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Environmental-based learning and joyful learning experiences in elementary education

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ABSTRACT

This study examines the utilization of the surrounding environment as a contextual learning medium in fostering joyful learning experiences among elementary school students. A qualitative descriptive approach was employed at SD Negeri Inpres Pantai Enggros. Data were collected through classroom observations, semi-structured interviews, and documentation involving five teachers and fifteen students from grades IV–VI selected through purposive sampling. The data were analyzed using thematic analysis supported by coding, categorization, interpretation, and triangulation procedures to ensure trustworthiness. The findings indicate that environmental-based learning creates meaningful, interactive, and enjoyable learning experiences for students. The use of the surrounding environment as an authentic learning medium enhances students' learning enthusiasm, curiosity, emotional engagement, collaboration, and active participation. Direct interaction with real-life environmental contexts enables students to construct knowledge through exploration, observation, and social interaction. The study also highlights the crucial role of teachers as facilitators in designing flexible, student-centered learning environments that support joyful learning. This study contributes to the literature by integrating environmental-based learning and joyful learning perspectives within elementary education. It proposes a conceptual relationship between environmental-based learning practices and the development of joyful learning experiences, offering insights for implementing contextual and engaging learning environments in elementary schools.



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Introduction

Elementary school students possess distinctive developmental characteristics that require active, concrete, interactive, and emotionally engaging learning experiences (Martins et al., 2022). At this stage, children tend to demonstrate high curiosity, strong imagination, and short attention spans, making monotonous and teacher-centered instruction less effective in sustaining meaningful learning engagement (Marianingsih, 2025). Consequently, the concept of joyful learning has gained increasing attention in primary education because it

emphasizes positive emotional experiences, student participation, exploration, and contextual interaction during the learning process (Siregar et al., 2025)(Andayanie et al., 2025)(Feriyanto & Anjariyah, 2024). Joyful learning is not merely associated with fun classroom activities, but also with the creation of psychologically safe and stimulating learning environments that encourage motivation, creativity, and active knowledge construction (Zadina, 2023). In this regard, elementary education requires innovative learning approaches capable of integrating students' real-life experiences into instructional activities to support both cognitive and emotional development simultaneously (Harjunmaa et al., 2023).

One potential approach to fostering joyful learning in elementary schools is the utilization of the surrounding environment as a contextual learning medium. Environmental-based learning enables students to interact directly with authentic objects, social realities (Harjunmaa et al., 2023), and natural phenomena surrounding them, thereby making learning more concrete, meaningful, and engaging (Mubarak et al., 2024). Previous studies have shown that contextual learning through environmental exploration contributes positively to students' motivation, participation, critical thinking, and conceptual understanding (Cahyani et al., 2026)(Maftuh et al., 2023)(Sarwari & Kakar, 2023). In elementary school settings, the surrounding environment can function as a dynamic educational resource that transforms passive learning into experiential learning activities (Jasper-Abowei & Victor-Ishikaku, 2023). However, despite its pedagogical potential, many classroom practices remain dominated by textbook-oriented instruction and limited classroom interaction, reducing opportunities for students to experience authentic and enjoyable learning processes (Sousa et al., 2022)(Zou et al., 2025). Teachers frequently encounter challenges in integrating environmental resources into instructional design due to limited pedagogical creativity, inadequate institutional support, and conventional teaching habits that prioritize content delivery over student engagement.

Although numerous studies have examined environmental education and contextual learning separately, limited research has specifically explored how the surrounding environment can be systematically utilized as a contextual learning medium to enhance joyful learning experiences among elementary school students. Existing research tends to focus primarily on academic achievement, environmental awareness, or learning outcomes, while the emotional dimensions of learning enjoyment and student learning experiences remain underexplored (Lovren & Jablanovic, 2023). Furthermore, previous studies often position the environment merely as supplementary instructional material rather than as an integral pedagogical ecosystem capable of shaping meaningful and emotionally engaging learning interactions. Therefore, this study offers novelty by positioning environmental-based learning not only as a contextual instructional strategy but also as a pedagogical approach for constructing joyful learning experiences in elementary education. The study attempts to bridge the gap between contextual learning theory and the psychological dimensions of joyful learning through a more integrative educational perspective.

Method

This study employed a qualitative descriptive approach to explore how the surrounding environment was utilized as a contextual learning medium to enhance joyful learning experiences in elementary schools. A qualitative design was considered appropriate because the study aimed to obtain an in-depth understanding of teachers' instructional practices, students' learning experiences, and the pedagogical interactions emerging from environmental-based learning activities in authentic educational settings. The study emphasized the exploration of meanings, experiences, and classroom realities rather than statistical generalization or causal measurement.

The research was conducted at SD Negeri Inpres Pantai Enggros, a public elementary school located on Jl. Pantai Enggros, Asano Village, Abepura District, Jayapura City, Papua Province, Indonesia. The school was purposively selected because it actively facilitated contextual learning practices and provided rich environmental and socio-cultural surroundings that could be utilized as authentic learning resources. The contextual characteristics of the school environment enabled students to engage directly with real-life learning experiences closely connected to their daily social and environmental interactions.

**Figure 1.** Location of SD Negeri Inpres Pantai Enggros

Resource: (a) and (b) by Author; (c) and (d) from Wikipedia

Detailed information regarding the participants and research data sources is presented in Table 1.

Table 1. Research Participants and Data Sources

Participant Category	Number of Participants	Selection Criteria	Data Obtained
Elementary School Teachers	5	Experienced in environmental-based learning practices	Teaching strategies, instructional experiences, classroom challenges
Elementary Students (Grades IV–VI)	5	Actively involved in contextual learning activities	Learning experiences, engagement, joyful learning perceptions
School Documents	–	Relevant instructional and school learning documents	Lesson plans, worksheets, photographs, reflective notes

Data collection was conducted over a three-month period using classroom observations, semi-structured interviews, and documentation studies. The use of multiple techniques aimed to strengthen the credibility and richness of the findings through methodological triangulation. Classroom observations were carried out during both indoor and outdoor learning activities to examine how teachers integrated the surrounding environment into the instructional process and how students responded to these learning experiences. Particular attention was given to students' participation, emotional engagement, interaction patterns, curiosity, and collaborative behaviors as indicators of joyful learning.

Semi-structured interviews were conducted with teachers and selected students to obtain deeper insights into their experiences and perceptions regarding environmental-based learning practices. Teacher interviews explored instructional planning, pedagogical strategies, challenges in implementation, and perceived impacts on student engagement and learning enjoyment. Meanwhile, student interviews focused on their emotional responses, learning preferences, classroom experiences, and perceptions of environmental learning activities compared to conventional classroom instruction. In addition, documentation studies were conducted through the analysis of lesson plans, student worksheets, photographs of learning activities, and school learning programs

related to contextual learning implementation. The focus of each data collection technique is summarized in Table 2.

Table 2. Data Collection Techniques

Technique	Focus of Data Collection	Research Purpose
Classroom Observation	Student engagement, classroom interaction, joyful learning indicators	To examine authentic learning situations during environmental-based learning
Semi-Structured Interviews	Teacher and student experiences	To explore perceptions and meanings of joyful learning experiences
Documentation Study	Instructional documents and learning evidence	To support and validate observational and interview findings

To operationalize the concept of joyful learning, the study identified several observable indicators adapted from previous studies on student engagement and joyful learning environments. These indicators were used during classroom observations to capture students' emotional and behavioral responses throughout the learning activities. The indicators are presented in Table 3.

Table 3. Indicators of Joyful Learning Observed During Learning Activities

Indicator	Observed Behaviors
Learning Enthusiasm	Students actively participate and respond during activities
Curiosity	Students ask questions and explore surrounding objects
Emotional Engagement	Students show excitement, confidence, and positive expressions
Collaboration	Students interact and cooperate with peers
Active Participation	Students are directly involved in observation and exploration activities

The collected data were analyzed using thematic analysis procedures adapted from Braun and Clarke (2006). The analysis began with data familiarization through repeated reading of interview transcripts, observation notes, and supporting documents. Subsequently, initial coding was conducted to identify important statements and recurring patterns related to environmental-based learning and joyful learning experiences. The identified codes were then categorized into broader themes, reviewed, and interpreted based on contextual learning and joyful learning perspectives. The analysis focused on understanding how environmental-based learning practices contributed to meaningful, enjoyable, and engaging learning experiences among elementary school students. To ensure the trustworthiness of the findings, the study employed several validation strategies, including source triangulation, technique triangulation, member checking, and peer debriefing. These strategies were implemented to enhance the credibility, consistency, and accuracy of the research findings. The validation procedures applied in this study are presented in Table 4.

Table 4. Trustworthiness Strategies

Validation Strategy	Implementation
Source Triangulation	Comparing data from teachers, students, and documents
Technique Triangulation	Combining observation, interviews, and documentation
Member Checking	Confirming interview interpretations with participants
Peer Debriefing	Discussing findings with fellow educational researchers

This study also adhered to ethical principles in educational research. All participants were informed about the objectives and procedures of the study prior to participation, and informed consent was obtained from teachers and school administrators. Student participation was conducted under teacher supervision to ensure safety and comfort throughout the research process. Furthermore, participant confidentiality and anonymity were maintained by using pseudonyms in all research records and publications.

Results and Discussions

Learning Enthusiasm Through Environmental-Based Learning

The findings revealed that the utilization of the surrounding environment as a contextual learning medium significantly increased students' learning enthusiasm during instructional activities at SD Negeri Inpres Pantai

Enggros. Students demonstrated greater excitement and participation when learning activities were conducted through direct interaction with environmental objects and real-life situations surrounding the school environment. Classroom observations showed that students became more responsive, communicative, and emotionally engaged during outdoor and contextual learning activities compared to conventional classroom instruction. Teachers explained that environmental-based learning reduced students' boredom because learning activities became more interactive and experiential.

One teacher explained:

"When students learn directly from the environment around them, they become much more enthusiastic because they can see the real objects being discussed. They are more active in asking questions and participating in discussions." (Teacher 1)

Another teacher similarly stated:

"Students are usually passive when learning only from textbooks, but when we invite them to observe the environment outside the classroom, they become more excited and motivated to learn." (Teacher 3)

This positive emotional response was also expressed by students. One student stated:

"I like learning outside the classroom because it is more fun and not boring. We can directly see plants, the beach, and other things around us." (Student 4)

Another student added:

"Learning while observing the environment makes me happier because we can study and play with friends at the same time." (Student 11)

The findings indicate that environmental-based learning created a more enjoyable and engaging learning atmosphere for elementary school students. Direct interaction with authentic learning objects appeared to stimulate students' emotional involvement and reduce monotonous learning experiences commonly found in conventional classroom instruction. Furthermore, contextual learning activities encouraged students to participate more naturally and confidently during the learning process.

Curiosity and Active Exploration in Contextual Learning Activities

Another important finding emerging from the study was the increase in students' curiosity during environmental-based learning activities. The observational data showed that students became more interested in exploring learning materials when they were encouraged to interact directly with objects and phenomena found in their surrounding environment. Instead of passively receiving information from teachers, students actively observed, questioned, compared, and discussed the learning objects encountered during instructional activities. This condition created a more exploratory learning atmosphere in which students were motivated to discover information independently through direct experience.

According to one teacher, environmental-based learning naturally stimulated students' curiosity because the learning process was closely connected to their everyday experiences.

"Students become more curious when they learn from things they often see in daily life. Sometimes they ask questions beyond the lesson because they want to know more about the environment around them." (Teacher 2)

A similar perspective was expressed by another teacher who observed that contextual learning encouraged students to think more critically during classroom discussions.

"When students observe objects directly, they tend to ask more questions and become more active in discussing what they find. Their curiosity appears naturally during the activity." (Teacher 5)

The students also described how environmental exploration activities helped them become more interested in learning. One student shared:

"I like observing things outside because I can find new things and ask questions directly to the teacher." (Student 7)

Meanwhile, another student explained:

"When we study from the environment, I want to know more about the objects we see because they are real and close to our daily life." (Student 13)

These findings suggest that environmental-based learning contributes not only to emotional enjoyment but also to the development of students' exploratory behaviors and active learning engagement. The surrounding environment functioned as an authentic learning stimulus that encouraged students to investigate, question, and

construct understanding through direct interaction with real-life contexts. Such learning experiences appeared to strengthen students' curiosity and support more meaningful learning processes in elementary education.

Emotional Engagement and Meaningful Learning Experiences

The study further revealed that environmental-based learning fostered stronger emotional engagement among students during instructional activities. Classroom observations indicated that students showed positive emotional expressions such as excitement, confidence, enjoyment, and comfort when participating in contextual learning activities outside the conventional classroom setting. Learning situations became more relaxed and interactive, enabling students to express their ideas more freely and participate without fear of making mistakes. The emotional atmosphere created through environmental exploration appeared to strengthen students' connection with the learning process.

One teacher described how environmental learning changed students' emotional responses during classroom activities.

"Students seem happier and more relaxed when learning directly from the environment. They do not feel pressured like in formal classroom situations." (Teacher 4)

Another teacher emphasized that contextual learning activities helped students become more confident in expressing their opinions and experiences.

"Usually some students are shy when speaking in class, but during outdoor learning activities they become more confident because they can directly talk about what they observe." (Teacher 1)

The students also expressed positive feelings toward environmental-based learning experiences. One student explained:

"I feel more comfortable learning outside because we can move around and observe many things directly." (Student 2)

Similarly, another student stated:

"Learning from the environment makes me happy because the lessons are easier to understand and the activities are enjoyable." (Student 10)

These findings indicate that environmental-based learning contributed significantly to the creation of emotionally supportive learning environments. Direct interaction with authentic learning contexts appeared to reduce students' anxiety and increase their sense of comfort during the learning process. Moreover, enjoyable learning experiences strengthened students' emotional attachment to classroom activities, which potentially supports long-term learning motivation and meaningful knowledge construction in elementary education.

Collaboration and Social Interaction During Learning Activities

The findings also demonstrated that environmental-based learning promoted stronger collaboration and social interaction among students. During observation and exploration activities, students actively worked together in groups to discuss findings, share ideas, and complete learning tasks. Compared to conventional classroom instruction, contextual learning activities created more flexible and communicative learning situations that encouraged students to interact naturally with their peers. Classroom observations showed that students were more willing to cooperate and help one another when learning activities involved direct environmental exploration.

One teacher explained that collaborative learning emerged more naturally during outdoor activities because students shared common experiences while observing the surrounding environment.

"When students learn outside the classroom, they communicate more with their friends because they observe objects together and discuss what they find." (Teacher 3)

In a similar vein, another teacher noted that environmental-based learning helped students develop teamwork and social confidence.

"Students who are usually quiet in the classroom become more active during group observation activities. They feel more comfortable sharing ideas with their friends." (Teacher 5)

Students also acknowledged that learning through environmental exploration strengthened their interaction with classmates. One student remarked:

"I like learning in groups outside the classroom because we can discuss together and help each other understand the lesson." (Student 6)

Another student similarly stated:

"When we observe the environment together, it becomes easier to share opinions and complete assignments with friends."
(Student 14)

These findings suggest that environmental-based learning not only supports individual learning engagement but also strengthens students' collaborative and social learning experiences. The surrounding environment functioned as a shared learning space that encouraged communication, peer interaction, and cooperative problem-solving. Such collaborative experiences contributed to a more dynamic and enjoyable learning atmosphere, which is closely aligned with the principles of joyful learning in elementary education.

Teacher Strategies and Challenges in Implementing Environmental-Based Learning

Another significant finding of this study relates to teachers' instructional strategies in creating joyful learning through environmental-based learning practices. The findings showed that teachers played an important role as facilitators who guided students in connecting learning materials with real-life situations found in their surrounding environment. Teachers attempted to design contextual learning activities by utilizing nearby environmental resources such as coastal areas, plants, community activities, and objects around the school environment as authentic learning media. Through these approaches, learning activities became more concrete and relevant to students' daily experiences.

One teacher explained that simple environmental objects could become effective learning media when integrated appropriately into classroom instruction.

"We do not always need sophisticated teaching media. The environment around the school already provides many learning resources that can help students understand the lesson more easily." (Teacher 2)

Another teacher highlighted the importance of contextual learning in maintaining students' learning interest and participation.

"Students become more enthusiastic when the lesson is connected to things they encounter every day. They feel that learning is related to their real life." (Teacher 4)

Despite these positive experiences, teachers also acknowledged several challenges in implementing environmental-based learning activities. Limited instructional time, weather conditions, and the need for additional preparation were frequently mentioned as obstacles during the learning process. In addition, teachers explained that not all learning materials could be easily adapted to outdoor or environmental exploration activities.

As expressed by one teacher:

"Sometimes the learning schedule becomes difficult to manage because outdoor activities require more preparation and supervision." (Teacher 1)

Another teacher similarly noted:

"Weather conditions often become a challenge. When it rains, we cannot conduct observation activities outside the classroom." (Teacher 5)

The students also recognized that environmental learning activities occasionally faced practical constraints. One student stated:

"I enjoy learning outside, but sometimes we cannot do it because the weather is not good." (Student 8)

Another student explained:

"Outdoor learning is fun, but sometimes it takes more time to prepare before starting the lesson." (Student 12)

Although several challenges were identified, the findings indicate that teachers perceived environmental-based learning as an effective strategy for creating more meaningful and enjoyable learning experiences in elementary education. The ability of teachers to adapt learning materials to the surrounding environment appeared to play a crucial role in enhancing student participation, emotional engagement, and contextual understanding during the learning process.

Overall Findings on Joyful Learning Indicators

Overall, the findings demonstrated that the utilization of the surrounding environment as a contextual learning medium contributed positively to the development of joyful learning experiences among students at SD Negeri Inpres Pantai Enggros. The integration of environmental resources into classroom instruction encouraged students to participate more actively, express greater curiosity, and engage more meaningfully in learning activities. Learning situations became less rigid and more interactive because students were directly involved in

authentic experiences closely connected to their daily lives. These conditions allowed students to construct knowledge through observation, exploration, communication, and collaborative interaction.

The observational data further indicated that joyful learning was reflected not only in students' emotional responses but also in their behavioral participation during instructional activities. Students demonstrated enthusiasm through active questioning, spontaneous discussion, peer collaboration, and direct engagement with learning objects found in the surrounding environment. Teachers also reported that contextual learning activities helped create more positive classroom atmospheres because students appeared more motivated and confident throughout the learning process.

One teacher summarized the impact of environmental-based learning by stating:

"Learning becomes more alive when students interact directly with the environment. They are happier, more active, and easier to guide during the lesson." (Teacher 3)

This perception was reinforced by students' experiences during contextual learning activities. One student explained:

"I feel more excited about learning when we can directly observe things around the school instead of only reading books." (Student 1)

Another student similarly remarked:

"Learning from the environment helps me understand the lesson better because I can see the real example directly." (Student 15)

To support these findings, the observed indicators of joyful learning during environmental-based learning activities are summarized in Table 5.

Table 5. Observed Indicators of Joyful Learning During Environmental-Based Learning Activities

Indicator	Observational Findings
Learning Enthusiasm	Students actively participated and showed excitement during learning activities
Curiosity	Students frequently asked questions and explored surrounding objects independently
Emotional Engagement	Students expressed enjoyment, confidence, and positive emotional responses
Collaboration	Students cooperated actively during group observation and discussion activities
Active Participation	Students were directly involved in exploration, observation, and presentation activities

The findings of this study demonstrate that the utilization of the surrounding environment as a contextual learning medium contributes significantly to the development of joyful learning experiences among elementary school students. The increased enthusiasm, curiosity, emotional engagement, collaboration, and active participation observed during learning activities indicate that environmental-based learning creates more meaningful and student-centered instructional experiences. These findings reinforce the argument that elementary school students learn more effectively when instructional activities are connected to concrete experiences and authentic real-life situations that are familiar to them (Hidayana & Lianingsih, 2025). At the elementary education level, students tend to rely heavily on direct interaction with tangible objects and experiential learning processes to construct understanding (Nurhasanah et al., 2022). Therefore, environmental-based learning provides an important pedagogical bridge between abstract academic concepts and students' daily experiences (Efendi et al., 2025).

The findings are also consistent with contextual learning theory, which emphasizes that knowledge becomes more meaningful when students actively connect learning materials with real-world situations (Rahmi, 2024)(Rabillas et al., 2023). In this study, the surrounding environment functioned not merely as a physical learning space but as a contextual pedagogical resource capable of stimulating students' emotional and cognitive engagement simultaneously. Students demonstrated greater learning enthusiasm because they were directly involved in exploration and observation activities rather than passively receiving information from teachers (Uyen et al., 2022). This condition supports previous studies reporting that contextual and experiential learning

approaches improve student motivation, participation, and classroom interaction (Fortunela et al., 2022)(Putri & Dewi, 2025). Moreover, the findings suggest that joyful learning emerges not only from entertaining classroom activities but also from meaningful learning experiences that allow students to interact authentically with their environment.

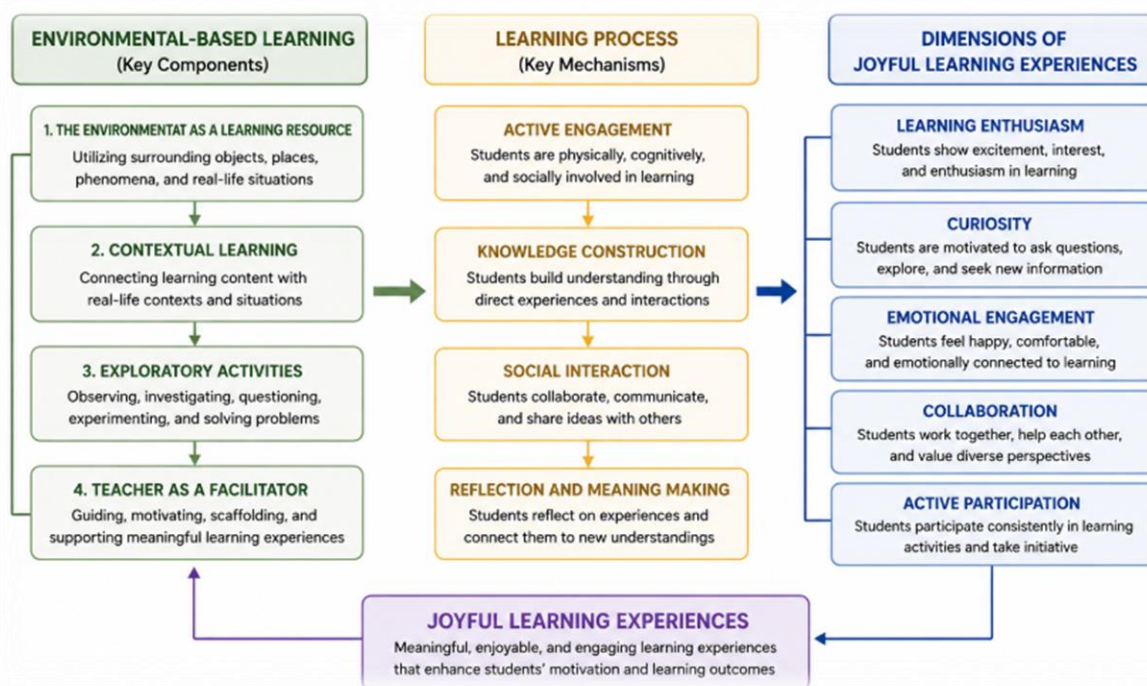


Figure 2. Conceptual Relationship between Environmental-Based Learning and Joyful Learning Experiences in Elementary Education

Another important finding concerns the strong emotional engagement experienced by students during environmental-based learning activities (Cahyanto et al., 2024). The students' expressions of enjoyment, comfort, and confidence indicate that contextual learning environments can reduce learning anxiety and create psychologically supportive classroom atmospheres. This finding aligns with previous research emphasizing that positive emotional experiences play an essential role in enhancing student engagement and learning effectiveness (Sun et al., 2024)(Guo et al., 2025)(Wang et al., 2025). Emotional involvement is particularly important in elementary education because students' motivation and participation are closely influenced by how safe, enjoyable, and meaningful they perceive the learning process to be. In the present study, learning activities conducted outside the conventional classroom environment appeared to reduce rigid teacher-centered interactions and encourage students to participate more naturally and confidently.

The findings additionally reveal that environmental-based learning strengthens collaborative interaction among students. During contextual learning activities, students engaged more actively in communication, discussion, and cooperative problem-solving processes. This finding supports sociocultural learning perspectives which argue that knowledge construction occurs through social interaction and collaborative engagement within meaningful contexts (Levasseur et al., 2022). Environmental exploration activities encouraged students to negotiate ideas, share observations, and construct understanding collectively through peer interaction (Sharma et al., 2024). Such collaborative experiences are important not only for cognitive development but also for fostering social skills, communication abilities, and positive classroom relationships in elementary education. Thus, environmental-based learning contributes simultaneously to both academic and socio-emotional dimensions of learning.

From a pedagogical perspective, this study highlights the crucial role of teachers in designing contextual and joyful learning environments. Teachers in this study acted as facilitators who transformed the surrounding environment into authentic learning resources relevant to students' daily experiences. This finding supports previous studies emphasizing that teacher creativity and pedagogical flexibility are fundamental components in successful contextual learning implementation (Nguyen et al., 2025). However, the study also identified several implementation challenges, including limited instructional time, weather conditions, and additional preparation requirements for outdoor learning activities. These constraints indicate that although environmental-based

learning offers substantial pedagogical benefits, its implementation requires institutional support, instructional flexibility, and teacher readiness to adapt learning activities effectively.

The novelty of this study lies in its integrative examination of environmental-based learning and joyful learning within the context of elementary education. Previous studies have generally focused on environmental education, contextual learning, or academic achievement separately, whereas this study specifically emphasizes how environmental utilization contributes to students' joyful learning experiences through emotional engagement, active participation, and meaningful interaction. By positioning the surrounding environment as an authentic pedagogical ecosystem rather than merely supplementary instructional media, this study expands the discourse on contextual learning in elementary education. The findings suggest that environmental-based learning should not only be viewed as an instructional strategy for improving academic understanding but also as an approach for creating emotionally supportive and meaningful learning experiences that strengthen students' overall engagement in the learning process.

Conclusions

This study concludes that the utilization of the surrounding environment as a contextual learning medium plays a significant role in fostering joyful learning experiences in elementary education. Environmental-based learning enables students to engage directly with authentic learning contexts, thereby creating more meaningful, interactive, and emotionally engaging instructional experiences. The findings demonstrate that contextual environmental learning contributes positively to students' learning enthusiasm, curiosity, emotional engagement, collaboration, and active participation during the learning process. Through direct interaction with real-life situations and environmental objects, students become more motivated and confident in constructing knowledge based on their own experiences. The study also highlights the important role of teachers as facilitators in designing contextual and enjoyable learning environments. Teachers' ability to integrate environmental resources into classroom instruction contributes to the creation of flexible and student-centered learning experiences that support both cognitive and socio-emotional development. Although several implementation challenges were identified, including limited instructional time and environmental conditions, the findings indicate that environmental-based learning remains a relevant and effective pedagogical approach for elementary education. Theoretically, this study contributes to the development of contextual learning and joyful learning discourse by positioning the surrounding environment not merely as supplementary instructional media but as an authentic pedagogical ecosystem capable of shaping meaningful learning experiences. Practically, the findings provide pedagogical insights for elementary school teachers to optimize environmental resources as contextual learning media that enhance student engagement and classroom interaction. Future studies are recommended to explore the implementation of environmental-based joyful learning in broader educational contexts and through different methodological approaches to strengthen the understanding of its impact on elementary learning experiences.

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