

PROFILE OF ENVIRONMENTAL LITERACY STUDENTS OF SMPN 3 TELUK KERAMAT

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Abstract

The aim of this research is to find out and explain the environmental literacy profile of SMPN 3 Teluk Keramat students. This research method is a quantitative descriptive method. The population and sample of this study were class VII students of SMPN 3 Teluk Keramat with a sample of 68 people. The collection of students' environmental literacy data in this study used the standard Middle School Environmental Literacy Survey (MSELs) assessment. Data collection techniques used in this study include interview methods and test methods. Data analysis and data interpretation in this assessment are data reduction, categorization, synthesis, and developing working hypotheses. The results of the study showed that the environmental literacy of junior high school students had an average value of 49.95%, namely the sufficient criterion. The results of the study based on environmental literacy indicators obtained different average values, namely ecological knowledge of 9.15% (sufficient criteria), cognitive skills of 4.23% (low criteria), environmental awareness of 80.11% (good criteria), and environmentally responsible behavior of 70.75% (good criteria).

INTRODUCTION

One's literacy ability is something that needs to be taken into account in the era of the industrial revolution 4.0. This happens because a person's literacy ability has an influence on how extensive knowledge and insight a person has which will in turn have an influence on a person's performance. Environmental problems have become the

spotlight of the world community, including Indonesia. Several very complex environmental problems that must be addressed immediately include: water, soil, air pollution, global warming etc.

A global program to increase public awareness of the importance of environmental management was pioneered by UNESCO with the issuance of the Tbilisi Declaration in 1977. One of the contents of the declaration is to mandate the implementation of environmental education for all circles and all levels of education, both formal and non-formal. It was from that time that environmental education began to be integrated into school curricula.

Environmental literacy is a person's understanding of everything related to the environment, including knowing existing problems and being able to find solutions to overcome a problem in the surrounding environment (Utami, 2019). Concern for the environment is fundamental to prevent various damages to nature, especially those caused by human activities. Concern for the environment which is included in the environmental literacy of the Indonesian people is still relatively low. This leaves various problems that do not care about the environment. This can be seen from the results of the Ministry of Environment Survey in 2012 which took samples in 12 provinces in Indonesia. Resulting in the conclusion that the index of people's behavior towards the environment nationally is still not entirely good. The national average index is 0.57. This figure indicates that people have not behaved to care about the environment in their daily lives (Subhan, 2017).

The same policy is carried out by the Province of West Kalimantan (Kalbar). As a province that has a forest area of 9.1 78 million ha, this province is believed to play a major role in absorbing greenhouse gases (GHG) and climate change. So far, the province's political alignments have strengthened in conservation efforts and ecosystem protection in general, including mangrove rescue efforts, prevention of illegal logging, coral reef rescue and the province's cooperative attitude as a pioneer of the *Reducing Emissions From Deforestation And Forest Degradation* (REDD) program (Abang Tambul Husin, 2005). In accordance with the existing conditions in the West Kalimantan Region, there are some of the most prominent environmental issues that result in changes in environmental quality, including the fisheries sector, forestry sector and mining sector.

Environmental education essentially aims to enlighten the world community in order to realize the importance of caring for the environment and develop a world community that has the knowledge, skills, attitudes, motivation, and commitment to work both individually and collectively towards the solution of environmental problems.

Literacy comes from Latin, namely *litera* (letter) which is often interpreted as literacy. When viewed from the literal meaning, literacy means a capability possessed by a person in understanding a writing and his skills in writing.

The environment is a combination of the physical condition of an ecosystem and the system in it. The environment is a whole thing both living and inanimate that together exert influence on each other and coexist.

We are all aware that the environment and humans have a relationship related to each other (Sullivan, 2012; Harahap, 2015). Man lives, settles, and does all his activities in the environment. Not only that, but human survival also depends on the environment, starting from the need for food, clothing, and shelter.

So important is environmental awareness, UNESCO held the Tbilisi Declaration in 1997. Based on the results of the declaration, environmental education aims to foster students' environmental awareness and the ability to provide solutions to environmental problems (NELA, 2008). Environmental education seeks to involve students in imparting knowledge to change beliefs, attitudes and behaviors towards the environment. Thus, students are expected not only to have insight into the environment, but also to be able to apply the knowledge that has been gained into everyday life.

McBeth (2010) argues that a person's environmental literacy ability can be measured based on four elements, namely knowledge of the environment, attitudes towards environmental problems, cognitive skills, and behavior. Departing from the four references, the level of environmental literacy ability possessed by students will be obtained which can then be further analyzed to obtain results in the form of student environmental literacy levels.

Junior high school students (SMP) can already be categorized as a transition period from the use of concrete reasoning to the application of formal reasoning (Piaget, 1958). This means that SM P students should be able and understand what is being learned and start applying it if a problem arises. If it is associated with environmental literacy, then SM P students should have an above-average literacy rate and be able to solve problems related to the environment.

Until now, there is no data in the form of environmental literacy profiles, especially students. There is also not too much research on the profile of environmental literacy in Indonesia, based on literature studies there are several studies on environmental literacy, namely research conducted by Rahmawati (2017) which shows that the average environmental literacy score of the four aspects of environmental literacy is 2.5 (classified as high). A similar study conducted by Research conducted by Varisli (2009) in Turkey showed the results of the level of environmental literacy possessed by students based on several factors. First, in terms of gender, female students are higher than male students. Second, in terms of maternal education, students with mothers with high levels of education have a higher level of environmental literacy than students with lower maternal education. The research conducted is still in a small scope and the data obtained cannot be generalized.

Departing from research that has been carried out previously by experts with the average level of environmental literacy of students classified as moderate to high, it is important to investigate the environmental literacy profile of SM students PN 3 Teluk Keramat and compared students' environmental literacy in terms of gender, grade level, location of student residence, and parents' education level. Based on this description, researchers are very interested in carrying out a study entitled "**Environmental Literacy Profile of SMPN 3 Teluk Keramat Students**".

RESEARCH METHODS

This research was carried out at SMPN 3 Teluk Keramat. The population in this study was grade VII students at the junior high school level. The sample in this study was 45 grade VII students. The research method used in this study is a descriptive research method, which is a method that does not provide treatment, manipulation, or alteration of the sample used so that it does not require control classes or experimental classes (Frankel et al, 2012).

In this student environmental literacy analysis research, there are several stages that are carried out. The research flow is used as a reference or guideline in the research agenda that will be carried out so that the author can conduct research in a structured manner and can complete the research on time, as well as so that the research can run as expected.

The first stage is the identification of the problem, which is the first step taken in this study. At the stage of identifying the problem, it is intended to be able to understand the problem to be studied, so that in the analysis and design stage it does not come out of the problem under study.

The second stage is the study of literature, at this stage the author studies and understands the theories that become guidelines and references obtained from various books, journals and also the internet to complement the preservation of concepts and theories.

The third stage is data collection which is an important stage in the process, because only by getting the right data. Some of the methods used are interviews used to find out responses about matters related to factors that affect the level of knowledge about the environment and its application in working on environmental literacy aimed at several students who are representatives of research subjects and science teachers.

Observation is an initial observation in the form of a general exploration of everything seen, heard, and felt. Researchers observe the environment around the school so that they know the situation or condition of the school. The test method is a way of collecting data by providing a number of questions related to environmental literacy to

the research subjects. The fourth stage is the preparation of a report that is compiled based on the results of the study.

This research approach uses quantitative descriptive research because it uses numbers, starting from data collection, interpretation of the data, and appearance and results (Suharsimi Arikunto, 2005). The population of this study is grade VII students at SMPN 3 Teluk Keramat for the 2022/2023 academic year. The sample of this study was a total population of 68 students of SMPN 3 Teluk Keramat. Sampling is sampling in population research. The way to determine this research sample is to use total sampling because there are less than 100 students. Data collection techniques include questionnaires, documentation, observations and interviews. The research instrument is an environmental instrument in the form of a 30-question multiple-choice test. The technique of data processing and analysis is by giving a score (*Scoring*) which is to give a number on the answer sheet of the questionnaire for each subject the score of each item or question on the questionnaire is determined according to the choice (*option*).

RESULTS AND DISCUSSION

The data obtained in this study is quantitative descriptive data in the form of percentages. This quantitative data is in the form of students' answers in doing environmental literacy questions that are modified with environmental pollution material. In the matter of environmental literacy, there are four parts of four domains in environmental literacy, namely knowledge, cognitive abilities, affective about the environment and behavior. In addition to the questions, there is also a questionnaire to add information about environmental literacy in the research site.

In order for the results of this study to be in accordance with a research questions, the results of this study are divided into five major topics, namely the analysis of student knowledge in environmental literacy, the analysis of students' Cognitive Skills in environmental literacy, the analysis of student attitudes in environmental literacy, the analysis of student behavior in environmental literacy, and the analysis of the learning process in the classroom on environmental pollution material. The assessment of each analysis will be discussed separately. Test questions and questionnaires are given after the pollution material is explained by the teacher.

In the matter of environmental literacy, it has been grouped based on four domains of environmental literacy, making it easier to analyze each domain. Achievement of knowledge, cognitive abilities, attitudes, behavior of students in environmental literacy modified with the concept of environmental pollution. Based on the range and criteria that have been set, it can be seen that the environmental literacy achievements of junior high school students N 3 Sacred Bays vary. The following are the results of the percentage of

environmental literacy achievement criteria for students at SMPN 3 Teluk Keramat presented in Table 1.

Table 1. Results of the Percentage of Environmental Literacy Achievement of SMPN 3 Teluk Keramat Students

No	Criterion	Value Range	Frequency	Percentage (%)
1	Very Good	81-100	0	0,00
2	Good	61-80	27	39,70
3	Enough	41-60	41	60,29
4	Less	21-40	0	0,00
5	Less Than Once	≤ 20	0	0,00
			68	100

Table 1 shows that the environmental literacy achievement criteria of students S MPN 3 Teluk Keramat with a total sample of 68 students, the highest percentage is 60.29% which is on sufficient criteria. The percentage with good criteria has a value of 39.70%. Based on the average environmental literacy score obtained, it can be seen that the environmental literacy of students of SMPN 3 Teluk Keramat has an average score of 49.95%, which is on sufficient criteria.

Student environmental literacy achievement on each indicator

Environmental literacy has 4 indicators that can determine the achievement of environmental literacy in students including ecological knowledge, cognitive skills, environmentally conscious attitudes and environmentally responsible behavior, it can be known that the four environmental literacy indicators have different average values. The following is the average environmental literacy score of students of SMPN 3 Teluk Kearamat on each of the indicators presented in the bar chart in Figure 1.

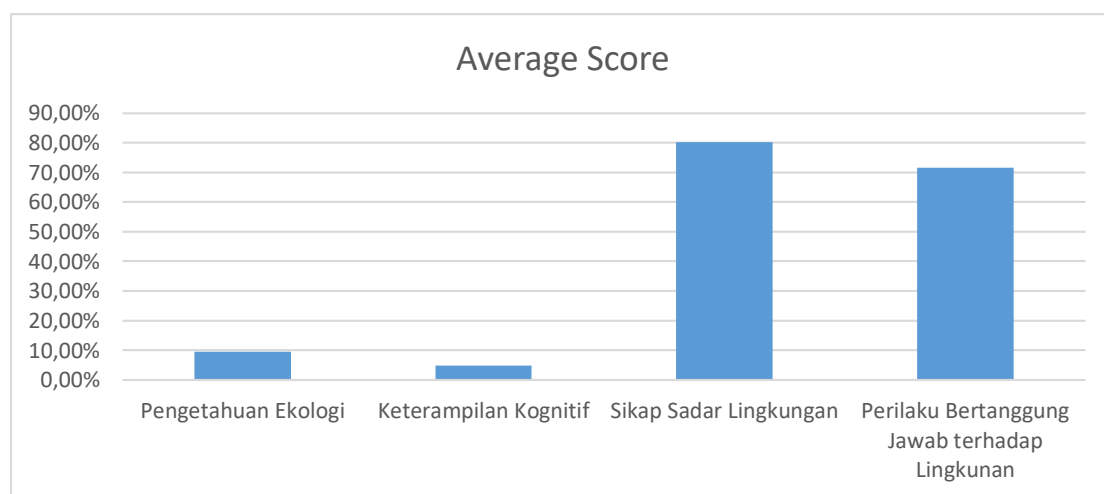


Figure 2. Comparison of Average Values in Each Environmental Literacy Indicator

Figure 2 shows that the highest average score is found in the environmentally conscious attitude indicator which has an average score of 80.11 with good criteria but not yet as expected. As for the lowest average score, it is found in the cognitive skills indicator which has an average score of 4.23 with less criteria. Based on the results of data analysis, it can be argued that the environmental literacy achievements of students of SMPN 3 Teluk Keramat are not very good, lacking and lacking once. The environmental literacy achievement of SMPN 3 Teluk Keramat students is on average included in the sufficient criteria with a percentage of 60.29%, while the environmental literacy achievement of students who are included in the good criteria is 39.70%. The results of the environmental literacy analysis of students of SMPN 3 Teluk Keramat obtained an average score of 49.95% on sufficient criteria. In NAAEE (2011) the concept of environmental literacy is affirmed by the Environment Education and Training Partnership (EETAP) which states straightforwardly that an environmental literate he knows what he will do for the environment, he knows how to do this. Learning in schools also affects the level of environmental literacy possessed by students as said by Miller (2012) is a process in which a person's environment is deliberately managed to allow him to participate in certain behaviors in special conditions or generate certain responses, learning is something that is the most special in the world of education.

Based on a comparison of the average scores on each environmental literacy indicator of junior high school students N 3 Sacred Bay, it was found that ecological knowledge and cognitive skills obtained low achievements, while environmentally conscious attitudes and environmentally responsible behavior obtained high achievements. Ozsoy et al, (2012) stated that students' low environmental literacy ability is not caused by the small number of books about the environment in the school but because there is no environment in the school that is able to provide direct learning experiences for students to interact with the environment.

Low achievement of environmental literacy in indicators of ecological knowledge and cognitive skills in junior high schools N 3 Teluk Keramat is influenced by many factors, both in terms of students, teachers and school facilities and infrastructure. This can be seen from the results of interviews with students (16/05/2022), namely when working on environmental literacy questionnaires, they feel difficulty in analyzing environmental problems and complain because of the many words that have never been read or

heard. Students consider that the environmental literacy questionnaire is difficult to understand and difficult to work with. According to Orion and Assaraf (2005) developing students' environmental literacy is not only delivered by one subject e.g. Science or Science. An environment consisting of various components that are complex and interact with each other also needs to be understood as a system.

Low cognitive ability can also be caused by a lack of student learning experience, namely students lack the opportunity to interact directly with environmental problems that occur around them. So far, learning is more often done in the classroom and is guided by textbooks and some additional information from teachers regarding environmental issues (Rokhmah, 2021).

According to Suryawati et al., (2020) learning experience is an activity of identifying problems in the surrounding environment through a scientific approach, so it needs to be designed to train the ability to observe, ask questions, experiment, associate, and communicate. Thus, learning is needed that is able to develop systematic thinking processes, namely the ability to think to connect and organize several parts of the knowledge they have into a unified whole. Susilastri (2015) also stated that science learning would be more easily understood by students directly in the field. For science learning materials that cannot be done directly in the field, students are given information through learning videos. The problem based learning model can be used as a way to grow students' knowledge of solving environmental problems. The use of the problem-based learning model in Pujianti's research (2018) showed the results of students' environmental literacy in the agricultural and coastal areas of Subang before learning were in the medium category, while after learning it was found that students' environmental literacy was in the high category.

The environment is a combination of the physical condition of an ecosystem and the system in it. The environment is a whole thing both living and inanimate that together exert influence on each other and coexist. The environment can be in the form of a physical environment or a social environment, but in this study more emphasis is placed on the notion of the physical environment, namely a place for living beings to live and continue their lives.

According to Kusumaningrum (2018), environmental literacy is a conscious attitude to pay attention to and maintain the environment so that it is always maintained and sustainable. Awareness is intended to be sensitive to the environment and knowing the problems that occur. The concept of environmental literacy is emphasized in three aspects, namely nature, problems that occur in the environment, and sustainable solutions to overcome environmental problems (McBeth, 2010).

Behavior is not formed by itself but is formed through the learning process. Knowledge of environmental problems and knowledge of various appropriate

actions to address them become one of the prerequisites for responsible behavior. Having knowledge and ability is not enough, it needs to be accompanied by a desire or desire to realize the deed in question. The desires or desires of a person himself are strongly influenced by personality factors, namely attitude, locus of control and sense of responsibility. Individuals who have knowledge and skills and have a positive attitude towards the environment as well as towards pro-environment behavior, usually have the intention to realize responsible behavior actions (Wibowo, 2009).

CONCLUSION

Based on the existing data, it can be concluded that the level of literacy of the student environment is sufficient. When viewed from environmental literacy indicators, they obtained different average values, namely ecological knowledge of 9.15% (sufficient criteria), cognitive skills of 4.23% (less criteria), environmentally conscious attitudes of 80.11% (good criteria), and environmentally responsible behavior of 70.75% (good criteria). Further research in improving students' environmental literacy should be introduced to the surrounding nature or learning outside the classroom, observing problems that interfere with the environment and behaviors that can have a positive impact on the environment, of all of which must be adapted to the existing material so as to allow an increase in the level of student environmental literacy.

BIBLIOGRAPHY

- Abdoellah, O.S. (2016). *Sustainable development in Indonesia: at the Crossroads*. Jakarta: Gramedia Pustaka Utama.
- Arikunto, Suharsimi. 2005. *Research Procedure: A Research Approach*. Jakarta: Rineka Cipta.
- Hesham & Dajeh, A. (2011). *Assessing the environmental literacy of pre-vocational education teachers in Jordan*. University of Jordan.
- Febriasari, L.K & Supriatna, N. (2017). Enhance environmental literacy through problem based learning enhance environmental literacy through problem based learning. International Conference on Mathematics and Science Education (ICMScE).
- Frankel, J.R, Wallen N.E., & Hyun, H.H. (2012). *How to Design and Evaluate Reserch in Education*. New York: McGraw-Hill.
- McBride, Brewer, Berkowitz, & Borrie. (2013). *Environmental literacy, ecological literacy, ecoliteration: What do we mean and how do we get here? Ecosphere*.
- McBeth, W. & Volk, T.L. (2010). The national environmental literacy project: A baseline study of middle grade students in the United States. *Journal Of Environmental Education*. 41(1), 55-67.
- Miller. C. (2012). *Educating for Environmental Literacy in America'sPublic Schools*

- NAAEE (North American Association for Environmental Education). (2011). Developing a framework for assessing environmental literacy. Washington DC: The National Science Foundation.
- National Environmental Literacy Assessment (NELA). (2008). *Final Research Report Part 1 & 2*. Washington DC: NELA Project Ozsoy, Sibel, Ertepinar, Hamide, Saglan & Necdet. (2012). *Can Eco-Schools Increase Environmental Literacy Levels of Primary School Students?* Asia Pacific.
- Nugroho, A. (2018). Youth environmental education action and the use of online media. *Journal of Urban Sociology*, 1(2), 27-41.
- Pratiwi, R.D., Rusdi, & Komala, R. (2019). The effects of personality and intention to act toward responsible environmental behavior. *JPBI (Indonesian Journal of Biology Education)*, 5(1), 169–176. *JPPS (Journal of Science Education Research)* Vol 10, No 02, May 2021 Ririn Santoso et al. 1982
- Prayandana, S.P. (2020). Efektivitas peran United Nation framework convention on climate change (unfccc) periode 2015-2017 terhadap pencapaian sustainable development goals 7 affordable and clean energy di Indonesia. Doctoral Dissertation. Universitas Pertamina.
- Pujianti, N. (2018). Analisis kemampuan literasi lingkungan siswa SMP dalam pembelajaran pencemaran lingkungan dengan menggunakan problem based learning di daerah pertanian dan pesisir subang. Doctoral dissertation. Universitas Pendidikan Indonesia.
- Rahmawati, D. P. 2017. *Pengembangan Instrumen Penilaian Literasi Lingkungan untuk Siswa SMP di Kota Malang dan Batu*. Skripsi Jurusan Biologi-Fakultas Mipa Universitas Negeri Malang.
- Rokhmah, Z & Fauziah, A.N.M. (2021). Analisis literasi lingkungan siswa SMP pada sekolah berkurikulum wawasan lingkungan. *Pensa: E-Jurnal Pendidikan Sains*, 9(2), 176-181.
- Santoso, R. (2017). Profil literasi lingkungan siswa SMA se-Kabupaten Pemalang. Skripsi. Semarang: Universitas PGRI Semarang.
- Subhan, A. (2017). Pengembangan Bahan Ajar Berbasis Nilai-Nilai Kearifan Lokal Pertanian Padi di Cirebon untuk Meningkatkan Literasi Lingkungan Siswa SMP. Tesis. Bandung: Universitas Pendidikan Indonesia.
- Suryawati, E., Suzanti, F., Zulfarina, Putriana, A. R., & Febrianti, L. (2020). The implementation of local environmental problem-based learning student worksheets to strengthen environmental literacy. *Jurnal Pendidikan IPA Indonesia*, 9(2), 169–178.
- Susilastri, S. D. (2015). Students' environmental literacy profile in school-based nature and in school that implement the adiwiyata program. *Prosiding KPSDA*, 1(1), 263-269.
- Tambul Husin, Abang. 2005. *Kabupaten Konservasi, Sumbangan Pemikiran Bupati Kapuas Hulu dalam Pembangunan Wilayah Berbasis Konseruasi SDA*. Jakarta: Gramedia Direct Selling.

- UNESCO. (1990). *Pendekatan Pendidikan Lingkungan untuk Pelatihan Guru Tingkat Menengah: Program Prototipe*. Program Pendidikan Lingkungan Internasional Unesco-UNEP.
- Utami, F. (2019). Upaya meningkatkan literasi lingkungan siswa SMA melalui pembelajaran berbasis masalah pada materi ekosistem. Doctoral dissertation. Universitas Pendidikan Indonesia.
- Varişli, T. 2009. *Evaluating Eighth Grade Students'environmental Literacy: The Role of Socio-Demographic Variables* (Doctoral Dissertation, Middle East Technical University).
- Wibowo, I. (2009). Pola perilaku kebersihan: Studi psikologi lingkungan tentang penanggulangan sampah perkotaan. *Jurnal Makara, Sosial Humaniora*, 13(1), 37-47.