The Effect of Environment Literacy in Thematic Learning on Writing Skills and Attitude to Fourth-Grade Elementary School Students

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Abstract. The purpose of this study was to determine the effect Tropical Forest as teaching material on the aspects of poetry writing skills such as the suitability of contents, diction, imagination, mandate, and attitudes of environmental care in fourth-grade for elementary school students. This research used quantitative research methods with The Matching Only Pretest-Posttest Control Group Design. The population was the public elementary school in the Rejang Lebong district. The sample was selected by random cluster sampling, namely elementary school number 93 and elementary school number 119 in Rejang Lebong. The independent variable was the Tropical Forest teaching material, while the dependent variable was poetry writing skills for Indonesian subjects and environmental attitudes of science subjects. The instrument for evaluating poetry writing skills used a rubric with intervals of 1 to 4, while a caring attitude used a questionnaire. The data collection technique was done by filling out an assessment questionnaire from the results of writing poetry individually. Data analysis using IBM SPSS Statistics Version 25, for: (1) validity and reliability, (2) prerequisite tests, and (3) hypothesis testing. The results of the prerequisite test are unnormal for poetry writing skills variable then data were analyzed using the non-parametric Mann-Whitney analysis. While the caring attitude variable shows the normal distribution, then data were analyzed using the parametric t-test. The experiments showed that there was a significant difference in the poetry writing skills for the suitability of contents and the attitudes of environmental care between students who use Tropical Forest as teaching materials and students who use environmental learning resources around the school. Furthermore, there was no significant difference in writing poetry, diction, imagination, and mandate writing skills between students who use Tropical Forest as teaching materials and students who use environmental learning resources.

Keywords: environmental literacy, thematic learning, poetry writing, tropical forest, elementary school

INTRODUCTION ~ Literacy program as one of the policies in the National Education System Law (2016). Literacy involves reading and writing activities to develop thinking skills using learning resources in print, visual, digital, and auditory forms (Rahayu, 2018). The multi and interdisciplinary literacy means to cover various subjects such as mathematics, Indonesian, science, social studies, and character-building that packaged in a theme. The theme used as the topic in this study was theme 6 about My Goals, sub-theme 3 in Work Hard to Achieve Goals. The integrated learning content was Indonesian Language and Science. The indicator achieved is creating poetry by paying attention to themes, diction, mandate, and imagination, whereas science subjects focus on caring for the environment.

When writing and reading poetry, students can master two skills at once, namely writing skills and the ability to assess poetry appreciation. The use of tropical forest teaching materials and the environment as a source of learning in learning Indonesian language learning on poetry material is more effective. Muktadir (2014)

concluded that environmental learning resources in Indonesian are useful for improving students' skills in writing poetry. Kusumaningrum (2018) states that environmental literacy is the ability of individuals to understand and to interpret ecological conditions. Rahayu (2018) develop an identity as a literacy artifact in language teaching of an elementary school student. Concannon (2019) purposes poetry to engage and motivate primary students in reading and writing abilities.

Winarni (2018a) states that the environment as a source of learning in natural science learning can be students' material in literacy. So, students can observe, see, understand, and digest about the surrounding environment to form a caring attitude towards their environment. According to UNESCO (2007), there are seven components of environmental literacy that can be used to measure a level of environmental literacy. There are (1) environmental issues, (2) interactions with the earth system, (3) material cycles and energy flow, (4) populations, society, and ecosystems, (5) human and natural resources, (6) environment and health, (7) environment and society. The environmental issues component covers the investigation and analyzing environmental issues ranging from local to global, the development and implementation of environmental actions to protect, maintain and improve the natural environment.

The real conditions show the different problem, namely learning to write poetry for school students still experiences obstacles and tends to be avoided. Different approaches create different learning experiences (Peterson, 2018). It is because: (1) the techniques used by the teacher in learning poetry are still lacking so that students' interests and competencies in writing poetry are also inadequate and (2) there is no understanding of the values and other benefits that can be obtained by students when writing poetry (Zainuddin, 2018). Based on the problem, the study's purpose was to determine the effect of Tropical Forest teaching materials on poetry writing skills for aspects such as the suitability of themes, diction, imagination, mandate, and attitudes of environmental care in fourth-grade students of elementary schools.

METHOD

The study design is the matching only pretest-posttest control group design. This design requires two groups of subjects chosen at random (Fraenkel and Wellen, 2011). The matching only pretest-posttest control research design scheme has the following characteristics: 1) matching subject in the control and experimental groups, 2) pretest and posttest, 3) the matching process not random (Winarni, 2018b).

The population of the elementary school in the Rejang Lebong District is 15 elementary schools with "Good" accreditation. The

sampling technique used random cluster sampling with a sample of fourth-grade students in elementary school number 93 and elementary school number 119 in Rejang Lebong. The experimental and control class in the study has passed the homogeneity test for monthly value, which was carried out in February 2019 in theme lesson "My Goals".

The independent variable in this study is the learning resource about "Tropical Forest." The dependent variable is writing poetry skills and environmental care. The poetry elements in this study are the suitability content with the theme, diction, imagination, and mandate. Indicators for environmental care in natural science subjects are (1) Hard work to protect the environment with descriptors namely helping to maintain the cleanliness of school facilities, organizing the environment, helping to keep the environment, and disposing of trash in its place; (2) wise in using natural resources with descriptors namely supporting electricity and managing water use; and (3) responsibility to the environment with descriptors, namely complying the environmental care rules and believing in the role of plants/animals in environment.

Data collection techniques for writing poetry skills using assessment rubrics with the elements of conformity, namely content, themes, diction, imagination, and mandate. Data collection techniques for environmental care attitudes using a questionnaire after poetry writing activities. The tests of normality and homogeneity were held before the research hypothesis. The normality test used IBM SPSS Statistics 25 with the Kolmogorov Smirnov and Shapiro Wilk methods. The homogeneity test aims to determine the condition of the experimental class has homogeneous with the control class. The normality and homogeneity tests presented in Table 1.

Table 1. Tests of Normality

	class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
suitability	experiment	.395	17	.000	.703	17	.000
diction	experiment	.400	12	.000	.674	12	.000
	control	.285	17	.001	.792	17	.002
imagination	experiment	.401	12	.000	.662	12	.000
	control	.264	17	.003	.768	17	.001
mandate	experiment	.258	12	.026	.818	12	.015
	control	.290	17	.000	.780	17	.001
environmental care	experiment	.159	12	.200*	.920	12	.288
	control	.162	17	.200*	.924	17	.171

a. Lilliefors Significance Correction
*. It is a lower bound of the true significance.
b. Suitability is constant when class = 1.00. It omitted.

ICEE-2
RESULTS

1. Use of Tropical Forest as a Learning Resources in Improving Poetry Writing Skills

The results for normality and homogeneity on poetry writing skills indicate the data not normally distributed. The hypothesis test formulated "There are differences in the skills of writing poetry elements such as the content suitability with the theme, diction, imagination, and the mandate between students in the experimental and control class". It was tested using the non-parametric Mann-Whitney. The analysis results for the students writing poetry variable presented in Table 2, and the hypothesis test shown in Table 3.

Table 2. Summary of Descriptive Poetry Writing Skills Results Analysis

	class	N	Mean Rank	Sum of Ranks
suitability	experiment	12	23.00	276.00
	control	17	9.35	159.00
	Total	29		
diction	experiment	12	14.25	171.00
	control	17	15.53	264.00
	Total	29		
imagination	experiment	12	13.08	157.00
	control	17	16.35	278.00
	Total	29		
mandate	experiment	12	17.83	214.00
	control	17	13.00	221.00
	Total	29		

Table 3 Summary of Hypothesis Poetry Test Hypothesis Results

	suitability	diction	imagination	mandate
Mann-Whitney U	6.000	93.000	79.000	68.000
Wilcoxon W	159.000	171.000	157.000	221.000
Z	-4.645	-.454	-1.079	-1.609
Asymp. Sig. (2-tailed)	.000	.650	.281	.108
Exact Sig. [2*(1-tailed Sig.)]	.000a	.711a	.325a	.140a

a. Not corrected for ties.
b. Grouping Variable: class

Based on the analysis results in Table 2 and Table 3 show that:

(1) There is a significant difference in the value of writing poetry skills in terms of content suitability with the theme. It means

the group using Tropical Forest learning resources scored higher 23 points compared to another group using the learning environment around the school, which obtained score 9.35.

(2) There is no significant difference in the value of writing poetry writing skills. It means that the students who used the Tropical Forest learning resources obtained the importance of writing diction poetry skills by 14.25. It was not significantly higher than the group of students who used the environment around school learning resources, which amounted to 15.53.

(3) There is no significant difference in the value of imagination in writing poetry skills. Students who used the Tropical Forest learning resources gained the importance of the imagery poetry writing skill of 13.08 no higher than the group of students who used the learning environment around the school by 16.35.

(4) There is no significant difference in the value of mandatory poetry writing skills. Students who used the Tropical Forest learning resources obtained the poetry writing skills not higher by 17.83 compared to the students who used the environment around school learning resources by 13.

2. Use of Tropical Forest Learning Resources in Increasing Environmental Care

The environmental care attitude variable shows normal distribution and homogeneous data. Then the hypothesis test "There is no difference in the attitude of environmental care between students in the experimental and control class" using the t-test. The results of students' environmental awareness variables descriptively presented in Table 4 and the results of hypothesis testing shown in Table 5.

Table 4. Summary of Descriptive Poetry Environmental Concern Results

	class	N	Mean	Std. Deviation	Std. Error Mean
Environmental care	experiment	12	12.9167	2.64432	.76335
	control	17	11.0000	2.00000	.48507

Table 5. Summary of Test Results for the Environmental Concern Hypothesis

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Environmental care	Equal variances assumed	1.266	.270	2.225	27	.035	1.91667	.86136	.14931	3.68403
	Equal variances not assumed			2.119	19.492	.047	1.91667	.90443	.02690	3.80643

Based on the analysis results in Tables 4 and 5 show that the significance value of 0.035 <0.05, then Ho is rejected. The group with the Tropical Forest learning resources received an environmental awareness attitude score of 12.92 higher than another group who used the environment learning resources around the school by 11.

DISCUSSION

1. Learning Resources in Improving Poetry Writing Skills

The activity steps in learning to write poetry in research through three stages, namely: (1) students read and explore the sources of learning Tropical Forests, (2) students begin to think about understanding the contents of learning resources, relate them to environmental conditions, and the impacts arising from environmental conditions, (3) students begin to write poetry from the results of the stage of thinking about the content of learning resources and associating with environmental conditions. The reading and thinking stages are a receptive ability in understanding, reading to find specific main ideas, and expressing that have been stored in productive activities to write poetry. The writing is a productive activity to accommodate students' understanding and knowledge to be more meaningful, especially about the main ideas and characters in the teaching material (Rachmawati, 2019).

In the experimental class, students are invited to practice how to make poetry using words found in the learning resources of tropical forests. Students practice writing poetry well by increasing the practice; students trained in composing a poem. Karlinda (2014) states that exercise can provide creative space for students to write poetry well. Widiastuti (2013) concluded that there was an increase in students' skills in writing poetry through the use of natural media around.

Learning is carried out in the experimental and control class together apply the learning steps of the EEC (Exploration, Elaboration, Confirmation) but differ in the application in the literacy program. The results of writing poetry for the imagination aspects and the mandate in the experimental class are not better than the control class that uses learning resources around the environment. It proves that the "Tropical Forest" learning resources can improve students' poetry writing skills in terms of content conformity to the theme but is not better for the aspects of imagining and mandating poetry. The study results were supported by Rahayu (2018) that the ability to write poetry of elementary school students in the imagination improved by observing objects in the environment directly.

When the control class was outside the classroom, students observe the school environment and choose the most exciting object according to a theme. Next, students write 4-7 words that fit the topic chosen. From the words that obtained, students make interesting sentences. After

becoming a complete sentence, students begin to change some sentences by imagining something more significant, more beautiful, and enjoyable as a form of imagination. In the control class at the end of the lesson, students bring up messages to care and to preserve the selected object from the environment. The three stages of writing poetry, namely reading, thinking, and writing. The ability to write poetry of the imagination and mandate aspects do not differ between the experimental and control classes. Reading activities do not only mean students read books, but students go directly to the environment to observe the state of the environment and literacy that is around the environment. Thinking where students start looking for ideas for poetry as a result of judging by the environment. Writing stage, students begin to write their ideas in the form of poetry.

The process of making children's poetry according to Tarigan (2005), namely (1) observing an object written either directly or indirectly; (2) determine the theme; (3) writing the idea into the title of the poem; (4) making sentences; (5) arranging each sentence down in sequence, one line containing one core sentence that is not too long; (6) looking for sentences or words that can be replaced with intensities that are stronger and more imaginative; (7) improving the words contained in the sentence. It will produce a poem that is concise, precise, dense, and euphony.

The characteristics of poetry produced by children are the number of sentences, and the number of lines is not essential, the choice of words that takes precedence, and the poetry may be the same or not. Therefore, in the exploration of learning activities, students and teachers understand the procedures for making poetry and are given examples of how to make poetry. The teacher provides an example using one of the presentations in the Tropical Forest teaching material. Writing poetry in experimental class research developed basic ideas for selecting diction or words that are dense capable of accommodating broad, concise, and imaginative meanings through the presentation of Tropical Forest teaching materials.

In the control class, exploration activities are carried out with students observing objects found around the school. After some time observing, students are asked to determine an object that he thinks is most interesting to write and then poured it into a poem. After finishing observations around the school, students return to the classroom to improve the poetry composed outside the classroom. Elaboration steps both in the experimental and control classes, students with the guidance of teachers practice-changing ordinary words in poetry that have been made to be more imaginative. The confirmation activity in the two groups was carried out by inviting students to read poems by themselves in front of the class. Other students gave responses regarding

the reading of poetry. At this stage, the teacher confirms the poem and the interpretation.

2. Learning Resources in Increasing Environmental Concern

The concern defined as caring for the individual to the physical environment around him and having the desire to be able to preserve and utilize natural resources wisely. The concern is the impact of one's environmental literacy abilities. Care is the attitude and action that always seeks to prevent damage to the surrounding natural environment and develop efforts to repair natural damage that has already occurred (Daryanto and Darmiatun,2013).

Besides, care interpreted as an effort to overcome environmental problems that often arise in everyday life, such as waste problems, and the quality of water resources and air pollution. Within the scope of the school, concerns that want to be instilled in students, for example, throwing trash in its place, conserving water, and protecting the environment around the school.

The concern must be instilled in students from the school environment because the school is a place where students get exemplary attitudes from educators (Adawiah, 2019). Some primary schools are already implementing reading strategies as literacy sources, but there are some problems related to teacher competence (Laksono, 2018). From the

analysis results adjusted to the 2013 curriculum, there are several objects related to environmental issues, among others, improving the quality of Human Resources (HR), soil pollution, water pollution, air pollution, biodiversity and its conservation, ecosystems, and environmental preservation issues.

Environmental care character indicators for students in schools include maintaining the cleanliness and environmental sustainability, availability of landfills and handwashing, the energy-saving habituation, separate the organic and inorganic waste, manage and compose the organic waste (Widyaningrum, 2016). While indicators of care in the classroom are a) maintaining the classroom environment, b) available landfills in the school, c) energy-saving habituation, d) installing stickers to turn off lights.

Ardianti et al. (2017) concluded that the EJAS model with a science edutainment approach could improve environmental care behaviors and student responsibilities. Desmawati (2018), found that the outdoor study method could increase the concern of fourth-grade students.

In the exploration phase in learning in the experimental class, students observe images and read Tropical Forest teaching materials. While the control class, students are invited out to observe the environment and real objects outside the class. The results showed that when students in the control class using learning resources around the environment facilitated with

the presentation of persuasive argument sentences that resulted in a lower attitude of environmental awareness. It proves that the use of learning resources "Tropical Forests," which presented pervasive arguments, both invitations, appeals, or prohibitions that can increase environmental awareness.

CONCLUSION

Based on the results of research, data analysis, and discussion, it concluded that

1. There is a significant difference in the value of poetry writing skills in terms of content suitability with the theme, meaning that students in the group using the Tropical Forest learning resources get higher scores compared to the group of students who use the learning resources around the school environment.

2. There is no significant difference in the value of writing poetry, diction, imagination, and mandate writing skills significantly. Students in the group who use the Tropical Forest learning resources get the value of writing poetry elements of diction, imagination, and mandate no higher than the group of students who use learning resources around the school environment.

3. There are significant differences in attitudes toward environmental care. Students in groups that use the Tropical Forest learning resources score higher environmental awareness attitudes compared to groups of students who use

environmental learning resources around the school.

For teachers and researchers further, it is recommended to use the environment learning resources directly to improve poetry writing skills in terms of content conformity to the theme and develop an attitude of environmental care for students more real but the teacher needs to add a presentation of keywords related to the theme of the poem to be written down. In classes that use Tropical Forest, Teaching Materials show poetry writing skills suitability with better themes due to the presentation of the text that contains information or keywords about the existence of tropical forests so that students can find the main ideas of the text and images in teaching materials. Suggestions for further research also to develop an attitude of environmental awareness suggested that teachers prepare writings that are an invitation to care for the environment by involving students in the teaching material presented sentences that are persuasive to invite students to care more about the environment.

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REFERENCES

Adawiah, R. (2019). Instilling the Environmental Care Characters to the Elementary

Schools Located on the River Banks. *Journal of Wetlands Environmental Management*, 6(2), 84-92.

Ardianti, S. D., Wanabuliandri, S., & Rahardjo, S. (2017). Peningkatan Perilaku Peduli Lingkungan dan Tanggung JAwab Melalui Model EJAS dengan Pendekatan Science Edutainment. *Jurnal Ilmiah" Pendidikan Dasar Vol.1*, 1-7.

Concannon-Gibney, T. (2019). Immersing First Graders in Poetry: A Genre Study Approach. The Reading Teacher, 72(4), 431-443.

Daryanto, & Darmiatun, S. (2013). *Pendidikan Karakter di Sekolah*. Yogyakarta: Gava Media.

Desmawati. (2018). Meningkatkan Sikap Peduli Lingkungan Melalui Metode Outdoor Study dalam Pelaksanaan Pembelajaran di Kelas IV Sekolah Dasar. *Fkip Universitas Jambi*, 1-10.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2011). *How to design and evaluate research in education*. *New York: McGraw-Hill*.

Karlinda. (2014). Penerapan Metode Latihan Dalam MeningkatkanKemampuan Menulis Puisi Anak-Anak Siswa Kelas IV SDN5 Soni. *Jurnal Kreatif Tadulako Online Vol. 4 No. 8 ISSN 2354-614X*, 314-329.

Kusumaningrum, D. (2018). Literasi Lingkungan Dalam Kurikulum 2013 Dan Pembelajaran IPA DI SD. *Indonesian Journal Of Natural Science Education (IJNSE) Vol 1 Nomor 2*, 57-64.

Laksono, K., & Retnaningdyah, P. (2018, January). Literacy Infrastructure, Access to Books, and the Implementation of the School Literacy Movement in Primary Schools in Indonesia. In *IOP Conference Series: Materials Science and Engineering* (Vol. 296, No. 1, p. 012045). IOP Publishing.

Muktadir, A. (2014). Penerapan Model ARIAS Berbasis Lingkungan dalam Pembelajaran Puisi untuk Meningkatkan Hasil Belajar dan Mengembangkan Karakter Siswa SDN 42 Kota Bengkulu. *Jurnal Ilmiah PGSD*, 54-264.

National Education System Law. (2016). *Indonesia Education Law No. 21 and No.22 about the National Education System in Indonesia*. Indonesia Government.

Peterson, A., Dumont, H., Lafuente, M., & Law, N. (2018). Understanding innovative pedagogies: Key themes to analyze new approaches to teaching and learning. *OECD Education Working Papers*, (172), 0_1-134.

Rachmawati, L. A., Supriyanto, T., & Doyin, M. (2019). The Effectiveness of Learning to Write Poetry with The Student Team Achievement Division (STAD) Model. *Journal of Primary Education*, 248-253.

Rahayu, E., & Rohmadi, M. (2018). Improving Students' Ability to Write Poems Through Scientific Discovery-Based Learning with Nature Pictures from Media. *KnE Social Sciences*, 632-638.

Rahayu, S., Yulianto, B., & Suhartono, S. (2018, December). Identity in Literacy Artefact

of Elementary School Student. In *2nd International Conference on Education Innovation (ICEI 2018)*. Atlantis Press.

Tarigan, Djago dkk. 2001. *Pendidikan Keterampilan Berbahasa*. Jakarta: Universitas Terbuka.

UNESCO. (2007). *The UN decade of education for sustainable development*. Paris: UNESCO.

Widiastuti, A. R. (2013). Pemanfaatan Media Alam Sekitar Untuk Meningkatkan Keterampilan Menulis Puisi pada Mata Pelajaran Bahasa Indonesia Kelas V Siswa SD Negeri I Giritontro, Wonogiri Tahun Ajaran 2012/2013. *Universitas Muhhammadiyah Surakarta*, 1-12.

Widyaningrum, R. (2016). Pembentukan Karakter Peduli Lingkungan siswa Sekolah Dasar melalui sekolah peduli dan berbudaya lingkungan . *Widya Wacana Vol 11. No. 1*, 108-115.

Winarni, E.W. (2018a). Pendekatan Ilmiah dan Pembelajaran IPA Kreatif dan Inovatif. Bengkulu: FKIP UNIB Press.

Winarni, E. W. (2018b). *Teori Dan Praktik Penelitian Kuantitatif, Kualitatif, Penelitian Tindakan Kelas, Research and Development*. Jakarta: Bumi Aksara.

Zainuddin. (2018). Meningkatkan Kemampuan Menulis Puisi Bagi Siswa Kelas IV SDN1 Dongko Dengan Metode Praktek. Jurnal Kreatif Tadulako Online Vol. 4 No. 9, 16-31.