Journal of Ethnic and Cultural Studies
2022, Vol.9, No. 3, 194-211
https://dx.doi.org/10.29333/ejecs/1280

ISSN: 2149-1291

The Role of Pedagogical Documentation in Early Childhood Education in Indonesia

Siti Zaenab[1]
Institut Agama Hindu Negeri Gde Pudja, Mataram, Indonesia

Abstract: Considering the significance of pedagogical documentation in the early childhood education/care system, the current study examines the influence of pedagogical documentation on children's semantic memory, observed activities and evaluated skills and qualities per their teachers and caretakers. This study also examines the interactive effect of the learning environment with pedagogical documentation to enhance children's semantic memory, observed activities, and evaluated skills and qualities. A mixed-method approach has been utilized to examine the proposed associations. Learning events were organized for children aged 36 to 72 months in the kindergartens and preschools in Mataram, Indonesia. After four weeks of observations, the teachers and caretakers of the children recorded their responses regarding children's semantic memory, observed activities, skills, and qualities. The data were analyzed using SmartPLS 3.0 software. The results showed a significant increase in children's semantic memory, evaluated skills and qualities, and a positive change in their routine activities. Simultaneously, results also presented the significant role of the learning environment in enhancing positive outcomes of the pedagogical documentation in the early childhood education/care system.

***Keywords*:** Pedagogical documentation, children's semantic memory, observed activities, skills and qualities, learning environment.

Early childhood education comprises a series of systematic activities and programs to guide children aged 36-72 months. Children differ from adults in some specific characteristics, i.e., the learning capability of children is higher than that of adults (Correia et al., 2019). They are full of energy, curiosity, enthusiasm, and vitality, and try to explore everything around them, makings them continuous learners (Ulferts et al., 2019). Worldwide, various programs are employed in early childhood education with numerous teaching methodologies. Simultaneously, numerous qualitative studies are available related to the federal logical documentation in early childhood education (Fleck et al., 2013; Kim, 2020; Lindh & Mansikka, 2022; Reunamo et al., 2013; Rintakorpi & Reunamo, 2017). However, there is a scarcity of research related to the association of paralogical documentation with early childhood activities (Lindh & Mansikka, 2022; Rintakorpi & Reunamo, 2017). Therefore, the main aim of the current study was to explore the association between pedagogical documentation and early childhood routine activities, skills, qualities, and semantic memory.

The current study was conducted among children studying in kindergarten in Indonesia. Research shows that for the past ten years, the government of Indonesia has been taking various initiatives to improve the early childhood education sector (Nakajima et al., 2021). The

[1] Corresponding Author: Instructor at Institute Agama Hindu Negeri Gde Pudja, Mataram, Indonesia.
E-Mail: dr.siti.zaenab@gmail.com

government took initiatives to expand access to preschool services via early childhood education and development projects (Indrawati et al., 2021). At the same time, community educators are provided with necessary training facilities via the frontline service delivery projects (Dalle et al., 2021).

Despite these initiatives, research also reports that access to early childhood education services is not equal in all parts of Indonesia, especially the children who belong to economically disadvantaged groups/families who have lower enrollment rates than their wealthier peers (Aliyyah et al., 2020). To overcome this issue, the government of Indonesia, with the support of the World Bank, launched the early childhood education and development project in 2009. This project was initiated in 50 different districts focusing on 3000 villages identified based on size and poverty rates (Hasan, 2013). These efforts produced positive results Ministry of Education and Culture 2018 data show regarding the gross enrolment rate for 36 months to 72-month-old children, which showed an increase of 32.1% in 2018 compared to 25.8% in 2010. Keeping these efforts at the governmental level to enhance the early childhood education quality in Indonesia, the main focus of the current study is to examine the significance of pedagogical documentation in enhancing children's memory, skills, and qualities at the institutional level.

Documentation has a long history of recording information in the context of early childhood education/care institutions. This documentation is important for preserving, assessing, and developing an early childhood education/care environment (Kasimova, 2022). Moreover, parents, teachers, researchers, and children photograph, videotape, and transcribe different experiences, feelings, observations, results, learning needs, and skills. If these kinds of documents or saved information are used to develop and study pedagogy, it is called pedagogical documentation (Hostyn et al., 2020).

Today, in most countries, assessing and developing early childhood education/care pedagogy, mainly in the curriculum documentation, has been given importance (De Sousa, 2019; Lee-Hammond & Bjervås, 2021). Simultaneously pedagogical documentation is not only about practical implementation but has been employed less frequently (Rintakorpi & Reunamo, 2017). It requires understanding the theoretical knowledge about the children's development and learning and the educators' social and technical skills (Knauf, 2020; Paananen & Lipponen, 2018). It also requires a unique and diverse meaning-making process and interpretations to achieve the measures' reliability and validity (Kasimova, 2022).

For the full application of the pedagogical documentation, the early childhood education/care communities and educators' understanding of teaching, learning, and children's needs and requirements must be transformed (De Sousa, 2019; Hostyn et al., 2020). At the same time, this understanding of educators' approach can be applied to the way they understand the use of documentation in early childhood education practices.

Basically, in the context of early childhood education, two approaches are commonly applied based on educators' perceptions regarding their work objectives. For instance, the French school approach is considered a complete children's guidance when they are ready to go to school (Rintakorpi & Reunamo, 2017), and the social methodological approach curricula focus on all the children's mutual interests (Bennett, 2005). In many regions of the world, the early childhood education/care curriculum focuses on children's development, learning, growth, and wellbeing in a composed manner without standardizing goals for early years education (Paananen & Lipponen, 2018). It further reflects a flexible system that believes in assessing the children's qualities and letting them drive their own lives as per their priorities and interests rather than imposing heavy educational liabilities. This can further be elaborated with the help of pedagogical documentation by focusing on children's general abilities rather than treating them as a part of children's groups.

Journal of Ethnic and Cultural Studies
2022, Vol.9, No. 3, 194-211
https://dx.doi.org/10.29333/ejecs/1280

ISSN: 2149-1291

In connection with that, research on pedagogical documentation has increased enormously in the past few years. However, the focus of most research around the area is based on qualitative data and analysis, due to which we cannot generalize the existing research results (De Sousa, 2019; Hostyn et al., 2020; Knauf, 2020; Lindh & Mansikka, 2022; Paananen & Lipponen, 2018). Most researchers focused on methods and tools to know about young children's views (Fleck et al., 2013; Rintakorpi & Reunamo, 2017). Whereas, in the practice and literature, listening to young children's voices has been considered a synonym for involving them in decision-making, assessing, and planning the overall educational system. In turn, this has been considered a meaningful way to improve the quality of early childhood education (Fochi, 2022; Lee-Hammond & Bjervås, 2021). Adding to the existing literature body, the current study aims to answer the following questions.

1. How and to what extent does pedagogical documentation influence children's semantic memory, observed activities, skills, and qualities as per their teachers' evaluations in early childhood education/care institutions?
2. Does the learning environment moderate the association of pedagogical documentation with children's semantic memory, observed activities, and evaluated skills and qualities?

In contrast to previous qualitative studies, this research applied a mixed-method approach. It focused on discussing the issue of pedagogical documentation utilizing quantitative data and analyzing how this documentation is linked with children's learning environment, learning capabilities, and observed actions, memory, skills, and qualities. For that purpose, the documentation kept by the children and educators was considered to have pedagogical documentation implications in planning and developing the activities in early childhood education/care institutions. In addition, we organized novel learning events for the children of kindergartens and preschools. After four weeks of keen observation, they were evaluated by their teachers and caretakers (who agreed to participate in the survey) to analyze the effect of pedagogical documentation and learning environment on their memory, activities, and skills. The current study is a valuable addition to the existing body of literature in the early childhood education system to reap the long-term benefits of pedagogical documentation.

Literature Review

Pedagogical Documentation, Semantic Memory, Observed Activities, and Evaluated Skills and Qualities

Documentation presents an ongoing and collaborative procedure of recording and observing children's work (Fochi, 2019). Several early childhood classrooms present narratives of children and photographs to enhance their learning capabilities and memory (De Sousa, 2019). However, in practice, pedagogical documentation is a broader field. It involves layers of books that discuss materials, observations, organization, and interpretation of the materials without any strict rules of presenting results in the form of refined products for display (Rintakorpi & Reunamo, 2017). On the other hand, it mainly involves describing children's conversations and relating such conversations with their photographs performing various activities at different stages of their tasks (Merewether, 2018). In some classroom practices like Reggio classrooms, such documentation is maintained in the form of narratives and photographs and is made visible via displays in books or panels (Westerberg & Vandermaas-Peeler, 2021). Simultaneously, various documentation forms include letters recording children's work, messages, audio cassettes, diaries, notebooks, artworks, and artifacts (Alnervik, 2018).

In addition, to be more effective, documentation is always available for adults and children to bring on the hallways and classroom walls (Hostyn et al., 2020).

Pedagogical documentation has several characteristics. For instance, it assists the teachers in listening to and observing the individual children (Rintakorpi & Reunamo, 2017). It also helps them to inform about their decisions regarding the curriculum suits, to get the idea of how children in groups generate different ideas and communicate knowledge (Fleck et al., 2013). Simultaneously, it helps teachers foster professional development in the children from their early childhood years (Lee-Hammond & Bjervås, 2021).

Likewise, pedagogical documentation for children has several advantages. For instance, in the cognitive and social context, it helps them to engage and exchange their ideas within the groups on the classroom premises (Kasimova, 2022). Previous literature suggests that documentation presented in the classrooms enhances young children's memory and learning capabilities (Fochi, 2022). Educators also revealed that the documentation enhances the depth and range of children learning based on its quality of providing an opportunity of revisiting the information and strengthening and clarifying the information with enhancing understanding regarding the subject matter (Knauf, 2020; Lee-Hammond & Bjervås, 2021).

Moreover, documentation acts as a memory to help the children memorize several activities performed in the classrooms based on their personal experiences (Aras & Erden, 2020). It further helps them practically implement those activities and experiences again and again in a constructive manner. Several scholars highlighted the benefits of documentation in the cognitive and developmental psychology field and considered them reminders to boost the long-term memory of individuals (Aras & Erden, 2020; Dalle et al., 2020; Fleck et al., 2013; Yılmaz et al., 2021). For instance, among young children in laboratory studies, intermittent test sessions are considered reminders that help students recall their previous learning experiences that further help them enhance their subsequent memory performance based on those reminding stimuli (Paananen & Lipponen, 2018). The current study focuses on children's semantic memory, observed activities, and evaluated skills and qualities in early childhood education/care institutions based on their memory. Hence, the following hypotheses are posited;

H1: Pedagogical documentation is positively associated with the children's semantic memory.
H2: Pedagogical documentation is positively associated with the children's observed activities.
H3: Pedagogical documentation is positively associated with the children's evaluated skills and qualities.

Learning Environment as a Moderator

The environment presents the space and materials used to engage children in various activities in educational institutions (Mundiri & Hamimah, 2022). It also involves parents' cooperation by informing them regarding the children's various activities (Kumalasari & Sugito, 2021). Research shows that when children are given ample opportunities to perform various tasks in classroom settings, they feel easy and contented and actively participate in different activities (Tuli & Mantri, 2021). Research also shows that children plan and execute the activities when various themes and projects are developed with their coordination and involvement (Svanbäck-Laaksonen & Heikkilä, 2021). In connection with that, Slicker et al. (2021) demonstrated that child-centered practices are emphasized in kindergartens that believe in pedagogical documentation. In other words, such institutions believe that the children's ideas are starting point of such activities and educators (teachers and caretakers) facilitate them to connect the content with the pedagogical targets (Vaiopoulou et al., 2021). Documentation is significantly connected with the children's self-expression and creativity in the literature (Lee-Hammond & Bjervås, 2021). At the same time, Rintakorpi and Reunamo (2017) asserted that

Journal of Ethnic and Cultural Studies
2022, Vol.9, No. 3, 194-211
https://dx.doi.org/10.29333/ejecs/1280

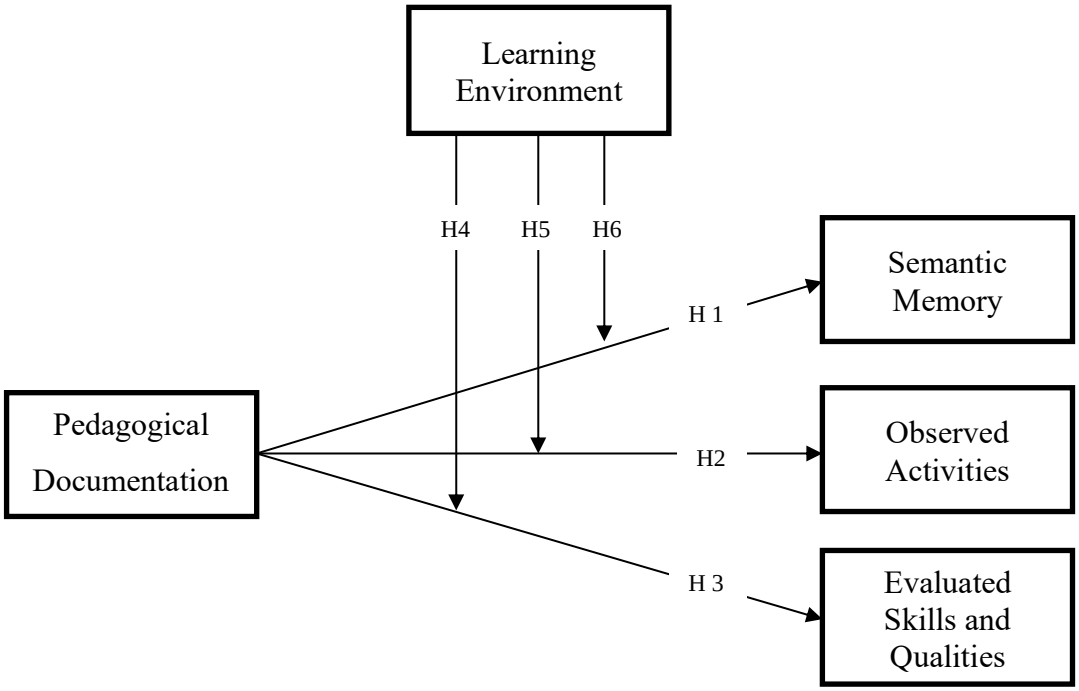
ISSN: 2149-1291

pedagogical documentation correlates with children's problem-solving ability, meta-cognitive skills, and creative thinking.

Adding to the existing body of literature, the current study proposes that when pedagogical documentation interacts with a highly learning environment that facilitates the children to engage in various learning activities, their semantic memory increases. Likewise, this interaction of the learning environment with the pedagogical documentation changes the patterns of children's involvement in various activities and enhances their skills and qualities. Thus, based on the above arguments and literature support following hypotheses are proposed;

H4: The learning environment positively interacts with pedagogical documentation to enhance children's semantic memory.
H5: The learning environment positively interacts with pedagogical documentation to enhance children's observed activities.
H6: The learning environment positively interacts with pedagogical documentation to enhance children's evaluated skills and qualities.

Figure 1
Theoretical Framework of the Study



Research methods

In the current study, a survey methodology followed by a learning event was employed to collect data from teachers and caretakers of kindergartens and preschools in Mataram, Indonesia. Children between the ages of three to six participated in learning events. During those events, they came into contact with the following documentation: photographs, factual information, and verbatim quotations from the learning events. They were also provided with a worksheet including factual information from the learning event. After four weeks, the same children were selected to participate in another learning event, and after that, their teachers took their interviews and conducted tests to check their semantic memory. They observed their activities and checked the development of their practical skills and qualities based on documentation usage.

Participants and Measures

The current study was performed in 30 kindergartens and preschools in Mataram, Indonesia. Using systematic sampling, one hundred teachers and caretakers of all the selected kindergartens and preschools were recruited to observe 700 children from January 15, 2022, to February 15, 2022. The selected teachers and caretakers evaluated children's semantic memory, observed activities, and skills (who participated later in the survey). The participant teachers and caretakers working at early childhood education/care institutions also completed learning environment evaluation forms. A random sampling technique was applied to select the kindergartens and preschools in Mataram, Indonesia.

Ethical Considerations

The administrative departments of all the selected kindergartens were contacted and were requested to give consent to conduct the current research. They were briefed about the nature of the research in detail. After taking consent from the kindergartens' administrative departments, the children participants' parents and guardians were requested to fill out the permission forms. Moreover, researchers did not collect any identifiable data of the children participants, including their names, birthdays, Social Security numbers, etc. Likewise, researchers did not collect any identifiable information related to parts of children participants' parents/guardians and educators. Simultaneously ethical approval from the research board of Institut Agama Hindu Negeri Gde Pudja Mataram was taken before conducting the current study.

Methodology

Assessment of Emotion and Activity

The kindergartens and preschool teachers, and caretakers were briefed about how to observe children. The main categories of observations included children's emotions, social orientation involvement, physical activity, the object of attention, and other activities. Simultaneously, natural settings were preferred to observe the children where they perform their everyday activities, i.e., free play situations, transactions, eating patterns, primary play, outdoors, and studying hours. Finally, teachers and caretakers filled in a questionnaire where children observed activities were measured with six items adapted from Rintakorpi and Reunamo (2017). The sample items include statements linked with children's emotions, i.e., happiness, joy, and satisfaction. The statements also included the children's involvement in the activity. See Table 1.

Table 1
Children's Observed Activities

Observed Activities	Statement
OA1	Child's emotions: happiness, joy, satisfaction
OA2	The activity of the nearest adult
OA3	The child's main object of attention
OA4	The child's involvement in the activity
OA5	The content of the child's activity
OA6	The activity of the nearest adult

Journal of Ethnic and Cultural Studies
2022, Vol.9, No. 3, 194-211
https://dx.doi.org/10.29333/ejecs/1280

ISSN: 2149-1291

Evaluation of the Children's Skills and Qualities

The teachers and caretakers evaluated children's social orientation, learning, social skills, and self-regulation skills. Children's evaluated skills and qualities were measured with four items adapted from Rintakorpi and Reunamo (2017). The sample items include the statements like "the child is creative in imaginary play" and "the child is adaptive, open, and mindful in interaction with others. See Table 2. " A 5-point Likert scale ranging from 1= does not describe the child at all to 5= describes the child very well was used to report the educators' responses.

Table 2
Skills and Qualities

Evaluated Skills and Qualities	Statement
ESQ1	The child is safely attached to the personnel of the kindergarten
ESQ2	The child is creative in imaginary play
ESQ3	The child is adaptive, open, and mindful in interaction with others
ESQ4	The child is insistent and self-imposed in interaction with others

Children's Semantic Memory

After four weeks of learning events and continuous observations, educators tested the children for their memory using pedagogical documentation. They asked various questions from the children and gave them various activities to draw pictures and connect the patterns used in the learning activities. Based on these memory tests, children's Symantec memory was measured with a four-item scale adapted from Fleck et al. (2013). The sample items are presented in Table 3.

Table 3
Symantec Memory

Semantic Memory	Statement
SM1	Pedagogical documentation enhances the semantic memory of the children
SM2	Children can recall and repeat their learning activities with the help of proper pedagogical documentation practices
SM3	Children's thinking, problem-solving, and learning to learn are flourishing
SM4	Children participate in many ways in the planning of the activities

Evaluation of the Learning Environment

All the selected teachers and caretakers were requested to evaluate four statements regarding the atmosphere and the methods employed in the learning environment. The measures were adapted from Reunamo et al. (2013) and Rintakorpi and Reunamo (2017). They were further requested to complete the forms by describing their answers on a 5-point Likert scale ranging from 1 = Does not describe the learning environment at all to 5 = describes the learning environment accurately. The sample items are given in Table 4.

Table 4
The Learning Environment

Learning Environment	Statement
LE1	Children have been given possibilities to impact their daily activities
LE2	The educators support and enrich children's plays a lot
LE3	The physical learning environment (space and materials) engages children in their activities
LE4	Different projects and themes are often developed together with children

Pedagogical Documentation

To see the pedagogical documentation from multiple perspectives in a developing nation, we used 12 statements adapted from Lindh and Mansikka (2022). The sample items include the statements like "Observing and documenting the lifeworld of children" and "photographs and children's activities are important to document in our everyday activities."

Respondents Characteristics

The children in this study belong to age groups ranging from 36-72 months, with the mean M = 56 months and SD = 18.3 months. For each observer, the number of children varied from 5 to 10, with the mean M= 6.5 (SD = 1.5 children). Moreover, 56 teachers and 44 caretakers participated in the study. Their age ranged from 20 to 55 years, with the mean M = 32 and SD = 11.3 years. Thirty-nine participants were male, and 61 were female. Fifty-eight participants were graduates, and the remaining 42 were postgraduates.

Control Variables

The current study used the SmartPLS 3. 0 software for data analysis. The simulation analysis was performed to check the impact of any of the demographic characteristics of the respondents on the dependent variables. However, results revealed that none of the demographic characteristics significantly impacted the dependent variables, and therefore, they were not controlled during the further analysis.

Data Analysis and Results

Assessment of the Measurement Model

A two-model process was followed for analysis purposes in smart PLS 3.0 software. The measurement model was assessed to establish all the constructs' reliabilities and validities, followed by the structural model assessment to evaluate the hypothesized associations. During the measurement model assessment for establishing reliabilities and content validity of the measures "Cronbach's Alpha (CA)," "Composite Reliability (CR)," and "Average Variance Extracted (AVE)" were calculated (Hair et al., 2010; Mansoor & Paul, 2022). Results of the measurement model revealed that factor loadings of all the items of the study constructs ranged from 0.700 to 0.784, which further resulted in AVE values of all the study constructs within the minimum range as prescribed by the experts (i.e., above 0.50). At the same time, the values of the CR and CA were also above the minimum prescribed criteria by the experts (i.e., above 0.70) hence, establishing the composite reliability and constructs' validity (Henseler et al.,

Journal of Ethnic and Cultural Studies
2022, Vol.9, No. 3, 194-211
https://dx.doi.org/10.29333/ejecs/1280

ISSN: 2149-1291

2015; Mansoor, 2021). Furthermore, all the values of AVE, CR, and CA and factor loadings are given in Table 5.

Table 5

Factor Loadings, Reliability, and Validity

Constructs/items	Factor Loadings					AVE	CR	CA
	1	2	3	4	5			
Pedagogical Documentation						0.545	0.935	0.756
PD1	0.713							
PD2	0.750							
PD3	0.715							
PD4	0.737							
PD5	0.759							
PD6	0.731							
PD7	0.724							
PD8	0.754							
PD9	0.757							
PD10	0.729							
PD11	0.752							
PD12	0.736							
Semantic Memory						0.578	0.845	0.718
SM1		0.777						
SM2		0.730						
SM3		0.799						
SM4		0.733						
Observed Activities						0.580	0.892	0.743
OA1			0.754					
OA2			0.772					
OA3			0.784					
OA4			0.773					
OA5			0.758					
OA6			0.727					
Evaluated Skills and Qualities						0.521	0.813	0.700
ESQ1				0.700				
ESQ2				0.733				
ESQ3				0.735				
ESQ4				0.720				
Learning Environment						0.563	0.837	0.709
LE1					0.723			
LE2					0.761			
LE3					0.783			
LE4					0.732			

Note. CR, composite reliability; AVE, average variance extracted.

Moreover, to measure the "discriminant validity" among the study constructs, scholars highlighted the significance of assessing "the Heterotrait-Monotrait Ratio (HTMT)" (Henseler et al., 2015; Mansoor & Wijaksana, 2021). The researchers suggested that the value of the HTMT ratio should be suggested less than 0.90 by the researchers to avoid any multicollinearity issues among the constructs (Sarstedt et al., 2017). Hence, following these available guidelines, the HTMT ratios for the current study constructs were less than 0.90, as shown in Table 6.

Table 6

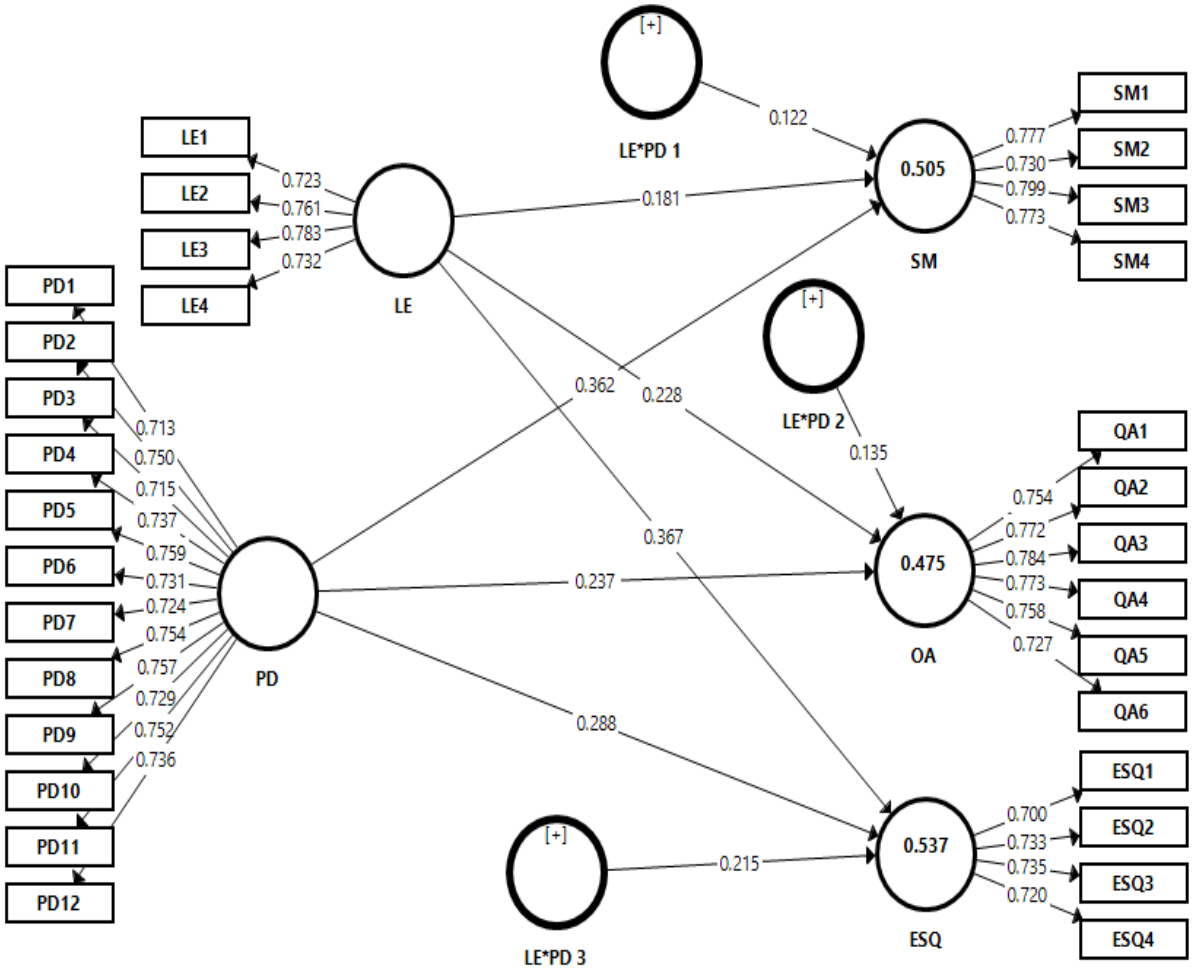
Heterotrait-Monotrait Ratio

Constructs	Mean	STD.	1	2	3	4	5
PD	3.32	1.97	**0.738**				
SM	4.11	0.91	0.302	**0.760**			
OA	3.80	1.29	0.493	0.086	**0.761**		
ESQ	4.05	0.95	0.505	0.498	0.450	**0.721**	
LE	4.65	0.25	0.478	0.400	0.397	0.334	**0.750**

Note. The square roots of AVEs of the constructs are shown in bold in diagonal, depicting the discriminant validity of the constructs**:** PD = Pedagogical Documentation; SM = Semantic Memory; OA = Observed Activities; ESQ = Evaluated Skill and Qualities; LE = Learning Environment.

Figure 2

Measurement Model



Journal of Ethnic and Cultural Studies
2022, Vol.9, No. 3, 194-211
https://dx.doi.org/10.29333/ejecs/1280

ISSN: 2149-1291

Assessment of the Structural Model

The structural model was assessed to calculate the significance of hypothesized links in the current study. We employed a bootstrapping technique with 500 subsamples in SmartPLS 3.0 software for hypothesis testing. In addition, the "ß-coefficient, t-value, and p-value" was calculated to determine the significance of the proposed associations. The "Coefficient of Determination (R2)" was assessed to check the theoretical framework fitness (Hair et al., 2010; Hartanto et al., 2021). The R^2 results showed a 50.5%, 47.5%, and 53.7% variance in children's semantic memory, observed activities, and evaluated skills and qualities simultaneously based on the pedagogical documentation and learning environment. Moreover, Figure 2 presents the effect size for hypothesized associations and fitness of the proposed model based on R^2.

Direct Hypotheses

The current study results revealed that pedagogical documentation is positively associated with semantic memory (ß = 0.362***, t = 6.849), observed activities (ß = 0.237**, t = 4.928)), and evaluated skills and qualities (ß = 0.288***, t = 5.754). However, the strength of the relationship varied. For instance, results revealed that pedagogical documentation is highly effective in developing and enhancing semantic memory among children, followed by enhancing their skills and qualities. Likewise, the teachers and caretakers observed a significant change in the children's actions after maintaining proper pedagogical documentation. Hence, as given in Table 7, the current study's H1, H2, and H3 are empirically supported.

Moderation Hypotheses

For calculating the contingent impact of the learning environment on children's semantic memory, observed activities, and evaluated skills and qualities, in SmartPLS 3.0 software, interaction terms between the moderator, the learning environment, and predictor pedagogical documentation were created using the product indicator approach. The results, as shown in Table 7, presents the significant effect of the interaction terms, learning environment*pedagogical documentations on children's semantic memory (ß =0.122**, t =2.683), observed activities (ß =0.135**, t =2.794), and evaluated skill and qualities (ß =0.215**, t =3.228). Additionally, R^2 change after adding the interaction terms was also assessed. There was a significant increase in the values of R^2 for all three dependent variables reflecting that the explanatory power of all the dependent variables increased based on the contingent impact of the learning environment. Additionally, an increase in the positive influence of the pedagogical documentation on children's positive outcomes in the presence of a learning environment as a moderator is also explained via plotted moderation graph in Figures 3, 4, and 5.

Figure 3 shows similar results as the line labeled for a highly *learning environment* had a steeper gradient than a less *learning environment* for the association of *Pedagogical documentation* and *children's semantic memory*. This presents that when children are provided with a highly engaging environment with ample learning opportunities, the positive influence of pedagogical documentation on building and enhancing their semantic memory is multifold. Hence, supporting hypothesis 4 of the study.

Figure 3

Interaction Plots for the Moderating Effect of the Learning Environment in Between the Association of Pedagogical Documentation and Children's Semantic Memory

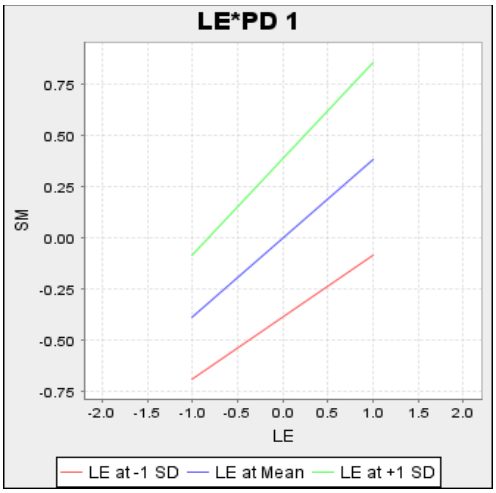


Figure 4

Interaction Plots for the Moderating Effect of the Learning Environment in Between the Association of Pedagogical Documentation and Children's Observed Activities

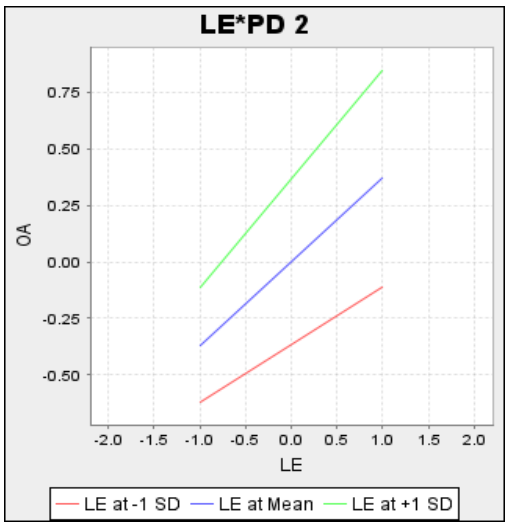


Figure 4 also presents that the line labeled for a highly *learning environment* had a steeper gradient than a less *learning environment* for the association of *Pedagogical documentation* and *children's observed activities*. This further demonstrates that the positive influence of pedagogical documentation in changing children's observed activities enhances when they are provided with a highly learning environment where they can interact and exchange their ideas and views with their peers and instructors. Thus, supporting hypothesis 5 of the study.

Figure 5 also shows that the line labeled for a highly *learning environment* had a steeper gradient than a less *learning environment* for the association of *Pedagogical documentation* and *children's evaluated skills and qualities*. This reflects the significance of a productive learning environment where children can recall their previous experiences and activities with the help of pedagogical documentation that enhances their skills and qualities as evaluated by their teachers. Hence, the results support hypothesis 6.

Journal of Ethnic and Cultural Studies
2022, Vol.9, No. 3, 194-211
https://dx.doi.org/10.29333/ejecs/1280

ISSN: 2149-1291

Figure 5
Interaction Plots for the Moderating Effect of the Learning Environment in Between the Association of Pedagogical Documentation and Children's Evaluated Skills and Qualities

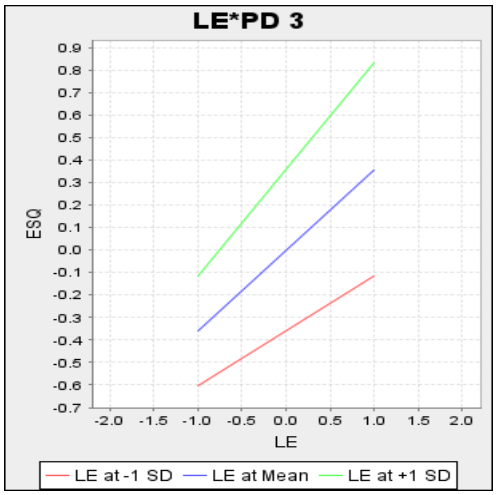
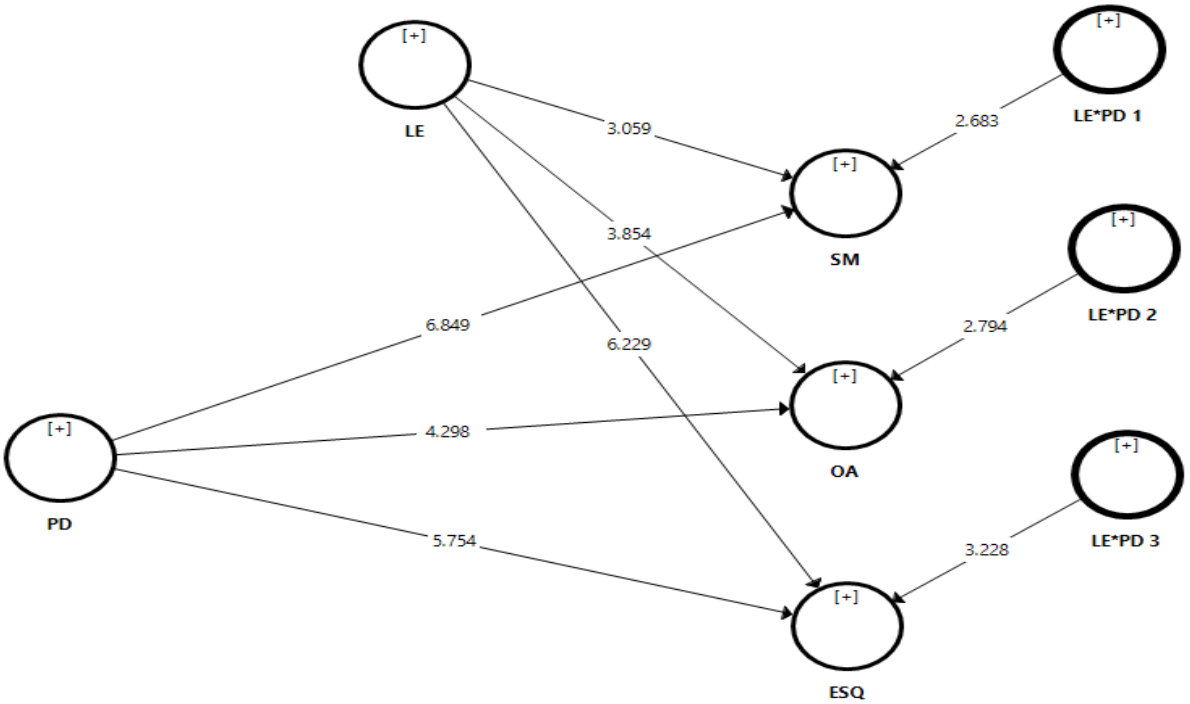


Table 7
Hypotheses Testing Results

	Hypotheses	Std. Beta	*t*-Value	*p*-values	Supported
H1	PD → SM	0.362	6.849	0.000	Yes
H2	PD → OA	0.237	4.928	0.001	Yes
H3	PD → ESQ	0.288	5.754	0.000	Yes
H4	LE*PD→ SM	0.122	2.683	0.010	Yes
H5	LE*PD → OA	0.135	2.794	0.007	Yes
H6	LE*PD → ESQ	0.215	3.228	0.003	Yes

Figure 6
Structural Model



Discussion and Conclusion

The current study was conducted among the children, teachers, and caretakers in the kindergartens and preschools in Mataram, Indonesia. A mixed-method approach was applied by introducing various events in the kindergartens and preschools among children ages 36 to 72 months. The teachers and caretakers continuously observed them during their school hours. After four weeks of observations, the teachers and caretakers were requested to participate in a survey containing questions regarding children's semantic memory, observed activities, and evaluated skills and qualities. The results revealed that pedagogical documentation positively influenced the semantic memory of the children. The children who participated in the learning events where their activities were properly documented and observed during the four weeks were more apt in their memory tests by their educators. These results are also in line with the previous studies, which demonstrated the significance of pedagogical documentation in enhancing children's abilities to recall their experiences and activities (Fleck et al., 2013; Fochi, 2019). This further reflects that pedagogical documentation functions as a continuous stimulus and helps the children to recall their experiences and activities to reproduce them and talk about them in later stages.

The data analysis results further revealed that pedagogical documentation positively and significantly impacted children's observed activities. Similar to previous studies, it was observed that mostly pedagogical documentation correlates with children's activities, which were indicators of high quality in early childhood education/care institutions (Fochi, 2019; Lee-Hammond & Bjervås, 2021). An attempt was made to provide the children with a natural environment during the observation period where they could play and perform the usual activities without fearing being observed by their teachers and caretakers all the time. However, the respondents revealed that pedagogical documentation positively affected the children's high level of involvement in various activities. This high level of involvement presents that children are more engaged in different activities that further bring creativity, persistence, mental engagement, and enhancing learning capabilities (Fochi, 2022; Rintakorpi & Reunamo, 2017). Hence reporting the observed activities based on pedagogical documentation, the educators revealed a higher level of joy, satisfaction, and contentment among the children.

Moreover, results revealed a significant influence of pedagogical documentation on children's evaluated skills and qualities. The educators evaluated the children based on their creativity and performance in various tasks, and they also evaluated the children based on their creative imaginary play. In line with the literature, the results further reflect that pedagogical documentation help educators focus on creative interactions with the children in a warm, sensitive, and safe environment (Knauf, 2020; Yılmaz et al., 2021). The results also revealed that the children seem more adaptive, open, and mindful based on pedagogical documentation while interacting with others. Likewise, similar to the findings of Rintakorpi and Reunamo (2017), in the current study, children were self-motivated to interact and be safely attached to others. Educators also reported a significant increase in children's performance and involvement in various creative tasks. This further reflects the significance of pedagogical documentation in building confidence among young children, which is the key to success in their life ahead.

Finally, contributing to the early childhood literature, this study's results also revealed the significant moderating role of the learning environment in enhancing the impact of pedagogical documentation on children's semantic memory, observed activities, and evaluated skills and qualities. These results further present that when children are provided with a friendly and comfortable environment where they can explore their qualities and participate in their learning activities' planning and execution process, they become more confident and freely participate in various activities. This confidence and ease of learning, when interacting with the pedagogical documentation, further strengthen children's ability to memorize various events,

ISSN: 2149-1291

activities, and experiences to utilize those in their routine tasks. Likewise, they freely participate in various activities with joy, happiness, and high satisfaction. Simultaneously, these things make them more open-minded and adaptive to the environment, and they freely interact with others, communicate their ideas, and follow other guidelines.

Study Implications

The current study is valuable in the existing body of literature regarding the implications of pedagogical documentation in early childhood education. Previously researchers focused on the pedagogical documentation implications based on the qualitative data and results (Fochi, 2022; Hostyn et al., 2020; Knauf, 2020; Lee-Hammond & Bjervås, 2021). In contrast, the current study has uniquely employed a mixed-method approach with a particular focus on quantitative analysis, wherein the first phase of learning events for the children in kindergartens and preschools were arranged. The results of such observation and learning outcomes were further documented by the educators (teachers and caretakers) to quantitatively analyze the significance of pedagogical documentation in enhancing children's semantic memory, observed activities, and evaluated skills and qualities in a single comprehensive framework. The research results are valuable for academicians, practitioners, policymakers, and governments to promote the significance of pedagogical documentation in early childhood education to reap its benefits. The results revealed that pedagogical documentation and a higher learning environment are valuable for enhancing children's semantic memory, observed activities, and evaluated skills and qualities; all kindergartens and preschools should maintain pedagogical documentation with strict rules and regulations. For this purpose, educators should be provided with ample opportunities for training to effectively implement the benefits of pedagogical documentation in their classroom practices. In addition, especially the government of developing nations should implement pedagogical documentation practices in all preschools and kindergartens regardless of their location (rural or urban) so that children of all classes can utilize its advantages. Furthermore, parents should also be involved in these practices to make the pedagogical documentation more effective in children's development.

Limitations and Future Research Directions

The current study is unique by applying a regression analysis to empirically examine the influence of pedagogical documentation on children's positive outcomes based on their participation in learning events and continuous observation by their teachers and caretakers for a certain period. However, instead of utilizing the data conducted during the interviews with the children by the educators, the current study only relied on the survey questionnaire filled by the educators. Therefore, the main focus of the current study remained only on children’s three outcomes, including semantic memory, observed activities, and valuated skills and qualities. In contrast, future researchers can utilize the interviews of the children by their educators after a certain period of arranging the learning events in the classrooms to extract more positive outcomes from pedagogical documentation. Moreover, the current study combined the data collected from kindergartens and preschools for analysis purposes. In contrast, future researchers can separately analyze the data collected from kindergartens and preschools to observe any predictive differences between the practices of both types of institutions regarding the educators and the learning environment provided by those institutions.

References

Aliyyah, R. R., Rachmadtullah, R., Samsudin, A., Syaodih, E., Nurtanto, M., & Tambunan, A. R. S. (2020). The perceptions of primary school teachers of online learning during the COVID-19 pandemic period: A case study in Indonesia. *Journal of Ethnic and Cultural Studies, 7*(2), 90-109.

Alnervik, K. (2018). Systematic documentation: Structures and tools in a practice of communicative documentation. *Contemporary Issues in Early Childhood, 19*(1), 72-84.

Aras, S., & Erden, F. T. (2020). Documentation panels: supporting young children's self-regulatory and metacognitive abilities. *International Journal of Early Years Education, 28*(1), 63-80.

Bennett, J. (2005). *The OECD thematic review of early childhood education and care policy. Learning with other countries: International models of early education and care*. Daycare Trust.

Correia, N., Camilo, C., Aguiar, C., & Amaro, F. (2019). Children's right to participate in early childhood education settings: A systematic review. *Children and Youth Services Review, 100*, 76-88.

Dalle, J., Raisinghani, M. S., Putra, A. P., Suriansyah, A., Hadi, S., & Sahara, B. (2021). A technology acceptance case of Indonesian senior school teachers: Effect of facilitating learning environment and learning through experimentation. *International Journal of Online Pedagogy and Course Design (IJOPCD), 11*(4), 45-60.

Dalle, J., Siyoto, S., Astika, N. D., Negara, D. J., Chandra, T., & Anam, K. (2020). Moderating role of IT adoption and mechanism of dynamic capabilities on Indonesian pharmaceutical firms performance. *Systematic Reviews in Pharmacy, 11*(9), 982-992.

De Sousa, J. (2019). Pedagogical documentation: the search for children's voice and agency. *European Early Childhood Education Research Journal, 27*(3), 371-384.

Fleck, B. K., Leichtman, M. D., Pillemer, D. B., & Shanteler, L. (2013). The effects of documentation on young children's memory. *Early Childhood Research Quarterly, 28*(3), 568-577.

Fochi, P. (2019). Pedagogical documentation as a strategy to develop praxeological knowledge: the case of the observatory of childhood culture–OBECI. *European Early Childhood Education Research Journal, 27*(3), 334-345.

Fochi, P. S. (2022). Pedagogical documentation as a strategy for planning and communicating children's learning and pedagogical day-to-day life. *European Early Childhood Education Research Journal, 30*(2), 227-238.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective* (7th ed.). Pearson Prentice Hall.

Hartanto, D., Agussani, A., & Dalle, J. (2021). Antecedents of public trust in government during the COVID-19 pandemic in Indonesia: Mediation of perceived religious values. *Journal of Ethnic and Cultural Studies, 8*(4), 321-341.

Hasan, A. (2013). *Early childhood education and development in poor villages of Indonesia: Strong foundations, later success*. World Bank Publications.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115-135.

Hostyn, I., Mäkitalo, A.-R., Hakari, S., & Vandenbussche, L. (2020). The professional actuation of pedagogical documentation in Belgian and Finnish early childhood education settings. *Early Child Development and Care, 190*(3), 400-413.

ISSN: 2149-1291

Indrawati, R., Ragamustari, S. K., & Wijaya, M. E. (2021). Best Practice in early childhood development financial governance: A case study in Indonesia villages. *Jurnal Pendidikan Usia Dini, 15*(2), 319-341.

Kasimova, Z. (2022). The role of spiritual and ideological education in shaping the socio-spiritual image of unorganized youth. *Journal of Pedagogical Inventions and Practices, 4*, 56-61.

Kim, J. (2020). Learning and teaching online during Covid-19: Experiences of student teachers in an early childhood education practicum. *International Journal of Early Childhood, 52*(2), 145-158.

Knauf, H. (2020). Documentation strategies: Pedagogical documentation from the perspective of early childhood teachers in New Zealand and Germany. *Early Childhood Education Journal, 48*(1), 11-19.

Kumalasari, P. I., & Sugito, S. (2021). The role of students' parents in shaping home learning environment (HLE) for early childhood. *Jurnal Obsesi, 5*(2), 1521-1535.

Lee-Hammond, L., & Bjervås, L.-L. (2021). Pedagogical documentation and systematic quality work in early childhood: Comparing practices in Western Australia and Sweden. *Contemporary Issues in Early Childhood, 22*(2), 156-170.

Lindh, C., & Mansikka, J.-E. (2022). Adoption of Pedagogical Documentation in Finnish ECEC Settings. *Early Childhood Education Journal*. Advance online publication. https://doi.org/10.1007/s10643-022-01321-6

Mansoor, M. (2021). Citizens' trust in government as a function of good governance and government agency's provision of quality information on social media during COVID-19. *Government Information Quarterly*, *38*(4), Article 101597. https://doi.org/10.1016/j.giq.2021.101597

Mansoor, M., & Paul, J. (2022). Mass prestige, brand happiness and brand evangelism among consumers. *Journal of Business Research, 144*, 484-496.

Mansoor, M., & Wijaksana, T. I. (2021). Predictors of pro-environmental behavior: Moderating role of knowledge sharing and mediatory role of perceived environmental responsibility. *Journal of Environmental Planning and Management*. Advance online publication. https://doi.org/10.1080/09640568.2021.2016380

Merewether, J. (2018). Listening to young children outdoors with pedagogical documentation. *International Journal of Early Years Education, 26*(3), 259-277.

Mundiri, A., & Hamimah, S. (2022). Early Childhood Behavior Management Strategy based on Fun Learning Environment. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini, 6*(4), 2583-2595.

Nakajima, N., Hasan, A., Jung, H., Kinnell, A., Maika, A., & Pradhan, M. (2021). Built to last: Sustainability of early childhood education services in rural Indonesia. *The Journal of Development Studies, 57*(10), 1593-1612.

Paananen, M., & Lipponen, L. (2018). Pedagogical documentation as a lens for examining equality in early childhood education. *Early Child Development and Care, 188*(2), 77-87.

Reunamo, J., Lee, H.-C., Wu, R., Wang, L.-C., Mau, W.-Y., & Lin, C.-J. (2013). Perceiving change in role play. *European Early Childhood Education Research Journal, 21*(2), 292-305.

Rintakorpi, K., & Reunamo, J. (2017). Pedagogical documentation and its relation to everyday activities in early years. *Early Child Development and Care, 187*(11), 1611-1622.

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Partial least squares structural equation modeling. *Handbook of market research, 26*(1), 1-40.

Slicker, G., Barbieri, C. A., Collier, Z. K., & Hustedt, J. T. (2021). Parental involvement during the kindergarten transition and children's early reading and mathematics skills. *Early Childhood Research Quarterly, 55*, 363-376.

Svanbäck-Laaksonen, M., & Heikkilä, M. (2021). Children's fundamental motor skills as a starting point for educational change within the learning environment in early childhood education and care centres. *Journal of Early Childhood Education Research, 10*(2), 199-221.

Tuli, N., & Mantri, A. (2021). Evaluating usability of mobile-based augmented reality learning environments for early childhood. *International Journal of Human–Computer Interaction, 37*(9), 815-827.

Ulferts, H., Wolf, K. M., & Anders, Y. (2019). Impact of process quality in early childhood education and care on academic outcomes: Longitudinal meta-analysis. *Child development, 90*(5), 1474-1489.

Vaiopoulou, J., Papadakis, S., Sifaki, E., Stamovlasis, D., & Kalogiannakis, M. (2021). Parents' perceptions of educational apps use for kindergarten children: Development and validation of a new instrument (PEAU-p) and exploration of parents' profiles. *Behavioral Sciences, 11*(6), 82.

Westerberg, L., & Vandermaas-Peeler, M. (2021). How teachers, peers, and classroom materials support children's inquiry in a Reggio Emilia-inspired preschool. *Early Child Development and Care, 191*(7-8), 1259-1276.

Yılmaz, A., Şahin, F., Buldu, M., Ülker Erdem, A., Ezmeci, F., Somer Ölmez, B., Aydos, E. H., Buldu, E., Ünal, H. B., Aras, S., Buldu, M., & Akgül, E. (2021). An examination of Turkish early childhood teachers' challenges in implementing pedagogical documentation. *Early Childhood Education Journal, 49*(6), 1047-1059.

Notes on Contributor

Siti Zaenab (Sita) completed her Diploma II Program (PGSLTP) from IKIP Makassar in 1990, undergraduate degree graduated in 2003, master's degree graduated from Universitas Negeri Surabaya in September 2008, and doctoral degree graduated from Universitas Negeri Malang in 2012. Currently, she is a lecturer at IAHN Gde Pudja, Mataram. She became a delegate for doctoral students at the University of Malaya, Open University Multimedia Malaysia, and Shatec Singapore, as well as conducted research on the Sandwich Program at KTLV Leiden University for 3 months, and conducted Visiting Professor at Manila University, Philippines.

ORCID

Siti Zaenab (Sita), https://orcid.org/0000-0002-1941-6140