

## Teachers' and Students' Perceptions of the Need for Integrated Contextual Sustainability Biology Worksheets

Persepsi Guru dan Siswa terhadap Kebutuhan LKPD Biologi Terintegrasi Konteks Keberlanjutan

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Abstract	Article Information
<p>Biology learning has great potential to integrate sustainability contexts as an effort to support Education for Sustainable Development (ESD). However, the lack of relevant teaching materials is one of the obstacles in its implementation. This study aims to determine the perceptions of teachers and students regarding the needs for Biology student worksheet (LKPD) teaching materials integrated with sustainability contexts, particularly on the topic of environmental changes. This study uses a quantitative approach with a survey method. The research respondents consisted of three high school biology teachers and 63 eleventh-grade students. Data were collected through questionnaires and analysed descriptively. The results of the study show that 63.5% of students do not yet understand the concept of sustainability and 55.6% of students stated that learning has not linked the material with the concept of sustainable development. In addition, 98.4% of students stated the need for the development of teaching materials based on the context of sustainability. Both teachers and students showed agreement in their perception regarding the need for developing Biology teaching materials that are contextual and incorporate the context of sustainability. Based on the needs analysis, the development of Biology teaching materials integrated with the sustainability context on environmental change topics is necessary to support the implementation of ESD.</p>	<p><b>Keywords:</b> Perceptions; Student; Sustainability; Teacher; Worksheet</p>
<p><i>Pembelajaran Biologi memiliki potensi besar untuk mengintegrasikan konteks keberlanjutan sebagai upaya mendukung Education for Sustainable Development (ESD). Namun, keterbatasan bahan ajar yang relevan menjadi salah satu kendala dalam implementasinya. Penelitian ini bertujuan untuk mengetahui persepsi guru dan siswa terhadap kebutuhan bahan ajar LKPD Biologi terintegrasi konteks keberlanjutan, khususnya pada materi perubahan lingkungan. Penelitian ini menggunakan pendekatan kuantitatif dengan metode survei. Responden penelitian terdiri atas tiga guru biologi SMA dan 63 siswa kelas XI. Data dikumpulkan melalui angket dan dianalisis secara deskriptif. Hasil penelitian menunjukkan sebanyak 63,5% siswa belum memahami konsep keberlanjutan dan 55,6% siswa menyatakan pembelajaran belum mengaitkan materi dengan konsep pembangunan berkelanjutan. Selain itu, sebanyak 98,4% siswa menyatakan perlunya pengembangan bahan ajar berbasis konteks keberlanjutan. Guru dan peserta didik menunjukkan kesesuaian persepsi mengenai perlunya pengembangan bahan ajar Biologi yang bersifat kontekstual dan memuat konteks keberlanjutan. Berdasarkan hasil analisis kebutuhan, diperlukan pengembangan bahan ajar Biologi terintegrasi konteks keberlanjutan pada materi perubahan lingkungan untuk mendukung implementasi ESD.</i></p>	<p><b>Kata kunci:</b> Persepsi; Siswa; Konteks keberlanjutan; LKPD; Guru</p> <p><b>History</b> Manuscript received : 20/04/2026 Revised : 21/04/2026 Accepted : 27/04/2026 Published : 30/04/2026</p>

## A. INTRODUCTION

In the 21st century, information technology has advanced and is now an integral part of various aspects of life. In this context, education must be flexible and able to adapt to the ever-changing challenges of the times. (Romadhon *et al.*, 2023). Education is essential for equipping students with the skills and global competitiveness needed to adapt to the developments of the 21st century. The focus of 21st-century education lies in the demand that educational systems prioritize preparing students to face the complex challenges of today and the future (Adam *et al.*, 2021).

Through the United Nations General Assembly, countries around the world have agreed on a global agenda centered on the Sustainable Development Goals (SDGs) as an effort to maintain quality of life, with several of these goals focused on the field of education (Hamdu *et al.*, 2023). In addressing these challenges, education can serve as an effective means of instilling SDG values, and it is a vital tool for enhancing human development and addressing environmental issues (Aulia *et al.*, 2024). The Sustainable Development Goals (SDGs) consist of 17 main goals with achievement indicators focused on three areas: environmental, social, and economic (Berglund *et al.*, 2020). In this context, the SDGs can serve as one solution to addressing various global challenges. One way to achieve the Sustainable Development Goals (SDGs) is through the field of education known as Education for Sustainable Development (ESD), which plays a role in instilling values of sustainability in students.

Education for Sustainable Development (ESD) is an educational approach that has gained widespread recognition as a key framework for addressing today's global challenges (Nugraheny *et al.*, 2025). ESD is seen as a means of equipping individuals with the attitudes, skills, and knowledge needed to make informed decisions that promote sustainability for both current and future generations (Wijayanti *et al.*, 2021). Through ESD, education not only facilitates the learning of academic content but also actively promotes the practical skills and values necessary for building a sustainable society (Inayah *et al.*, 2023). Within the ESD framework, the competencies developed include the ability to reflect on human actions and analyze their impacts from both local and global perspectives.

In the era of globalization, the environment is facing various forms of degradation, including climate change, the threat of biodiversity loss, and pollution, all of which can undermine environmental sustainability and human life (Ramadhani *et al.*, 2024). Sustainable development has emerged as a response to global concerns about declining quality of life due to resource constraints and the threat of environmental degradation. Environmental issues have become a global concern that requires serious attention from various stakeholders, including educational institutions. Through the implementation of Education for Sustainable Development (ESD), it is hoped that students will become socially conscious and committed to supporting the achievement of sustainable living. This situation highlights the urgency of education's role in shaping students' awareness and sense of responsibility from an early age. ESD is viewed as an educational approach that can develop the knowledge, skills, attitudes, and values necessary to support sustainable development (Suardi *et al.*, 2021). ESD instills an understanding of the needs of the current generation without neglecting future generations. These values of sustainability must be introduced at an early age; one way to do this is by implementing Education for Sustainable Development in schools, with the hope that students will embrace these values and be able to preserve the natural, social, and cultural environment.

Achieving learning objectives in education is inseparable from the role of instructional materials as a key component of the learning process. Instructional materials serve as a guide for teachers and students in achieving the established competencies (Wahyudi, 2022). Instructional materials are one of the teaching tools that can effectively support the learning process. Modern education must be creative and innovative, and capable of developing the competencies that students need to acquire. Instructional materials make it possible to integrate learning content, the competencies students must achieve, and technology to support student learning materials that can be accessed anywhere and anytime (Fanani *et al.*, 2022). Therefore, in their learning, students need to have access to instructional materials that are appropriate for current conditions. Instructional materials help teachers present learning content that aligns with learning needs and objectives. These materials assist educators in conducting learning activities and enable students to meet the established competency standards or learning outcomes. The implementation of ESD in learning cannot be separated from the availability of supportive learning tools, one of which is instructional material designed to be contextual and relevant to students' lives.

Environmental change is an essential topic that can serve as a learning context for instilling the concept of sustainability in students. One study indicates that biology instruction in schools remains dominated by conceptual and cognitively oriented approaches, while the integration of sustainability contexts into instructional materials has not yet been implemented in a systematic and contextual manner. As a result, students' understanding of environmental issues is often temporary and has not fostered the development of sustainable awareness and behavior. Furthermore, the teaching materials used in biology instruction are generally not explicitly designed to support the achievement of sustainability competencies. Instructional materials play a crucial role as a bridge between learning objectives and students' learning experiences. The limitations of these materials make it difficult for teachers to connect environmental change topics with the real-world challenges students face in their daily lives. (Martatiana *et al.*, 2023).

This situation arises because there are currently no studies that identify the needs of teachers and students for biology teaching materials that integrate sustainability, particularly regarding environmental change. A number of studies have examined the implementation and development of teaching materials that incorporate sustainability principles in the context of science education. Research by Inayah *et al.* (2023) emphasizes the importance of integrating sustainability values into the learning process, while Sholihah *et al.* (2023) focus on developing learning materials that incorporate sustainability aspects. Furthermore, Septiandini & Nida (2025) revealed that the instructional materials currently in use do not fully meet sustainability indicators. Nevertheless, these studies remain predominantly focused on the implementation and product development stages, as well as content analysis of instructional materials, without being preceded by a specific study that identifies the needs of users—both teachers and students. Meanwhile, a needs analysis study by Rakhman *et al.* (2023) led to the integration of ESD concepts into global warming materials in elementary schools. Thus, there has been no study that explicitly reveals the need for biology teaching materials integrated with a sustainability context based on the perspectives of teachers and students at the high school level.

This gap underscores the importance of preliminary studies capable of depicting the actual conditions of biology instruction in high schools, particularly regarding the availability and needs for instructional materials. Therefore, the novelty of this study lies in the presentation of empirical data on the need for biology instructional materials integrated with sustainability contexts, directly incorporating the perceptions of teachers and students regarding environmental change. The results of this analysis thus serve as the foundation for developing teaching materials that are more contextual, relevant, and aligned with learning needs. Through needs analysis, the

characteristics of teaching materials that align with the learning context, curriculum requirements, and the integration of sustainability contexts can be formulated more precisely. Based on this needs analysis, this study aims to: 1) determine the perceptions and preliminary knowledge of teachers and students, 2) identify the conditions and difficulties experienced by students, and 3) formulate teaching materials that can facilitate students in achieving competencies in Biology learning regarding environmental change.

## B. METHOD

This study is a quantitative survey designed to provide a factual overview of teachers' and students' perceptions regarding the need for the development of biology teaching materials that integrate sustainability concepts. The study was conducted in January 2026 at two high schools in Jember regency, namely Arjasa State High School and Kalisat State High School. The study participants consisted of three biology teachers and 63 eleventh-grade students who were selected using purposive sampling based on specific criteria to ensure alignment with the study's objectives. The criteria for teacher respondents include: (1) have experience teaching biology, (2) have taught or are currently teaching material on environmental change, and (3) have used teaching materials in the learning process. The criteria for students include: (1) have completed the learning of material on environmental change, and (2) have access to digital devices for completing the research instrument. Purposive sampling was employed because the study focused on needs analysis; therefore, respondents were selected based on the relevance of their experiences to the research context. The number of teacher respondents was limited due to the nature of the study, which focused on an in-depth needs analysis; thus, respondents were selected selectively based on their direct involvement in teaching environmental change-related content. The research instrument consisted of a needs questionnaire developed based on indicators for analyzing instructional material needs and the integration of sustainability contexts. The questionnaire uses a scale of 4 levels, which are: (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree. The research instrument has undergone an expert judgment validation process by experts in the field of biology to ensure the appropriateness of the content and clarity of the questions. Data collection was conducted by distributing a needs assessment questionnaire to teachers and students, with the aim of gathering in-depth information regarding students' baseline conditions, the availability of teaching materials, and the urgency of integrating sustainability contexts into teaching materials. The research procedure was carried out in three main stages, namely: (1) instrument preparation, (2) field data collection, and (3) data analysis. The survey data were then analyzed descriptive, as this study is exploratory in nature and aims to identify instructional material needs; therefore, it is not intended to draw generalizations but rather to provide an initial overview of the perceptions of teachers and students as a basis for developing instructional materials. To calculate the percentage of respondents' answers, the relative frequency percentage formula according to Sudijono (2005) was used as follows:

$$P = \frac{f}{N} \times 100$$

Note: P is the percentage being calculated, f is the frequency of the response, and N is the total number of respondents.

## C. RESULTS AND DISCUSSION

The results of the needs analysis for the development of instructional materials were obtained through the distribution of questionnaires to three high school biology teachers and 63 eleventh-grade students. This needs analysis aimed to provide an initial overview of the state of biology instruction at the school, particularly regarding the instructional materials used for the topic of environmental change, as well as the expectations of teachers and students regarding ideal instructional materials. The research findings are based on the analysis of teachers' and students' needs. Based on the questionnaire administered to teachers, the summary results are presented in Table 1.

**Table 1. Results of the Analysis of Teachers' Needs Regarding Biology Teaching Materials**

No	Question	Count	Percentage (%)
1	Have taught Biology material about environmental changes		
	a. Yes	3	100
	b. No	0	0
2	Students showed interest in the material on environmental change		
	a. Yes	3	100
	b. No	0	0
3	The students' enthusiasm during the biology lessons (especially regarding the topic of environmental change)		
	a. Very enthusiastic	1	33,3
	b. Somewhat enthusiastic	2	66,6
	c. Not very enthusiastic	0	0
	d. Not enthusiastic	0	0
4	In biology lessons on environmental change, provide students with instructional materials		
	a. Yes	3	100
	b. No	0	0
5	An overview of learning achievement in biology regarding environmental change, based on students' level of understanding		
	a. Very effective (more than 80% of students understand the material)	0	0
	b. Effective (71–80% of students understand the material)	3	100
	a. Fairly effective (60–70% of students understand the material)	0	0
	b. Less effective (less than 60% of students understand the material)	0	0
6	An overview of learning achievement in Biology regarding environmental change, based on students' attitudes and behaviors in addressing environmental issues		
	a. Very good (>80% of students demonstrate a caring attitude toward the environment and engage in activities/actions to protect the environment)	0	0
	b. Good (71–80% of students demonstrate a caring attitude toward the environment and engage in activities/actions to protect the environment)	3	100
	c. Fairly good (60–70% of students demonstrate a caring attitude toward the environment and engage in activities/actions to protect the environment)	0	0
	d. Poor (less than 60% of students demonstrate a caring attitude toward the environment and engage in activities/actions to protect the environment)	0	0
7	Understanding the term Education for Sustainable Development (ESD)		
	a. Yes	2	66,6
	b. No	1	33,3
8	The consensus that the concept of Education for Sustainable		

No	Question	Count	Percentage (%)
	Development (ESD) is important to incorporate into biology education		
	a. Yes	3	100
	b. No	0	0
9	Biology education should be geared toward improving students' sustainability literacy		
	a. Yes	3	100
	b. No	0	0
10	Implementing teaching materials that integrate Education for Sustainable Development (ESD) content into biology instruction, particularly in lessons on environmental change		
	a. Yes	2	66,6
	b. No	1	33,3
11	The approval of worksheets used in biology instruction is integrated with Education for Sustainable Development (ESD) content		
	a. Yes	3	100
	b. No	0	0
12	Approval for the development of biology instructional materials in the form of e-worksheets integrated with ESD content on environmental change		
	a. Agree	3	100
	b. Disagree	0	0

Based on the results of the teacher questionnaire presented in Table 1, all teachers have taught the topic of environmental change and used instructional materials in their lessons. The teaching materials used in Biology lessons on environmental change, as shown in Table 1, are still dominated by textbooks and worksheets. However, these materials generally focus on conveying basic concepts and have not been systematically designed to integrate sustainability contexts. This indicates that Biology instruction remains largely concept-oriented. This situation is caused by the limitations of teaching materials that have not been designed contextually, making it difficult for teachers to relate the material to real-world problems in the surrounding environment. In line with this situation, Kurniawan *et al.* (2025) state that students should not only learn about the biological theories found in textbooks but are also expected to connect that material to real-world problems they encounter in their surroundings.

Teachers stated that instruction has incorporated various instructional models; however, the availability of contextual teaching materials relevant to real-world environmental issues remains limited. Teachers also noted that the materials used are not well-suited to students' characteristics, lack appeal, make it difficult to connect the content to real-world environmental issues, and have limited supporting references. These conditions indicate that the available teaching materials have not yet been able to facilitate meaningful and contextual learning, thereby potentially reducing student engagement in the learning process. This aligns with Inayah *et al.* (2023), who noted that the implementation of Education for Sustainable Development (ESD) in Biology instruction still faces challenges, particularly regarding the scarcity of contextual teaching materials. Davlia *et al.* (2025) state that contextual-based learning is a method that places students in real-life situations and guides them to apply the knowledge they have acquired. This indicates that the relevance of the material to real-life contexts is a crucial factor in enhancing student engagement.

Bahan ajar yang tidak dikaitkan dengan konteks kehidupan nyata cenderung kurang efektif dalam meningkatkan keterlibatan siswa. Widayanti *et al.* (2019) noted that effective instructional materials must be able to connect concepts with real-life contexts to make learning

more meaningful. Teachers also expressed support for the development of teaching materials integrated with sustainability contexts. This indicates that teachers require teaching materials that are not merely concept-oriented but also capable of linking content to real-world conditions. This need aligns with findings regarding students, thereby highlighting a gap between the available teaching materials and learning needs. Context-based learning can enhance students' literacy more deeply (Utami *et al.*, 2020). This is supported by Mardiyah *et al.* (2025), who state that contextual learning in Biology can improve critical thinking skills and connect the material to real-world environmental issues. Additionally, systematically organized instructional materials can also improve the quality of learning. emphasize that structured instructional materials can enhance student engagement and understanding in science learning.

The results of the needs analysis, obtained through a survey distributed to students, were used to determine students' perceptions of the teaching materials used and to identify the need for the development of biology teaching materials on the topic of environmental change. A summary of the results of the student needs survey is presented in Table 2.

**Table 2. Results of the Analysis of Students' Needs Regarding Biology Teaching Materials**

No	Question	Count	Percentage (%)
1	Have studied the biology material related to environmental changes		
	a. Yes	59	93,7
	b. No	4	6,3
2	The biology lessons taught by our teachers have motivated me to learn (especially the material on environmental change)		
	a. Always	34	54
	b. Sometimes	29	46
	c. Never	0	0,0
3	Biology lessons on environmental change can be difficult to understand		
	a. Yes	14	22,2
	b. No	49	77,8
4	When teaching biology lessons on environmental change, teachers use teaching materials		
	a. Yes	60	95,2
	b. No	3	4,8
5	The use of these teaching materials helps students understand the topic of environmental change		
	a. Yes	60	95,2
	b. No	3	4,8
6	Have you ever heard of the term (Sustainable Development)		
	a. Yes	23	36,5
	b. No	40	63,5
7	During a biology lesson on environmental change, the teacher once linked the material to the concept of sustainable development		
	a. Yes	28	44,4
	b. No	35	55,6
8	The teaching materials used to study environmental change also address environmental issues related to social, economic, and environmental aspects (for example: the impact of the environment on community life, the impact of environmental degradation on economic activities, or ecosystem damage caused by human activities)		
	a. Yes	48	76,2
	b. No	15	23,8

No	Question	Count	Percentage (%)
9	Teaching materials that are better suited to current learning needs		
	a. Electronic teaching materials (e-worksheets, e-books, e-modules, e-handouts)	28	44,4
	b. Non-electronic (printed) teaching materials (textbooks, worksheets, modules)	35	55,6
10	Agreement regarding the development of instructional materials that include content on environmental change and are accompanied by case studies or environmental issues		
	a. Agree	62	98,4
	b. Disagree	1	1,6

Based on Table 2, the results of the student questionnaire analysis show that 93.7% of students reported having studied the topic of environmental change in their biology classes. However, 22.2% of students still reported having difficulty understanding the material. The fact that the teaching materials remain conceptually oriented affects students' understanding of the topic of environmental change. A total of 95.2% of students stated that the teaching materials used helped them understand basic concepts, but did not fully help them relate the material to environmental conditions around them. This indicates that students' understanding tends to be limited to cognitive aspects and has not yet developed toward contextual understanding. This situation is likely due to a teaching approach that has not explicitly integrated sustainability considerations into the curriculum, so students are not yet accustomed to connecting these concepts to the real world. This finding is supported by the results of a teacher survey, which indicate that learning achievement levels fall within the "effective" category (71–80%); however, student enthusiasm remains predominantly in the "moderate" category. Consequently, learning has not yet fully succeeded in fostering active student engagement and therefore needs to be improved through more contextualized instruction.

Most students stated that the instructional materials helped them understand the concepts covered in the curriculum, but did not fully help them connect the material to real-world situations. Additionally, the survey results showed that 63.5% of students did not understand the concept of sustainable development, indicating that biology instruction on environmental change is rarely clearly linked to the concept of sustainable development, thereby demonstrating the low level of integration of sustainability contexts into the learning process. This low level of understanding is due to the minimal presentation of sustainability issues in the teaching materials, so that students do not gain learning experiences that link biological concepts to environmental, social, and economic aspects. Kurniawan *et al.* (2025) add that a context-based approach in biology education not only teaches biology itself but also fosters a stronger sense of social and environmental awareness among students. The integration of such contexts into the curriculum makes learning more meaningful and sustainable. Students' low understanding of sustainability concepts indicates that the application of Education for Sustainable Development (ESD) principles in biology teaching materials is still suboptimal. In fact, ESD aims to equip students with the knowledge, skills, and attitudes necessary to make responsible decisions regarding environmental, social, and economic issues (UNESCO, 2017).

The use of instructional materials such as worksheets can also help improve students' thinking skills and understanding. This is supported by Pratiwi *et al.* (2024) who state that worksheets can enhance students' thinking skills in science learning. Additionally, the use of interactive teaching materials can also boost students' motivation to learn (Osman & Lay, 2022). The results of the needs analysis obtained through a survey distributed to students align with the

teachers' analysis. Students expect teaching materials that not only facilitate conceptual understanding but also connect environmental change topics to real-life issues in their daily lives.

The results of the analysis indicate a convergence of perceptions between teachers and students regarding the importance of developing biology teaching materials that integrate sustainability contexts into lessons on environmental change. Most teachers are familiar with the concept of Education for Sustainable Development (ESD), and all of them stated that ESD is important to implement in biology instruction. This indicates that teachers are aware of the importance of integrating sustainability contexts into their teaching. However, teachers stated that the teaching materials used are still insufficiently contextual and have not been able to link the content to real-world environmental issues; consequently, the materials remain focused on conveying concepts theoretically and have not fully addressed environmental problems relevant to students' daily lives. This aligns with the results of the student survey, which showed that most students have not yet been able to connect the material to their daily lives. These findings indicate that the learning process has not yet fully facilitated students in developing a contextual understanding of environmental change issues.

The current situation reveals a gap between students' conceptual understanding and their ability to apply that knowledge in the context of sustainability. From the perspective of Education for Sustainable Development (ESD), learning is not only oriented toward mastering concepts but also toward developing the ability to connect knowledge with real-world problems involving environmental, social, and economic aspects (UNESCO, 2017). Students' low ability to understand sustainability concepts is caused by the use of teaching materials that are not context based, resulting in learning experiences that remain limited to cognitive activities. Furthermore, the lack of clear presentation of sustainability issues in the learning process means that students are not accustomed to reflecting on environmental problems in their surroundings. These findings indicate that the implementation of ESD principles in biology education is still suboptimal, particularly in developing critical thinking skills, environmental awareness, and decision-making skills which are the primary objectives of ESD.

A total of 98.4% of students agreed with the development of teaching materials that link environmental change topics to real-life examples in everyday life. This percentage indicates that nearly all students have a need for teaching materials that are more contextual and relevant to their surrounding environment. Teachers also agreed with the development of teaching materials that can help students understand the material in a contextual manner while fostering environmental awareness. This support indicates that teachers are not only focused on achieving cognitive outcomes but also on fostering students' environmental attitudes and awareness.

The alignment of needs between teachers and students indicates that the development of biology teaching materials integrated with sustainability contexts is a relevant solution to address the limitations of existing teaching materials. This shared perception reinforces the urgency of developing teaching materials that are not only concept-oriented but also focused on real-life application. This aligns with Widayanti *et al.* (2019) who state that user-need-based teaching materials are more effective in learning. Additionally, Zan *et al.* (2023) suggest that contextual teaching materials can enhance students' critical and creative thinking skills. This view is further supported by Eurika *et al.* (2023), who demonstrate that teachers and students share common expectations regarding instructional materials: they should be contextual, interactive, and capable of fostering problem-solving activities in the learning process. This ensures that the development of instructional materials integrated with sustainability contexts is not merely a necessity but also a crucial strategy in creating more relevant and meaningful learning experiences. Thus, the development of E-LKPD integrated with a sustainability context is expected to be user-friendly,

engaging, contextual, and capable of enhancing students' critical thinking skills and sense of responsibility toward environmental issues.

#### D. CONCLUSION

Based on the results of the needs analysis of teachers and students, it can be concluded that biology instruction on the topic of environmental change still shows limitations in integrating sustainability contexts into teaching materials. The results of the teachers' needs analysis indicate that instruction on environmental change has been conducted in a sufficiently contextual manner. However, the teaching materials used still have limitations, particularly regarding their appeal and relevance to real-world environmental issues. This situation makes it difficult for students to connect the material to real-world environmental issues in their daily lives. Although some teachers are familiar with and have applied the concept of ESD (Education for Sustainable Development), its implementation has not been consistent. Teachers expressed support for the development of teaching materials integrated with sustainability contexts as a solution to enhance students' understanding, awareness, and sustainability literacy. This study indicates that the development of Biology teaching materials integrated with sustainability contexts needs to be systematically designed by incorporating real-world environmental issues, thereby assisting teachers in implementing more contextualized learning, increasing student engagement, and facilitating the achievement of student competencies.

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