



Based Project Learning Based Activities On Environmental Awareness

Sri Hanipah¹, Ni Nyoman Rediani¹

¹Universitas Musamus, Merauke, Papua Selatan
srihanifah@unmus.ac.id, nyoman.rediani@unmus.ac.id

Berdasarkan Kegiatan Berbasis Project Learning Pada Kesadaran Lingkungan

ARTICLE HISTORY

Submitted:
20 Oktober 2023
20th October 2023

Accepted:
19 Desember 2023
19th December 2023

Published:
27 Desember 2023
27th December 2023

ABSTRACT

The suboptimal environmental awareness among students is one of the reasons for the environmental issues faced by society. To improve this, proper learning is needed that fosters environmental care attitudes. This is the reason why research aimed at examining the effect of activity-based project-based learning on environmental care attitudes was conducted. This type of research uses a pseudo-experimental method with a posttest-only control group design. The research subjects were fifth grade students, and the data collection methods were observation, interview, and questionnaire. The results of the t test showed that the activity-based PjBL model had a positive influence on students' environmental care attitudes. This finding is supported by the significance value (Sig.), which is less than 0.05, namely 0.00. *Therefore, it is recommended that this learning model be considered as a potential solution to enhance students' environmental awareness and address the suboptimal state of environmental consciousness.*

Keywords: *learning activities, project based learning, environmental awareness*

Masih belum optimalnya sikap peduli lingkungan siswa menjadi salah satu alasan masalah lingkungan yang dihadapi di masyarakat, untuk memperbaiki hal inilah dibutuhkan sebuah pembelajaran yang layak yang menumbuhkan sikap peduli lingkungan. Hal inilah menjadi alasan penelitian yang bertujuan untuk mengkaji pengaruh *Project Based Learning* berbasis aktivitas terhadap sikap peduli lingkungan dilakukan. Jenis penelitian ini menggunakan metode eksperimen semu dengan desain *posttest only control group*. Subjek penelitian adalah siswa kelas V, dan metode pengumpulan data dilakukan melalui observasi, wawancara, dan angket. Analisis data menggunakan uji t. Hasil uji t menunjukkan bahwa model PjBL berbasis aktivitas memiliki pengaruh positif terhadap sikap peduli lingkungan siswa. Temuan ini didukung oleh nilai signifikansi (Sig.) yang kurang dari 0,05, yaitu 0,00. Sehingga bisa di rekomendasikan bahwa model pembelajaran ini bisa digunakan sebagai salah satu solusi untuk mengatasi belum optimalnya sikap peduli lingkungan.

Kata Kunci: *aktivitas pembelajaran, project based learning, sikap peduli lingkungan*

CITATION

Hanipah, S., & Rediani, N. R. (2023). Based Project Learning Based Activities On Environmental Awareness . *Primary: Jurnal Pendidikan Guru Sekolah Dasar*, 12 (6), 1504-1511. DOI: <http://dx.doi.org/10.33578/jpfkip.v12i6.10256>.

*Corresponding: Sri Hanipah, Universitas Musamus, Merauke, Papua Selatan

INTRODUCTION

The destruction of natural habitats such as forests, wetlands, and coral reefs threatens many plant and animal species. Loss of biodiversity can disrupt food chains and reduce nature's ability to maintain ecosystem balance. This environmental damage is partly caused by the low attitude toward caring for the environment, which is still at a low level (Rokhmah & Munir, 2021). Public ignorance



about the environment results in environmental damage (Abdulfatah & Widodo, 2018; Immaniar et al., 2019; Sakman & Syam, 2020). Environmental concerns express attitudes about environmental quality, expressed in any relevant behavior as a willingness to state actions that improve and maintain environmental quality (Santika et al., 2022). Knowledge of the environment and morality in interacting with the environment have a close relationship with attitudes and actions in preserving nature (Ratih et al., 2020). Education is the most effective way to raise awareness of the importance of protecting the environment. Simply put, concern for the environment will affect efforts to preserve nature. Based on this, the attitude toward environmental care must be improved and strengthened, starting with basic education, considering that changing one's attitude is not done just like that but requires a process (Tresnani, 2020).

Therefore, to improve or develop an attitude toward environmental care, good learning is needed (Immaniar et al., 2019; Tresnani, 2020). Many studies have been conducted related to the development of environmental care attitudes, including the results of research stating that the SETS (Science, Environment, Technology, and Society) learning approach combined with local cultural elements is used in teaching Natural Sciences (IPA) to improve critical thinking skills and environmental awareness (Erika & Surya, 2022). The results of research state that the implementation of an environmentally sound school culture can have an impact on students' concern for the environment (Rokhmah & Munir, 2021). The results showed that the development of skills in students had a positive impact on attitudes of discipline, responsibility, and concern for others (Ulum, 2018). This description illustrates that innovative learning is one way to foster students' concern for the environment.

One of the innovative learning models provided is project-based learning (PjBL). This learning model gives students the opportunity to find their own knowledge, both in groups and individually. Some of the impacts of the PjBL model in the learning process are to improve critical thinking skills (Efendi et al., 2020; Susanto et al., 2020), increase creativity (Noviyana, 2017; Syarifah & Emiliasari, 2019; Wulandari et al., 2019), improve science literacy skills (Safaruddin et al., 2020; Surya et al., 2018; Tesi Muskania & Wilujeng, 2017), improve higher-order thinking skills (Apriany et al., 2020; Winarni, 2019), improve character (Joedanarni, 2018), improve learning outcomes (Darmawan, 2020), improve collaboration skills (Saenab et al., 2019), improve learning activities (Hanipah et al., 2018), and increase interest (Triadi, 2020).

The research that aims to examine the impact of the activity-based project-based learning model on improving environmental awareness is innovative because it combines two different independent variables, namely the PjBL model and learning activities. The learning activities implemented in this study were designed in accordance with the characteristics of students, who emphasize their active role in the learning process. In the framework of active learning theory, students are considered the center of learning. The activities encourage students to actively participate, think critically, and collaborate. Examples of suitable learning activities include group discussions, team-based projects, simulations, case studies, problem solving, and experiments. In these activities, students don't just listen to teaching; they should also play an active role in finding solutions, organizing ideas, and applying their knowledge in real-life situations. Thus, students have room to be creative, develop critical thinking skills, and improve their understanding of the learning material, all of which are in accordance with the principles of active learning. In this study, the activity based PjBL model enables learners to gain in-depth knowledge of the environment through practical experience in real projects, encouraging collaboration, creativity, and the development of a sense of care for the environment. The results of this study can make a valuable contribution to the educational literature and demonstrate the significant potential of the activity based PjBL model in improving students' environmental awareness, which is an important step in preserving the natural environment.

METHOD

This study used a pseudo-experimental design with a posttest-only control group design. A pseudo-experiment is a type of comparative research that allows comparison between a group that receives treatment (the experimental group) and a control group without researcher intervention by measuring the impact or results of the treatment (Arikunto, 2015). In a posttest-only control group design, the experimental group is given a certain treatment (in your context, it may be the application of an activity-based project-based learning model), and afterwards, a posttest measurement is conducted to assess the impact of the treatment on the observed variable (in this case, the improvement of environmental care attitude). The control group, on the other hand, received no treatment and was also measured using a posttest. A comparison between the posttest results of the experimental group and the control group will provide insight into the effectiveness of the treatment in achieving the research objectives. Therefore, this study was designed to examine the impact model of activity-based PjBL on environmental care attitudes using a quasi-experimental approach. This research will be conducted at Wasur 1 Elementary School, located at Trans Irian Street, Wasur Village, Merauke, South Papua, from July to August 2023. The research subjects will be grade V students at the elementary school. This research will enable us to identify the impact of activity-based project-based learning on the environmental care attitude of grade V students in the school.

Data collection techniques are instruments used as tools to collect data in order to streamline work and produce more accurate findings. In this study, a non-test was used as a data collection method. The information collected is in the form of an environmental attitude questionnaire for students' environmental awareness. After the learning activities are completed, a questionnaire about environmental awareness will be given. To illustrate the techniques and tools used to collect the data below, the instrument grids are shown in Table 1.

Table 1. Lattice of Questionnaire Instruments for Environmental Care Attitude

Variables	Indicator	Aspects observed	Instrument Item No.
Environmental care attitude	Forming an attitude of caring for the environment	Attention to the environment	1-7
	Measures to prevent environmental damage	Safeguarding the environment	8-18
	Role in social activities	Participation in social activities	19-25
	Score		25

The analyses used in this research are descriptive analysis and inferential analysis. Descriptive analysis was used to calculate the mean, standard deviation, minimum, maximum, and range values. Meanwhile, inferential analysis involved the t-test. Before conducting the t-test, assumption tests such as normality and homogeneity were conducted first. Inferential tests were used to test the research hypothesis. The t-test is used to assess the significance level of the effect of independent variables partially on the dependent variable. This test involves a comparison between the calculated t value and the t table. If the calculated t value is greater than the t table value and the significance value is less than 0.05 (α : 5%), then the independent variable partially has a significant effect on the dependent variable. In this study, hypothesis analysis was supported by SPSS 26 statistical software.

RESULTS AND DISCUSSION

RESULTS

The results of the descriptive analysis in Table 2 indicate a significant difference in environmental care attitudes between the group of students who participated in learning with the activity-based PjBL model and the group who did not. Specifically, the difference in mean values reaching 16.80 indicates that students who engaged in learning using the activity-based PjBL model experienced a more significant increase in environmental care attitudes compared to the group that did not use the model. These results suggest that the activity-based PjBL model can be considered an effective method to increase environmental awareness and attitudes among students, and this has a positive influence in the context of environmental education at SD Wasur 1.

Table 2. Results of a descriptive analysis of environmental care attitudes

Measured variable	Environmental care attitude	Environmental care attitude
	Ekserimen	Control
Mean	44,25	61,05
Std. Deviation	7,48	7,92
Minimum	35,00	45,00
Maximum	55,00	75,00
Range	20,00	30,00

To strengthen the research results, statistical testing was carried out using the t-test model. Previously, prerequisite tests such as normality tests and homogeneity tests were carried out first. The normality test results show that the data comes from a normal distribution, indicated by a significance value > 0.05 . Details of the data can be seen in Table 3. The results of the homogeneity test show that the data has homogeneity, as shown by the calculation results of Levene's Test for Equality of Variances, with a significance value of more than ($>$) 0.05, namely 0.725. Because all prerequisite tests have been met, the t test can be continued.

Table 3. Data normality results

	Treatment	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Attitude_care	Control	.192	20	.052	.869	20	.011
	Experiment	.165	19	.189	.960	19	.582

The results of the t test that has been carried out show that there is an influence of the PjBL (project-based learning) model based on learning activities on environmental care attitudes. This finding is supported by a value (Sig.) of less than 0.05, namely 0.00. More complete results are presented in Table 4. These results indicate that the use of this learning model encourages students to learn independently and actively, which in turn has a positive impact on the development of students' environmentally caring attitudes. The PjBL model based on learning activities is designed so that students can be actively involved in their learning by presenting projects that require collaboration, research, and experimentation. In this context, when students are involved in these projects, they have the opportunity to better understand environmental issues and their impacts. As time goes by, they will become more aware of the importance of protecting and caring for their environment, which is reflected in the development of a positive environmental care attitude. Thus, these findings provide

strong evidence that the use of the PjBL model based on learning activities can be an effective strategy for increasing students' environmental care attitudes.

Table 4. Independent Samples Test Results

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- taile d)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
Environmental care attitude	Equal variances assumed	.126	.725	6.909	38	.000	17.2500	2.49671	12.19568	22.30432
	Equal variances not assumed			6.909	37.610	.000	17.2500	2.49671	12.19396	22.30604

DISCUSSION

The research results showing that the activity-based PjBL model has an influence on students' caring attitudes towards the environment are very relevant and important findings in the context of environmental education. The activity-based PjBL model provides an approach that focuses on students' active participation in the learning process, which includes learning planning and solving problems related to the environment. Several things that can be explained regarding this influence are: 1) Active student participation: In the activity-based PjBL model, students are not only passive recipients of information, but they are also actively involved in planning and implementing learning. This allows students to feel ownership of the learning process, which can increase their sense of concern for environmental issues. 2) Concrete problem solving: By focusing on activities related to the environment, students have the opportunity to face real problems related to the environment. This can help them develop better problem-solving skills and realize the importance of sustainable action to protect the environment. 3) An in-depth understanding of current environmental challenges and issues can be obtained through learning activities that involve the environment in the PjBL model. This can increase students' awareness of the importance of preserving the environment and the impact of human actions on the environment. 4) PjBL-based learning, which focuses on activities, shifts the center of teaching from the teacher to the students. This helps students feel more involved and active in learning, which in turn can influence their caring attitude towards the environment. The findings of this research may be the basis for developing more effective learning methods to increase students' awareness and concern for the environment. Therefore, it is important to continue to integrate environmental education into the curriculum and actively involve students in the learning process so that they can become agents of change who care more about environmental preservation.

Environmental learning and teaching environmental ethics play a crucial role in forming a caring attitude towards the environment. Through the learning process, individuals gain an understanding of ecosystems, environmental defenses, and the negative impacts of human activities on the planet, thereby increasing their awareness of environmental issues, both at the global and local levels (Ratih et al., 2020). More than that, teaching environmental ethics also provides a foundation for the norms and values that guide environmentally responsible behavior. In practice, various learning approaches, such as project-based learning, field studies, discussions, and technology, can be applied to create a learning environment that supports the development of environmental knowledge and



environmental ethics. Thus, through the right learning approach, individuals can become agents of change who care more about environmental sustainability. This is very important considering that minimal awareness of the environment in society has caused significant environmental damage (Abdulfatah & Widodo, 2018; Immaniar et al., 2019; Sakman & Syam, 2020). Environmental concern reflects attitudes that are realized through actions that improve and maintain environmental quality, and environmental knowledge and environmental foundations are the main foundations that support attitudes and behaviors to protect the environment (Santika et al., 2022).

In the learning context, the activity-based PjBL model has been proven to be an effective solution for producing a number of positive changes in students' abilities and attitudes. PjBL provides opportunities for students to develop various important aspects of learning. Through PjBL, students can improve their critical thinking skills (Efendi et al., 2020; Susanto et al., 2020) by facing real problems and solving them. Apart from that, PjBL also stimulates students' creativity (Noviyana, 2017; Syarifah & Emiliasari, 2019; Wulandari et al., 2019) because they have to think "outside the box" when completing tasks that involve real activities. Scientific literacy abilities (Safaruddin et al., 2020; Surya et al., 2018; Tesi Muskania & Wilujeng, 2017) and higher-order thinking abilities (Apriany et al., 2020; Winarni, 2019) can also be done through PjBL because students are involved in exploration and in-depth research. Apart from academic development, PjBL can also improve character (Joedanarni, 2018) and overall learning outcomes (Darmawan, 2020). PjBL encourages students to work together and collaborate in completing projects, thereby increasing collaboration skills (Saenab et al., 2019) and numeracy literacy and digital literacy skills (Faridah et al., 2022). Interesting learning activities in PjBL can also increase students' interest in learning material (Triadi, 2020). With these various benefits, activity-based PjBL is not only an effective learning method for improving academic abilities but also plays a role in forming students' positive character and attitudes, including caring attitudes towards the environment. Through active exploration in learning contexts, students can become better agents of change in society and contribute to environmental.

CONCLUSIONS AND RECOMMENDATIONS

The conclusion from this presentation is that the research results that highlight the influence of the activity-based PjBL model on students' caring attitudes towards the environment are very relevant and essential findings in the realm of environmental education. This PjBL model encourages students' active participation in the learning process, allowing them to plan their own learning and face concrete problems related to the environment. By focusing on these in-depth activities, students can build problem-solving skills, increase awareness of the importance of preserving the environment, and feel personal responsibility for environmental issues. In addition, the student-centered learning approach in PjBL provides great potential to change students' attitudes to be more concerned about the environment. The results of this research provide an important foundation for the development of more effective learning methods for increasing students' awareness and commitment to environmental sustainability efforts, which are becoming increasingly urgent in an ever-changing global context. By actively integrating environmental education into the curriculum and implementing the activity-based PjBL learning model, we can form a generation that is more concerned and responsible for the future of our environment.

REFERENCE

- Abdulfatah, M. R., & Widodo, S. T. (2018). Pendidikan Karakter dalam Novel Maha Mimpi Anak Negeri Karya Suyatna Pamungkas Tinjauan Psikologi Sastra. *Jurnal Gramatika*, 1, 12–23. <https://doi.org/10.22202/JG.2018.V4i1.2412>
- Apriany, W. A., Winarni, E. W., & ... (2020). Pengaruh Penerapan Model Pembelajaran Project Based Learning (PjBL) terhadap Hasil Belajar Kognitif Siswa pada Mata Pelajaran IPA di Kelas V SD Negeri 5 *Jurnal Pembelajaran Dan ...*



- Arikunto, S. (2015). *Dasar-Dasar Evaluasi Pendidikan*. Bumi Aksara.
- Darmawan, A. (2020). The Influence of Project Based Learning Model on Student Writing Skills. *Jurnal Pena Sains*, 7(2). <https://doi.org/10.21107/jps.v7i2.6443>
- Efendi, D., Sumarmi, & Utomo, D. H. (2020). The effect of PjBL plus 4Cs learning model on critical thinking skills. *Journal for the Education of Gifted Young Scientists*, 8(4), 1509–1521. <https://doi.org/10.17478/jegys.768134>
- Erika, R., & Surya, E. (2022). Model Pembelajaran Sets (Science, Environmental, Technology, Society) Berbasis Budaya Lokal Pada Pembelajaran Ipa Terhadap Berfikir Kritis Dan Peduli Lingkungan. *School Education Journal Pgsd Fip Unimed*, 12(1), 1–7. <https://doi.org/10.24114/sejpgsd.v12i1.34816>
- Hanipah, S., Florentinus, T. S., & Rc, A. R. (2018). The Effectiveness of Problem Based Learning and Project Based Learning Model to Improve Natural Science Study Outcomes. *Innovative Journal of Curriculum and Educational Technology*, 7(1), 1–6.
- Immaniar, B. D., Sumarmi, S., & Astina, I. K. (2019). Pembelajaran Lingkungan Berbasis Kearifan Lokal dengan Model Experiential Learning. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, 4(5), 648. <https://doi.org/10.17977/jptpp.v4i5.12431>
- Joedanarni, A. (2018). Penerapan Project Based Learning (PjBL) Berupa Peta Konsep untuk Meningkatkan Karakter dan Prestasi Belajar Biologi Siswa SMP. *Jurnal Pembelajaran Sains*.
- Noviyana, H. (2017). Pengaruh Model Project Based Learning Terhadap Kemampuan Berpikir Kreatif Matematika Siswa. *JURNAL E-DuMath*, 3(2). <https://doi.org/10.26638/je.455.2064>
- Ratih, K., Utami, R. D., Fuadi, D., Mulyasih, S., Febriani, D., Asmara, S. F., Aprilianti, D. R., Rianti, A. W., Santiana, D., Rahmawati, H., Adlina, L. M., Rosyidi, B., & Hidayat, M. T. (2020). Penguatan Pendidikan Etika dan Karakter Peduli Lingkungan Sosial Budaya di SMP Muhammadiyah 10 Matesih, Karanganyar. *Buletin KKN Pendidikan*, 2(1), 44–49. <https://doi.org/10.23917/bkknndik.v2i1.10770>
- Rokhmah, U. N., & Munir, M. (2021). Implementasi Budaya Sekolah Berwawasan Lingkungan Dalam Membentuk Karakter Peduli Lingkungan Siswa Sekolah Dasar. *Muallimuna : Jurnal Madrasah Ibtidaiyah*, 7(1), 63. <https://doi.org/10.31602/muallimuna.v7i1.5314>
- Saenab, S., Yunus, S. R., & Husain, H. (2019). Pengaruh Penggunaan Model Project Based Learning Terhadap Keterampilan Kolaborasi Mahasiswa Pendidikan IPA. *Biosel: Biology Science and Education*, 8(1), 29. <https://doi.org/10.33477/bs.v8i1.844>
- Safaruddin, S., Ibrahim, N., Juhaeni, J., Harmilawati, H., & Qadrianti, L. (2020). The Effect of Project-Based Learning Assisted by Electronic Media on Learning Motivation and Science Process Skills. *Journal of Innovation in Educational and Cultural Research*, 1(1), 22–29. <https://doi.org/10.46843/jiecr.v1i1.5>
- Sakman, S., & Syam, S. R. (2020). Penguatan Pendidikan Karakter Berbasis Kearifan Lokal Bagi Peserta Didik Di Sekolah. *SUPREMASI: Jurnal Pemikiran, Penelitian Ilmu-Ilmu ...*, 15(2), 101–111.
- Santika, I. G. N., Suastra, I. W., & Arnyana, I. B. P. (2022). Membentuk Karakter Peduli Lingkungan Pada Siswa Sekolah Dasar Melalui Pembelajaran Ipa (Forming the Character of Caring for the Environment in Elementary School Students through Science Learning). *Jurnal Education and Development Institut Pendidikan Tapanuli Selatan*, 10(1), 207–212.
- Surya, A. P., Relmasira, S. C., & Hardini, A. T. A. (2018). Penerapan Model Pembelajaran Project Based Learning (PjBL) Untuk Meningkatkan Hasil Belajar Dan Kreatifitas Siswa Kelas Iii Sd Negeri Sidorejo Lor 01 Salatiga. *Jurnal Pesona Dasar*, 6(1), 41–54. <https://doi.org/10.24815/pear.v6i1.10703>
- Susanto, E., Susanta, A., & Rusdi. (2020). Efektivitas Project Based Learning Terhadap Kemampuan Pemecahan Masalah Dan Berpikir Kritis Mahasiswa. *Jurnal THEOREMS (The Original*



- Research of Mathematics*), 5(1), 61. <https://doi.org/10.31949/th.v5i1.2219>
- Syarifah, E. F., & Emiliasari, R. N. (2019). Project-Based Learning To Develop Students' Ability and Creativity in Writing Narrative Story. *Indonesian EFL Journal*, 5(1), 85. <https://doi.org/10.25134/ieflj.v5i1.1627>
- Tesi Muskania, R., & Wilujeng, I. (2017). Pengembangan Perangkat Pembelajaran Project-Based Learning Untuk Membekali Foundational Knowledge Dan Meningkatkan scientific literacy. *Jurnal Cakrawala Pendidikan*, 36(1), 34–43. <https://doi.org/10.21831/cp.v36i1.8830>
- Tresnani, lia dwi. (2020). Penanaman Karakter Peduli Lingkungan melalui Kegiatan Pembiasaan di SMP Negeri 6 Pekalongan. *AL-HIKMAH (Jurnal Pendidikan Dan Pendidikan ...)*, 2(1), 108–117. <https://doi.org/10.36378/al-hikmah.v2i1.431>
- Triadi, R. A. (2020). Pengaruh Project Based Learning Terhadap Minat dan Hasil Belajar Menulis Narasi Siswa Kelas V SDN 1 Tambaknegara. *Pancar*, 4(2), 53–65.
- Ulum, C. (2018). Social skills of students in thematic learning in fifth grade at Madrasah Ibtidaiyah Muhammadiyah Selo Kulon Progo. *Al-Bidayah : Jurnal Pendidikan Dasar Islam*, 10(2), 230–253. <https://doi.org/10.14421/al-bidayah.v10i2.169>
- Winarni. (2019). Peningkatan Kemampuan Berpikir Tingkat Tinggi Menggunakan Huruf Kapital melalui Penerapan Model PJBL di Sdit Izzatul Islam Getasan. *Jurnal Manajemen Pendidikan*, 14(1), 18–24. <https://doi.org/10.23917/mp.v14i1.8643>
- Wulandari, A. S., Suardana, I. N., & Devi, N. L. P. L. (2019). Pengaruh Model Pembelajaran Berbasis Proyek Terhadap Kreativitas Siswa Smp Pada Pembelajaran Ipa. *Jurnal Pendidikan Dan Pembelajaran Sains Indonesia (JPPSI)*, 2(1), 47. <https://doi.org/10.23887/jppsi.v2i1.17222>