

The integration of English language teaching with environmental sustainability: A comprehensive review of pedagogical strategies and global impacts

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Abstract

Governments and other entities worldwide are becoming increasingly aware of the need to promote sustainable living. Today, some institutions have a policy on sustainability in any field. This understanding has led to the organization of various courses and educational materials being published in all areas of education, including English language teaching (ELT). This paper examines how ELT is promoting environmental sustainability, and how ELT contributes to sustainability can be divided into three broad categories: direct, collaborative, and teacher-based. This paper also examines and analyzes the categories, as well as proposes the best way to strengthen the focus on sustainability through a variety of approaches. Collaboration between ELT teachers and teachers from other fields is not only an important way but also a concept that is often overlooked. Therefore, teacher education programs should focus on teaching the principles of sustainability, not just teaching skills, regardless of sustainability skills. English teacher education programs should support innovation for sustainability, not just English teaching methods, and finally, future studies should examine the effectiveness of this combination.

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1. Introduction

Due to its extensive global perspective and lengthy and prestigious history, English language teaching (ELT) is crucial in promoting and pursuing greater environmental sustainability (Rose et al., 2020). Additionally, Xhaferi and Bektashi (2020) provided a wide range of effective strategies and methods for successful application in the context of teaching English as a second language. In this sense, ELT aims to empower and equip students with the essential knowledge, attitudes, values, and skills needed to promote active participation and facilitate group decision-making about environmental concerns by providing a wide range of resources and carefully planned lessons that encompass various teaching objectives.

The widely accepted and well-known ELT curriculum embodies English empowerment. ELT classrooms may foster a profound understanding and appreciation for the interconnectedness of our global community and the vital necessity of sustainability by drawing on the diversity and richness of many cultures and practices (Misiaszek, 2020). The cornerstone of ELT is

forming learners' attitudes and values; it is a natural catalyst that instills in people a steadfast commitment and sense of duty to save and maintain the environment. ELT empowers individuals of all ages and comprehension levels to actively contribute to the preservation and enhancement of our planet, thereby ensuring a more sustainable and peaceful world for future generations (Saiful, 2023). With its plethora of educational opportunities, ELT opens a potent platform that fosters the qualities and ecologically conscious mindset needed to satisfy the demands of our future society (Jodoin, 2023). Indeed, the constantly changing landscape of curriculum review and the urgent need to improve methods of resource conservation hinder our efforts to effectively address environmental issues within English classrooms, despite growing concerns and anxieties about our fragile global environment (Raposo et al., 2020). Nonetheless, it is critical to acknowledge how vital it is to include environmental sustainability within ELT settings. ELT provides a means of fostering critical awareness and enabling students to make decisions that have a positive environmental impact and manage the difficulties and complexities of the present day (Huot & Loch, 2025).

Therefore, to incorporate environmental sustainability into the curriculum, ELT experts must constantly adjust and modify their approaches (Galloway & Numajiri, 2019). ELT can integrate a wide range of issues, including ecological responsibility, conservation, and climate change, to produce a coherent and all-encompassing learning experience. Being aware of the school environment and getting any best practices from teachers not only gives students language skills but also cultivates an intense sense of environmental consciousness, which is another way to improve student learning outcomes (Huot et al., 2024). With this comprehensive method of teaching languages, students are likely to develop into initiative-taking agents who can promote sustainability both within and outside the classroom (Sidiropoulos, 2022). ELT can also optimize its influence through interdisciplinary projects by collaborating with other academic divisions, community organizations, and environmental campaigns. Students can collaborate with peers from other areas to develop innovative solutions for environmental concerns by engaging in firsthand problem-solving (Chen et al., 2023). By fostering collaboration and a sense of shared responsibility that extends beyond the classroom, ELT can have an impact on communities and societies as a whole (Chan, 2016).

This paper focuses on how ELT can help mold individuals into citizens by emphasizing the significance of incorporating strategies and approaches that promote environmental sustainability in ELT classrooms. Following this discussion about the importance of raising consciousness in ELT educational settings, the obstacles related to integrating sustainability into the curriculum will be explored, along with suggestions for collaborative actions to enhance ELTs' effectiveness in promoting sustainability efforts. The methods used in education (EE) explore how different disciplines can be integrated into EE practices and suggest ways to enhance EEs' impact on creating a more sustainable future, is examined.

2. Designing an ELT Curriculum for Environmental Awareness

Psychodrama, co-counseling, Gestalt, biofeedback, echo awakening, stimulating sensitivity, listening, mythology, and many other schools and techniques all point to natural style as a way of living in an intimate relationship with our Mother Earth and with our wider universe (Chawla & Gould, 2020). All religions have obligations of stewardship of the environment. What a pity that this lack of respect and understanding has resulted in many of these ideas becoming antiquated. The pursuit of the material benefits possible from economic efficiency has meant that for a substantial proportion of the world's population, the school curricula tend to deny younger members of the population access to such learning, driven by fears for their security, and are taking much more than they are giving (Dillon & Herman, 2023).

The economics of success is more important than human welfare; overconsumption is more important than conservation. The quality of environmental capital has seriously deteriorated, and ELT as a subject should address these issues using both a process and a content approach (Ahmad et al., 2022; Xiao et al., 2020). Many of these problems stem from a lack of social concern, a lack of trust, a lack of respect, and a basic instinct to exploit Earth's resources (Corning, 2023). Camagni (2023), along with Sedlacek (2023), delved into the work of Jean Liedloff (1926–2011), an author and researcher known for her understanding of human growth and child-rearing practices in society. In her publication titled “*The Continuum Concept: In Pursuit of Forgotten Joy*,” published in 1975, Liedloff explored behavior and how contemporary societal norms impact individual well-being. Based on her experiences with the Yequana community in South America, she concluded that Western traditions often hinder development, resulting in social obstacles for individuals. She emphasized the significance of touch. Being attentive to babies’ needs while engaging children in activities typically done by adults is crucial for proper development. Her beliefs have influenced how parents raise their children and sparked conversations about matching standards with our instincts. She feels that this emphasis breeds feelings of superiority and inferiority. Money rates success: hard work not only leads to this success but also to prestige, property, the accumulation of things that form the right background, and power, according to Rublack (2023).

Implementation of an ethical framework with caring, love, respect, implicit trust, and a concern for social welfare or the common good is caring (Lemon & Boman, 2022). Menggo (2022) explores the extent of exposure, effectiveness, and orientation of ELT curriculum concerning environmental sustainability and various pressing issues of growing significance, such as world peace, global economic disparities, human rights and responsibilities, child development, illiteracy, hunger, population growth, and shortages of water and energy. These issues demand not only stabilization but an increase in awareness and action to ensure the well-being of current and future societies. Establishing a persuasive argument, based on scientific theory, concept, or phenomenon, to increase a sense that a problem is relevant, important, and intriguing (Tang, 2022). Enable empirical self-validation for sides of issues, e.g., overpopulation. One way to implement an elicitation process of this nature is to include not only a for-advocate but also an against-advocate presentation, each required to expound arguments with equal time and opportunity for challenge from the other (Yuan et al., 2022). Zhou et al. (2020) stated that determining a customer’s Will Pay and Willing to Pay about the proposed inclusion of these emerging societal challenges in the curriculum is a crucial part of the market assessment requirement. According to Murphy (2023), this social message enhances citizenship, highlighting the council's role in meeting with parliament to voice complaints, a powerful lobbying tool during legislation deliberations that often benefits a select few.

2.1. Key Concepts and Principles

The concept of sustainability emerged during environmental crisis debates in the early 1970s (Mol et al., 2020). Today, amid the ongoing environmental challenges of late capitalism, particularly climate change, sustainability has become a central component of cultural, political, and economic landscapes worldwide (Taylor, 2020). It is a notion that transcends borders, bringing together various stakeholders in a shared commitment to a balanced coexistence between humanity and the natural environment. Broadly defined, sustainability advocates for a holistic approach to living within our means, enjoying a quality of life that does not compromise that of future generations. This includes a deep sense of responsibility to protect the planet’s integrity while supporting the well-being and prosperity of both present and future inhabitants (Mazzocchi, 2020). A core principle of sustainability is intergenerational

equity, which asserts that future generations have a right to access essential resources for their survival and growth (Sanson & Burke, 2020). This principle also acknowledges the current generation's right to live with dignity, equal opportunities, and social justice. Sustainability intersects with environmental, economic, social, and political spheres, and a comprehensive approach emphasizes the interconnections within these dimensions, recognizing their mutual influence (Ruggerio, 2021).

While sustainability theory encompasses these interconnected aspects, conflicts can arise when balancing priorities (Feeney et al., 2022). Some emphasize the need to protect ecosystems and biodiversity as the foundation of sustainability, while others prioritize poverty reduction and equitable resource distribution. Navigating these complexities requires innovative approaches that harmonize environmental preservation with social equity (Moallemi et al., 2020). Historically, humanity's relationship with Earth's limited ecosystem calls for adaptation rather than exploitation, urging a shift from short-term gains that benefit only a privileged few to practices that address broader social needs and reduce poverty (Em, 2022). Sustainable practices, therefore, promote an interconnected view of human and environmental health, fostering a more inclusive society for all (Upreti, 2021).

According to Cheer (2020), ultimately, the interdependence of environmental, social, and economic dimensions underscores the need for an integrated approach to sustainability. The health of natural ecosystems is intrinsically linked to social progress and economic resilience, and only through this holistic approach can they create a sustainable, dynamic balance for future prosperity.

2.2. Incorporating Environmental Topics into Language Lessons

Besides teachers with a specialization in environmental sciences or environmental education, many language teachers do not feel qualified to teach complex scientific content (Timm & Barth, 2020). However, it must be emphasized that, as experts in pedagogy, language teachers are highly qualified to help their students understand complex issues that are not necessarily straightforward scientific facts. In many cases, the very nature of the needs that get addressed in the classroom, whether creating presentations for students in different grades or countries, responding and writing to emails, creating blog entries, or putting together articles, makes working with the language learner a piece of a complex, interconnected puzzle (Kubota, 2021). It is not about simply drilling grammar structures or teaching thematic vocabulary; it is about facilitating the real communication of language learners. Task-based projects are particularly suitable for promoting student interaction and involvement, and at the same time, creativity, around complex topics (Sang & Dan, 2022).

In addition, the increasing evidence of global climate change, the biodiversity crisis, and the depletion of natural resources present a moral and indeed pedagogical imperative for subjecting students and language teachers to the most important news and trends concerning environmental sustainability and the maintenance of a functioning planet (Shivanna, 2022). One of the key ways that countries, policymakers, and people in general can influence the political process and policy development concerning environmental sustainability is through informed, engaged democratic dialogue (Ross et al., 2021). For their democratic system to allow people to engage in appropriate dialogues around important topics, language learners should develop an awareness of the importance of environmental issues as well as the language, strategies, tools, and rhetorical structures necessary to deliver their persuasive speech in diplomatic ways that allow them to build consensus (Dillon & Herman, 2023). In addition, it makes good sense to help these participants understand the current state of the problem so that

they can help find reasonable and realistic solutions, realizing that the problem will not likely go away by itself without cooperative initiatives by countries and people around the world (Khan et al., 2022).

3. Integrating Project-Based Learning in ELT: Pedagogical Overview

To achieve a better social, economic, and environmental balance, the primary goal of implementing an environmental project is to identify and analyze the causes and effects of environmental problems to promote attitudes of respect for other people's rights and interests (Grilli & Curtis, 2021). Through active participation in a critical, transformative, and humanizing action, students learn to investigate problems in this type of project, which enhances and changes their learning experience (Garzón, 2018). This pedagogical approach, which is based on constructivist theory and Howard Gardner's theory of multiple intelligences, aims to develop students' skills and attitudes through effective collaborative work, in addition to knowledge acquisition. This will allow students to apply their newly acquired knowledge in real-world scenarios (Grilli & Curtis, 2021).

This method identifies a communicative goal that transcends simple academic benchmarks. It combines several cognitive processes to accommodate each student's unique learning preferences and range of skills. It also takes into account the emotional side of people, acknowledging the close relationship between feelings and intelligence (Sari & Muttaqin, 2021). This instructional approach promotes holistic growth and a greater awareness of environmental issues by bringing the emotions and the intellect together (Torres, 2024). Additionally, it stresses the use of many sensory registers, recognizing the role that sensory experiences have in the learning process and allowing students to interact with the material in a multimodal way (Spiegelhaar, 2022). To guarantee thorough pedagogical integration, one also needs to carefully carry out the educational articulation of abilities, habits, and attitudes in the educational project. This necessitates a tight connection between the project goals, curriculum requirements, and the strategic planning of the school (Dawe et al., 2021). Regarding the school's pedagogical structure, the project approach permits students to choose how many elective hours to take, enabling them to explore their interests and learn more about environmental issues. Additionally, it promotes interdisciplinary work, which encourages students to draw connections between various courses and use a variety of viewpoints to tackle challenging environmental issues (Van et al., 2020).

Furthermore, the project method places a high importance on student interest and involvement since it understands that student motivation is essential to their ability to learn and succeed. This method fosters a sense of ownership and empowerment among students, enabling them to become engaged citizens and responsible environmental stewards by providing chances for independent discovery and self-directed learning (Joseph & Gandolfi, 2020). Additionally, the project strategy engages the community, promoting significant alliances and cooperative efforts with outside entities, interested parties, and subject matter experts (Lehtinen & Aaltonen, 2020). The project fosters a common sense of responsibility and action toward environmental sustainability by actively involving the community (Colding et al., 2021).

Finally, the project method is integrated into society and extends beyond the confines of the school. The project enhances learning and increases understanding and respect for the wide range of expertise present in society by presenting the knowledge and cultures of many professionals. This cooperative knowledge-sharing promotes a culture of ongoing learning and innovation by strengthening the connections between professions, academic institutions, and the general public (Grilli & Curtis, 2021).

All things considered, the project method for environmental project execution provides students with a comprehensive, captivating, and life-changing educational experience. This pedagogical approach empowers students with the essential knowledge, skills, and attitudes needed to address complex environmental challenges, promote sustainable practices, and improve society by combining constructivist principles, multiple intelligences theory, and a student-centered approach (Torres, 2024).

3.1. Benefits of Project-Based Learning in Raising Environmental Awareness

Li and Li (2022) investigated students' environmental engagement by examining their interest in learning more about environmental topics, their inclination to discuss environmental issues at home and with classmates, and their plans to promote sustainable practices among family and peers. This approach aimed at assessing the extent to which participation in environmental projects enhanced students' environmental awareness. Furthermore, Johnston et al. (2021) examined the impact of environmental initiatives on students, focusing on how these initiatives are integrated into students' daily lives. Additionally, Howell (2021) emphasized the goal of fostering a lasting connection between students and their environment by encouraging critical thinking and active participation.

The quantity of field trips and other ELT-related activities with an environmental theme has proven to be an excellent information source throughout this campaign (Crack, 2019). These outings illuminated the students' developing understanding of the value of environmental conservation in addition to providing practical insights into the significance of face-to-face engagement with nature (Fernández et al., 2020). The diverse range of experiences these expeditions provided enhanced our comprehension of the students' larger viewpoints (Em et al., 2022).

Barak and Yuan (2021) found that project-based learning effectively inspires and educates both college and high school students about pressing environmental issues. Droz (2021) further highlighted the importance of these projects in educating and empowering students by emphasizing their unique roles and responsibilities in creating a sustainable environment, promoting the idea that environmental awareness is a collective effort requiring active participation from everyone. Students actively embraced eco-friendly approaches as the projects developed. Seeing the ripple effect as the kids initiated discussions and devised solutions for environmental issues within their social circles was quite touching. With their newly acquired environmental consciousness, they assumed accountability for their deeds as well as for motivating their classmates and families to make changes (Kolenaty et al., 2022).

Akharraz (2021) highlighted that the primary objective of project-based learning activities is to raise students' awareness of environmental issues. Through these activities, students explore the interdependence of living organisms and the delicate balance necessary for ecosystems to thrive, fostering a personal connection with nature. Astuti et al. (2020) observed that such immersive experiences with nature provide students with a profound understanding of the interconnectedness of life, instilling a sense of responsibility and a genuine desire to protect the environment.

3.2. Examples of Project Ideas for ELT Classes

This section presents a variety of project ideas tailored for ELT classes across different proficiency levels, designed to foster collaborative learning through pair or small group work. These projects are intended to stimulate and engage students by encouraging the active use of

diverse language functions, with final outputs that may include written, oral, and visual reports. Aligned with this approach, Zheng et al. (2020) emphasize the importance of guiding students to develop critical skills such as questioning, describing, comparing, and classifying. Additionally, they advocate for activities where students organize, monitor, summarize, and evaluate their work, which promotes an active and reflective learning experience. Together, these projects and skill-building activities enable students to deepen their language abilities through meaningful, cooperative engagement.

These projects can successfully incorporate online resources and interactive activities to provide a dynamic learning environment. These elements not only boost learners' interest and motivation in the material but also help them form a strong sense of responsibility and belonging (Rahmi et al., 2021). To complete a sequence of related tasks, students must observe and analyze situations, suggest and make well-informed decisions based on specific solutions, and apply their newly gained understanding of language functions practically (Kaharuddin, 2021). Additionally, to thoroughly test students' speaking, listening, reading, writing, and critical thinking skills, these assignments call for the use of a wide variety of assessment techniques (Redman et al., 2020). Through the implementation of these projects, educators can offer students an all-encompassing language learning experience that transcends the boundaries of the conventional classroom. Students can foster their creativity and critical thinking skills, gain a deeper comprehension of the English language, and improve their communication skills (Suryawati et al., 2020). Furthermore, by allowing students to take charge of their education and actively participate in their language development, these programs help pupils acquire a sense of autonomy and independence. Incorporating online materials and interactive activities gives the projects a more modern feel while also making it easier to integrate technology into language learning and providing students with the tools they need to become digitally literate (Sailer et al., 2021).

Students learn the value of collaboration, group decision-making, and effective interpersonal communication as they work in groups or pairs, strengthening their teamwork abilities. Students develop critical self-reflection and self-assessment skills through the act of organizing, supervising, and assessing their work (Brass et al., 2023). These projects foster meaningful and authentic language use by encouraging students to draw links between language and their everyday experiences through the integration of language functions with real-life tasks and challenges (Utami et al., 2021). These projects' wide choice of assessment techniques guarantees a thorough analysis of students' language proficiency and critical thinking abilities, giving teachers important information about their development and areas that could need more help. Teachers can foster students' curiosity, inventiveness, and enjoyment of the English language by adopting these project ideas and establishing a lively and participatory language learning environment (Block, 2020).

By putting these projects into practice, students can improve their language proficiency while also gaining valuable life skills that will benefit them outside of the classroom and enable them to become successful communicators in a world that is becoming more interconnected (Baran et al., 2021; Yusuf, 2022).

4. Conclusion and Future Directions

Attaining sustainable development is fundamental to the mission of the United Nations Development Program (UNDP) to fulfill current requirements without jeopardizing the capacity of future generations to satisfy their own needs. This idea is increasingly important in various areas of contemporary life, affecting energy use, personal choices, and city planning.

The broad integration of sustainable methods is vital for community well-being, highlighting the importance of equipping people with the knowledge and abilities required to apply these methods successfully.

In the field of education, ELT is essential for promoting both language skills and environmental consciousness. Learning a language influences one's perspective, creating a perfect setting for nurturing awareness of cultural and environmental issues. Presenting environmental subjects in ELT can foster a sense of duty and appreciation for the natural environment, ultimately affecting societal norms and contributing to the development of shared ecological awareness. To achieve these outcomes, educational institutions must integrate environmental education into the ELT curriculum, providing students with both the knowledge and practical skills for sustainable living. Effective integration involves moving beyond theoretical lessons by incorporating experiential activities, community-based projects, and partnerships with environmental organizations, thereby reinforcing sustainability's relevance in real-world contexts.

This paper highlights the importance of embedding sustainability within ELT and offers several key implications. First, educators are encouraged to prioritize sustainability-related content, using language learning as a platform to engage students in meaningful discussions on environmental issues. Second, institutions should allocate resources to support hands-on, project-based learning experiences that can deepen students' understanding of sustainability. Future research is recommended to further investigate the impact of language learning on environmental attitudes, especially how second language acquisition may influence students' perspectives on sustainability. Research could explore effective strategies for integrating environmental topics within ELT and examine how these approaches affect students' long-term engagement with sustainable practices. By emphasizing environmental education within ELT, future generations can be empowered to contribute actively to a sustainable future, embedding sustainable living as a core societal value.

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The authors used Grammarly to polish the language in some parts of the article. However, they declared that the content of the article is totally theirs.

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