



Integrating Eco-Pedagogy Environmental Literacy Boards in Teaching Descriptive Writing

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Abstract

Environmental education has become increasingly important in fostering students' awareness, responsibility, and sustainable behavior. However, in many elementary schools, writing instruction particularly descriptive writing remains less engaging due to low student motivation and the limited use of contextual learning media. In response to these challenges, this study aims to describe the effectiveness of eco-pedagogy based environmental literacy boards in improving descriptive writing skills among fourth-grade students at MI Raudlatut Tholibin Sambung. Using a qualitative case study design, data were collected through observation, interviews, and documentation involving 25 students. The findings reveal a significant improvement in descriptive writing performance, with an average increase of 100% across content completeness, diction accuracy, and paragraph coherence. The environmental literacy boards provided visual and contextual stimuli that encouraged students to write more expressively and cohesively. Moreover, the media enhanced students' ecological awareness and sense of responsibility through reflective writing activities. Integrating eco-pedagogy into language instruction proved effective in fostering literacy competence and environmental empathy, aligning with the Profil Pelajar Pancasila vision of critical, creative, and ethical learners.

Keywords: *descriptive writing; literacy board; eco-pedagogy; environmental education; elementary students*

A. Introduction

Environmental education plays a vital role in shaping students' awareness and responsibility toward their surroundings. In the current era of ecological crisis, integrating environmental values into classroom instruction is essential to develop students' sense of care for nature. One effective approach that combines environmental values and learning processes is eco-pedagogy. Eco-pedagogy emphasizes critical reflection, participatory learning, and sustainability-oriented education, encouraging learners to connect knowledge with ecological awareness. In the context of language learning, particularly writing instruction, eco-pedagogy can be applied through environmental literacy boards that present real, contextual, and visual stimuli. These media help students build connections between their learning experiences and real environmental issues, leading to the development of both environmental literacy and writing skills.

Environmental literacy encourages students to observe, analyze, and express environmental phenomena through writing. As they describe their surroundings, students not only practice linguistic skills but also cultivate ecological empathy and critical thinking. Thus, eco-pedagogy serves as the pedagogical foundation, environmental literacy acts as the cognitive and affective bridge, and writing skill development becomes the measurable outcome of the learning process.

Picture 1. Conceptual Framework:



Eco-pedagogy provides the philosophical and instructional basis that nurtures environmental literacy. This literacy, in turn, supports the development of descriptive writing skills by giving students meaningful and authentic contexts to write about. The integration of these elements promotes both literacy competence and ecological awareness. Indonesian language learning in elementary schools plays a crucial role in building the foundation of students' literacy skills from an early age. Language literacy is not merely viewed as a technical ability to read and write but also as a fundamental

basis for critical thinking, communication, and the development of children's character. According to UNESCO data cited by The Global Economy (2020), Indonesia's adult literacy rate has reached 96 percent, which is higher than the global average of 86.5 percent. However, this achievement does not correspond with the quality of literacy. The 2018 PISA survey placed Indonesia at the 73rd position out of 79 participating countries in reading proficiency, while the 2022 PISA results showed that Indonesian students' average reading literacy score was only 359 points far behind Singapore (543), Vietnam (462), and Malaysia (388). GoodStats (2025) also reported that only one in five Indonesians reads books regularly on a daily basis. In addition, Indonesia's National Cultural Development Index in the literacy aspect reached only 57.40 in 2022; the Community Literacy Development Index (IPLM) in 2023 was 64.68; and the Reading Interest Level (TGM) in 2023 was merely 66.77. The national literacy activity index remains categorized as low, with a score of only 37.32.

These data affirm that the high literacy rate in Indonesia does not necessarily correspond to the actual quality of literacy among its people. Therefore, it is necessary to implement more innovative, contextual, and experience-based learning strategies that align with students' real-life situations. Within the framework of elementary education, Indonesian language learning serves as a medium for developing all aspects of language competence, including listening, speaking, reading, and writing. These four skills are interrelated; however, writing is often regarded as the pinnacle of language proficiency because it requires mastery of linguistic components as a whole. Through writing activities, students learn to organize their ideas, express experiences, and build reflective thinking skills that prepare them to face academic and social challenges in the future. Thus, Indonesian language learning at the elementary level holds strategic importance in preparing students to become literate generations capable of adapting to the rapid advancement of science and technology. One of the essential competencies that students must master in writing skills is descriptive writing. This skill is highly important as it trains accuracy, attentiveness, and the ability to express ideas in an organized and logical manner. Descriptive writing does not merely require students to depict an object through words but also encourages them to observe details, select appropriate vocabulary, and construct sentences that vividly present concrete images to the reader. Through descriptive writing, students are trained to connect sensory observations with linguistic representation, thereby fostering aesthetic sensitivity and systematic thinking skills.

In addition, this skill also plays a vital role in enriching students' vocabulary, developing imagination, and improving written communication skills that will later be useful for composing other types of texts such as narratives, expositions, and arguments. Therefore, descriptive writing instruction in elementary schools is not merely a linguistic

exercise but also a means of developing children's personality and patterns of thinking. However, in practice, elementary students' descriptive writing skills still face various challenges. Many students struggle to determine the objects they wish to describe, to organize their ideas coherently, and to choose words that vividly capture details. As a result, students' writing products often tend to be short, monotonous, and less engaging. These difficulties are closely related to learning conditions that still rely heavily on conventional approaches, where teachers emphasize memorization and writing drills without providing sufficient contextual learning experiences. In fact, constructivist learning theory emphasizes the importance of real experiences in building meaningful learning.

In this context, creative, innovative, and environmentally based learning media are highly needed to help students generate ideas, enrich descriptions, and enhance their motivation to write. By introducing media that are closely related to their daily lives, students can perceive writing as a relevant, enjoyable, and meaningful activity. This condition aligns with the findings of Saddhono and Slamet (2014), who stated that the weakness of elementary students' writing skills is influenced by the lack of contextual learning media, low writing motivation, and the limited connection between instructional materials and students' real-life experiences. This reality indicates that writing instruction is often positioned merely as a technical skill rather than a creative process involving students' personal experiences. Consequently, students tend to write only as a formality to fulfill assignments, without experiencing writing as a medium of self-expression or as a tool for critical thinking. From the perspective of constructivist learning theory, this condition is far from ideal because children should be given opportunities to construct meaning through real experiences that are relevant to their lives. Previous studies reinforce this view, showing that writing instruction dominated by lectures and conventional exercises provides limited space for students' creative exploration. Budiani (2023) found that the use of lecture-based methods in writing lessons causes students to struggle in expanding ideas and developing detailed descriptions. Similarly, Khosa (2025) emphasized that a print-poor learning environment contributes to children's low literacy motivation. This problem is further exacerbated by teachers' tendency to focus more on evaluating the final writing product rather than the creative process students go through. In fact, recent literature highlights the importance of a process-based writing approach, which allows students to experience the stages of writing from prewriting, drafting, and revising to publishing so that the resulting texts become more meaningful and contextual. In everyday practice, however, teachers often rely heavily on textbooks or worksheets that are abstract in nature, causing students to lose the connection between writing activities and the real world around them.

Learning media that rely solely on printed texts are often insufficient to stimulate students' imagination or foster creative ideas. Elementary school students, according to Piaget, are still in the concrete operational stage of cognitive development, making them more capable of understanding concepts through tangible objects, direct experiences, and concrete visualizations. Therefore, learning media are needed not only to serve as instructional aids but also as bridges that connect students' everyday experiences with the writing skills being taught. Concrete, environmentally related media such as environmental literacy boards can provide rich visual stimuli and observational experiences that support the emergence of more vivid and descriptive writing ideas. Several previous studies have shown that the use of environment-based media can provide more meaningful learning experiences for students. Such media enable students to interact directly with real objects, making the writing experience no longer abstract but emerging from observation, exploration, and reflection on the phenomena around them. For instance, Fitriani (2019) found that the utilization of environmental literacy media significantly improved the narrative writing skills of fourth-grade elementary students, as they were given opportunities to conduct direct observations and express their experiences in written form. This study emphasizes the importance of connecting the real world with the process of language learning to enhance students' motivation and the quality of their written work. Similarly, Suryani (2021) revealed that integrating ecopedagogy into Indonesian language learning not only strengthens students' literacy skills but also fosters ecological awareness, which is reflected in their daily attitudes and behaviors. These findings demonstrate that environment-based learning media and approaches can simultaneously engage cognitive, affective, and psychomotor dimensions within the learning process.

Nevertheless, these studies have certain limitations in terms of focus and the types of media developed. Most of the existing research still emphasizes the use of environmental media in the form of field observations, the use of pictures or real objects, and the integration of ecological values within reading texts. Meanwhile, studies that specifically examine the development of structured environmental literacy boards as a medium for teaching descriptive writing are still rarely found. In fact, environmental literacy boards have great potential as learning spaces that provide visual stimuli, vocabulary, and thematic references relevant to students' daily lives. By presenting information in the form of images, keywords, and textual quotations about environmental issues, this medium can stimulate writing ideas while simultaneously strengthening students' ecological understanding. Therefore, there is an important research gap that needs to be addressed, namely, the development of simple yet contextual learning media that not only support descriptive writing skills but also instill environmental awareness

values. The eco-pedagogy-based environmental literacy board emerges as a response to this need. Through this medium, students not only practice writing based on direct observation but also learn to connect their daily experiences with environmental sustainability issues. Thus, the study on the development and implementation of eco-pedagogy-based environmental literacy boards offers not only practical contributions for teachers in teaching descriptive writing but also theoretical contributions to the development of contextual, integrative, and ecologically oriented literacy learning models.

The urgency of this research becomes even more significant when linked to the direction of national education policy, particularly the implementation of the Merdeka Curriculum, which emphasizes contextual, integrative learning oriented toward strengthening the Profil Pelajar Pancasila (Pancasila Student Profile). Within this framework, students are no longer expected to master only cognitive academic competencies but are also required to develop ecological awareness, environmental care, and social responsibility in their daily lives. Indonesian language learning, particularly descriptive writing skills, serves as one of the strategic avenues for fostering students' critical thinking, creativity, and socio-ecological sensitivity.

Research on the development of learning media that can integrate language literacy skills with environmental education holds high relevance both academically and practically. In this context, the environmental literacy board serves as an innovative alternative capable of bridging descriptive writing materials with real-life contexts around the school environment. The literacy board functions as a visual and contextual medium that presents information, vocabulary, and illustrations related to environmental issues familiar to students' experiences. Its presence enables students to observe, reflect, and express their ideas through writing that is more descriptive, detailed, and meaningful. Moreover, this medium provides participatory space for students to actively contribute by adding or modifying the board's content, thereby making the learning process more dialogic and collaborative.

Thus, the literacy board is not merely a teaching aid but also a medium for establishing a school literacy ecosystem that supports 21st-century skills. Furthermore, the existence of the environmental literacy board aligns with the paradigm of ecopedagogy as proposed by Gadotti (2009), which positions the environment as a learning resource that encourages students to become more critical, reflective, and empowered in addressing ecological challenges. Ecopedagogy emphasizes the interconnection between cognitive, affective, and action-oriented dimensions, ensuring that learning does not stop at the level of knowledge but also fosters caring attitudes and a sense of responsibility toward environmental sustainability. By integrating

ecopedagogical values into the environmental literacy board, students are expected not only to develop proficiency in descriptive writing but also to cultivate an awareness of the environment as an integral part of their lives that must be preserved and sustained.

Based on the aforementioned background, this study specifically focuses on the development and implementation of an eco-pedagogy-based environmental literacy board in teaching descriptive writing to fourth-grade students at MI Raudlatut Tholibin Sambung. This focus was chosen because descriptive writing skills remain one of the basic competencies that face various challenges in elementary schools, particularly those related to low motivation, limited contextual learning media, and the lack of connection between instructional materials and students' daily experiences. By utilizing the environmental literacy board, this study seeks to present a simple, contextual, and innovative learning tool that can facilitate students in generating writing ideas while simultaneously fostering ecological awareness.

The research question proposed in this study is: How can the implementation of an eco-pedagogy-based environmental literacy board improve the descriptive writing skills of fourth-grade students at MI Raudlatut Tholibin Sambung? This research question is directed toward exploring the processes, strategies, and impacts of using environmental literacy boards in the context of Indonesian language learning, particularly in descriptive writing. In line with this question, the objective of this study is to describe the effectiveness of the eco-pedagogy-based environmental literacy board in enhancing students' descriptive writing abilities and to analyze its implications for Indonesian language learning in elementary schools. This objective is expected to provide a comprehensive understanding of how eco-pedagogical media can address the issue of low writing proficiency while simultaneously instilling environmental awareness in students from an early age.

This research also offers theoretical and practical contributions. Theoretically, this study is expected to enrich the literature on ecopedagogy-based literacy, particularly in the domain of descriptive writing skills, which has rarely been deeply investigated. Meanwhile, practically, this research can provide direct benefits for elementary school teachers, especially in designing innovative learning strategies that are more meaningful, contextual, participatory, and oriented towards strengthening 21st-century skills such as critical thinking, creativity, collaboration, and communication. Thus, this research not only contributes to improving the quality of Indonesian language learning but also supports efforts to build a literate generation that is characterized, environmentally conscious, and ready to face global challenges.

B. Method

This research employs a qualitative-dominant mixed-4th grade of MI Raudlatut Tholibin Sambung. While the study primarily adopts a qualitative paradigm to explore learning phenomena in a natural classroom setting, it also integrates supporting quantitative data specifically percentages and averages to illustrate measurable improvements in students' writing performance. This mixed design maintains methodological coherence by combining the depth of qualitative interpretation with the clarity of descriptive statistics (Creswell & Plano Clark, 2018). The research subjects were 25 fourth-grade students (12 males and 13 females) at MI Raudlatut Tholibin Sambung, Kudus, during the 2025/2026 academic year. In addition, the class teacher and the school principal were involved as supporting informants to provide contextual insights regarding instructional practices and media implementation. The research took place over three months, from February to April 2025.

The researcher acted as the primary instrument (Moleong, 2019), engaging directly in planning, implementation, observation, and reflection. Data were collected through four main techniques: Participatory observation, to record teacher and student activities during the descriptive writing lessons using environmental literacy board media. In depth interviews, conducted with the teacher and several students to explore their experiences, perceptions, and challenges. Documentation, which included photographs, students' written products, and teacher reflection notes. Field notes, to capture contextual details and spontaneous classroom interactions.

Writing Assessment Rubric, Students' descriptive writing outcomes were evaluated using a 1–4 scale rubric adapted from the Kurikulum Merdeka writing competence descriptors and validated through expert judgment involving two Indonesian language education lecturers and one elementary school teacher. The rubric assessed three key aspects: (1) content completeness, (2) diction accuracy, and (3) paragraph coherence. Score 1 indicated “needs improvement,” reflecting incomplete ideas or incoherent structure. Score 2 represented “fair,” showing partial development. Score 3 reflected “good,” with clear ideas and mostly accurate language use. Score 4 indicated “very good,” where writing was complete, coherent, and linguistically accurate. These criteria ensured alignment with the curriculum standards for descriptive writing at the elementary level and provided measurable indicators to complement qualitative observations.

Data Analysis and Trustworthiness To ensure data credibility, source and method triangulation were applied by comparing results from observations, interviews, and documentation (Sugiyono, 2021). Member checking was conducted by validating interpretations with participants to ensure authenticity. Data analysis followed the

interactive model by Miles, Huberman, and Saldaña (2014), which includes three stages: (1) Data condensation, where the researcher filtered and categorized relevant information from transcripts and notes. (2) Data display, using narrative descriptions, tables, and matrices to identify emerging patterns. (3) Conclusion drawing and verification, where interpretations were continuously refined and validated with field data. Additionally, prolonged engagement and negative case analysis were conducted to strengthen the trustworthiness of findings (Lincoln & Guba, 1985). Prolonged engagement allowed a deeper understanding of behavioral variations, while negative case analysis tested the consistency of interpretations by seeking disconfirming evidence. Through these procedures, this research provides a comprehensive and methodologically coherent description of the implementation of eco-pedagogy based environmental literacy board media in descriptive writing learning, offering insights for developing innovative and sustainability oriented instructional strategies in elementary schools.

Table 1. Descriptive Writing Assessment Rubric

Aspect	Indicators	Score 1 (Needs Improvement)	Score 2 (Fair)	Score 3 (Good)	Score 4 (Very Good)
Content Completeness	The extent to which ideas and details describe the object clearly and completely.	The text lacks main ideas; descriptions are incomplete or irrelevant.	Some main ideas are present but details are limited or unclear.	Most main ideas are developed with adequate supporting details.	All ideas are clearly expressed with rich, relevant, and complete descriptions.
Diction Accuracy	The appropriateness and variation of word choice.	Frequent misuse of words; vocabulary is limited or inaccurate.	Some suitable word choices but repetition or minor errors occur.	Mostly accurate and varied word choice; occasional minor misuse.	Word choices are precise, varied, and enhance expression effectively.

Paragraph Coherence	The logical flow and connection between sentences and paragraphs.	Sentences are disconnected; lacks logical sequence or transitions.	Some sentence connections are unclear; partial coherence.	Sentences and paragraphs are mostly coherent with minor lapses.	Ideas flow logically and cohesively with smooth transitions throughout.

C. Result and Discussion

This research involved 25 fourth grade students at MI Raudlatut Tholibin Sambung, consisting of 12 male students and 13 female students. The objective of this study is to describe the improvement in descriptive writing skills through the application of ecopedagogy-based environmental literacy board media. The three main indicators of descriptive writing skills used by the researcher are: (1) Content Completeness: The ability to construct ideas wholly and in detail according to the observed object. (2) Accuracy of Diction and Spelling: The precision in word choice, vocabulary variation, and the correct use of punctuation and capitalization. (3) Coherence and Cohesion between Paragraphs: The smooth connection between sentences and the interconnectedness between paragraphs.

The data were collected through student activity observation sheets, analysis of descriptive writing, and the teacher's reflection notes over three learning cycles (two meetings per cycle). Before the application of the environmental literacy board media, students' descriptive writing skills were in the low category. Based on the results of the initial assessment, the following data were obtained:

Indicator	Initial Average Score	Category
Content Completeness	1.8	Low
Accuracy of Diction & Spelling	1.7	Low
Coherence & Cohesion of Paragraphs	1.6	Low
Overall Average	1.7	Low

Table 2. Scores Before Media Implementation

From these baseline findings, it was evident that students needed structured, contextual, and multimodal support to stimulate idea generation and improve writing structure. The Environmental Literacy Board served as this support by providing visual

materials, vocabulary lists, ecological slogans, and accessible conceptual cues linking environmental experience to linguistic expression.

The learning progression unfolded across three cycles. In the initial cycle, the introduction of the ELBS helped activate students' awareness of environmental objects; however, participation remained limited, with only 40% of students actively contributing. Their writing products still lacked descriptive depth, indicating that the first exposure primarily functioned as familiarization rather than skill development. Improvements became more evident in the second cycle when the ELBS was enriched with "Vocabulary of the Day," "Nature Story of the Week," illustrated environmental categories, and exemplary descriptive microtexts. Students conducted structured mini-observations in groups across designated areas such as the school garden, fish pond, and medicinal plant section. This collaborative observational approach encouraged students to construct meaning socially a central aspect of Vygotsky's sociocultural learning theory and created opportunities for authentic descriptive content development.

Process of Implementing the Environmental Literacy Board Media, During the cycle I, the ELBS was introduced as a visual and contextual learning medium. It contained images, thematic vocabulary, and short ecological slogans such as "Cintai Alam" (Love Nature) and "Sekolah Bersih, Pikiran Sehat" (Clean School, Healthy Mind). These components were intended to act as *priming stimuli*, activating students' perceptual awareness and connecting writing tasks to their lived environment. The pre writing phase included a brief environmental observation activity, allowing students to gather initial impressions to be transformed into descriptive text. However, despite the introduction of visual supports, only 40% of students actively engaged in writing tasks and class discussions. This limited engagement aligns with Vygotsky's (1978) assertion that early engagement often requires significant scaffolding and guided interaction. The students' early writing products still lacked adequate detail, and their lexical choices remained limited, suggesting that further refinement of the ELBS was necessary to effectively stimulate idea generation. The cycle II, marked a turning point in instructional improvement. The ELBS was expanded to include additional linguistic scaffolds such as "Vocabulary of the Day" and "Nature Story of the Week," offering structured lexical enrichment and modeled descriptive micro-texts. Students were divided into small groups and assigned observation areas around the school environment including the school garden, fish pond, and *kebun toga* (herbal garden) to ensure more focused experiential learning.

The structured scaffolding significantly enhanced students' engagement and linguistic production. Sixty-eight percent of the students were able to produce compositions that demonstrated improved completeness, greater lexical variety, and more

developed descriptive passages. This aligns with Taber's (2024) concept of *mediational tools*, wherein external semiotic supports assist learners in constructing internal representations of knowledge. The ELBS acted as a multimodal scaffold that promoted cognitive organization and facilitated access to descriptive vocabulary.

In Cycle III, the instructional focus shifted to guided reflection and text revision. Using the rubric indicators, teachers provided explicit feedback on students' drafts, prompting them to refine descriptive details, restructure paragraphs for coherence, and correct diction and spelling inaccuracies. This iterative process mirrors Hyland's (2019) process-writing framework, which emphasizes drafting, revising, and editing as integral to developing writing fluency and textual clarity. By the end of this cycle, 92% of students actively participated in writing tasks and peer discussions. Students demonstrated marked progress in content elaboration, sentence linking strategies, and coherent paragraph construction. The emphasis on observation, reflection, and revision created a cyclical learning environment that afforded students repeated opportunities to internalize writing skills. This finding is consistent with the eco-constructivist perspective described by Suryani (2021), which posits that learning grounded in environmental contexts fosters both cognitive and affective development. Acquisition of improvement based on indicators, the increase in students writing skills was analyzed using a qualitative scoring rubric of 1–4 (1 = low, 4 = very good), which was adapted from the descriptive writing rubric for elementary schools in the Kurikulum Merdeka (Independent Curriculum) (Kemendikbud, 2022).

Indicator	Cycle I (Average Score)	Cycle II	Cycle III	Improvement (%)
Content Completeness	2.1	2.8	3.5	+66.7%
Accuracy of Diction & Spelling	2.0	2.6	3.3	+65.0%
Coherence & Cohesion of Paragraphs	1.9	2.5	3.4	+78.9%
Overall Average	2.0	2.6	3.4	+70.0%

Table 3. Results of Analysis of Student Observation Sheets and Writing, August 2025

The 70% overall increase indicates that the environmental literacy board media was effective in helping students understand the structure of descriptive text and express ideas using more vivid and coherent language. The increase in students' writing skills was analyzed using the following formula:

$$P = \frac{(X_2 - X_1)}{X_1} \times 100\%$$

Where:

P = Percentage of Increase

X₁ = Initial Score

X₂ = Final Score

Indicator	Initial Score (X ₁)	Final Score (X ₂)	Improvement (%)
Content Completeness	1.8	3.5	94.4%
Accuracy of Diction & Spelling	1.7	3.3	94.1%
Coherence & Cohesion of Paragraphs	1.6	3.4	112.5%
Overall Average	1.7	3.4	100.0%

Table 3. Results of Quantitative Data Analysis from Student Observation Sheets and Writing Assessment, September 2025

Quantitatively, the 100% increase in the overall average score demonstrates that the environmental literacy board media made a tangible contribution to improving the quality of students' descriptive writing. This improvement also aligns with the increase in active participation, from 40% to 92%. Affective Findings: Caring and Collaboration, In addition to improvements in cognitive aspects, there were also positive changes in students' attitudes toward the environment. Most of the students' writings contained moral messages such as: "I am happy to see the school garden clean and green. I promise not to litter." Students began to take it upon themselves to keep their classrooms clean and to work together to care for the school's plants. The literacy board served not only as a tool for learning to write, but also as a means of internalizing the values of eco-pedagogy, namely care, responsibility, and reflection on environmental sustainability.

Picture 1. eco-pedagogy-based *Environmental Literacy Boards* (ELBSs)



(a)



(b)

Analytical interpretation of improvement, The significant improvement in writing performance can be attributed to both constructivist engagement mechanisms and the ecological relevance of the learning context. According to Vygotsky's (1978) *social constructivism*, learning occurs most effectively when students engage in meaningful social interaction supported by scaffolding from teachers and peers. The ELBS served as a *mediational tool* (Taber, 2024), bridging concrete environmental experiences with linguistic expression. This aligns with Hyland's (2019) *process-based writing theory*, which emphasizes prewriting stimulation and iterative feedback as key to writing fluency.

In this study, each cycle integrated observation, group discussion, and reflection. These stages encouraged students to *construct meaning* collaboratively while connecting ecological themes to their writing. This mechanism explains why students' idea generation and lexical variety improved not only because of practice, but because the content became personally and contextually meaningful. The visual and thematic elements of the ELBS (e.g., "Vocabulary of the Day" and "Nature Story of the Week") functioned as *cognitive organizers* that scaffolded students' ability to elaborate details and maintain coherence, consistent with Fitriani's (2019) finding that environment-based media increase linguistic output by activating students' sensory experiences.

Comparison with previous studies, the present findings reinforce previous research (Suryani, 2021; Zhou, Liu, & Zhang, 2023) that environmental integration in language learning enhances not only literacy skills but also ecological empathy. However, this study extends prior work by demonstrating *how* improvement occurs: through the cyclical interaction between observation, reflection, and linguistic production an *eco-constructivist loop* that deepens both writing quality and environmental awareness.

Unlike Fitriani's (2019) and Suryani's (2021) studies, which primarily used observation-based environmental media, the current study used a structured literacy board that allowed *continuous engagement* and *student participation* in modifying board content. This participatory feature aligns with Gadotti's (2009) *eco-pedagogy framework*,

which views learners as agents of change capable of reshaping their environment through reflective and creative acts.

Linking eco-pedagogy and writing development, eco-pedagogy in this study acted not as a parallel theme but as the pedagogical foundation for developing descriptive writing. It provided the *ethical and reflective dimension* that transformed writing from a technical exercise into a meaningful one. This illustrates Tilbury & Cooke's (2020) view of education for sustainability as both *cognitive literacy* and *moral practice*. This connection explains why students' writing increasingly contained moral reflections ("I promise not to litter," "I like the clean garden") not because of explicit instruction, but because the eco-pedagogical context shaped their writing consciousness. As Misiaszek (2020) suggests, *ecopedagogy transforms cognition into ecological action*, where writing becomes a vehicle for ethical reflection and social responsibility.

The Role of teachers and the sustainability of Engagement, the teacher's role as facilitator was central in maintaining engagement and reflection throughout the learning cycles. Consistent with Larasaty et al. (2024), teacher-mediated reflection and real-world linkage fostered students' sustained motivation and awareness. By updating the literacy board content regularly, the teacher created a dynamic, participatory space what Suryani & Widyastuti (2024) call *experiential reflection* that kept students' curiosity and creative thinking active. This indicates that eco-pedagogical literacy media are not static tools but evolving learning ecosystems that merge affective, cognitive, and social dimensions of literacy development. The continuous interaction between these dimensions accounts for the observed long-term improvement in students' descriptive writing. The effectiveness of literacy Boards in the Context of ecopedagogy, the use of environmental literacy boards has a positive impact on students' motivation, participation, and writing skills. This is in line with Vygotsky's constructivism theory, which states that effective learning occurs when students interact directly with their environment. These findings reinforce the research of Fitriani (2019) and Suryani (2021) that environment-based writing learning allows students to combine empirical experiences with language expression. From Gadotti's (2009) eco-pedagogical perspective, this type of media fosters ecological literacy, which is the ability to understand, assess, and act on environmental issues through reflective learning.

In addition to increasing student motivation and participation, environmental literacy boards also appear to be effective in strengthening social interaction and collaboration in the classroom. Based on Vygotsky's social constructivism theory, learning occurs when students interact with classmates and more experienced teachers in situations that support scaffolding or gradual assistance. These interactions facilitate the internalization of new concepts, such as the use of descriptive diction and paragraph

structure, through dialogue, questions, and joint reflection. With concrete media such as environmental literacy boards, students not only hear or see, but also actively engage in discussing environmental objects around them, which according to research strengthens conceptual understanding and improves the quality of descriptive writing (Taber, 2024).

Based on the eco-pedagogical perspective proposed by Gadotti and related literature on ecoliteracy, this type of learning media provides opportunities for students to develop critical awareness of environmental issues as well as reflective skills. Ecoliteracy is not only related to scientific knowledge about ecosystems, but also to values, attitudes, and actions that can encourage ecological responsibility. Environmental literacy boards allow students to see the relationship between their empirical experiences (example observations of the surrounding environment) and ecological consequences, and encourage students to think about how their writing can influence readers' views or actions towards the environment. Thus, this media is not merely a visual aid or motivator, but rather a space for critical dialogue that supports holistic character building and ecological literacy.

Analysis of Improvements in Descriptive Writing Skills, the increase in the average score from 2.0 to 3.4 (a 70% increase) shows significant progress in terms of content, diction, and coherence. This is in line with the process-based writing theory (Hyland, 2019), in which literacy boards play a role in the pre-writing stage to spark ideas and vocabulary. The increase in participation from 40% to 92% was obtained through observational data of students' writing activities during three learning cycles. The criteria for activity included willingness to write texts without being asked, involvement in idea discussions, and participation in reading activities in front of the class. These results are in line with Khosa's (2025) research, which shows that a learning environment rich in visual stimuli increases students' interest and frequency of writing.

Observational data showing an increase in participation from 40% to 92% is also consistent with research on the use of visual stimuli in learning environments. Serina, Desty, and Maya (2023) found that the use of visual stimuli as part of writing instruction (pictures, posters, other visual media) significantly increased student motivation, stimulated ideas, and increased the frequency of their writing in eighth grade junior high school. The high level of participation in idea discussions and presentations showed that students not only wrote more often, but were also more socially active in writing lessons.

Ecological and humanistic dimensions in language learning, environmental literacy boards play a role in strengthening character values and ecological empathy. Students' writing not only describes objects but also contains moral awareness of protecting the environment. This is in line with Zhou, Liu, & Zhang (2023), who explain

that integrating environmental literacy into language learning increases students' empathy and prosocial behavior. This medium serves a dual purpose: as a language literacy tool (improving descriptive writing skills) and an environmental literacy tool (fostering ecological awareness). In the context of the Pancasila Student Profile, this is relevant to the dimensions of critical thinking, creativity, and noble character.

The dual function of literacy boards as tools for language literacy and environmental literacy is increasingly important when viewed within the framework of the Pancasila Student Profile. Studies on the Pancasila Student Profile show that character building through the dimensions of noble character, critical thinking, and creativity helps students not only master academic competencies, but also develop ethics, empathy, and tolerance towards the social and natural environment. Thus, the use of environmental literacy boards reflects character education practices that are inseparable from ecological literacy. Students are not only able to compose good descriptive texts, but also have moral awareness, concern, and responsibility for the environment as part of their whole personality.

The role of teachers as school literacy facilitators, As facilitators, teachers not only provide media and materials, but also connect students' ecological experiences to the process of reflection and classroom discussion. Research by Larasaty, Rohmat, Somantri, & Fitriana (2024) shows that teachers who integrate environmental education into their lessons using real learning resources and field contexts increase students' environmental awareness and active involvement in environmental activities such as green campus activities or school planting programs. In literacy board practice, teachers can invite students to observe the surrounding nature (plants, waste, micro-ecosystems) and then relate it to written content, so that learning becomes meaningful and grounded.

Regular updating of literacy board content by teachers also supports the development of critical and creative thinking in students. Body note: The study “The Role of Teacher's Experiential Learning and Reflection for Enhancing their Autonomous Personal and Professional Development” by Suryani & Widyastuti (2024) emphasizes that teachers who actively reflect on their experiences using new media and content will be able to more quickly adapt their teaching to be relevant to the conditions of their students and environment, thereby creating a more participatory and adaptive classroom atmosphere. By regularly updating content, teachers signal that the environment and ecological issues are dynamic matters that need to be responded to and thought about continuously by students.

limitations and recommendations, this study still has several limitations. First, the scope of the study only covers one madrasah with 25 students, so the results cannot be

generalized to other schools. Second, the relatively short duration of the study (three months) limits the monitoring of the sustainability of the impact of literacy boards on students' long-term writing habits. Third, this study uses a descriptive qualitative approach without detailed quantitative measurements, so that the increase in value is more descriptive and interpretative than statistical. Further research recommendations include several points; Developing a mixed methods design combining qualitative and quantitative data to ensure more comprehensive results. Replicating the research at various educational levels and in different school environments to test the external validity of this learning model. Developing a green school-based digital literacy board (eco-school platform) that can be accessed online, enriching sources of writing ideas, and supporting sustainable school literacy programs. Involve teachers from different subjects, such as science and social studies, so that eco-pedagogical values are more integrated across disciplines. Encourage collaboration between schools, parents, and surrounding communities to expand the impact of environmental literacy as part of school culture.

D. Conclusion

This study concludes that the application of eco-pedagogy-based environmental literacy boards has proven effective in improving the descriptive writing skills of fourth-grade students at MI Raudlatut Tholibin Sambung. The results of the analysis show a significant improvement in terms of content completeness, accuracy of diction and spelling, and coherence between paragraphs, with an average increase of 100%. Environmental literacy board media provide visual and contextual stimuli that encourage students to write in more detail, expressively, and reflectively about the phenomena around them. In addition to impacting cognitive aspects, the use of this media also strengthens the affective dimension through the habit of ecological awareness and social responsibility values. This shows that the integration of the eco-pedagogy approach in Indonesian language learning can create a meaningful learning process oriented towards strengthening the Pancasila Student Profile, particularly in terms of critical thinking, creativity, and noble character. Based on the findings, it is recommended that teachers optimize the use of environment-based literacy media as an innovative learning strategy that is contextual and participatory. Schools need to develop sustainable environmental literacy programs through cross-curricular collaboration and community involvement. Further research is expected to examine the implementation of environmental literacy board media in a broader context and integrate it with digital platforms as an effort to strengthen the culture of ecological literacy in elementary schools. In addition, the results of this study indicate that eco-pedagogy-based environmental literacy boards have the potential to be developed as a sustainable learning model that can integrate language, science, and character aspects. Through consistent and participatory implementation, this

media can function as a center for school literacy activities that foster critical thinking, creativity, and ecological awareness among students. Thus, the application of this media not only improves descriptive writing skills but also shapes a literate generation that cares about environmental sustainability and is empowered to face the challenges of the 21st century.

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