



Characteristics and Relationship Between Eco-Literacy Competencies and Independent Curriculum Indonesian Language Learning Objectives Middle School Level in Indonesia

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Abstract: The research aims to examine the characteristics of eco-literacy-based Indonesian language learning and to design a link between eco-literacy competencies and the objectives of Indonesian language learning in the Merdeka curriculum at the junior high school level as a curative solution to overcome environmental problems in Indonesia. This study uses a qualitative approach with design as a content analysis of the latest curriculum documents in Indonesia. The data collection technique is the documentation technique, using data sources from independent curriculum documents at the junior high school level. To obtain valid and reliable data, reading, listening, and analyzing basic competencies that intersect with environmental education are done. The data analysis technique is organization, synthesis, and identification. The research results show that ecoliteracy-based Indonesian language learning strategies include problem-solving, simulations, demonstrations, environmental-themed projects, discovery-based learning, and experiments. All Indonesian language learning texts in classes VII and VIII include head, hands, and heart aspects. The head aspect is related to learning objectives in the cognitive domain, which requires students to master the ability to identify, interpret, compare, and analyze environmentally friendly texts. The hand aspect is related to learning objectives in the psychomotor domain which requires students to be able to practice, write, and speak in accordance with environmentally friendly texts. The heart aspect is related to learning objectives in the affective domain, namely, requiring students to empathize with environmental issues.

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Introduction

Indonesia has experienced improvement and progress from the previous stage of development. However, environmental change, handling climate change, and disasters are challenges that need serious attention in planning and implementing Indonesia's development 2025-2045 (Ministry of National Development Planning, 2023). Environmental pollution and damage continue to occur due to unsustainable development (brown economy), causing forest degradation, deforestation, and reduced biodiversity in Indonesia. The ecological crisis clarity is rooted in human activities and ignorance of the surrounding environment (Ihsan & Hanami, 2021). A curative solution that can be implemented is to provide students with eco-literacy skills to form environmentally caring behavior through education. This is in line with the opinion of (Surakusumah, 2010), which explains that environmental education can shape behavior, habits, values, and attitudes to respect the environment. Therefore, environmental



education, which includes eco-literacy, is crucial for providing students with the knowledge and skills needed to overcome environmental problems.

The results of the Indonesian National Assessment Program Survey (INAP, 2016) show that the level of student eco-literacy related to environmental issues is in the poor category, with a percentage of 73.61%. The low eco-literacy ability of students is caused by (1) education that has not focused on environmental issues and has not integrated learning material that is relevant to eco-literacy, (2) lack of access to information which causes understanding and involvement in environmental activities to be lacking, and (3) eco-literacy education in Indonesia it is not included in the main learning at school. Therefore, understanding and cultivating concern for the environment must be formed and familiarized through eco-literacy education.

Ecoliteracy is a person's understanding, knowledge, attitudes, and behavior regarding the importance of global ecological awareness to create a balance between the needs of society and the universe. Eco-literacy is awareness in making decisions and information to take action in overcoming environmental problems. In line with this opinion, Supriatna (2020) states that the ability to ecoliterate is related to the ability to understand natural systems that support the continuity of life on earth or the sustainability of life. Ecoliteracy aims to ensure that every human being can live in harmony with nature without destroying the natural order. A person who has eco-literacy will live according to ecological principles and organize life with other humans on earth to create a sustainable society.

The Center for Ecoliteracy has developed a set of ecoliteracy competencies. Ecoliteracy competencies include aspects of head (cognitive) competencies, heart (emotional) competencies, and hands (active) competencies (Rondli & Khoirinnida, 2017). The head (cognitive) aspect is a person's understanding competence which reflects ecoliteracy towards the environment. The heart (emotional) aspect is related to a person's attitude in responding to understanding and problems related to the environment. The hand's aspect relates to a person's actions or behavior in applying their ecological knowledge in everyday life. Students' eco-literacy abilities can be seen through environmental knowledge, environmental care attitudes, skills, and participation in protecting the environment. This is also in line with the opinion of Ramadhan et al., (2022), which states that awareness or concern for the environment can be viewed in terms of a person's knowledge, attitudes, and actions. Therefore, these three eco-literacy competencies are the basis for researchers formulating learning objectives.

It is important to provide eco-literacy to students so that they can play an active role in preserving the environment. Isnanda et al., (2022) explain that efforts that can be made to instill an attitude of concern for the environment are through learning Indonesian. Ecoliteracy has positive learning objectives and pedagogical aspects that can be applied in Indonesian language learning at school. Ecoliteracy can support language skills material, namely reading, writing, listening, and speaking. Integrating eco-literacy in Indonesian language learning culminates in students' environmental knowledge, skills, and attitudes. Therefore, it is necessary to review the curriculum framework used in schools so that it can be developed and improved to suit students' characteristics and needs later. This research aims to examine the characteristics of eco-literacy in Indonesian language learning and map the relationship between eco-literacy competencies and the Indonesian language learning objectives of the Merdeka Curriculum for junior high school level. The urgency of this research lies in the importance of awareness and curative solutions in overcoming ecological problems that occur in the long term through environmentally friendly learning. With this understanding, it is hoped that Indonesian language learning can be directed at developing humans who have



awareness, knowledge, skills, attitudes, motivation, and commitment to work individually and collectively in solving environmental problems and preventing the emergence of new problems.

Research Method

This study uses a qualitative approach. Qualitative research aims to understand holistically the phenomena experienced by research subjects and a scientific context by utilizing scientific methods. The design of this study is a content analysis of the latest curriculum documents in Indonesia (Corbin, 2015). The steps of content analysis research are (1) determining objectives; (2) selecting documents; (3) categorizing or coding; (4) conducting content analysis; (5) interpreting results (Lapan et al., 2012). The researcher, as an instrument, determines the quality of content analysis (Elo & Kyngäs, 2008). The source of research data is the Independent Curriculum Document for junior high school level and various literature related to the problems of this study. The data collection technique is the documentation technique. To obtain valid and reliable data, reading, listening, and analyzing basic competencies that intersect with environmental education are done.

Document content analysis is an analysis technique used to make inferences that can be reviewed and are valid from data based on the context of its use (Krippendorff, 2019). Content analysis is carried out to check whether environmental education is explicitly included in the Independent Curriculum. Data analysis techniques are carried out in three stages: organization, synthesis, and identification (Martyanti & Suhartini, 2018). The organization stage is carried out by reviewing the literature first so that it is in accordance with the problem. Literature analysis is adjusted to ecoliteracy learning in junior high schools. Furthermore, a search for ideas, objectives, and conclusions from several types of literature is carried out, starting from reading the abstract, introduction, methods, results, and discussion and grouping the literature based on certain categories. The synthesis stage is carried out by uniting and combining all the literature into a summary by looking for relationships between the literature. The last stage is identification, namely identifying controversial issues in the literature. The controversial issues in question are issues that are considered very important to be researched or analyzed so as to produce an interesting piece of writing to read.

The data validity testing technique is carried out through triangulation. Triangulation is used to build justification for all information obtained from the document's perspectives or views until the validity of valid data (Creswell, 2017). The triangulation of this research uses investigator triangulation, which is carried out by asking for the willingness of a team of experts relevant to the field or focus of the research to conduct a re-check. The results or information obtained after testing the validity of the data is the relevance and linkage of ecoliteracy competencies to learning Indonesian at the junior high school level.

Results and Discussion

Characteristics of Eco-literacy in Indonesian Language Learning

In Indonesian language learning, eco-literacy is positioned as a theme or content that colors the substance of learning. Eco-literacy in learning has positive learning objectives and pedagogical aspects be applied in Indonesian language learning at school (Ministry of Education, Culture, Research and Technology, 2024). Eco-literacy in Indonesian language learning aims to create environmentally aware students. The following are the characteristics of eco-literacy in Indonesian language learning for class VII SMP.



Table 1. Characteristics of Eco-literacy in Indonesian Language Learning

Learning Outcomes	Element	Pedagogical Aspect	Learning Strategies
Students have the language skills to communicate and reason according to objectives, and social and academic contexts. Students can understand, process, and interpret exposure information about various topics and literary works. Students can actively participate in discussions and present and respond to non-fiction and fiction information presented. Students write various texts to convey their observations and experiences in a more structured manner and write their responses to exposure and reading using their experiences and knowledge. Students develop self-competence through exposure to various texts to strengthen character.	Listen Students can analyze and interpret information in the form of ideas, thoughts, feelings, views, directions, or appropriate messages from various types of audiovisual and aural texts (non-fiction and fiction) in the form of monologues, dialogues, and speeches. Students can explore and evaluate variation information from the actual topics they hear.	Cognitive	Problem-based learning Discovery-based learning
	Reading and Viewing Students understand information in the form of ideas, thoughts, views, directions, or messages from various types of texts, for example, descriptive texts, narratives, poetry, explanations, and expositions from visual and audiovisual texts to find explicit and implied meanings. Students interpret information to express sympathy, concern, empathy, or opinions for and against visual and audiovisual texts. Students use other sources of information to assess the accuracy and quality of data and compare information in the text. Students can explore and evaluate various actual topics they read and watch.	Cognitive	Problem-based learning Discovery-based learning Cooperative learning
	Speaking and Presenting Students can convey ideas, thoughts, views, directions, or messages to submit proposals, solve problems, and provide solutions orally in the form of monologues and logical, critical, and creative dialogues. Students can use and interpret new vocabulary that has denotative, connotative, and figurative meanings to speak and present their ideas. Students can use expressions based on the norms of politeness when communicating. Students can discuss actively, contributively, effectively, and politely. Students can speak and present expressions of sympathy, empathy, care, feelings, and appreciation in the form of informative and fictional texts through multimodal texts. Students can express and present various actual topics critically.	Affective/moral Psychomotor	Simulation Demonstration Role-playing
	Write Students can write ideas, thoughts, views, directions, or written messages for various purposes logically, critically, and creatively. Students also write the results of the research using a simple methodology by citing ethical reference sources. Convey expressions of sympathy, empathy, care, and pro/con opinions ethically in giving awards in writing in multimodal texts. Students can use and develop a new vocabulary that has denotative,	Affective/moral Psychomotor Creative and innovative	Problem-based learning Project-based learning



connotative, and figurative meanings for writing. Students convey writing based on facts, experiences, and imagination beautifully and interestingly in the form of prose and poetry with the creative use of vocabulary.

Based on the table above, eco-literacy learning in Indonesian Language subjects is developed by referring to the general learning outcomes that students must have in Phase D. Furthermore, general learning outcomes are described in learning achievement elements, which consist of four language elements, namely listening, reading and watching, speaking and presenting, and writing. The learning outcomes of each element will later be described in more detail in the learning objectives. Each element of learning outcomes is related to pedagogical aspects, including cognitive, affective, and psychomotor aspects. The cognitive aspect is more developed for receptive elements, namely listening, reading, and watching. The cognitive aspect includes knowledge, understanding, application, analysis, synthesis, and evaluation (Mahananingtyas, 2017). Students need to be constantly encouraged and facilitated to find, recognize, and realize various environmental problems and increase their concern in participating in environmental conservation. Thus, students include people who will be directly involved in finding solutions to environmental problems (Suwandi et al., 2024). The affective and psychomotor aspects are more developed for productive language skills, namely speaking, presenting, and writing. The affective aspect discusses traits and behaviors as examples of feelings, interests, emotions, and values. The psychomotor aspect is in the form of student actions or skills. Learning in the psychomotor realm emphasizes more on the results of the learning process (product) which looks at the ability of students to present a concept from the material that has been given.

Ecoliteracy learning will run well if clear learning objectives are set to improve the cognitive and psychomotor aspects of students (Maulana et al., 2021). This is because these three cognitive, affective, and psychomotor aspects or domains have a very close relationship and cannot be separated. Before arriving at the psychomotor aspect, students will experience the cognitive and affective stages first. In the early stages, students need to be directed to be able to pay attention to receiving the material provided. Once students have attention, students will easily accept the material. Each affective aspect is supported by a cognitive aspect in it. After going through the cognitive and affective stages, students will be ready to proceed to the psychomotor stage based on what they have learned in the two previous stages. These three domains are the basis for eco-literacy learning so that the results will not only make children understand the concept of ecology and the environment but will also develop emotional and motor skills to direct students to care and take action to preserve the environment.

The Relationship between Ecoliteracy Competencies and Indonesian Language Learning Goals at the Middle School Level

Ecoliteracy has components and characteristics that can be developed by the learning objectives set in the curriculum. The Center for Ecoliteracy has developed a set of ecoliteracy competencies consisting of head (cognitive), heart (emotional), and hands (active) aspects. These three aspects are integrated into the Indonesian language learning objectives for grades VII and VIII of junior high school. The first aspect of ecoliteracy is the head (cognitive) aspect. This aspect contains a person's competence, which reflects ecoliteracy in terms of understanding the environment or knowledge. Indicators of understanding aspects of knowledge are characterized by students' ability to (1) understand environmental issues and problems from the perspective of ecological balance and sustainability, (2) understand basic ecological principles, (3) think critically in solving problems creatively and applying



knowledge in new situations, and (4) take into account the long-term consequences of a decision.

The second aspect is the heart (emotional) aspect. The heart (emotional) aspect contains a person's eco-literacy competence which shows an empathetic attitude towards the living creatures around him. Apart from knowing a good environment, someone who has ecoliteracy is also supported by empathy or a sense of responsibility to care for and protect the environment so that a person's sense of concern arises to continue to protect and care for the environment. As McGinn (in Sigit & Ristanto, 2019) stated, a person should not only have ecological knowledge but also have a responsibility so that they can solve environmental problems well based on knowledge and responsibility. Emotional aspect indicators include (1) an attitude that shows concern, and empathy, (2) respect for fellow humans and living creatures, (3) seeing and appreciating from various perspectives, and working with other people who have different backgrounds, motivations, and intentions, and (4) committed to equality, inclusiveness, and respect for people.

The hands (active) aspect contains the behavior of a person who has applied his ecological knowledge in everyday life. In this aspect, students are expected to apply ecological knowledge to everyday life through activities to preserve the surrounding nature. Indicators of this aspect include (1) creating and using tools, objects, and procedures needed in a sustainable society, (2) turning beliefs into practical and effective actions, and (3) applying ecological knowledge to ecological design practices, and assessing and adjusting energy and resource use. As Igbokwe (2016) explains, someone who has ecological literacy is willing to act to improve the welfare of other people and society and can adapt well. In line with this, Supriatna (2020) explains that environmental knowledge, awareness, and life skills that are in harmony with nature also increasingly support the success of eco-literacy. The eco-literacy practices by students will influence attitudes towards caring for the environment (Ramadhan et al., 2022). The following is an explanation of the relationship between ecoliteracy competencies and the objectives of Indonesian language learning for class VII SMP.

Table 2. The Relationship of Ecoliteracy Competencies with the Learning Goals of Indonesian Language Class VII Junior High School

Competency in Ecoliteracy	Learning Objectives	Indicators
Head (cognitive) has basic knowledge of ecological principles.	Specifies the information in the description text.	Students can analyze information about mangrove trees from the description text.
Head (cognitive) has basic knowledge of ecological principles.	Present the description text in writing.	Students can write a description text about the condition of the mangrove forest area through a video.
Head (cognitive) understanding of environmental issues and problems.	Identify and discovering the meaning of poetry.	Students can interpret the text of the poem entitled "1000 Mangroves"
Heart (emotional) shows empathy and care for the environment.	Writing poetry texts	Students can express empathy and care for the environment by writing a poem.
Head (cognitive) understanding of environmental issues and problems.	Identify information from the procedural text.	Students can identify procedural text information about the steps of mangrove crab cultivation.
Hands (active) utilizing existing resources by paying attention to ecological principles.	Writing procedural texts.	Students can present procedural texts about mangrove nursery steps.
Head (cognitive) understanding	Interpreting information from	Students can identify information from



of environmental issues and problems.	news texts.	news texts about the destruction of mangrove forests.
Head (cognitive) wise in using natural resources.	Compare information from news texts.	Students can compare information from news texts about mangrove areas.
Hands (active) Assess and adjust uses of energy and resources.	Write news text.	Students can present news in writing about information related to efforts to handle mangrove forest damage.
Head (cognitive) understanding of environmental issues and problems.	Analyze information from the original text of the response.	Students were able to analyze information from response texts in the form of criticism of the government related to mangrove forest management.
Heart (emotional) instilling an attitude of respect for the environment and its contents.	Write a response text.	Students can present criticism and praise of government policies related to the environment in writing.

The texts taught at the grade VII level are descriptive texts, poetry texts, procedural texts, news texts, and response texts. This text is relevant because through this text students can show how to actively participate in environmental conservation by expressing their critical ideas in the form of response text (Sulaiman, 2020). Ecoliteracy competencies can be developed in news text material. News texts aim to convey an event, incident, or information that has already happened or is happening. Students are required to be able to examine information in news texts related to the environment so that they will have good literacy skills by and being able to differentiate hoax news from reliable news. Based on this, students are expected to be able to increase literacy through environmental news texts so that they realize how important the environment is, and how important it is to protect and care for the earth, ecosystem, and nature as a place to live and develop life.

Apart from response texts and news texts, the learning objective of descriptive texts is packaged so that students can describe and identify objects related to the environment such as mangroves or mangroves. This is an effort to instill basic knowledge related to ecological principles in the form of ideas in text form. Apart from that, the learning objective of poetry texts is designed so that students can interpret and express empathy for environmental issues in the form of poetry. The learning objective of the procedural text is also designed so that students can identify and create procedural steps related to environmental preservation, such as mangrove crab culture and mangrove nurseries. The overall learning objectives that are prepared lead to eco-literacy competencies, which require students to be able to understand, interpret, and take action. The competencies that must be achieved are not only about various environmental problems but also efforts to resolve them.

Table 3. Relationship between Ecoliteracy Competencies and Indonesian Language Learning Objectives for Class VIII

Competency in Ecoliteracy	Learning Objectives	Indicators
Head (cognitive) has basic knowledge of ecological principles	Assess the accuracy and quality of data from the observation report text	Students can assess the accuracy and quality of data from the report text of observations of mangrove forest biodiversity
Hands (active) Turn conviction into practical and effective action, and apply ecological knowledge to the practice of ecological design	Write simple research results in the form of observation report text.	Students can present simple research results in the form of a text report on observations about the biodiversity of mangrove forests
Head (cognitive) understanding of environmental issues and problems	Explore and evaluate advertisements, slogans, and posters.	Students evaluate advertisements, slogans, and posters about the invitation to preserve mangrove forests



Hands (active) Assess and adjust uses of energy and resources	Write advertising texts, slogans, and posters.	Students can present advertising texts, slogans, and posters relating to the call to preserve mangrove forests.
Head (cognitive) wisely uses natural resources	Finding meaning in modern poetry texts.	Students can identify meaning in modern poetry texts with environmental themes
Heart (emotional) show empathy and care for the environment	Write modern poetry texts creatively.	Students can write modern poetry texts with environmental themes creatively.
Head (cognitive) understanding of environmental issues and problems	Explore and evaluate the content of the speech text.	Students can assess the content of speech texts with environmental themes
Head (cognitive) wisely uses natural resources	Interpreting information in speech texts.	Students can analyze the structure and language rules of environmental-themed speech texts.
Hands (active) utilize existing resources by taking into account ecological principles	Deliver the text of the speech in front of the class.	Students can present speeches on environmental themes using polite language and paying attention to norms
Hands (active) Assess and adjust uses of energy and resources	Write speech texts.	Students can write speech texts on environmental themes.

The table above shows the distribution of Indonesian learning objectives for grade VIII junior high school. The three literacy competencies are spread into Indonesian texts which include observation report texts, advertising texts, slogans, and posters, review texts, popular scientific article texts, poetry texts, and speech texts. The purpose of learning the text of the observation report requires students to be able to assess the accuracy and present data by the facts contained in the environment. This aims to ensure that students have basic knowledge related to ecological principles, such as observing the biodiversity of mangrove forests. The learning objectives of advertising texts, slogans, and posters are arranged so that students can explore, evaluate, and make invitations to preserve the environment, such as mangrove forest conservation. This goal is designed so that students have an understanding of environmental issues and problems and are wise in using natural resources.

The Indonesian learning texts presented contain ecoliteracy, ecoliteracy is positioned as a theme (content) that colors the substance of learning. Ecoliteracy equips students with sufficient knowledge, care, and competence to live by maximizing positive impacts on the environment by finding solutions to environmental problems. As Sengupta (2010) explains, a person who has good ecological literacy is aware of environmental problems and has the responsibility and skills needed to minimize adverse impacts on the environment.

Goleman, D., Bennett, L., & Barlow (2012) explain that eco-literacy is a movement that aims to integrate social-emotional intelligence to create educational, social, and environmental prosperity by reducing ecological damage and preserving nature. This is in line with the opinion of Keraf (2010) which states that ecoliteracy is an awareness that nature and humans influence each other. This awareness will guide students in all aspects of their lives to form a sustainable society, which is aware of the importance of protecting the environment. According to Bruyere (2020), a person's ecoliteracy is obtained from knowledge of ecological principles as well as sensitivity and concern for the environment so that they can make a real contribution to the environment. Apart from that, eco-literacy also aims to create a person's sensitivity to preserving the surrounding environment to reduce environmental problems (Sarmiasih, 2018). Eco-literacy has the meaning or is related to the attitude of someone who has been enlightened about the importance of protecting the



environment. Thus, if someone understands the importance of caring for the environment, they will automatically have reached the level of ecoliteracy.

Setiawati (2023) explains that the Center of Ecoliteracy institution in the United States has developed core eco-literacy competencies. There are four core competencies of eco-literacy, namely knowledge, skills, attitudes, and human relationships with nature. All these competencies are to improve all domains of learning for students, including knowledge, attitudes, skills, and human relationships with nature. In knowledge competency, there are several indicators, namely understanding basic ecological principles, being able to think based on existing problems, analyzing the impact of technology and human behavior, thinking about the long-term impacts that will be obtained, and thinking deeply and critically about a problem.

Theoretically, this study reinforces the importance of ecoliteracy as a cognitive, affective, and psychomotor element in language learning. The integration of ecoliteracy into learning materials enables students to not only understand Indonesian language materials but also broaden their insights related to the environment. Thus, this study enriches educational literature by adding an environmental perspective to language learning, which is expected to encourage changes in students' attitudes and behaviors related to environmental sustainability. This study provides practical guidance for teachers implementing ecoliteracy-based learning in the classroom. The strategies outlined, such as using environmentally themed texts and project-based approaches, simulations, and problem-solving, serve as references for teachers in creating a more ecologically oriented learning environment. Thus, this study helps in the development of a relevant curriculum for language education that also strengthens students' concern for environmental issues. This integration also facilitates learning that is relevant to student's daily lives, which not only improves literacy competence but also builds environmental awareness.

Conclusion

The eco-literacy characteristics of Indonesian language learning prioritize environmentally-focused learning. The integration of eco-literacy in Indonesian language learning aims to create environmentally aware students. Eco-literacy is positioned as a theme or content that colors the substance of learning. Eco-literacy-based learning emphasizes pedagogical aspects which include cognitive or environmental knowledge, affective or responsible attitudes toward the environment, and psychomotor skills to protect and prevent environmental issues. This pedagogical aspect is related to the texts contained in Indonesian language learning in junior high schools. Apart from that, the strategies used in eco-literacy-based Indonesian language learning can include problem-solving, simulations, demonstrations, environmental-themed projects, discovery-based learning, and experiments that focus on the 4Cs (critical thinking and problem-solving, creative and innovation, collaboration, and communication) environmentally friendly.

Recommendation

The results of this study form the basis for the development of an ecoliteracy-based curriculum in schools, especially for Indonesian language subjects. Environment-related materials can be integrated into the learning materials in the classroom and can even be linked to the activities of the Pancasila Learner Profile Strengthening Project. This mapping of learning objectives can be used as a reference for teachers in integrating and developing ecoliteracy-based learning materials appropriate to students' characteristics and needs.



Moreover, it is suggested that schools are capable of independently developing ecoliteracy-based curricula as a form of environmental stewardship.

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