Storytelling to develop resilience in early childhood in facing earthquake disasters

Dwi Jayanti Kurnia Dewi[1,*]

1 Universitas Negeri Yogyakarta, Yogyakarta, Indonesia
dwijayantikurniadewi@gmail.com

Abstract. Storytelling is a form of learning activity used to stimulate young children's resilience in earthquake disasters. This research aims to develop aspects of children's resilience in facing earthquake disasters. This study begins with an assessment of the need for children's resilience to face disasters, even though the Indonesian region has a high potential for experiencing earthquake disasters because it is located at the junction of three active plates. Early childhood children need to be provided with learning about earthquake disaster mitigation through storytelling activities so that children become resilient in facing earthquake disasters. The research method uses a quantitative experimental approach with a pretest-posttest design involving kindergarten children in the Yogyakarta area. The sample was determined using a purposive sampling technique. The sample criteria are (1) kindergarten children who attend school in the red zone are vulnerable to tectonic and volcanic earthquakes; (2) Kindergarten children are accompanied by a class teacher who is a certified educator; and (3) kindergarten children whose school accreditation is superior. The samples obtained were 205 kindergarten children in the Pakem District. The quantitative data obtained was in the form of resilience development achievement values which were analyzed using the T-Test. The research results showed a significant increase in the average score of the posttest resilience aspect (21.12) compared to the pretest (17.23), with a t-value of -91.714 and a significance of 0.000. These findings confirm that the effectiveness of storytelling activities can develop children's resilience in facing earthquake disasters. This study has significant implications for early childhood education practice and suggestions for integrating the development of children's resilience in facing earthquake disasters into the curriculum. This highlights the need for repeated practice so that children are resilient in earthquake disasters.

Keywords: storytelling, resilience, learning about earthquake disaster mitigation, early childhood.

1 Introduction

Storytelling is the activity of telling stories or conveying clear descriptions of ideas, beliefs, personal experiences, and life lessons through stories or narratives that evoke strong emotions and insights in the audience [1], [2]. The script provides a storyline that children can follow. Children can retell their version of the story. Stories stimulate children's creativity and imagination which will be remembered in memory [3] to remember information, and experiences, and enable them to communicate them

to friends or family at home. Storytelling delivered orally or using storybooks is often done in Early Childhood Education (PAUD).

Storytelling is a learning method for early childhood [4], [5]. The use of storytelling in learning is associated with two types of learning content in Indonesian PAUD, namely content related to aspects of child development (religious, physical-motor, cognitive, language, social-emotional, and aesthetic) and context material (basic abilities in mathematics, science, technology, and social sciences) delivered using game-based pedagogy [2019]. In other words, the practice of telling stories is already familiar to teachers in learning for early childhood.

Early Childhood Education is the earliest level of formal education for Indonesian children. Early childhood is a time that requires extra attention, stimulation, and guidance because during this period the child's growth and development occur rapidly and is a determinant of later life. So educators should make good use of it in providing stimulation such as children's resilience in facing earthquake disasters. This is motivated by Indonesia's location at the confluence of three tectonic plates which experience movement every year, namely 0-15 centimeters per year [1], [2]. This plate movement activity contributes to the formation of the risk of earthquake disasters. The results of IRB calculations reveal that 15 provinces in Indonesia have a high risk of earthquake disasters, while 19 other provinces have a medium risk of earthquake disasters.

Earthquake disasters can result in damage and loss experienced by humans. Children are considered one of the most vulnerable groups when a disaster occurs. This is due to their weak physical condition and their inability to make decisions, especially when separated from their parents [3]. The results of a study from the World Health Organization (WHO) in 2011 estimated that 30-50% of the victims who died due to the earthquake disaster were children [1]. The impact of the earthquake disaster experienced by children is that it can disrupt children's physical health, disrupt children's mental health, and disrupt children's education [4]. Disasters experienced at an early age will have a negative effect on growth and development [5]. Preventive efforts are needed to reduce the consequences. Schools have a strategic role in introducing earthquake disaster mitigation. Mitigation is carried out as the initial stage of natural disaster management to minimize or reduce the impact of a disaster. Mitigation can also mean activities before a disaster occurs. Various forms of learning about earthquake disaster mitigation can be done through lectures, exercises, discussions with teachers and friends, reading and listening to stories, and through games [5].

One of the areas prone to earthquake disasters in Indonesia is Yogyakarta. Yogyakarta has the potential for disasters such as tectonic and volcanic earthquakes. It is located in the southern part of the island of Java, directly bordering the Indian Ocean, and has an active volcano, namely Mount Merapi. Volcanic earthquakes occur due to magma activity which usually occurs before a volcano erupts. Meanwhile, tectonic earthquakes are caused by tectonic activity, namely sudden shifts in tectonic plates which have forces ranging from very small to very large.

Based on the results of a survey of kindergarten teachers in Pakem District, Sleman, it was found that (1) disaster mitigation learning for children has not been carried out routinely, teachers provide knowledge about disasters only on one theme; (2) children's emotional development, such as resilience, still needs to be improved;

(3) disaster simulations are very rarely carried out; (4) teachers experience difficulties and confusion when designing and implementing disaster mitigation lessons for children. Children who live in areas prone to earthquakes must have a high level of resilience in facing disasters [8]. Schools as the main environment are expected to be able to develop children's resilience optimally and can raise them from adversity and adapt to various changes. Children can be considered resilient when they face difficulties and have seven characteristics of resilience within themselves, namely emotional regulation, impulse control, optimism, analyzing the causes of problems, empathy, self-efficacy, and being able to achieve desires [7].

Teachers have a direct role in forming resilient children [8]. The involvement of teachers as children's companions at school is something that is of great concern. Achieving earthquake disaster mitigation learning to develop resilience depends on the teacher's skills in planning and implementing learning. Success in learning earthquake disaster mitigation to develop resilience is largely determined by the teacher. In introducing earthquake disaster mitigation, a learning design is needed to facilitate its introduction. Learning design is a strategy to support learning activities as well as a means of distributing messages and information [23], [24].

School-based earthquake disaster mitigation learning involving children has increased [9], but the delivery method is less suitable for children who have unique understandings and different ways of learning from adults [10], [1]. The delivery method for disaster mitigation for children is also different from that for adults. The Merdeka Curriculum also has not discussed in detail the importance of learning about earthquake disaster mitigation. Even though earthquake disaster mitigation is very important to do early. This causes young children to be unfamiliar with earthquake disaster mitigation, how to save themselves, and a resilient attitude in facing earthquake disasters. Earthquake disaster mitigation learning for early childhood is designed through fun game activities, carried out actively by children, and can be repeated until the learning objectives are achieved. Learning about earthquake disaster mitigation is carried out through storytelling activities.

The results of the research show that children who listen to fairy tales through storytelling in class have broad environmental insight and remember quickly, increasing children's memory for knowledge, life values, and experiences, and contributing to learning [25], [26], [6]. Storytelling using picture storybooks can develop positive values such as religious values, morals, and children's knowledge, honing emotional and social intelligence by retelling what is known to people in their environment [27], [28], [29], [33]. These findings confirm the effectiveness of storytelling in being able to be practiced for learning disaster mitigation. However, the resilience aspect has not been developed optimally. These results show the great potential of using active learning methods in child-centered disaster mitigation activities, namely storytelling to stimulate resilience abilities at an early age. Stories can bring meaning, develop aspects of resilience, and introduce and stimulate children's imagination about earthquake disaster situations. Children will listen to stories from books about the characteristics of earthquakes, the causes of earthquakes, the dangers of earthquakes, and how to save themselves and others when an earthquake occurs. The aim of this research is for children to stimulate resilience in facing earthquake disasters through storytelling learning activities.

2   METHOD

This research is a quantitative experimental study that aims to measure the effect of storytelling as a learning activity for earthquake disaster mitigation to develop resilience in early childhood. The data collection method used in this research was a questionnaire and observation results, namely using data from the assessment of resilience aspects in the storytelling activities of Kindergarten B children in Pakem District, Yogyakarta. The sample involved Kindergarten B children in Pakem District who were determined using purposive sampling techniques. The sample was determined using a purposive sampling technique. The sample criteria are (1) kindergarten children who go to school in the red zone prone to tectonic and volcanic earthquake disasters (2) children who are accompanied by class teachers who are certified educators, and (3) kindergarten children whose school is accredited A. The results of purposive sampling obtained as many as 205 Kindergarten B children from 12 classes and 12 class teachers.

The instruments used to collect data in this research were questionnaires and instrument sheets for assessing aspects of children's resilience. Validation results are analyzed using the Aiken's V formula index where if the index is less than or equal to 0.4 it is declared less valid; if the index is between $0.4 - 0.8$ it is declared quite valid; and if the index is greater than 0.8 it is declared very valid [19]. Each item in the instrument for assessing aspects of children's resilience gets a score of V 1 which is in the valid category. Apart from that, there is a reliability test using Araujo's Percentage of Agreement (PA) [14]. The limit of reliability criteria for PA results is said to be "Reliable" if ≥ 0.75. The instrument for assessing aspects of children's resilience produces a PA value of 0.85. Following the requirements for the reliability criteria for PA results, they can be categorized as reliable because the value is ≥ 0.75.

The practical test is carried out by the class teacher, starting with the class conducting a pretest on children's resilience abilities before receiving stimulation for resilience development through storytelling activities. At the end of the lesson, the teacher also carried out a posttest of resilience abilities after receiving stimulation to develop resilience. The results of the pretest and posttest were compared to see whether or not there were differences in children's resilience development achievements before and after stimulation. The assessment results data were then analyzed using a parametric statistical test, namely the Paired-Samples T-test.

3   RESULT AND DISCUSSION

Assessment of children's resilience development is carried out before receiving stimulation through storytelling activities (pretest) and after storytelling activities (posttest). This assessment was carried out to prove whether or not there was a

difference in the average achievement of children's resilience development before and after being stimulated through storytelling activities.
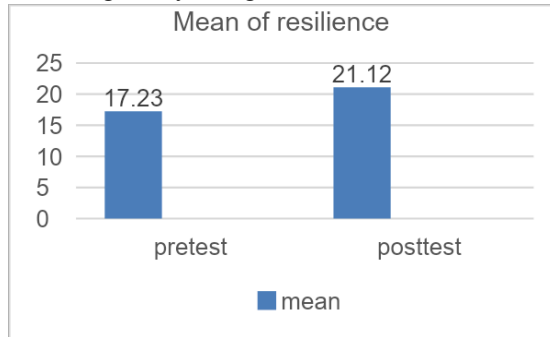

Fig. 1. Results of assessing children's resilience development

Based on Figure 1, shows that the average value of resilience development achievements after being treated (posttest) with storytelling learning activities is higher than the average value before treatment (pretest), namely, the mean value at the posttest is 21.12, and at the pretest is 17.23. Next, data from the assessment of resilience aspects during the pretest and post-test were analyzed using a parametric statistical test, namely the Paired-Samples T-Test.

Table 1. Normality test results

Test Statistics	Tests of Normality		
	Chi-Square	Df	Asymp. Sig.
Pretest	4,945	6	0,551
Posttest	3,673	6	0,721

Based on the results of the Chi-Square test in Table 1, the child's resilience ability before and after being given treatment has a value of Sig. respectively 0.551 and 0.721. Sig value. This is greater than the set significance level of 0.05. So it can be concluded that the data before (pretest) and after (posttest) were treated on the resilience ability questionnaire with a normal distribution. The prerequisite test, namely normality, shows results that meet the criteria for implementing the T-test, namely the Paired Samples T Test. Paired Samples T Test was carried out in this study to see whether there was an average difference between the data before and after treatment on each resilience ability questionnaire. There is a hypothesis formulation that Ho is that there is no difference in the average results of the pretest and posttest, and Ha is that there is a difference in the average results of the pretest and posttest. The following are the results of the Paired Samples T Test on data before and after treatment.

Table 2. Paired Samples T Test Results

		Paired Differences						
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
			Lower	Upper			
-3.89091	.31463	.04242	-3.97596	-3.80585	-91.714	54	.000

The results of the Paired Samples Test in Table 2 are determined by the significance value. The t value is -91.714 and the Sig value. (2-tailed) is 0.000. Because the Significance is Sig. = 0.000 < 0.05 then Ha is accepted, or it can be interpreted that the pretest and posttest results have a difference in average. Based on pretest and posttest descriptive statistics, it is proven that the posttest results are higher. Table 1 contains information about the average pretest score being 17.23 and the average posttest score being 21.12. This shows that there is an increase in the average value of children's resilience development achievements. The mean Paired Difference is -3.89091, which shows the average difference in pretest and posttest results. It is known that the t count is negative, namely -91.714 because the average value of the posttest results is higher than the pretest. In this case, a negative t value can have a positive meaning, so the t value becomes 91.714. Based on several test results, it is proven that there is an increase in the development of children's resilience after being given treatment or storytelling learning about earthquake disaster mitigation which can increase children's resilience.

This finding has important implications for early childhood education in that it needs to be underlined the need to stimulate children's resilience through storytelling activities in the curriculum. This aims to provide educational provisions for earthquake disaster mitigation and prepare children to be resilient when facing earthquake disasters. This research provides new and quite valuable insights but still has limitations such as focusing on a sample that only involved Kindergarten B children in the Pakem District area, Yogyakarta, and there is no evaluation of the long-term impact of storytelling activities to develop children's resilience in facing earthquake disasters. Therefore, the author suggests conducting further research involving a wider or more diverse sample and developing a more effective assessment instrument to measure the long-term impact of storytelling learning activities on the development of children's resilience. This research contributes to the importance of resilience in facing earthquake disasters for children living in disaster-prone areas and opens up opportunities for further research regarding early childhood education.

STOROGAM-based earthquake disaster mitigation learning is carried out through storytelling activities to stimulate aspects of children's resilience in facing earthquake disasters. The storytelling activity given by the class teacher uses the storybook Earthquake in My School by Dwi Jayanti Kurnia Dewi. Children listen to stories read by the class teacher. This stage is called the knowing stage because children will gain knowledge about the characteristics of earthquakes, the causes of earthquakes, how to save themselves, and examples of resilience in dealing with earthquakes. This activity is carried out using an individual learning model because in its implementation children learn independently. Storytelling using picture storybooks can develop positive values such as religious values, morals, and children's knowledge, honing

emotional and social intelligence by retelling what is known to people in their environment [27], [28], [29].

The class teacher who reads the Earthquake Storybook at My School will transfer the values and messages in the story conveyed after finishing reading the story. This aims to ensure that children can understand what they learn from the story and can convey the safety message back to friends or other people. This newly acquired information by children serves as a strong foundation for their language skills, enabling them to speak confidently [30]. Stories can bring meaning, develop aspects of resilience, and introduce and stimulate children's imagination about earthquake disaster situations so that children recognize the atmosphere of an earthquake and can face it with resilience.

Implementing the program requires careful planning, strategies, active participation of children, and teacher support. This research is a practice to stimulate children's resilience in facing earthquake disasters. Active child involvement is an important element in achieving the objectives of this research. Children can immediately apply simulation practices and the values taught in a real-world context through storytelling activities. Therefore, this research aims to measure the effect of storytelling learning on the development of children's resilience in facing earthquake disasters [31].

The teacher's role in the learning process is as a facilitator, mediator, motivator, and collaborator with kindergarten children. The role of the facilitator is demonstrated by the teacher providing facilities and convenience as well as opportunities for children to gain knowledge about disasters, namely earthquakes, through storytelling activities. The teacher's role as a mediator is to assist children by working together to create an atmosphere like when an earthquake occurs. Teachers act as motivators by encouraging children so that indicators of resilience can emerge when facing an earthquake disaster. Children act as active learners through storytelling activities.

The instructional impact of implementing storytelling activities as learning to mitigate earthquake disasters is the development of children's resilience aspects in facing disasters. Meanwhile, the accompanying impact of implementing storytelling activities is learning to mitigate earthquake disasters, such as children being able to help each other when saving themselves and having a positive attitude when facing and after facing an earthquake disaster. Teachers' self-efficacy can increase motivation, effective skills, willingness to experiment, as well as collaborative and leadership attitudes [32]. Teachers who have high self-efficacy will be more enthusiastic and skilled in developing learning, which will ultimately have a positive impact on student development.

Storytelling activities such as learning to mitigate earthquake disasters are carried out routinely referring to behaviorism theory. Behaviorism in learning uses stimuli and responses that are realized through play activities to increase resilience. Behavior is directed by stimuli, while stimulus-response produces changes in behavior [15]. Skinner is one of the figures behind the theory of behaviorism which emphasizes the formation of resilience as a result of learning. Skinner believes that changes in behavior are the result of each individual's reaction/response to a stimulus. A behavior will appear after receiving a stimulus followed by a direct reward [16]. In this research, resilience will emerge after receiving stimulus through storytelling activities. During the learning process, children need motivation and reinforcement from the teacher. Therefore, teachers develop structured learning between learning

objectives and strategies so that learning objectives can be achieved. The expected result is the formation of the desired behavior, namely children who are resilient in facing earthquake disasters. The desired behavior is carried out repeatedly [17]. The aim is for children to get used to dealing with situations similar to earthquake disasters, not panic, and be able to save themselves. This method is very suitable for improving these abilities which require practice and habituation. Apart from that, the designed learning development aims to produce behavioral changes, namely resilience in facing disasters [18]. This behaviorist theory is suitable to be applied to train children through repetition and habituation.

4   CONCLUSION

The research aims to measure the influence of earthquake disaster mitigation learning activities through storytelling on the development of resilience in early childhood. A significant finding was that there was an increase in resilience development achievements, as evidenced by the average posttest test score increasing to 21.12 from the pretest score of 17.23. The results of the Paired Sample T-test show a t-value of -91.714 and a significance value of 0.000. This finding has important implications for early childhood education in that it needs to be underlined the need to stimulate children's resilience through storytelling activities in the curriculum. This aims to provide educational provisions for earthquake disaster mitigation and prepare children to be resilient when facing earthquake disasters. This research also provides new and quite valuable insights but still has limitations such as focusing on a sample that only involved Kindergarten B children in the Pakem District area, Yogyakarta, and there is no evaluation of the long-term impact of storytelling activities to develop children's resilience in facing earthquake disasters. Therefore, the author suggests carrying out further research involving a wider or more diverse sample which can be carried out in areas prone to volcanic earthquakes and other tectonic disasters. This research contributes to the importance of resilience in facing earthquake disasters for children living in disaster-prone areas and opens up opportunities for further research regarding early childhood education.

References

1. A. Amri, K. Haynes, D. K. Bird, and K. Ronan, Bridging the divide between studies on disaster risk reduction education and child-centred disaster risk reduction: a critical review, Children's Geographies, vol. 16, no. 3, pp. 239–251, Jul. 2017. DOI: https://doi.org/10.1080/14733285.2017.1358448.

2. N. Yaghmaei, Disasters 2018: year in review, Centre for Research on the Epidemiology of Disasters (CRED), 2018.

3. S. Yusuf, Asniar, Rachmalia, and S. S. Susanti, Disaster preparedness in the red zone schools at 13 years post tsunami 2004, IOP Conference Series: Earth and Environmental Science, vol. 273, p. 012038, Jul. 2019, DOI: https://doi.org/10.1088/1755-1315/273/1/012038.

4. C. Kousky, Impacts of natural disasters on children, The Future of Children, vol. 26, no. 1, pp. 73–92, 2016, DOI: https://doi.org/10.1353/foc.2016.0004.

5. D.-H. Yeon, J.-B. Chung, and D.-H. Im, The effects of earthquake experience on disaster education for children and teens, International Journal of Environmental Research and Public Health, vol. 17, no. 15, Aug. 2020, DOI: https://doi.org/10.3390/ijerph17155347.

6. J. Sharpe and Y. O. Izadkhah, Use of comic strips in teaching earthquakes to kindergarten children, Disaster Prevention and Management: An International Journal, vol. 23, no. 2, pp. 138–156, Apr. 2014, DOI: https://doi.org/10.1108/dpm-05-2013-0083.

7. K. Reivich and A. Shatté, The resilience factor : 7 keys to finding your inner strength and overcoming life's hurdles. New York: Broadway Books, 2002.

8. S. I. A. Dwiningrum, Developing school resilience for disaster mitigation: a confirmatory factor analysis, Disaster Prevention and Management: An International Journal, vol. 26, no. 4, pp. 437–451, Aug. 2017, DOI: https://doi.org/10.1108/dpm-02-2017-0042.

9. B. Pfefferbaum, R. L. Pfefferbaum, and R. L. Van Horn, Involving children in disaster risk reduction: the importance of participation, European Journal of Psychotraumatology, vol. 9, no. sup2, p. 1425577, Feb. 2018, DOI: https://doi.org/10.1080/20008198.2018.1425577.

10. K. Haynes and T. M. Tanner, Empowering young people and strengthening resilience: youth-centred participatory video as a tool for climate change adaptation and disaster risk reduction, Children's Geographies, vol. 13, no. 3, pp. 357–371, Oct. 2015, DOI: https://doi.org/10.1080/14733285.2013.848599.

11. M. Dujmovic, Storytelling as a method of EFL teaching, Pergendira Journal, vol. 1, no. 1, 2006, 75-88

12. H. Soleimani, & M. Akbari, The effect of storytelling on children's learning english vocabulary: a case in Iran, International Research Journal Of Applied And Basic Sciences, vol. 4, no. 11, p.4005-4014, 2013. DOI: http://irjabs.com/files_site/paperlist/r_1240_130829111014.pdf

13. J. Sharpe and Y. O. Izadkhah, Use of comic strips in teaching earthquakes to kindergarten children, Disaster Prevention and Management, vol. 23, no. 2, pp. 138–156, Apr. 2014, DOI: 10.1108/dpm-05-2013-0083.

14. J. Araujo and D. G. Born, Calculating percentage agreement correctly but writing its formula incorrectly, Behavior Analyst, vol. 8, no. 2, pp. 207–208, Oct. 1985, DOI: 10.1007/bf03393152

15. M. Dastpak, F. Behjat, and A. Taghinezhad, A comparative study of vygotsky's perspectives on child language development with nativism and behaviorism, International

Journal of Languages' Education, vol. 1, no. Volume 5 Issue 2, pp. 230–238, Jan. 2017, DOI: https://doi.org/10.18298/ijlet.1748.

16. B. Skinner, Utopia through the control of human behavior, in John Martin Rich (ed.), reading in the philosophy of education, Belmont, CA: Wadsworth, 1972.

17. J. Mareš, Prosocial behavior education in children, Acta Technologica Dubnicae, vol. 7, no. 2, pp. 7–16, Aug. 2017, DOI: https://doi.org/10.1515/atd-2017-0009

18. M. K. Kitano, and D. F. Kirby, Gifted education: a comprehensive view, Boston: Little Brown, 1986.

19. H. Retnawati, Validitas, reliabilitas & karakteristik butir, Parama Publishing, 2016.

20. M. Hayati, and S. Purnama, Perencanaan pembelajaran pendidikan anak usia dini, Rajagrafindo Persada, 2019.

21. D. P. Lestari, Peningkatan perilaku anti korupsi melalui metode story telling: penelitian tindakan TK B Az Zahra, Kebayoran Baru, Jakarta Selatan, Tahun 2016, Al-Athfal J Educ Child, vol. 4, no. 1, pp. 17–30, Jun. 2018, DOI: https://doi.org/10.14421/al-athfal.2018.41-02

22. F. Nazarullail and D. Maskulin, Identification of the formation of character education values for preschool children in the disruption era, Golden Age SCI J ECD , vol. 7, no. 4, pp. 169–176, Jan. 2023, DOI: https://doi.org/10.14421/jga.2022.74-02

23. I. Lhutfi and R. Mardiani, Merdeka belajar - Kampus Merdeka Policy: how does it affect the sustainability on accounting education in Indonesia?, Dinamika Pendidikan, vol. 15, no. 2, pp. 243–253, Dec. 2020, DOI: https://doi.org/10.15294/dp.v15i2.26071.

24. A. V. Wahyudi, Implementation of archipelago dance as a means of introducing cultural literacy to early children, Golden Age SCI J ECD , vol. 7, no. 4, pp. 197–206, Feb. 2023, DOI: https://doi.org/10.14421/jga.2022.74-05.

25. A. Ramdhania and H. Djoehaeni, Environmental literacy through tales of the archipelago for early childhood, Al-ATHFAL J EDUC CHILD, vol. 8, no. 2, pp. 95–104, Dec. 2022, DOI: https://doi.org/10.14421/al-athfal.2022.82-02.

26. A. R. Adwiah, Aulia Faraz Tantia, and Intan Asyikin Rantikasari, Implementation of storytelling method with folktales in instilling character values in children: a study at ABA Warungboto Kindergarten, Golden Age SCI J ECD , vol. 8, no. 1, pp. 47–57, Mar. 2023, DOI: https://doi.org/10.14421/jga.2023.81-05.

27. M. Mutmainnah, R. Nessa, B. Bukhari, N. Farhana Mohd Radzif, and R. Kurniawati, Development of learning media for acehnese culture picture books to get to know local culture in early childhood, Al-ATHFAL J EDUC CHILD, vol. 7, no. 1, pp. 53–72, Jun. 2021, DOI: https://doi.org/10.14421/al-athfal.2021.71-05.

28. D. T. Tiruneh, X. Gu, M. De Cock, and J. Elen, Systematic design of domain-specific instruction on near and far transfer of critical thinking skills, International Journal of Educational Research, vol. 87, pp. 1–11, Jan. 2018, DOI: 10.1016/j.ijer.2017.10.005

29. R. Yuliani, C. S. Abd Jabar, and I. B. Maryatun, The influence of the inquiry project-based learning model on critical thinking skills in early childhood: A quantitative experimental study, Golden Age SCI J ECD , vol. 8, no. 3, pp. 193–202, Sep. 2023, DOI: https://doi.org/10.14421/jga.2023.83-08.

30. M. Ilham, F. Rahman, D. D. Sari, and A. Annisaturrahmi, Enhancing preschool english vocabulary through multimedia tools: Insights from a mixed-methods study, Al-ATHFAL J EDUC CHILD, vol. 9, no. 2, pp. 93–102, Dec. 2023, DOI: https://doi.org/10.14421/al-athfal.2023.92-02.

31. S. Handoko and S. A. Sakti, Optimizing classroom and activity-based character education: A comprehensive guide to best practices and implementation strategies in early childhood education, Golden Age SCI J ECD , vol. 8, no. 2, pp. 79–88, Jun. 2023, DOI: https://doi.org/10.14421/jga.2023.82-03.

32. S. Salsabila, B. Rahmatullah, and H. 'Aziz, The digital teaching landscape: Investigating the roles of interest, self-efficacy, and experience in shaping TPACK, Al-ATHFAL J EDUC CHILD, vol. 9, no. 2, pp. 141–152, Dec. 2023, DOI: https://doi.org/10.14421/al-athfal.2023.92-06.

33. A. Formen and E. Waluyo, Storytelling podcast as an alternative learning tool for early childhood education: a TPACK-based reflection, Al-ATHFAL J EDUC CHILD, vol. 9, no. 1, pp. 29–38, Jul. 2023, DOI: https://doi.org/10.14421/al-athfal.2023.91-03.