INSTRUCTIONAL MATERIALS OF PODCAST SCRIPTS IN BRIDGING EFL STUDENTS' AWARENESS OF CLIMATE CHANGE: A NEED ANALYSIS

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Article Info	Abstract
	The Independent Curriculum places an emphasis on readings in English that address global concerns like climate change. However, there is a lack of materials that address climate change in a way that is both interesting and easy to understand. The purpose of this study is to examine the needs of students at SMA Srijaya Negara in Palembang, Indonesia, related to the development of podcast scripts based on descriptive texts about climate change. The research involved 35 tenth-grade students, their English instructor, and two stakeholders. A mixed-methods study, which included questionnaires and semi-structured interviews, was conducted. The findings reveal that students need materials that align with their English proficiency levels and are relevant to global issues, especially climate change. Students expressed a preference for descriptive texts that are not only informative but also simple to understand, allowing them to connect the theme of climate change with their real-life contexts through engaging and relatable materials. This study identifies a significant gap in the existing teaching materials, as they do not fully accommodate students' needs for climate change content presented in accessible descriptive text formats. Based on these findings, the study advocates for the development of climate change-based podcast scripts derived from descriptive texts, designed to match students' English proficiency and be more relevant to their daily lives. This research is expected to contribute to the development of supplementary teaching materials that enhance students' English skills while raising their awareness of climate change issues.

INTRODUCTION

The education system is evolving to meet the challenges of the modern world, requiring a flexible and inclusive approach to curriculum design. While consistency in curriculum planning has traditionally been emphasized, recent research suggests that overlapping and even contradictory elements may be necessary to address complex learning environments (Prøitz, 2023). Daga (2020) highlights that curriculum acts as the "lifeline" of education, directing the educational strategies and objectives necessary for meaningful learning. In Indonesia, curriculum development has evolved through numerous revisions since 1947 (Setiawan & Suwandi, 2022), reflecting the substantial influence of science and technology on shaping the nation's educational path (Dewi, 2021). Currently, the Ministry of Education, Culture, Research, and Technology oversees these developments, supporting an Independent Curriculum designed to enhance educational standards and develop a competent workforce (Kemendikbud, 2022; Vhalery et al., 2022). This evolution underscores the adaptability of the

national curriculum to address both local and global challenges, particularly those posed by environmental issues such as climate change.

Changing weather patterns and average global temperatures over extended periods of time are known as climate change (Shivanna, 2022). Although climate change has always been a part of the natural world, the present pace of change is unprecedented and causes great alarm.Djalante (2018) emphasizes the need for in-depth research and immediate action to address these threats within Indonesia, noting the urgency for educational initiatives that enable the younger generation to understand and address these environmental challenges. Recognizing this need, UNESCO (2021) advocates for climate change education as an essential part of the global curriculum, arguing that education has a critical role in empowering communities to effectively combat climate change. This global framework calls for strategic collaboration among educational leaders and environmental experts to implement educational reforms that integrate climate change topics, equipping students with the skills and awareness needed to confront these pressing issues. Silvhiany et al. (2023) suggested that climate change is a critical issue that can and should be integrated into English language teaching (ELT), and it was found that teachers were willing to incorporate climate change education into EFL learning, despite having varying levels of knowledge and preparedness.

In Indonesia, while the need for climate change education is widely acknowledged, gaps remain in how climate change and environmental issues are incorporated within secondary school curricula. Environmental education has several obstacles in Indonesian high schools, according to research by Darmawan and Dagamac (2021), especially at the secondary level of education. Inadequate time in the classroom, little resources, and unwavering administrative support are all factors contributing to this problem. This is why the Ministry of Culture and Education has lately moved to include climate change in the national English curriculum (Handayani et al., 2020; Mahfud, 2019). Creating climate change-focused descriptive texts that are in line with the goals of the Independent Curriculum is one possible and promising strategy.

Descriptive texts provide a valuable tool for cultivating environmental awareness among students, allowing them to engage with contemporary global issues. Integrating climate change topics into English language classes can foster ethical attitudes and environmental responsibility. Such materials not only support literacy and comprehension skills but also cultivate a sense of stewardship, as students learn to view environmental issues with empathy, responsibility, and ecological awareness. This ethical component is essential for nurturing students' commitment to preserving natural resources and preventing ecological degradation.

Given the scope and urgency of climate change, introducing the topic within school curricula can raise awareness and support informed decision-making among students. A promising method for delivering this content is through podcast-based descriptive texts, an approach that aligns with the current independent curriculum's focus on active learning and engagement. By incorporating climate change themes into these texts, educators can offer interactive and informative resources that resonate with students, fostering a deeper understanding of global and local environmental issues.

Despite these advantages, there is a severe lack of descriptive texts on climate change that are specifically designed for Indonesian senior high school students to listen to in podcast form.Existing studies, such as those by Tenridinanti et al. (2021) and Noto et al. (2022), have largely focused on report and exposition texts aligned with earlier curricula. There is, however, an increasing recognition of the need for research on instructional resources and curricula that emphasize descriptive texts in the current educational framework. Groundbreaking studies by researchers such as Azizah et al. (2020), Researchers in Indonesia have looked at how to improve students' understanding of climate change by the use of descriptive text materials in a number of studies (Elviana et al., 2020; Pratiwi & Rezeki, 2019; Rhahima et al., 2021).

Conducting a needs analysis is a foundational step in designing educational materials that address specific student requirements. According to Balatska and Vyslobodska (2020), needs analysis plays a crucial role in teaching English for specific purposes, helping to tailor the curriculum to the learners' requirements. This study, therefore, seeks to conduct a thorough needs analysis of Indonesian students to determine how climate change-based descriptive texts can be developed as podcast scripts, which will serve as supplementary educational content.

The novelty of this study lies in its integrative approach to curriculum-based climate change education through the development of podcast-based descriptive texts tailored to the Indonesian secondary school context. While prior research has addressed environmental topics in science and report-based texts, this study is the first to conduct a comprehensive needs analysis to inform the creation of podcast script materials that align with the Independent Curriculum's emphasis on active, student-centered learning. By merging language acquisition with environmental awareness through a multimodal format, the study offers a unique and contextually relevant contribution to both English language pedagogy and climate change education. Therefore, the study formulates a research question: What are the needs and expectations of EFL students regarding instructional materials, particularly podcast scripts adapted from descriptive texts, to help increase their awareness of climate change?

RESEARCH METHOD
Research Design

In this study, a mixed-methods approach was employed to obtain a comprehensive understanding of the research problem by integrating both quantitative and qualitative methodologies. The quantitative component was primarily used to collect and analyze numerical data obtained through structured questionnaires distributed to a broad sample of participants. This method enabled the researchers to identify patterns, measure variables, and establish statistical relationships relevant to the research objectives. Through statistical tools and techniques, the quantitative data provided generalizable findings that offered an overview of trends and behaviors within the study population. Complementing this, the qualitative component of the research was designed to gain in-depth insights and a nuanced understanding of the participants' experiences, attitudes, and perceptions. Semi-structured interviews were conducted with selected participants, allowing for open-ended responses and a more flexible exploration of themes that emerged from the quantitative analysis. These interviews enabled the researchers to probe deeper into specific issues, clarify ambiguities, and capture the contextual richness of participants' perspectives that numbers alone could not reveal. The integration of both approaches allowed for triangulation, enhancing the validity and reliability of the findings. By combining the strengths of both methods, the study provided a more holistic and robust analysis of the research topic.

Research Participants or Population and Sample

This research was conducted at SMA Srijaya Negara, a senior high school located in Palembang, Indonesia. The study targeted the tenth-grade student population, which consisted of 252 students distributed across seven different classes. Additionally, the research considered input from two English language teachers and other key educational stakeholders within the school environment. To ensure that the sample reflected the specific focus of the study, a purposive sampling technique was utilized. This non-probability sampling method was chosen to deliberately select individuals who were most relevant and informative for addressing the research objectives. As a result, the sample included one class comprising 35 tenth-grade students, one English teacher who regularly engaged with this class, and a vice principal responsible for overseeing academic programs and curriculum implementation. The inclusion of these participants was intended to provide a well-rounded perspective on the teaching and

learning processes, particularly in relation to the integration of climate change content into English instruction.

Instruments

The process of data collection in this study utilized a mixed-method approach, combining the use of questionnaires and semi-structured interviews to gather comprehensive and meaningful data. A structured questionnaire consisting of twenty-five carefully formulated items was administered to the selected tenth-grade students and their English teacher. Each item was meticulously designed to align with the research objectives, aiming to uncover detailed information about the students' learning needs, limitations, available learning resources, and personal interests or aspirations—specifically in relation to learning through climate change-themed descriptive texts. The questionnaire's structure was based on the widely accepted framework developed by Hutchinson and Waters (1987), which emphasizes various dimensions of needs analysis, including Target Situation Analysis (what learners need to do in the target situation), Deficiency Analysis (what learners lack), and Present Situation Analysis (learners' current language proficiency and resources). Complementing the quantitative data, semi-structured interviews were conducted with two key educational stakeholders: the English teacher and the vice principal responsible for academic and curriculum affairs. These interviews were intended to provide deeper insights into the institutional context of English language teaching at SMA Srijaya Negara. The interview sessions explored several critical themes, including the availability and use of English reading materials, the current curriculum's flexibility in accommodating new content, and the perceived relevance and practicality of integrating climate change topics into English descriptive texts. This qualitative component not only enriched the data gathered from the questionnaire but also helped clarify contextual factors that could influence the development and implementation of relevant educational materials.

Data Analysis

During the data analysis stage, all collected information was carefully and systematically processed to ensure its accuracy, integrity, and alignment with the research objectives. The quantitative data, derived from students' responses to structured questionnaires, were subjected to a detailed statistical analysis. Descriptive statistics, such as frequencies, percentages, and means, were employed to summarize the general trends and characteristics of the responses. In addition, inferential statistical techniques were applied to explore potential relationships or significant differences among variables, providing deeper insights into the patterns that emerged. On the qualitative side, data gathered through semi-structured interviews with the teacher and school vice principal were analyzed using thematic analysis. This method allowed the researcher to code, categorize, and interpret recurring patterns or meaningful themes that reflected participants' perspectives and experiences. By integrating both quantitative and qualitative findings, the study achieved a well-rounded and comprehensive understanding of the research problem, enhancing the overall validity and depth of the analysis.

RESEARCH FINDINGS AND DISCUSSION
Research Findings

The findings of this study were obtained by analyzing students' needs regarding climate change–based descriptive texts for podcast scripts, which include Target Situation Analysis, Deficiency Analysis, Present Situation Analysis, and Strategy Analysis.
Target Situation Analysis (TSA) This section assesses the students' needs, overall goals, and expectations regarding their English learning experience. The findings from this analysis are presented in Table 1.

Table 1
Analysis of Students' Perspectives on TSA

No.	Question/Statement	Student's View	Percentage
1.	The significance of learning English	to assist in communicating with other people	51,5 %
2.	Students' expectation towards learning English	To communicate orally using English in the future workplace	78,8 %
3.	The language used for students' career	To communicate orally with coworkers or tourists	78,8%
4.	Do you see a need for adding descriptive text-based podcast scripts as part of English reading materials?	A significant number find the inclusion of descriptive texts integrated into podcast scripts beneficial for comprehensive learning.	60, 6 %

The Target Situation Analysis (TSA) results reveal students' perceptions and expectations about their English language learning. A notable percentage of students (51.5%) consider English essential for communication, highlighting its importance in both academic and professional contexts. More than three-quarters of the students (78.8%) expect to use English for oral communication in their future workplaces, reflecting an increasing awareness of English as a global lingua franca. Despite these aspirations, many students experience a disconnect between their expectations and the current curriculum's ability to develop these essential skills. In particular, reading proficiency—which is crucial for building vocabulary, grammar awareness, and comprehension—is often underemphasized in classroom instruction.

The study also shows that 62.9% of students believe that incorporating descriptive text-based podcast scripts into English learning materials would be beneficial. This aligns with growing research suggesting that when students engage with relevant, interesting, and contextually meaningful learning materials, their motivation and perceptions of the task's value increase, resulting in better educational outcomes. Podcasts, as multimodal learning tools, provide authentic listening experiences that enhance language exposure and cater to various learning styles and preferences. These results highlight the urgent need for curriculum reforms that integrate innovative and real-world materials—such as climate change-focused podcasts—to better address students' practical needs and future career demands.

Deficiency Analysis (DA)

This section examines the present desires and needs of the students, as well as the deficiencies or inadequacies of their desired circumstances. Table 2 displays the present desires and requirements of the students in relation to the subjects or materials for reading.

Table 2
Students' Views on DA

No.	Question/Statement	Student's View	Percentage
1.	Topic wanted by students in English learning 11	Current issues	62,9%
2.	Students' preferred input for reading materials 12	Authentic materials that are easily accessible and include texts accompanied by a list of related new vocabulary.	74,3%
3.	Integrating contemporaneous issue-related subjects into reading text	Multiple choices	78,9 %
4.	Integrating climate change–based descriptive texts for podcast	Very important	57,1%

The findings suggest that students predominantly prefer learning topics that are current and relevant to real-world situations, with 62.9% emphasizing the importance of contemporary issues. In terms of material preferences, 74.3% of students favored authentic materials that are not only easily accessible but also include related vocabulary lists. Additionally, 78.9% of students expressed a preference for multiple-choice question formats in their assessments, demonstrating a need for structured and targeted evaluation methods. Furthermore, 57.1% of students rated the integration of climate change–based descriptive texts for podcast purposes as very important, highlighting the relevance of this topic in their learning journey. The application of authentic materials in learning has been shown to effectively enhance students' interest and comprehension in reading. Research supports that the use of authentic materials significantly improves reading scores and motivates learners by providing meaningful and relevant content.

The development of authentic assessment instruments for reading comprehension has demonstrated high feasibility. Additionally, thematic learning assessments have been validated with high levels of applicability and readability. Systematic implementation of authentic assessments can consistently increase students' motivation to engage in continuous learning. The data and supporting evidence emphasize the importance of integrating authentic and relevant materials into English reading lessons. These materials, coupled with effective assessments, not only address students' current needs but also foster a more engaging and impactful learning environment. The findings also showed that students consider climate change to be an important and relevant topic that should be incorporated into English reading materials. This aligns with UNESCO's recommendation to include climate change as a key component in educational resources, highlighting it as a vital skill set encompassing attitudes, abilities, and knowledge that students need to develop.

Present Situation Analysis (PSA)
This section provides an in-depth analysis of students' current English proficiency, the scope of curriculum content delivered in the classroom, and students' awareness and understanding of climate change-related topics. The purpose of this analysis is to evaluate how well the existing curriculum supports the development of language skills while also addressing contemporary global issues. Specifically, it explores students' self-assessed competence in reading, writing, listening, and speaking in English. Table 3 illustrates key findings drawn from student responses, offering insight into their perceived strengths and weaknesses, which can guide the development of instructional materials, particularly those integrating climate change themes.

Table 3
Students' English Proficiency

No.	Question/Statement	Student's View	Percentage
1.	Students present English-level	Beginner	54,3%
2.	Students present proficiency in comprehending the reading text	Good enough	45,7%

According to the data, the half of students (54,3%) rated their English proficiency as beginner-level. Furthermore, 45.7% of students considered their reading comprehension to be good. This indicates that some students have managed to develop solid reading comprehension skills, even with their beginner-level English abilities. These results emphasize the importance of focused teaching and assistance to help students improve both their English language skills and reading comprehension.

Table 4
The Existing Materials Learned and Presented

No.	Question/Statement	Student's View	Percentage
1.	The difficulty of reading text in English coursework	Difficult	57,1%
2.	Frequency of seeking extra reading materials outside school topics	Often	60%

The findings in Table 4 reveal significant challenges in students' engagement with English learning materials. A notable proportion (57.1%) perceive the reading texts as difficult, indicating a potential mismatch between the complexity of the materials and students' proficiency levels. This aligns with recent studies that highlight similar issues, where students struggle with reading comprehension due to the lack of alignment between material difficulty and their abilities. Additionally, 60% of students report frequently seeking supplementary reading materials beyond school-provided content, suggesting gaps in the relevance or appeal of existing resources. This finding is consistent with research indicating that the absence of engaging and contextually relevant materials drives students to look elsewhere for meaningful content. These results underscore the necessity of integrating accessible, engaging, and real-world topics—such as climate change—to enhance comprehension and address students' diverse learning needs effectively.

Table 5
Students' views on DA

No.	Question/Statement	Student's View	Percentage
1.	Students' knowledge about climate change	Good	31%
2.	Climate change's aspects that students know	Extreme weather	82,9%
3.	Students' ways of knowing about climate change	Online media	62,9%
5.	Students' climate change knowledge level	General information	77,1%

The students' perspectives on their current knowledge of climate change are shown in Table 5. The results indicated that 31% of students reported having a good understanding of climate change. Students were most familiar with the concept of extreme weather, with 82.9% identifying it as a key aspect of climate change. Online media emerged as the primary source of knowledge, cited by 62.9% of students. However, 77.1% of students admitted that their understanding of climate change remained limited to general information. This highlights the need for more in-depth educational initiatives to enhance their comprehension.

Strategy Analysis
The result highlights participants' preferences for various reading activities, providing valuable insights for developing effective learning strategies. The most preferred activity was reading aloud with proper pronunciation and intonation (57.1%), demonstrating the significance of active, auditory engagement in enhancing comprehension. Following this, group discussions and translation tasks (48.6% each) emerged as highly favored methods. Group discussions facilitate collective understanding through peer collaboration, while translation tasks promote linguistic competence and a deeper understanding of text meanings. Individual reading followed by answering questions (37.1%) was moderately preferred, catering to independent learners who thrive on self-directed engagement with texts. Contextual vocabulary analysis, however, was the least favored activity (20%), indicating a need for innovative and interactive approaches to make it more appealing. These findings suggest that combining reading aloud, collaborative discussions, and translation tasks, while improving the

implementation of vocabulary analysis, can create a comprehensive and effective learning framework tailored to diverse learner needs.

The Students' Needs Viewed by the English Teacher

Based on the result of the interview with the English teacher, she argues that the present English learning objectives align with the established curriculum. She stated:

> *"The English education goals at this school are tailored to align with the current curriculum standards. To support effective learning, the school provides various resources, including official English textbooks and online tools like Google websites and YouTube videos. These materials help students engage with the subject matter more effectively."*

According to the English teacher, some students demonstrated strong reading skills, while others struggled to keep pace. She emphasized the difficulty students faced in understanding the course materials. She explained that the primary challenges were the students' limited vocabulary and comprehension difficulties with certain content, especially in descriptive texts. She provided further details on these issues.

> *"When students read a text, their limited vocabulary becomes a significant obstacle in understanding English reading materials. As a result, they struggle to grasp the meaning of descriptive texts. They also find it difficult to describe a person, a place, or an object accurately."*

The current curriculum emphasizes the importance of addressing students' needs by providing materials relevant to their daily lives. For example, issues like climate change can be incorporated into English lessons. Themes such as arid weather can be used for descriptive texts, especially through podcast scripts. However, environmental topics are still not commonly found in teaching materials, which indicates a gap in the curriculum where more focus on environmental issues could improve the learning experience. As the teacher explained:

> *"The current curriculum highlights the need to meet students' needs by providing materials that are relevant to their daily lives. For instance, climate change, as a global issue, can be included in English lessons. Themes like arid weather can be used for descriptive texts based on podcast scripts. However, environmental topics are still not commonly found in teaching materials."*

According to her explanation highlights the necessity of incorporating topics such as climate, weather, and the environment into climate change education.

The Students' Needs Viewed by the Stakeholders

The statement below reflects the assistant curriculum's viewpoint on aligning English language learning goals with the current curriculum framework.

> *The school works hard to improve the effectiveness of English learning through the application of the independent curriculum, focusing on encouraging learning that aligns with each student's interests and abilities.*

The curriculum assistant also mentioned that the school has provided a variety of learning resources for students. He stated:

> *"Currently, the school provides government-issued textbooks that are accessible in the library. Additionally, the independent curriculum offers various features that can be effectively utilized. One of its advantages is the integration of internet resources, enabling students to access and explore a wide range of materials and information with ease. Moreover, the school strongly encourages teachers to develop and provide their own instructional resources."*

Furthermore, the views on climate change, as outlined in the reading materials, are as follows. He stated:

> *"Climate change is an issue that should be seen as a global concern. Clearly, public awareness about it is still quite low, which is why it's important for students to understand this pressing matter. Teachers are also expected to develop teaching materials that meet the needs of the curriculum and students. These materials should focus on student-centered learning. We*

encourage teachers to create resources like modules, textbooks, or other essential materials that cover key topics in education."

In order to combat climate change, stakeholders agree that education is crucial for educating the public, fostering understanding, and motivating sustainable behaviours. When it comes to pupils' perspectives on climate change, teachers are crucial. Crafting resources that elucidate the scientific facets of this matter falls squarely on their shoulders. Teachers need to establish specific goals for student learning and check that their course materials support these objectives if they want to do this successfully. Furthermore, stakeholders recommend that schools think about integrating climate change into English classes, especially as a way to promote a sustainable lifestyle in the independent curriculum.

Discussion

The findings from the study underscore the significant role that climate change–based descriptive texts can play in fulfilling the diverse learning needs of students, especially within the framework of language education. The integration of these texts responds directly to the evolving demands of both global educational priorities and localized classroom realities, making learning more meaningful, relevant, and engaging. According to Parmawati and Yugafiati (2017) and more recently Nurmalasari (2023), integrating real-world topics into language learning fosters a stronger connection between the students and the material they are learning, thus promoting increased motivation and deeper comprehension. In this regard, climate change emerges as a particularly urgent and meaningful theme. It is not only globally significant but also contextually relevant for students living in a country like Indonesia, which faces direct consequences from environmental degradation and climate-related events.

The implications of these findings resonate across multiple dimensions of educational practice, including curriculum development, pedagogical strategy, and the creation of instructional resources. They suggest a pressing need for curriculum designers and educators to bridge the persistent gap between academic goals and the practical realities of the 21st-century world. In particular, language education must evolve from being a system of grammar instruction and vocabulary drills to one that integrates real-world content, critical thinking, and communication skills. This is particularly evident in the data drawn from the Target Situation Analysis (TSA), where students overwhelmingly indicated that oral communication was a central skill they would need in future workplace environments. With 78.8% of students expressing this expectation, the findings validate Hadi's (2006) assertion that communication, particularly in English, is a fundamental competency for global engagement and career advancement.

However, as supported by research from Poedjiastutie et al. (2018), the current curriculum often falls short in preparing students for real-life communication scenarios, particularly in developing reading comprehension and critical thinking. These shortcomings are symptomatic of a broader disconnect between curricular content and the actual communicative contexts students are likely to encounter outside the classroom. Climate change–based descriptive texts offer an opportunity to address this gap. They can serve as entry points for stimulating discussions, encouraging debates, and practicing presentations, thus enabling students to simulate and prepare for real-world interactions. As Kusmijati (2014) and Utami et al. (2020) argue, descriptive texts that are grounded in contemporary, real-life themes can function as effective tools to support active, meaningful communication.

Authenticity in learning materials has long been recognized as a driving factor in effective language acquisition. The Deficiency Analysis (DA) findings reveal that students favor learning materials that are not only linguistically accessible but also thematically relevant to their lived experiences and current global challenges. Authentic materials—those that reflect real language use in genuine contexts—are inherently motivating, and they support the development of both language proficiency and critical engagement. Kusmijati (2014) asserts that learners who are

presented with authentic materials are more likely to demonstrate increased comprehension and application of content. Climate change–based descriptive texts are inherently authentic: they reflect current global discourse, are grounded in scientific facts, and demand active interpretation. According to Chowdhury and Ara (2021), as well as Adao et al. (2023), such materials promote higher-order thinking, cognitive development, and reflective learning.

This pedagogical orientation is strongly aligned with global educational guidelines such as those proposed by UNESCO (2021), which advocate for integrating global issues into curriculum content. These guidelines highlight education not merely as a tool for linguistic mastery, but as a transformative force for shaping responsible global citizens. Thus, by incorporating descriptive texts that focus on climate change, teachers are not only enhancing English language learning but are also participating in a broader educational mission—developing awareness, responsibility, and action in the face of global challenges.

Another pressing concern identified in the Present Situation Analysis (PSA) is the proficiency gap that exists between students and the linguistic complexity of many available English texts. This gap, as Tasyaa et al. (2023) point out, often results in students feeling overwhelmed, disinterested, or disengaged. Research by Pratiwi & Priyana (2024) reinforces this claim, noting that when materials are misaligned with learners' actual language skills, the result is diminished confidence and reduced learning outcomes. Climate change–based descriptive texts, however, offer the flexibility to be adapted and scaffolded according to different levels of language proficiency. Through the inclusion of vocabulary support, simplified sentence structures, and guided reading activities, these texts can be made accessible to all students.

The adaptation of these texts into podcast formats further enhances their reach and impact. Podcasts offer a multimodal learning experience by combining auditory and textual inputs, which is especially beneficial for students with varying learning preferences. Research by McIntyre et al. (2021) affirms that podcasts serve as valuable tools for language learning, providing exposure to natural language use, pronunciation, intonation, and context. Moreover, podcasts can be paused, replayed, and revisited, enabling self-paced learning that fosters autonomy and deeper engagement with content. By integrating climate change–focused descriptive texts into podcast scripts, educators can create compelling, multimodal resources that make learning dynamic, relevant, and impactful.

In addition to their linguistic benefits, podcasts also complement the active learning strategies that students in this study found most effective. Reading aloud, group discussions, and peer interaction emerged as preferred activities, reflecting a desire for more participatory and collaborative classroom environments. These methods are consistent with constructivist learning theories, which posit that knowledge is best constructed through social interaction and experiential engagement. Podcasts enhance these approaches by providing content that students can listen to, analyze, and then discuss in groups, thus reinforcing comprehension while developing communication and critical thinking skills. For example, after listening to a podcast on rising sea levels, students can be tasked with summarizing the key points, offering solutions, or even creating their own podcast segments. This not only fosters language skills but also develops media literacy and collaborative problem-solving.

The relevance of climate change as a learning theme was particularly evident in the study's findings, which showed high levels of student interest in topics such as extreme weather, environmental degradation, and ecological preservation. This interest signals an important pedagogical opportunity. By designing instructional materials around topics that students are genuinely curious about, educators can tap into intrinsic motivation—a key predictor of academic success. Climate change–based texts invite students to grapple with complex, interdisciplinary issues, thereby promoting inquiry, analysis, and empathy. They allow students

to connect classroom learning with real-world events, fostering a sense of purpose and relevance that is often lacking in traditional language instruction.

This educational approach is also in line with the Education for Sustainable Development (ESD) framework promoted by UNESCO (2021), which calls on educators to equip learners with the knowledge, skills, values, and attitudes necessary to shape a sustainable future. ESD encourages an integrated model of learning that spans cognitive, socio-emotional, and behavioral dimensions. By embedding climate change into descriptive texts, teachers fulfill this mandate, enabling students to reflect on their own roles and responsibilities in the global environmental crisis.

The integration of climate change–based descriptive texts into podcast scripts, therefore, represents more than a methodological innovation; it is a comprehensive strategy for educational enrichment. It responds to students' expressed needs for communication skills, meaningful content, and engaging formats. It bridges the gap between student proficiency levels and curriculum expectations. It supports preferred learning strategies that emphasize collaboration, discussion, and reflection. And importantly, it aligns language education with the broader goals of environmental awareness and global citizenship.

CONCLUSION

The conclusions drawn from this study reinforce the importance of rethinking and redesigning language education to better meet the evolving needs of students in the 21st century. The integration of climate change–based descriptive texts into English language instruction offers a rich, interdisciplinary solution that combines linguistic development with real-world awareness. The findings underscore how these texts—especially when adapted into podcast formats—bridge the gap between traditional curriculum structures and the dynamic communicative demands of modern life. They respond directly to students' needs for accessible, engaging, and contextually meaningful learning materials, as well as their preference for collaborative and multimodal learning environments. By fostering critical thinking, enhancing reading and listening skills, and promoting the use of English in real-life communicative scenarios, climate change–themed content serves as a powerful pedagogical tool. Moreover, it supports the cultivation of global competencies, aligning well with the objectives of Education for Sustainable Development and the broader aims of cultivating socially responsible and environmentally literate citizens.

Furthermore, this study offers practical and theoretical insights into the design of language learning resources that are both effective and forward-looking. The podcast-based approach, informed by students' preferences and validated through needs analysis, demonstrates how educational innovation can be grounded in student voices while also anticipating future challenges. As the climate crisis continues to shape socio-political and economic realities, the classroom becomes an essential space for fostering not only academic literacy but also ethical and civic engagement. In this regard, the use of climate change–based descriptive texts marks a strategic shift toward a more relevant, inclusive, and transformative model of language education. It empowers learners to become articulate communicators, critical thinkers, and informed participants in the global discourse on sustainability—thus positioning English not merely as a subject to be learned, but as a medium for real-world engagement and responsible action.

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