi peningkatan kompetensi guru PAUD di Indonesia.

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Each teacher has different self-management and has different strategy in teaching. Bandura's theory of social cognition explains that personal, behaviour, and environment are inseparable components. These three aspects are interrelated because when a person tries to self-regulate, then the result is in the form of performance or behaviour, and behaves having an impact on environmental change (Bandura, 1991). In this case, independent learning is defined as the motivation, behaviour, and cognition of individuals who play a role in the learning process (Zimmerman, 1986). Currently, early childhood teachers are required to be able to adapt to the digital learning environment, due to the pandemic conditions that still require online learning. For this reason, it is very important to study early childhood teacher self-regulated strategy in a digital environment to find out how much effort early childhood teachers make in regulating themselves in teaching in a digital environment.

The digital environment and the accompanying technology have changed how teaching is delivered. The success of education in the digital era cannot be separated from the quality of teachers (Sapriani, 2019). For this reason, early childhood teachers are required to master the skills, the ability to adapt to the digital environment to answer the challenges of education during a pandemic. This is in line with the pedagogic competencies that early childhood teachers must possess, which is to have

at least the basic skills of information and communication technology for learning purposes. Therefore, the digital environment for early childhood teachers is now very important in bridging the learning process in early childhood education. Currently, early childhood teachers inevitably have to get used to and adapt to the digital environment so that learning objectives can be achieved even though it is still carried out online.

The readiness of early childhood teachers in adapting to the digital environment is currently needed to support online learning which is still being carried out due to the impact of the COVID-19 pandemic. However, the ability of early childhood teachers to use technology in learning is still an obstacle. According to (Agustin et al., 2020) the teaching obstacles experienced by early childhood teachers during the covid 19 pandemic include four indicators, namely (1) indicators of communication constraints (2) indicators of learning method constraints (3) indicators of material constraints, and (4) indicators cost constraints and technology use. The ability of teachers to develop plans and goals to be achieved in learning is a characteristic of teachers who have self-regulated learning. In (Zumbrunn, 2011) mentions several strategies to become self-regulated ability, namely: a) goal setting, b) environmental structuring, c) task strategies, d) time management, e) help-seeking, and f) self-evaluation. Therefore, early childhood teachers need to instill these strategies to develop self-regulated teaching abilities.

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Several studies discussing self-regulated learning have been carried out previously, such as research from (Dinata et al., 2016). which states that self-regulated learning is a learning strategy that enables students to learn independently and improve achievement. The study conducted by (Latipah, 2015) also discusses the effect of self-regulated learning on student achievement. Furthermore, the study on investigating the effects of self-regulated learning also said that self-regulated learning had a significant impact on student's academic motivation and self-efficacy (Lavasani et al., 2011).

However, from some of these studies, no one has specifically discussed self-regulated strategy in early childhood teachers that focus on the digital learning environment. So this study aims to complement previous studies. Therefore, the purpose of this study is to investigate the level of self-regulated strategy of early childhood teachers in a digital environment. By knowing the level of self-regulated strategy of early childhood teachers, it will also know the performance or behavior of teachers in self-management in teaching and this will have an impact on changes in the digital learning environment of early childhood teachers.

This research consists of an introduction that provides the background for the implementation of the research concerning the situation in the field. The second part is a methodology that explains the research approach used, research subjects, data collection techniques, and data analysis techniques. The third part is the results of the study which describes the data from the research. Then the discussion section connects the results of the study with previous research. The conclusion section describes the impact of research results and their contribution to the field of early childhood science.

METHOD

Research Design

The method used in this research is a survey with a quantitative approach. The survey method was applied in this study by quantitatively describing the behavioural tendencies of a population by examining the sample of the population (Borg & Gall, 2003). The behaviour referred to in this study is the self-regulated strategy of early childhood teachers in a digital learning environment. The data in this study were obtained online using Google Form.

Participant

This study involved 100 early childhood teachers in West Java, Indonesia. The following detailed information on research respondents is shown in Table 1.

Table 1. Demographics Respondent

Demographic		Number of participants	%
Gender	Female	99	99
	Male	1	1
Experience	1-5 years	41	41
	years	35	35
	>10 years	16	16
	<1 year	8	8
Certified Teacher	Yes	7	7
	No	93	93

Data Collection Technique

The data in this study were obtained online. Before the respondents filled out the questionnaire, we gave the participants brief instructions regarding the purpose and nature of the study. In general, it only takes about 5 to 10 minutes to fill out the questionnaire. The data collection technique used a five-point Likert scale response format with the pattern of answer categories: (1) always, (2) often, (3) sometimes, (4) rarely, and (5) never. Data processing used the Google Forms. Documents that directly generate data descriptions based on statements answered by respondents.

The development of the online self-regulated strategy instrument refers to the six dimensions of self-regulation theory (Barnard et al., 2008) with added modifications by researchers, then weighed by 3 experts with academic and practitioner backgrounds using questions that are declared appropriate and eliminating statements that declared unsuitable. This was done as an effort to validate internally. After that, the instrument was directly used to take data from the field, and then the results were analyzed. The self-regulated instrument consists of six dimensions with fifteen statements, as shown in Table 2.

Table 2. Instrument of Self-Regulated Survey

No	Dimensions	Variables
1.	Goal Setting	Formulate lesson plans Formulating learning materials Determining the learning method Determining learning media
2.	Environment Structuring	Choose a teaching location that supports Using multiple platforms Using special time
3.	Task Strategies	Doing initial apperception Stimulate children
4.	Time Management	Allocate additional study time Provide time regularly
5.	Help-Seeking	Consultation with colleagues Studying material from social media
6.	Self-Evaluation	Doing reflection Documenting the child's assessment

Data Analysis

In this study, descriptive statistics were used for data analysis techniques. The data processing process used a spreadsheet tool. To determine the level of self-regulated of teachers, this study used the formula as in Formula 1 and the assessment criteria refer to Table 3. (Aditya & Permadi, 2019).

Table 3. Self-Regulated Criteria

Score	Criteria
84,2—100	Very Good
68,2—84	Good
52,2—68	Acceptable
36,2—52	Poor
0—36	Very Poor

Specifically, the descriptive analysis focused on two things: (1) self-regulated teachers in digital environment per dimension, and (2) self-regulated teachers in digital environment per variable.

RESULT

The study analyzed the results of the questionnaire on self-regulated level in digital environment per dimension, and self-regulated level per variable.

Self-Regulated Level per Dimension

Table 4. Self-Regulated level per dimension

Dimensions	Self-Regulated Level (0-100)	Status	Rank
Task Strategies	83,4	Good	1
Goal Setting	83,25	Good	2

Dimensions	Self-Regulated Level (0-100)	Status	Rank
Self-Evaluation	83	Good	3
Time Management	82,7	Good	4
Help-Seeking	82,6	Good	5
Environment Structuring	77,2	Good	6
SRL Level	82,025		

Based on Table 4 related to self-regulated teaching in the digital learning environment, early childhood teachers show that overall, they are in a good category, (82.05%). The dimensions of task strategies, goal setting, and self-evaluation appear to be the highest dimensions of self-regulated teaching for early childhood teachers in Indonesia with scores of 83.4%, 83.25%, and 83%. Unfortunately, the environment structuring dimension has a low score. This shows that there are still gaps related to self-regulated strategy of early childhood teachers in digital learning environment. In this regard, there has been no previous report that examines the level of self-regulated ability of early childhood teachers in a digital environment. However, self-regulated strategy has been reported to increase motivation and achievement (Lavasani et al., 2011). Self-regulated strategy was also reported to be able to have a positive impact, namely directing someone to study independently, setting learning targets, and finding the information needed independently (Dinata et al., 2016).

Self-Regulated Level per Variable
Table 5. Self -Regulated Level per Variable

Dimensions	Variables	Self-regulated Level (0-100)	Status	Rank
Goal Setting	Formulating learning materials	87,6	Very Good	1
	Formulate lesson plans	87,2	Very Good	2
	Determining the learning method	82,8	Very Good	3
	Determining learning media	75,4	Good	4
Environment Structuring	Using special time	80,2	Good	1
	Choose a teaching location that supports	79	Good	2
	Using multiple platforms	72,4	Good	3
Task Strategies	Stimulate children	89,6	Very Good	1
	Doing initial apperception	77,2	Good	2
Time Management	Allocate additional study time	89,2	Very Good	1
	Provide time regularly	76,2	Good	2
Help-Seeking	Consultation with colleagues	86	Very Good	1
	Studying material from social media	79,2	Good	2
Self-Evaluation	Doing reflection	86,2	Very Good	1
	Documenting the child's assessment	79,8	Good	2

In Table 5 it can be observed that the early childhood teacher has a very good level of self-regulated strategy in the dimension of goal setting. They can formulate learning materials and plans and determine learning methods. While the ability to determine learning media is still in the good category. The self-regulated ability of early childhood teachers in the environment structuring dimension in using the special time to study, choosing learning locations, and using various supporting platforms is also good.

Meanwhile, the strategic task dimensions that look superior are in terms of providing stimulation to children during the learning process, on the other hand, to do initial apperception before starting learning is still in the good category. In the time management dimension, which includes the teacher's ability to provide independent study time, discuss with colleagues and reflect, it also looks very good. As for managing additional study time, studying material from social media, and being consistent in documenting children's assessments are still in the good category.

Discussions with peers and reflecting on learning which is included in the dimensions of help-seeking and self-evaluation are included in the very good category, while the teacher's ability to learn the material from social media or other learning resources as well as assessing children is in a good category.

DISCUSSION

From a series of data presented, the investigation carried out in this study was able to conclude the findings and describe the level of self-regulated learning ability of early childhood teachers in digital environment. Furthermore, the self-regulated strategy of early childhood teachers in the digital environment is generally still in a good category, this means that the ability of early childhood teachers to regulate themselves in the digital environment to become even better is still very much needed.

Because learning in early childhood is still done online, it requires the ability of teachers to determine appropriate teaching strategies and make learning more effective. If the teacher wants to create effective teaching, the teacher must also be an effective strategy (Peeters et al., 2014).

The application of self-regulated strategy by early childhood teachers in a digital environment, both in face-to-face learning conditions and online learning will have an impact on the results of the teaching carried out. Self-regulated strategy has been shown to increase self-satisfaction and motivation so that they are more likely to succeed academically (Peng, 2012). The results of this study indicated that the level of self-regulated of early childhood teachers in the digital environment was in a good category. This gives a new hope that early childhood teachers are now starting to realize the importance of self-management in learning in a digital environment, adapting to information and communication technology to support their teaching.

Based on several previous studies, good self-regulated strategy are reported to be able to improve academic achievement (Hadwin, 2012) and self-regulated strategy can be used by teachers or lecturers as models or learning strategies to improve the learning process in the classroom (Yulanda, 2017). Apart from the reported investigative results, certain limitations of this study should be noted. Respondents involved in this study only included 100 early childhood teachers in Indonesia. Self-regulated strategy of early childhood teachers in a digital environment can be measured more widely, anywhere, and does not depend on certain regions. For this reason, further research is recommended to involve early childhood teachers from various regions in Indonesia so that the respondent's domicile becomes heterogeneous.

CONCLUSION

In this study, self-regulated level of early childhood teachers in a digital environment was investigated. The results of this study indicated that the level of self-regulated of early childhood teachers in a digital environment was in a good category. The self-regulated dimensions which include goal setting, environment structuring, task strategies, time management, help-seeking, and self-evaluation have been able to describe the self-regulated strategy of early childhood teachers in a digital environment. Investigations that have been carried out on the self-regulated of early childhood teachers in the digital environment provide new hope that early childhood teachers can transform learning and adapt to the digital environment which is currently very necessary to achieve learning goals during a pandemic or distance learning. Through the findings obtained in this study, the measurement of self-regulated strategy in various regions in Indonesia is highly recommended. Dissemination of information or understanding related to the benefits of self-regulated learning for a teacher needs to be done so that teachers are familiar with independent learning patterns to increase competence in this digital environment. In addition, further research that examines the effect of early childhood teacher's self-regulated strategy on the transformation to a digital environment also needs to be done. The research will be able to provide information about the advantages and disadvantages when the teacher has been able to regulate himself properly. In addition, studies that examine the self-regulated learning of early childhood teachers in other fields also need to be carried out so that educators know what benefits can be obtained when a teacher can regulate himself in self-study.

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