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ECO-ELT

Trends and Developments
in the Study and Practice
of Environmental Education
within English Language Teaching

ECO-ELT

Trends and Developments in the Study and Practice of Environmental Education within English Language Teaching

Jepri Ali Saiful

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ECO-ELT

Trends and Developments in the Study and Practice of Environmental Education within English Language Teaching

Ditulis oleh :

Jepri Ali Saiful

> It is not too late for our LOVELY field of ELT to make a
> meaningful contribution to addressing environmental crises.
> **LET'S** TAKE ACTION NOW!

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PREFACE

In an era marked by escalating environmental crises, the intersection of education and ecological consciousness has never been more critical. This book, *Eco-ELT: Trends and Developments in the Study and Practice of Environmental Education within English Language Teaching,* explores the burgeoning subfield of Ecological English Language Teaching (Eco-ELT) and its transformative impact on English education and the natural environment.

The significance of this book extends beyond the boundaries of traditional language teaching. For English teachers, Eco-ELT offers a profound opportunity to integrate environmental education into their curricula, fostering not only language proficiency but also a deep-rooted environmental consciousness among students. This approach encourages educators to engage with content that transcends grammar and vocabulary, emphasizing instead the role of language in addressing global ecological issues. By adopting Eco-ELT principles, teachers can empower students with the skills and knowledge necessary to contribute meaningfully to environmental sustainability.

ELT researchers will find this book an invaluable resource, providing a comprehensive review of current trends and developments in the field. It synthesizes existing research and highlights emerging areas of interest, offering insights into effective methodologies and innovative practices. This exploration is crucial for advancing scholarly discourse and for guiding future research directions in Eco-ELT. The book's in-depth analysis of various models and approaches

will aid researchers in developing robust frameworks and strategies for studying environmental education into language teaching.

Government policymakers and educational administrators will also benefit from this book. As governments around the world recognize the importance of environmental education, understanding how Eco-ELT can be effectively implemented in language programs becomes essential. This book offers practical recommendations for incorporating ecological principles into curricula, advocating for a holistic approach that aligns with global sustainability goals. It also provides a roadmap for fostering a more environmentally conscious generation.

Finally, the well-being of nature is at the heart of this book. By promoting Eco-ELT, we are not merely enhancing language education but also contributing to the broader effort of environmental preservation. Educators and students alike play a crucial role in this global endeavor. Through Eco-ELT, we can cultivate a deeper appreciation for nature, encourage sustainable behaviors, and inspire actions to address pressing environmental issues.

In sum, *Eco-ELT: Trends and Developments in the Study and Practice of Environmental Education within English Language Teaching* is more than a scholarly work—it is a call to action. It challenges us to rethink the role of language education in the context of environmental stewardship and provides a valuable guide for those committed to making a positive impact on both education and the natural environment.

Surabaya, Indonesia

Jepri Ali Saiful, Ph.D.
Pioneer and Founder of Eco-ELT

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CHAPTER 1

INTRODUCTION

> Chapter 1 provides a comprehensive overview of the study, highlighting the significance and novelty of exploring the landscape and future directions of Eco-ELT. It outlines the research questions and objectives, shedding light on the scope and limitations of the study. Additionally, it delves into the fundamental background necessary for understanding the context and motivation behind the research endeavor.

—- Eco-ELT Voices —-

The TESOL department carries an equal responsibility alongside other departments in advancing environmental sustainability and holds significant potential to contribute to the preservation of planetary ecosystems. The initiatives that the TESOL can take span across micro, meso, and macro levels, encompassing the integration of environmental sustainability into learning, research, and community engagement. It is imperative for all TESOL departments across the globe to participate in the Eco-ELT movement, thereby amplifying the contribution of the ELT filed to global environmental sustainability endeavors. (Saiful, 2024a)

There is an urgent call for widespread expansion of Eco-ELT, research and teaching about environmental issues in ELT. Such endeavors are crucial for gathering more evidence and showcasing a deeper commitment for the ELT community towards addressing environmental catastrophes. By doing so, the ELT field can enhance its position and outlook in global environmental sustainability efforts. This proactive stance can dispel skepticism surrounding the roles and contributions of ELT in fostering environmental stewardship and decolonizing the Earth. (Saiful, 2023)

English teachers now play crucial roles as "green" moral agents, fostering self-awareness and a sense of belonging between human and nature through language instruction. English also serves not only to overcome language barriers and enhance language proficiency but also to address ecological issues within the social and human context. (Saiful, 2020)

Background of the Research

Anthropogenic perturbations such as climate change, global warming, energy crises, biodiversity loss, and pollution have created planetary predicaments, rendering Earth inhospitable for all living beings. A recent report by the United Nations Environment Programme (UNEP) in 2023 affirms that Earth's temperature has increased by 1.1°C above pre-industrial levels over the past 200 years, leading to an increase in hazardous weather events and negatively impacting ecosystems (UN Environment Programme, 2023). Additionally, air pollution from sources such as cars and industries negatively impacts plant pollination, which in turn harms habitat conservation and food security (Guenat & Dallimer, 2023). The production of particulate matter $PM_{2.5}$ in aerosols from air pollution also poses a significant threat to human health. These particles act as carriers for airborne respiratory viruses, contributing to the spread of respiratory diseases in communities, including COVID-19 (Wang et al., 2021), which has caused millions of deaths globally.

2 **Eco-ELT** Trends and Developments in the Study and Practice of Environmental Education within English Language Teaching

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Those treacherous conditions resulting from environmental problems are further substantiated by present research on the geological epoch of the Earth, revealing that our Earth systems have exceeded the boundaries of a safe environment for humanity (Richardson et al., 2020). We are witnessing the deterioration of our Earth—the place we call home—which is impacting not only humans but also plants, animals, and entire ecosystems. Urgent collective action across sectors and disciplines is necessary to restore the Earth's vitality and balance. As humans, we bear both the responsibility and the capacity to save the planet, making swift and concerted efforts essential. This is not a dystopian vision; we have the power to create a planetary equilibrium for all entities within ecosystems.

To realize our vision and halt the damage inflicted on the natural world, we must fundamentally shift our treatment of nature (Amel et al., 2017). This transformation requires acknowledging and integrating positive valuations of nature into our political, economic, and everyday decision-making processes (Pascual et al., 2023). It involves adopting pro-environmental behaviors and embracing non-anthropocentric views that prioritize the well-being of the environment. These behaviors and worldviews are essential for addressing global environmental issues like climate change, as such issues are deeply ideological and rooted in our values, sense of identity, and purposes (Hulme, 2009). Furthermore, changing our treatment of nature should include reconnecting with it. Our detachment from nature is a source of environmental problems, and restoring a sense of oneness with nature is essential. This connection encourages behaviors that are not harmful to the environment (Mayer & Frantz, 2004) and promotes pro-environmental actions (Barrera-Hernández et al., 2020). This holistic approach, which encompasses pro-environmental behaviors, valuing nature, and fostering a connection with the natural world, serves as a comprehensive strategy to tackle environmental crises and promote sustainable coexistence with the environment. For these reasons, current sustainability efforts emphasize developing

individuals' inner qualities and skills regarding the environment, such as favorable worldviews and attitudes toward nature (Woiwode et al., 2021).

The inner qualities and skills of individuals on environmental sustainability can be nurtured through education. Education serves as an avenue for fostering positive values in students and teachers toward both humans and nonhumans. In the present Anthropocene era, education has the responsibility to challenge the anthropocentric concept by acknowledging and supporting the contributions of nonhumans and material worlds in shaping our treatments to the natural environment (Gough, 2020). Education also offers ample opportunities for active engagement with the natural world, embracing coexistence with nonhuman entities, and fostering experiential learning (Gough, 2020). Consequently, education now carries the crucial responsibility of nurturing sustainable citizens who are both accountable and capable of preserving the ecosystems and fostering sustainable coexistence with all other life forms in this planet. This vital duty extends to all fields within education, including English Language Teaching (ELT) (Mercer et al., 2022).

ELT carries the responsibility of fostering ecological thinking and critical awareness in students while also enhancing their English proficiency (Xiong, 2014). It also has the potential to address global issues, including topics related to the Sustainable Development Goals (SDGs) (Bowden, 2010), such as environmental crises (Mercel et al., 2022). Students can engage in comprehensive intellectual and philosophical discussions, exploring nature and environmental ethics through literary texts (Beigel, 1996). They can also participate in projects related to ecological crises, such as dramas about climate change, nature writing on pollution, and experiential learning about biodiversity loss. These discussions and activities help students develop ecocentric attitudes and views toward nature. They also enable students to understand the intricate interconnections of environmental crises within ecosystems and reflect on their roles as

stewards of the Earth. Ultimately, these activities encourage students to take action to protect their environment at school, home, and in their communities (Jung & Dos Santos, 2022).

Building on the responsibility and potential of ELT in addressing environmental crises, Saiful (2023) advocates for a collective focus on Eco-ELT. The goal is to strengthen the commitment and involvement of the ELT field in promoting environmental sustainability. Additionally, the aim is to cultivate "global sustainable citizens," individuals proficient in English who use their language proficiency to advocate for and support environmental protection in global communities. Similarly, Katunich and Goulah (2020) emphasize the urgent need to develop methods within ELT to address sustainability crises and promote a new ethic in language teaching. Jodoin (2022) also argues that ELT practices must shift towards empowering students as future leaders in achieving the SDGs.

Novelty of the Research

We have observed a vital responsibility, substantial potential, and an urgent need to tackle environmental crises within ELT through teaching and research. However, efforts to implement and study Eco-ELT are scarce. The current scholarship primarily concentrates on the conceptual and philosophical aspects of Eco-ELT, delving into ontology, epistemology, and axiology, as demonstrated in Saiful's work (2023). This study provides essential information on the rationales and foundations of Eco-ELT. Another pertinent study by Jodoin (2022) focuses on ELT integration with SDGs, offering a framework for teaching SDGs topics into ELT, covering three pillars of sustainability: economic, environment, and social. The study provides valuable insights for educators aiming to integrate SDGs into ELT.

Several additional studies contribute to the discourse on Eco-ELT. Goulah (2020) explores the integration of the Anthropocene environmental issue of climate change in TESOL, shedding light on curricular, pedagogical, and perspective-related aspects of climate

change, migration, and English learning. Appleby (2017) conducts a literature review on the incorporation of environmental education in ELT, focusing on environmental issues in ELT textbooks and a pedagogical project in an English for Academic Purposes (EAP) class in Australia. This study provides valuable insights into suitable teaching materials and the implementation of an inquiry based approach for teaching environmental issues in ELT. Hauschild et al. (2012) offer personal reflections on integrating environmental education in ELT, suggesting instructional activities to raise students' environmental awareness. Meighan (2023a) proposes Heritage Language Pedagogy (HLP) and transepistemic language education as models for a more equitable and sustainable ELT. This approach encourages ELT learners and teachers to engage in the co-creation of knowledge across diverse peoples, cultures, and lands. Lastly, Yu et al. (2024) conduct a systematic review on the topic of sustainability integration in ELT, revealing various approaches, innovative classroom activities, teacher development programs, assessment methods, and challenges.

While these seven studies lay the groundwork for Eco-ELT, they do not provide a comprehensive account of its historical development and the guiding principles for its practice and research. Additionally, they overlook important insights into the future directions of Eco-ELT. Consequently, a significant knowledge gap exists regarding environmental movements within ELT, particularly as these movements have recently grown under the banner of "Eco-ELT" (see Saiful, 2014; 2020; 2023). Therefore, it is essential to explore and document the landscape of Eco-ELT more thoroughly.

Importance of the Research

Addressing the gap in knowledge about the historical movements and future directions of Eco-ELT through this study is vitally important for two key reasons. First, it provides ELT scholars and teachers with essential information on the evolution of concepts, frameworks, and principles for teaching and researching environmental issues within

ELT. This information serves as a guide for implementing instruction and conducting research on these topics with strong theoretical and empirical accounts. Second, it contributes to the growth of scholarship in Eco-ELT, enhancing the field's commitment to and active involvement in addressing environmental crises.

Questions of the Research

To address the gap and achieve the significances of the study, this study formulates three research questions as follows.

1. What is Eco-ELT, and how has its global movement developed over time?

2. How are the present landscape and the future directions of Eco-ELT practice?

3. How are the present landscape and the future directions of Eco-ELT research?

Aims of the Research

The study aims to:

1. Elaborate the concept, bases, and global historical movement of Eco-ELT.

2. Unveil the present landscape and the future directions of Eco-ELT practice.

3. Unveil the present landscape and the future directions of Eco-ELT research.

Scope and Limitation

This study focuses exclusively on Eco-ELT, which involves the study and practice of environmental education within the field of ELT. It includes both theoretical and empirical papers within this domain. However, it does not cover papers related to ecolinguistics or literary ecocriticism, as these are distinct disciplines. Ecolinguistics examines

the roles of language in environmental advocacy, and ecocriticism explores the roles of literature in shaping positive relationships between humans and nature. In contrast, Eco-ELT concerns itself with the roles of English education research and practice in promoting environmental sustainability.

The study is also limited to English-language Eco-ELT articles that are accessible online or obtainable through personal requests to authors via email or social media. While efforts were made to include as many relevant studies as possible, it is acknowledged that some articles may have been overlooked. Authors with relevant Eco-ELT studies not included in this book are encouraged to contact the author via email for inclusion in future publications. Despite the possibility of missing a few studies, this work provides comprehensive overviews and insights into the current landscape and future directions of Eco-ELT movements.

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CHAPTER 2

LITERATURE REVIEW

Chapter 2 offers a thorough review of literature concerning the intersection of ELT and environmentalism, aiming to provide a comprehensive understanding of the early stages of development in these domains. It is also to elucidate the relationship between ELT and environmentalism and demonstrate the theoretical gap, the extent to which this integration has been explored.

—- Eco-ELT Voices —-

Environmental children's literature, including folklores, traditional songs, short shorties, and so on along with ecoliteracy teaching could serve as valuable teaching materials in English lessons to instill a love for nature and impart the virtues of local wisdom to young learners. (Saiful, 2014)

"It's not too late for TESOL to join in and contribute to saving our world" (Atkinson, 2020, p. 858)

English classrooms provide an ideal setting for fostering in-depth intellectual and philosophical discussions, offering English students opportunities to explore concepts related to nature and environmental ethics, often through the analysis of literary texts. (Beigel, 1996)

English Language Teaching (ELT)

English Language Teaching (ELT), encompassing both its academic knowledge and professional practice, has undergone embryonic development. ELT involves the teaching English as either a second language (TESL) or a foreign language (TEFL) (Johnston, 2003). TESL specifically refers to teaching English to individuals who use it for daily communication alongside their native language. In contrast, TEFL involves teaching English to individuals in an educational setting who do not use the language in their daily lives. Both TESL and TEFL fall under the broader category of Teaching English to Speakers of Other Languages (TESOL), which involves instructing English to non-native speakers. ELT also involves teaching English as a Mother Tongue (EMT) (Hutchinson & Waters, 1987) where English is used as the native language of a speaker. Thus, ELT serves as an umbrella term that includes various contexts such as TESL, TEFL, TESOL, EMT, and more, as depicted in the tree of ELT in Figure 1.

The term "ELT" was first coined in 1946 when it was used as the title of a journal by the British Council, with the aim of establishing a cohesive profession (Howatt & Widdowson, 2004). However, the roots of ELT movements predate the term itself, with English becoming the national language of Britain between 1400 and 1800, replacing French, which had been the national language for three centuries (Howatt & Widdowson, 2004). This period likely laid the foundation for EMT. Additionally, around 1570 to 1580, many French Huguenot refugees arrived in Britain and learned English. This period marked the creation of the first textbook for teaching English and evidenced the inaugural TEFL movement, as English was taught to French speakers.

Between 1800 and 1900, English expanded throughout Europe and the British Empire, possibly laying the groundwork for TESL.

After 1900, ELT began to gain recognition as an independent profession (Howatt & Widdowson, 2004). In the early 20th century, the global spread of English accelerated as the British Empire declined and the United States emerged as a dominant global power (Pennycook, 2007). Since then, ELT has seen tremendous growth. Numerous ELT-related associations have been established, contributing to the field's development at international, continental, national, and local levels, such as the TESOL International Association, ASIA TEFL, the Association of Teaching English as a Foreign Language in Indonesia (TEFLIN), and various regional ELT communities.

Figure 1 *The Tree of ELT (Hutchinson & Waters, 1987, p.17)*

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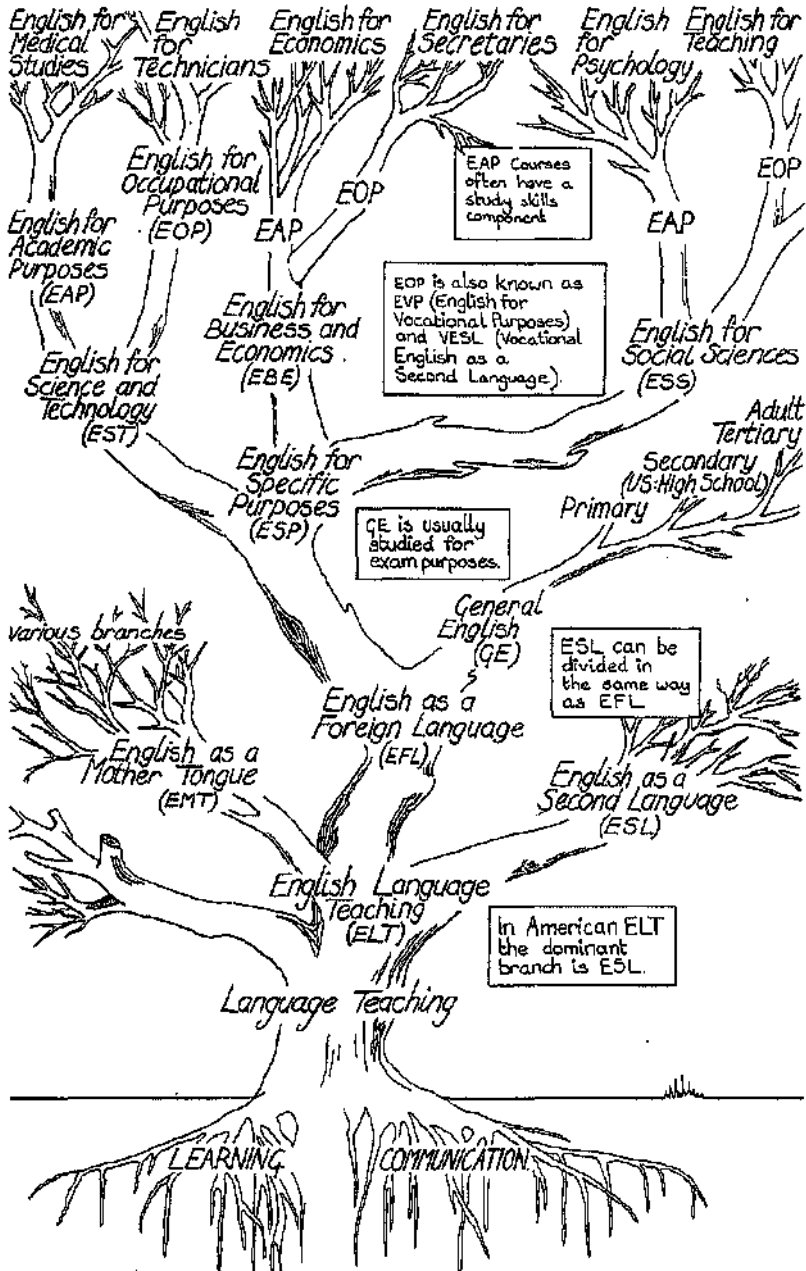
In the realm of ELT as an academic field, scholarship has advanced significantly, encompassing a wide range of critical issues. These include the integration of technology, such as Computer-Assisted Language Learning (CALL) and Information and Communication Technology (ICT) (e.g., Dudeney & Hockly, 2012), as well as the incorporation of Sustainable Development Goals (SDGs) (e.g., Bowden, 2010) and other global issues (e.g., Mercer et al., 2022). The scope of these global issues is broad, covering topics like nature and the environment (e.g., Rossiter, 1980; Saiful, 2023), gender (e.g., Granger & Gerlach, 2023), faiths (e.g., Varghese & Johnston, 2007; Yaghi & Ryan, 2022; Hamid & Ali, 2023), underprivileged communities (e.g., De Castro et al., 2020), and inclusive education (e.g., Indrarathne, 2019; Alamsyah, 2023). Additionally, recent developments in ELT include the exploration of Artificial Intelligence (AI), with platforms like Chat GPT (e.g., Kostka & Toncelli, 2023) and Chatbots (e.g., Lee et al., 2024). A summarized historical overview of ELT is presented in Table 1.

Table 1 *Brief History of English Language Teaching*

Period	Events
1400 – 1800	English adopted as the national language in Britain following a three-century period of being subservience to French language.
1570 – 1580	• The first English textbook in Britain for teaching English to French Huguenot Refugees. • The initial recorded endeavor in TEFL • Before this period, there was a growing interest in learning English within mercantile community, especially in Flanders.
1800 – 1900	Change and the development of English in Europe and British empire overseas.
Starting 1900	• ELT as an autonomous profession • The spreading of English through Decolonization, the decline of Britain as an imperial power, and the rise of USA as a global power
1946	The term "ELT" was invented as the title of journal from British Council to serve as a coherent profession

1946 – present	1. ELT and CALL/ICT
	2. ELT SDGs or global issues, among others:
	  • Nature / environment
	  • Gender such as feminist movements
	  • Faiths
	  • Underprivileged communities
	  • Inclusive education
	3. ELT and AI such as Chat GPT and Chatbots

Given the well-established nature of the ELT profession and field of knowledge, scholars have identified factors that contribute to the success or failure of ELT programs. For instance, Sakkir and Abduh (2Q022) explored factors influencing ELT practices before and during the COVID-19 pandemic. They highlighted the significant roles of students, teachers, school environments, and material conditions. Additionally, they noted that learning and administrative processes, as well as the use of technology to support online ELT during the pandemic, also influence ELT practices. It is evident that the factors determining ELT performance are context-dependent, and a myriad of factors becomes relevant when ELT is implemented under pandemic conditions.

Renandya (2013) identifies eight crucial factors contributing to the success of ELT, particularly in EFL programs. These factors include fluency, input, output, motivation, formulaic expressions, vocabulary, grammar, and the amount and intensity of instruction. These aspects require the attention of English teachers, school administrators, and other key stakeholders. Renandya emphasizes that close attention from these individuals can lead to improvements in students' English proficiency levels. Similarly, Rashid et al. (2017) underscore the importance of formal support systems from the Ministry of Education (MoE) to schools in facilitating the implementation of ELT. These key figures play an important role in developing policies that enhance the quality of English teaching and learning.

Beyond those successful factors, there are other factors that hinder the quality of ELT. Nguyen et al. (2014) disclosed various factors decreasing the quality of ELT practices. They include

"Uninteresting teaching style; insufficient time for communicative activities; grammar-driven teaching; unreasonable time-management; unclear instructions; large class sizes; teachers' limited ability in classroom organization; unequal students' English levels; inadequate lesson preparation; teachers' limited use of teaching aids and technology; and students' lack of confidence in using oral English in class activities" (p. 94).

Waters and Vilches (2008) highlight additional factors that contribute to the diminished quality of ELT practices. These factors include an inadequately aligned curriculum with the teaching context and the lack of professional support and instructional materials.

To address these issues, Farmer (2006) applied TESOL's criteria for ELT professional services. These criteria can serve as an assessment tool for evaluating the quality and professionalism of ELT practices and services. Table 2 outlines the eight domains of these criteria.

Table 2 *Criteria of ELT Professional Practice or Service (Farmer, 2006, p. 166-168)*

No	Domains	Items
1.	Program structure, administration and planning	• Providing programs with a mission statement, philosophy, and goals, with input from internal and external stakeholders. • Providing effective administration and accountability in all programs. • Providing effective evaluation of programs and planning for future needs.
2.	Curriculum	• Setting goals, objectives, outcomes, approaches, methods, materials, technological resources, and evaluation measures that are appropriate for clients' needs and goals. • Evaluating and revising the curriculum.

No	Domains	Items
3.	Instruction	• Promoting active client participation in the learning process. • Taking account of diverse client needs and cultural backgrounds. • Focusing on the functional use of language. • Integrating the four language skills (reading, writing, speaking, listening). Taking account of different clients' learning styles. • Developing authentic communication skills. • Preparing clients for formal and informal assessment situations.
4.	Recruitment, intake, and orientation	• Identifying and recruiting client learners to meet needs. • Evaluating recruitment procedures. • Planning recruitment programs. • valuating clients' needs, goals, and language proficiency level.
5.	Retention and transition	• Encouraging clients to stay in the system or transfer to other programs in accordance with their goals and needs.
6	Assessment and learner gains	• Assessing clients' skills and goals for placement into the program, documentation of progress within the program, and exit from the program • Collecting and reporting data on educational gains and outcomes. • Providing appropriate facilities, equipment, and conditions for assessment activities. • Identifying clients' needs and goals as individuals, family members, community participants, workers, and lifelong learners. Assessing clients' language proficiency level in the areas of listening, speaking, reading, and writing. • Using an appropriate variety of reliable and valid instruments for assessment. • Obtaining information through needs assessment to aid in developing curricula, materials, skills assessments, and teaching approaches that are relevant to clients' lives.

No	Domains	Items
		• Explaining and sharing assessment results with clients.
		• Documenting clients' progress towards attainment of other goals.
		• Helping clients identify their short- and long-term goals.
		• Helping clients demonstrate skill level improvements in listening, speaking, reading, and writing.
		• Helping clients demonstrate progress towards their short- and long-term goals.
		• Helping clients demonstrate progress in non-linguistic areas identified as important toward their goals.
		• Helping clients attain their personal short- and long-term goals within time frames compatible with client and program expectations.
7.	Staffing, professional development, and staff evaluation	• Recruiting, hiring, and inducting suitably qualified administrative, instructional and support staff.
		• Developing a professional development plan based on staff needs and developments in ESOL, with suitable follow up.
		• Training in assessment procedures and in the interpretation and use of assessment results.
		• Maintaining an up-to-date resource library of materials on teaching methods and previous course syllabi.
		• Evaluating administrative, instructional, and support staff. Giving clients the opportunity to evaluate program staff anonymously.
8.	Support services	• Providing access to a variety of services related to barriers to learning directly or through referrals to other agencies.
		• Identifying learner disabilities and providing appropriate services directly or through referrals to other agencies.

Environmentalism

The ongoing dire state of our natural environment has spurred significant movements aimed at remedying these conditions. These movements, concerning and taking actions on protecting the environment, are generally known as "environmentalism" (Davies, 2020). It plays a crucial role in shaping human ethics, politics, and perspectives concerning our planetary ecosystems' current state and its preservation.

Environmental movements have a rich history spanning centuries, with early roots emerging as responses to the disruptive effects of western industrialization (Grove, 1990). Industrial practices, particularly in agriculture, led to unsustainable practices that disrupted ecosystems and jeopardized the well-being of both living and non-living organisms. These descriptions have been recorded for more than 10,000 years, reshaping global patterns of climate, ecosystems, landscapes, and biodiversity paving the road for the Anthropocene (Ellis, 2021). To combat these diverse environmental catastrophes, various forms of environmentalism have emerged, including renowned entities such as the Sierra Club, Rachel Carson's "Silent Spring," Greenpeace, and Deep Ecology. These movements could also be transdisciplinary in nature, addressing interconnected environmental issues and collaborating with other fields such as ecofeminism and environmental humanities.

Environmentalism has also made significant inroads into the field of education, giving rise to various initiatives such as environmental education, ecopedagogy, and education for sustainable development. Environmental Education (EE) stands out as one of the earliest educational movements aimed at preserving our planetary ecosystem. EE is renowned for its versatility (Ardoin et al., 2018), making it adaptable to integration across all disciplines (Masalimova et al., 2023). This educational movement offers considerable important benefits for both individuals and the natural environment. It plays a

pivotal role in shaping individuals' environmental attitudes, values, and knowledge, while also fostering pro-environmental behaviors (Ardoin et al., 2020). Moreover, EE serves as a conduit for promoting appreciation for natural resources and encouraging engagement in conservation activities (Ardoin, et al. 2020; Masalimova et al. 2023). For students, EE facilitates a deeper understanding of environmental issues, nurturing problem-solving skills, critical thinking abilities, and ecological attitudes toward nature (Sari et al., 2023). Teachers play a crucial role in ensuring that these benefits are reached by incorporating relevant models, methods, techniques, and tools of environmental education into their lessons (Husamah et al., 2022).

EE is intricately linked to and often viewed as an evolution of Education for Sustainable Development (ESD). Scholars such as Kostoulas-Makrakis (2010) posit that ESD encompasses more than just EE, as it addresses the development of attitudes, values, and the economic, sociocultural, and environmental aspects of sustainability. Similarly, Wals and Kieft (2010) argue that while EE is essentially synonymous with ESD, it can also be considered a component thereof, given that ESD encompasses environmental sustainability within its broader movement. While EE and ESD exhibit differences, they also share common elements, and from a content perspective, they are nearly interchangeable in addressing environmental and ecological issues.

ESD involves teaching and learning about crucial sustainable development issues like climate change, gender equality, zero hunger, economic development, and so forth. It embodies the promotion of values and ethics essential for a sustainable future (see UNESCO, 2005). This approach can be examined through four distinct lenses, as illustrated in Figure 2 according to UNESCO (2012).

Figure 2 *Four Lenses of ESD* (UNESCO, 2012, p.13)
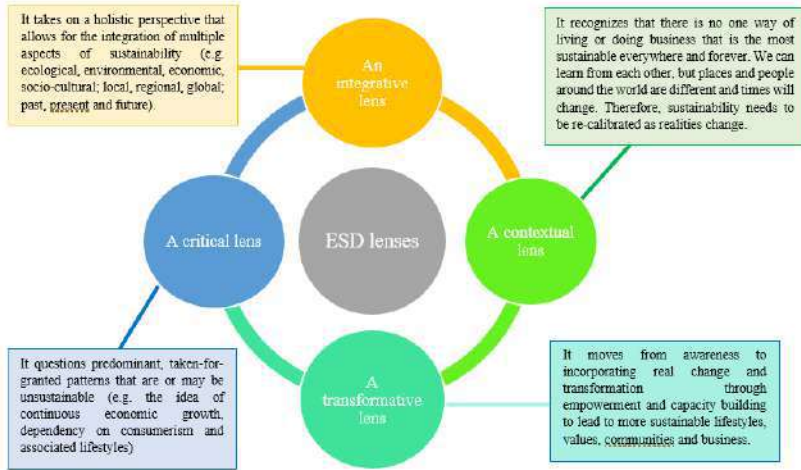
Figure 2 presents four perspectives on the ESD movement. The first lens views ESD as integrative, emphasizing the holistic integration of diverse sustainability elements. The second lens adopts a contextual approach, recognizing that sustainability within ESD is dynamic and influenced by various factors such as time, location, and societal contexts. The third lens views ESD as a transformative movement, shifting from mere awareness-building to effecting real change through empowerment and capacity building. Lastly, the fourth lens adopts a critical perspective, questioning prevailing unsustainable practices and challenging implicit patterns of dominance.

Integrating ESD into teaching and learning offers several significant benefits. Firstly, it serves as a valuable platform for educating students about the SDGs, thereby contributing to their achievement. Secondly, it elevates the quality of education by cultivating essential learning skills, perspectives, and values essential for fostering sustainable societies, as highlighted by Laurie at al. (2016). Thirdly, it empowers students with action competence for sustainability, as emphasized by Olsson et al. (2022).

Beyond EE and ESD, another environmental movement in education is ecopedagogy. Ecopedagogy questions the conventional models of ESD and EE which put so much concern on the "development" to get "progress" of sustainability, yet, deprioritizing environmental well-being, neglecting the power of "reading" social injustices which are the sources of environmental violence and the politics of development frameworks (Misiaszek, 2020). It aims to dismantle educational systems that perpetuate socio-economic inequality, planetary unsustainability, and anthropocentric dominance over nature, as articulated by Misiaszek (2022). Moreover, ecopedagogy applies the Ferarian principle and hence it promotes a holistic worldview that recognizes the interconnectedness of Earth and all its inhabitants. Therefore, it is to cultivate students' profound comprehension of environmental violence (Misiaszek, 2022).

Environmental movements have also influenced the field of English studies. This study identified two related movements: ecocriticism and ecolinguistics. While these movements have different focuses, they share the same goals of achieving the well-being of nature by restoring positive human-nature relationships. Ecocriticism, established earlier in 1978, studies literature and the environment (Glotfelty, 1996). It explores how various literary, cultural, critical, and disciplinary contexts depict and conceptualize the physical environment or nature in literature (Gersdorf & Mayer, 2006) and other creative media (Buell et al., 2011). Its scope lies in literary criticism and the role of **literature** in addressing anthropocentricism promoting nature's well-being. On the other hand, ecolinguistics examines how language and discourse affect the environment and ecology, addressing key ecological issues such as climate change, biodiversity loss, and environmental justice (Stanlaw, 2021). The focus of ecolinguistics is on **the role of language and linguistic studies** for environmental protection.

While ecocriticism and ecolinguistics lay the groundwork for environmental movements in literary criticism and language studies, they do not explain how environmentalism can be promoted

through language education, especially English education. These movements do not provide frameworks or principles for curriculum design, language instruction, or assessment that could also foster environmentalism. This leaves a knowledge gap in the role of English education in environmental protection within the broader context of English studies. Fortunately, this gap has been addressed by the development of Eco-ELT by Saiful (2014; 2020; 2023), which offers foundational principles and a framework for studying and teaching environmental issues in ELT. Eco-ELT is present to elaborate **the roles of English education** on environmental protection. Thus, the integration of ecocriticism, ecolinguistics, and Eco-ELT completes the "Triangle of Environmentalism in English Studies," as illustrated in Figure 3.

Figure 3 *Triangle of Environmentalism in English Studies among the Fields of ELT, Linguistics, and Literature*

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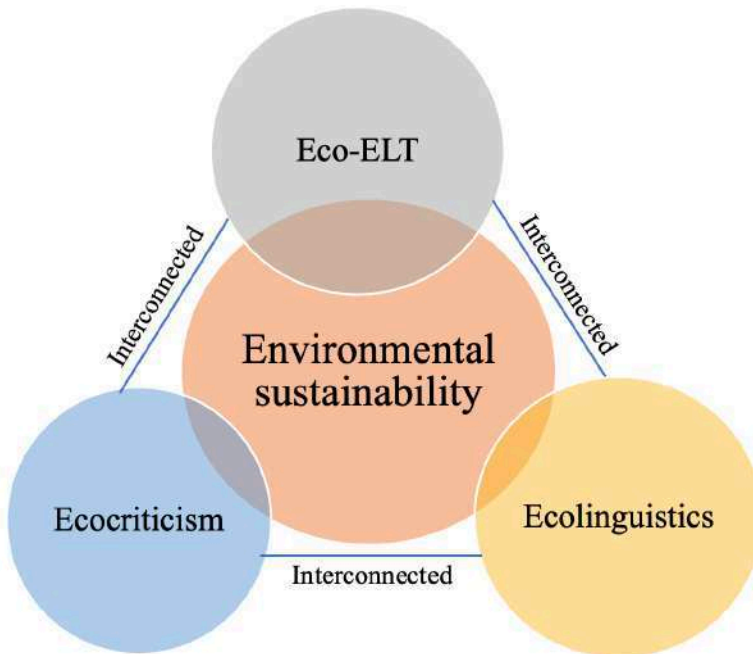
Figure 3 illustrates how environmentalism in English studies can contribute to environmental sustainability through the collaboration of three subfields: ecocriticism, ecolinguistics, and Eco-ELT. While these subfields have distinct areas of focus, they are interconnected. For example, in implementing Eco-ELT practices, English teachers might use environmental poetry to teach reading skills, analyze representations of nature within the poems, and discuss the linguistic elements that either support or marginalize nature.

Considering that Eco-ELT is a new environmental movement in the field of ELT, Eco-ELT endeavors remain relatively limited in number. Therefore, Saiful (2023) highlights the importance of more studies and teaching endeavors in Eco-ELT. Similarly, Katunich and Goulah (2020) aver the urgent need for increased attention to teaching and studying environmental issues in ELT, advocating for concrete ways our ELT field can actively contribute to addressing sustainability challenges and promote a new ethical framework in language teaching. Thus, it is imperative to increase the numbers of study and practice of Eco-ELT. Such efforts are crucial for showcasing the commitment and engagement of the ELT community in addressing global ecological crises.

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CHAPTER 3

METHODOLOGY

Chapter 3 offers a comprehensive overview of the study's methodology, detailing the research design and object, selection criteria and process, coding and categorization, and synthesis and analysis techniques. By thoroughly documenting these methodological aspects, the chapter aims to ensure the scientific rigor and trustworthiness of the research findings.

—- Eco-ELT Voices —-

TESOL bears a responsibility to address sustainability issues in the Anthropocene era and there are urgent needs to disclose explicit ways in which TESOL contribute to overcoming present sustainability crises to foster a new ethic of language teaching. (Goulah & Katunich, 2022)

ELT carries a responsibility promoting ecological thinking and critical awareness among English learners beyond developing their language proficiency. (Xiong, 2014)

To underscore the significance of ELT in promoting sustainability, it is imperative to foster discussions or dialogues concerning the vision, image, and design of sustainable education. ELT teachers and

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learners have huge potentials to be agents of change when given ample opportunities to engage with the broader society, enabling them to explore, develop, and embody sustainability values. (Bowden, 2010)

Research Design

A literature review is essential for evaluating the scope and depth of existing knowledge and identifying gaps in research (Xiao & Watson, 2019). A systematic literature review (SLR) offers a structured approach with detailed methodologies that ensure the credibility and relevance of the findings (Page et al., 2021). This makes SLR invaluable for understanding current efforts and future research directions (Koufteros et al., 2018). Given the importance of SLR, this study utilized a systematic literature review to explore the concept and historical development of Eco-ELT, as well as the current landscape and future directions of Eco-ELT practice and research. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021), the review process was conducted systematically to aid in the identification, selection, description, and visualization of the review process and outcomes in a standardized manner. This approach ensured the reliability and applicability of the findings. Additionally, the SLR method used in this study was designed to address the research questions (Carrera-Rivera et al., 2022).

Planning of the Review

The study involved four planning stages of review presented in Figure 4 which included identification of relevant studies on the database search based on search terms, determination on the eligibility of papers based on the inclusion and exclusion criteria, and selection of the studies based on the criteria.

Database Search and Search Terms

The study reviewed published articles and/or book chapters in English pertaining to Eco-ELT across various databases, including Google Search, Google Scholar, ScienceDirect, Directory of Open Access Journals (DOAJ), SAGE open, Springer Open, and ResearchGate. Additionally, it was decided to do personal contact to authors' email to request closed-access articles. Besides, this study scoured newsletters published by TESOL-related associations to obtain any relevant studies and/or teaching practices concerning environmental issues. To provide a comprehensive overview of the Eco-ELT movement, articles from all years were examined, revealing a total of 116 articles encompassing both empirical and theoretical perspectives. Empirical articles were distinguished by methodological judgements, while theoretical articles primarily presented ideas or arguments without methodological analysis. The earliest instance of the Eco-ELT movement dated back to 1980, with the most recent articles published in 2024.

Figure 4 *PRISMA Guidelines for Identifying Relevant Articles and/or Book Chapters Pertaining to Eco-ELT*
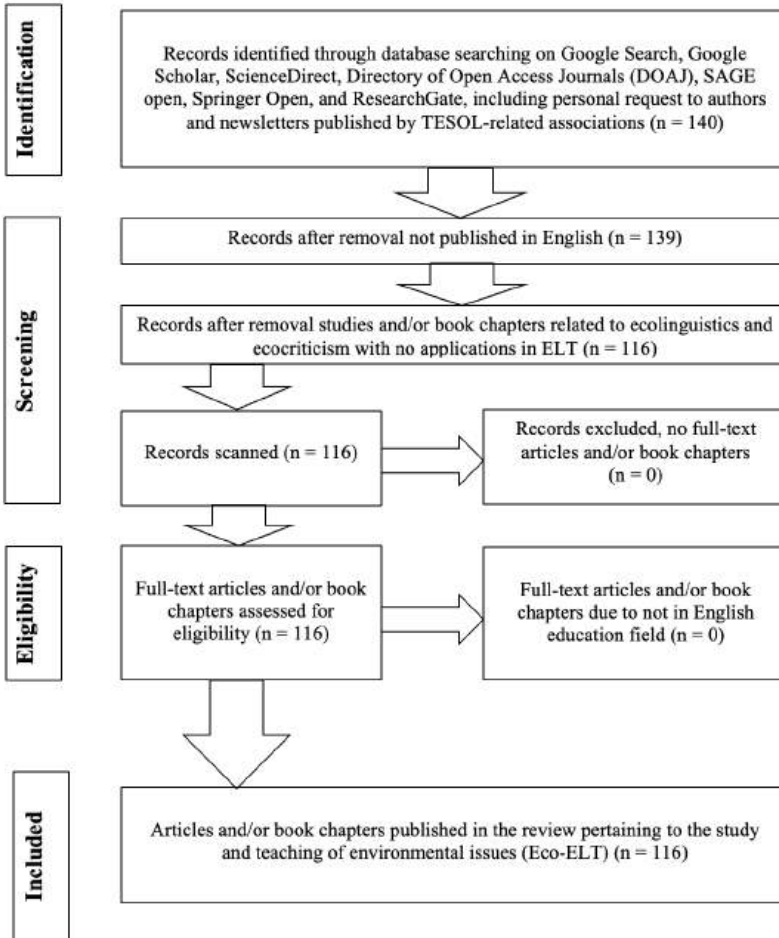
The study employed a range of search terms to identify relevant articles and/or book chapters on Eco-ELT, including phrases like "teaching environmental issues in ELT", "teaching about nature in ELT", "environmental teaching in ELT", "environmental sustainability in ELT", "teaching environmental problems in ELT", "teaching English about environmental topics", "global issues in ELT", and "teaching English about environmental issues". Additionally, terms such as

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"TESOL and sustainability", "TESL and sustainability", and "TEFL and sustainability" were utilized to obtain more articles. Specific topics like "Education for Sustainable Development (ESD) and ELT", "Sustainable Development Goals (SDGs) and ELT", and "Climate change in ELT" were also included. These search terms provided instrumental in identifying relevant Eco-ELT literature.

Inclusion and Exclusion Criteria

This study established the inclusion and exclusion criteria to guide the selection of relevant articles and/or book chapters for review. Inclusion criteria encompassed: (a) studies published in journals and/or book chapters, whether empirical or theoretical. Proceedings, newsletters, or magazines from TESOL-related associations were put as a part of the book chapters category in this study; (b) studies and/or book chapters that focused on teaching and research about environmental issues in ELT/ English Education; (c) studies and/or book chapters published in English; (d) studies and/or book chapters which are available in full text documents. This study excluded (a) studies published in journal editorial statements, (b) studies which focused on ecolinguistics and ecocriticism which did not have application in English teaching practices, (c) relevant published studies and/or book chapters which did not have or unable to access the full texts. These inclusion and exclusion criteria are presented in Table 3.

Table 3 *Inclusion and Exclusion Criteria of the Study*

Inclusion Criteria	Exclusion Criteria
• Studies published in journals and/or book chapters, whether empirical or theoretical. Proceedings, newsletters, or magazines from TESOL-related associations were considered part of the book chapters category in this study.	• Studies published in journal editorial statements.

Inclusion Criteria	Exclusion Criteria
• Studies and/or book chapters that focused on teaching and research about environmental issues in ELT/ English Education.	• Studies which focused on ecolinguistics and ecocriticism which did not have application in English teaching practices.
• Studies and/or book chapters published in English.	• Relevant published studies and/ or book chapters which did not have or unable to access the full texts.
• Studies and/or book chapters which are available in full text documents.	

Selection Process

This study used predefined keywords to search for relevant Eco-ELT articles published in journals and book chapters from December 1, 2023, to June 30, 2024, covering a seven-month period. To ensure inclusivity, no specific time range was set for published articles, allowing the exploration of both pioneering and contemporary works related to teaching and researching environmental issues in ELT. Efforts were also made to obtain articles and book chapters not readily accessible through personal email outreach to authors. Although some articles remained inaccessible, this limitation did not hinder the study's ability to compile a comprehensive selection of relevant works from diverse sources worldwide.

After careful filtering, the study ultimately gathered 116 pertinent Eco-ELT articles and book chapters. This number reflects the exclusion of non-English language publications, such as those in German, and works focusing solely on ecolinguistics or ecocriticism, which lacked relevance to English education. Consequently, the 116 articles and book chapters specifically addressed the study and teaching of environmental issues within ELT. This selection was determined after a thorough examination of each article and book chapter from title to conclusion.

Review Process

Coding and Categorization

To address Research Question (RQ) 1, the study tabulated data on various parameters including the type of articles and/or book chapters (empirical or theoretical), the countries of affiliation of the author(s) (the same country of affiliation was counted one occurrence), publication year, concept of Eco-ELT, bases of Eco-ELT, and significances of Eco-ELT. For RQ2 concerning the present landscape of Eco-ELT practice, data were organized according to ELT professional practice or service outlined by Farmer (2006), encompassing the missions or assumptions, curriculum and instruction (curriculum, learning objectives, approaches methods, materials, and assessment), and staffing. Furthermore, to address future directions in Eco-ELT practice (RQ2), this study suggested recommendations based on the reviewed articles. Similarly, for RQ3 focusing on the present landscape of Eco-ELT research, data were tabulated using the elements of critical review framework for novice research in ELT by Bailey and Corrales (2020) covering principles, framework, and methodology of the research. Recommendations for future directions of Eco-ELT research were also proposed based on the reviewed articles. The coding schemes employed in this review are detailed in Table 4.

Table 4 *Coding Schemes of Review of Eco-ELT Practice and Research*

Categories	Dimensions	Coding Items
	Type	Empirical
		Theoretical
	Country	Indonesia, Thailand, … etc.
Movement	Publication Year	1980, 1990, 1993… 2024
	Concept	Definition or Conceptualization
	Bases	Bases or Frameworks of Eco-ELT
	Significances	Nature, Humans

Practice	Paradigm	Assumptions in Eco-ELT practice
	Curriculum and Instruction	curriculum, learning objectives, teaching approaches/strategies/methods, materials, and assessment
	Staffing	Characteristics of Eco-ELT teachers
	Recommendation	Recommendations for future directions of Eco-ELT practice
Research	Principles	Principles of study
	Framework	Framework of study
	Methodology	Design, Participants, Intervention, Instruments, Analysis
	Recommendation	Recommendations for future directions of Eco-ELT research

Synthesis dan Data Analysis

This study employed both thematic and sub-thematic approaches to analyze the data. Thematic analysis facilitated the systematic presentation of results by identifying emerging themes and subthemes within each article or book chapter (Clarke & Braun, 2014). To ensure coherence in synthesizing the narratives of a review, the framework proposed by Leamy et al. (2011) was utilized, involving the development of a preliminary synthesis, exploration of relationship within and between study objects, and assessment of synthesis strength. Additionally, descriptive statistical analysis such as totals and percentages were done to present a general overview of the data.

Reporting the Review

This study rigorously examined 116 articles and/or book chapters on Eco-ELT using the PRISMA framework in Figure 3. Findings of a review were meticulously reported according to each research question and coding themes identified and then they were discussed. Additionally, visual aids in the form of figures were crafted to enhance understanding of the Eco-ELT landscape. Furthermore, the results of review along with discussions were put in different chapters.

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CHAPTER 4

RESULTS AND DISCUSSION

What is Eco-ELT, and how has its global movement developed over time?

Chapter 4 provides answers of the first research question pertaining to the Eco-ELT and its historical movement. This chapter elaborates the outlooks of global attempt on Eco-ELT and the concept and the bases of Eco-ELT.

—- Eco-ELT Voices —-

The integration of environmental and sustainability knowledge with English proficiency gives students the much-needed voice and empowers them to be effective agents of positive environmental change, benefiting humanity both in the present and in the future. (Jung & Dos Santos, 2022)

English Language Teaching (ELT) shares the broader educational responsibility of addressing global challenges, including environmental crises. (Mercer et al., 2022)

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EFL students often face language proficiency tests like TOEFL and IELTS, which assess their fluency in English. By incorporating readings and writing prompts centered around environmental issues in their curriculum, students not only develop a deeper appreciation for, respect towards, and connection with their natural environment but also become better equipped to tackle such topics when encountering them in tests like TOEFL or IELTS. (Elsherif, 2013)

Eco-ELT Movement

This study identified 116 articles contributing to the teaching and research of environmental education within ELT. These works have helped to elucidate key aspects of studying and teaching environmental issues, from coining the term «Eco-ELT» to establishing foundational principles for teaching and research in this area. The number of articles reflects the versatility of environmental education (Ardoin et al., 2018), highlighting its adaptability for integration across all disciplines, including ELT (Masalimova et al., 2023). Figure 5 provides an overview of global Eco-ELT initiatives, which are further elaborated upon in the following paragraphs.

Figure 5 *Global Eco-ELT Attempts*

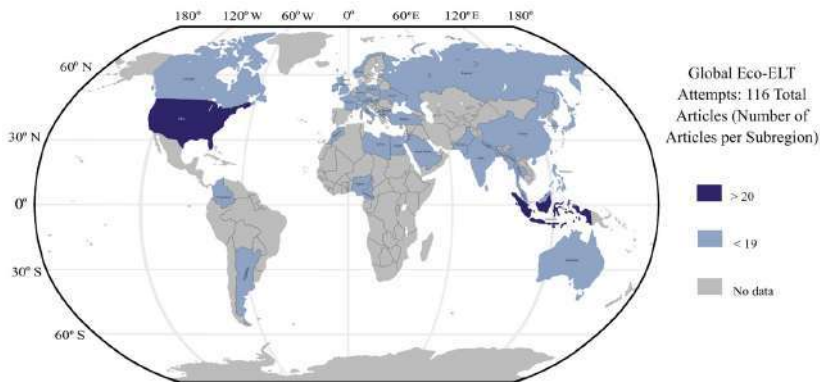Figure 5 shows that the 116 Eco-ELT-related articles originated from 37 countries across five continents: Asia, Africa, the Americas, Europe, and Oceania. Although this study identified Eco-ELT efforts

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in 37 countries worldwide, the number of these initiatives remains limited and needs to be increased (Saiful, 2023). The increase numbers of Eco-ELT efforts are necessary to demonstrate ELT's commitments in addressing global environmental crises. Additionally, the study further revealed that Indonesia has made the most significant contributions to Eco-ELT, followed by the USA and Canada. The details of the contributing countries based on the researchers' affiliations are as follows.

> Indonesia (n = 28), Malaysia (n = 5), China (n = 5), Philippines (n = 1), Bangladesh (n = 2), Libya (n = 1), Singapore (n = 2), Nepal (n = 2), Saudi Arabia (n = 2), Nigeria (n = 1), Colombia (n = 1), Pakistan (n = 1), Argentina (n = 1), Egypt (n = 1), India (n = 2), Cameroon (n = 1), Morocco (n = 1), Thailand (n = 1), Myanmar (n = 1), Jordan (n = 1), South Korea (n = 2), Canada (n = 10), USA (n = 20), Poland (n = 1), Austria (n = 2), Norway (n = 1), Australia (n = 2), Turkey (n = 6), Bulgaria (n = 1), Germany (n = 4), Japan (n = 6), Russia (n = 3), United Kingdom (n = 1), Ukraine (n = 1), France (n = 1), Kosovo (n = 1), and Macedonia/North Macedonia (n = 2).

This study identified several key categories in global Eco-ELT efforts: types of articles, environmental problems addressed, benefits of Eco-ELT for nature and humans, teaching approaches/strategies/methods, and research methods. These categories provide important insights into the current landscape of Eco-ELT movements. Unlike previous freestanding and systematic review studies, such as Appleby (2017), Saiful (2023), and Yu et al. (2024), which primarily focused on teaching approaches, classroom activities, challenges, teacher development programs, and appropriate assessment methods, this study offers comprehensive information on the environmental issues tackled through Eco-ELT, the contributions of Eco-ELT to the well-being of nature and humans, an extensive list of teaching approaches/methods, and research methodologies. Figure 6 presents these

categories of Eco-ELT movements, which are further elaborated upon in the following paragraphs.

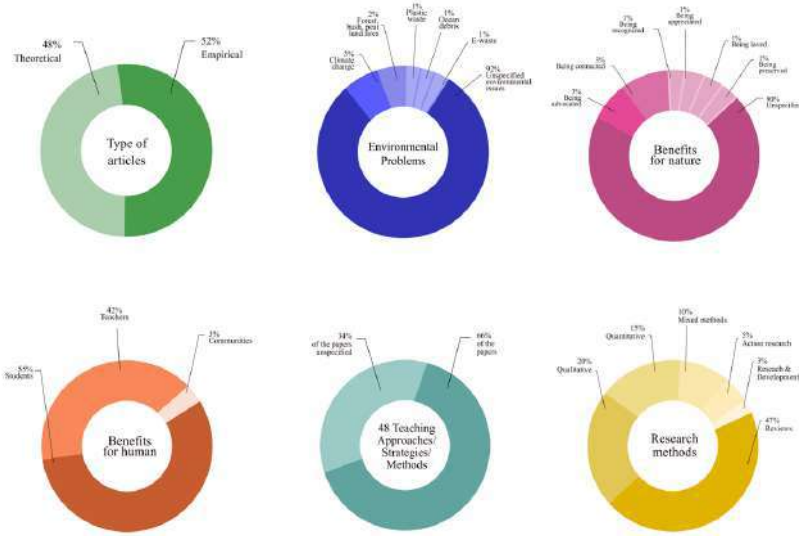**Figure 6** *Outlooks of Global Eco-ELT Attempts*

Figure 6 demonstrates that the 116 articles were divided into tow types: 56 theoretical (48%) and 60 empirical (52%). In terms of environmental issues, 107 (92%) discussed environmental issues in general terms, merely mentioning "environmental issues" without specifying particular problems. Only a few articles focused on specific global issues: climate change (four papers, 3%) as seen in Goulah (2015; 2020), Noto et al. (2022), and Silvhiany et al. (2023); plastic waste (one paper, 1%) as seen in Suyanti et al. (2023); forest, bush, and peatland fires (two papers, 2%) as seen in Cad et al. (2022) and Fauzan (2013); ocean debris (one paper, 1%) as seen in Apriyanti (2017); and electric and electronic waste (e-waste) (one paper, 1%) as seen in Ludwig (2021). These results indicate that Eco-ELT endeavors have predominantly addressed environmental issues in a general context, rather than focusing heavily on specific issues such as climate change, global warming, pollution, and biodiversity loss. This study extends the findings of the previous systematic literature review by Yu

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et al. (2024). While Yu et al. (2024) highlighted various approaches to sustainability integration, innovative classroom activities, teacher development programs, assessment, and challenges, this study provides a more detailed exploration of the specific environmental issues within the scope of Eco-ELT.

Saiful (2023) highlights the significant benefits of Eco-ELT for both English learners and teachers. However, from the perspective of critical environmentalism, these benefits are predominantly human-centered, focusing primarily on the well-being of learners and teachers. As an environmental movement within language education, Eco-ELT must also be eco-centered and contribute to the well-being of nature. Fortunately, the review of 116 articles revealed two main areas of significance: benefits to nature and benefits to humans, as shown in Figure 6.

For nature, Figure 7 illustrates the positive impacts of Eco-ELT, including increased recognition, appreciation, connection, love, advocacy, and preservation of the natural world. Despite these advantages, only a small percentage of articles (10% of the 116 reviewed) focus on the well-being of nature. Therefore, more efforts are needed to emphasize the contributions of Eco-ELT practices and research to the natural environment.

Figure 7 *The Benefits of Eco-ELT Attempts on the Well Beings of Nature*
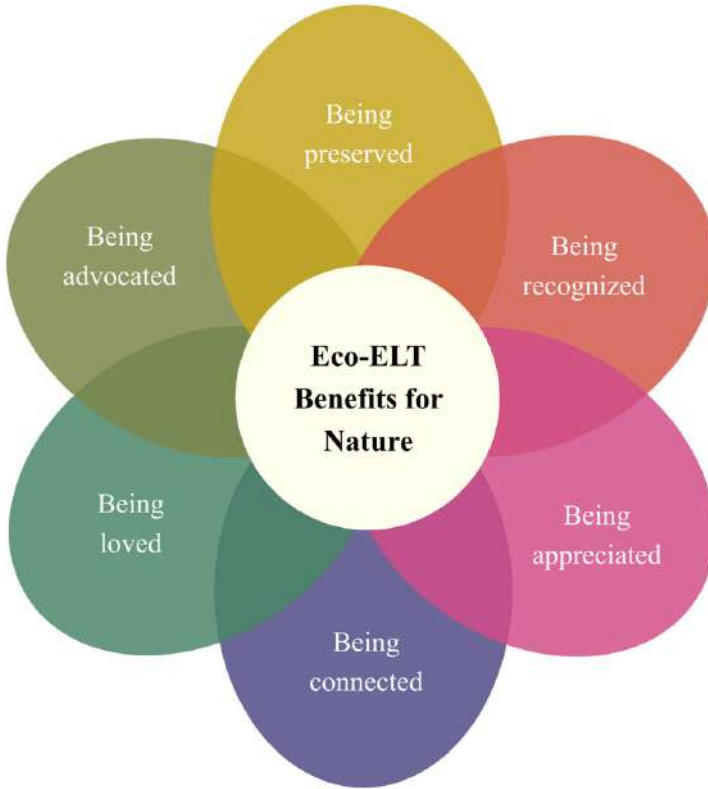
The study further found that Eco-ELT efforts benefited students (64 papers, 55%), teachers (49 papers, 42%), and communities (3 papers, 3%), as detailed in Table 5. This finding broadens the understanding of environmental education's general contributions, which include shaping individuals' environmental attitudes, values, and knowledge while promoting pro-environmental behaviors (Ardoin et al., 2020). Additionally, this study highlights that integrating environmental education into English lessons can also enhance students' English proficiency. Table 5 outlines the development of students' language skills in the Eco-ELT classroom, encompassing language components, skills, and communicative competence.

Table 5 *The Significances of Eco-ELT Endeavors for Humans (Students, Teachers, and Communities)*

Categories	Significances	Related studies echoing the significances of Eco-ELT attempts
Students	Language development	• <u>Speaking</u> (Asgher et al., 2021; Kang, 1997; Manurung & Ria, 2018; Saiful, 2023) • <u>Reading</u> (Saiful, 2023; Templer, 2018; Thanya & Suganthan, 2023) • <u>Writing</u> (Iswandari, et al., 2017; Lavrysh, 2020; Nugraha & Ridwan, 2019; Saiful, 2023; Setyowati, et al., 2022a; Setyowati, et al., 2019; Setyowati, et al., 2020) • <u>Listening</u> (Saiful, 2023; Thanya & Suganthan, 2023) • <u>Vocabulary</u> (Asgher et al., 2021; Cad et al., 2022; Chai & Bin Swanto, 2020; Goulah, 2015; Iswandari, et al., 2017; Lavrysh, 2020; Paramanathan & Syed-Abdullah, 2022; Saiful, 2023; Templer, 2018; Saiful, 2024c) • <u>Pronunciation</u> (Saiful, 2023) • <u>Grammar</u> (Arican, 2009; Saiful, 2023) • <u>Communicative competence</u> (Corzo & Lopera, 2016; Griffiths & Jodoin, 2023)
	Environmental values	• <u>Environmental awareness</u> (Elsherif, 2013; Setyowati, et al. 2022a; Manurung & Ria, 2018; Suyanti et al. 2023; Centikaya et al. 2015; Cad et al. 2022; Chowdhury, 2014; Kang, 1997; Appleby, 2017; Afrin & Saha, 2023; Suwaed, 2022; Nugraha & Ridwan, 2019; Konovalova, et al. 2021; Papi & Haque, 2023; Veselinovska & Kirova, 2013; Setyowati et al., 2020; Gursoy, 2010; Fauzan, 2013; Stempleski, 1995; Cetinkaya et al., 2015)

Categories	Significances	Related studies echoing the significances of Eco-ELT attempts
		• Eco-ethical consciousness (Goulah, 2015) • Sustainable worldview (Meighan, 2021) • Nature connectedness (Saiful, 2024b)
	Environmental attitudes and willingness	• Positive Attitude towards environment (Asgher et al., 2021; Fauzan, 2013; Jodoin & Singer, 2019; Setyowati, et al. 2022b) • Willingness to do pro-environmental behaviors (Kurniawati & Indrasari, 2023) • Nature interest (Saiful, 2024b)
	Environmental literacy	• Environmental literacy (Deetjen & Ludwig, 2021; Summer, 2021) (Rusda et al. 2023) such as climate science (Goulah, 2015) (Haggag, 2023; Templer, 2018) • Broaden students' perspectives environmental problems (Jodoin & Singer, 2019) • Knowledge about environment (Paramanathan & Syed-Abdullah, 2022; Griffiths & Jodoin, 2023), such as climate science (Goulah, 2015)
	Environmental ethics	• Environmental ethics (Beigel, 1996)
	Sustainability skills	• Skills (Kang, 1997: case setting, cooperative problem solving, critical and creative thinking, non-violent conflict resolution, communication, and informed-decision making) (Svien, 2018: research, presentation, opinion- sharing, and critical thinking skills) (Jodoin, 2019: critical thinking, systems thinking, proactive and cooperative learning) (Brown et al, 2017: social and collaboration)

Categories	Significances	Related studies echoing the significances of Eco-ELT attempts
		(Ludwig, 2021: critical and problem-solving skills, (Jodoin, 2019: systems thinking) • Social-emotional learning: self-management and self-awareness (Muller & Herrera, 2023) • Interdisciplinary thinking (Chowdhury, 2014) • Science inquiry skill (Westervelt, 2007), (Brown et al, 2017)
	Pro-environmental behaviors	• Waste management (Suyanti et al. 2023); plastic waste cleaning (Suyanti, et al. 2023); cleaning up old streams, protecting birds' nests, and join environmental campaign (Kang, 1997); beach cleaning (Apriyanti, 2017); sustainable lifestyle (Lavrysh, 2020) • Volunteerism and developing community's capacity (Vilbar, 2023)
	Learning	• Learning motivation (Kang, 1997; Rossiter, 1980; Thanya & Suganthan, 2023) • Learning enthusiasms (Corzo & Lopera, 2016) • Comfort in learning (Dato Paris et al. 2012), less stressful relationship to writing (Manookin, 2018)
Teachers (In and pre-service teachers)	Language development	• Reading (Haggag, 2023) • Vocabulary learning (Haggag, 2023)
	Environmental values	• Climate change awareness (Silvhiany et al. 2023); environmental awareness (Yastibas, 2021; Bushal, 2021) • Awareness of Human and nature relationship (Sharma, 2020)
	Environmental literacy	Knowledge about environment (Paramanathan & Syed-Abdullah, 2022; Yastibas, 2021; Yastibas, 2021)

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Categories	Significances	Related studies echoing the significances of Eco-ELT attempts
	Environmental attitudes	• Positive attitudes toward environment (Bushal, 2021)
	Pedagogical Content Knowledge of Sustainability (PCKS)	• Knowledge on how to teach environmental issues in English lessons (Saiful, 2023; Bowden, 2010; Saiful, 2020; Jung & Dos Santos, 2022; Elsherif, 2013; Muller & Herrera, 2023; Putri, 2018; Nur, et al. 2022; Nalliah & Thiyagarajah, 1995; Jacobs & Goatly, 2000; Pokhrel, 2023; Micalay-Hurtado & Poole, 2022; Pranoto & Levinli, 2022; Centikaya, et al. 2015; Silvhiany, et al. 2023; Asgher, et al. 2021; Deetjen & Ludwig, 2021; Cad, et al. 2022; Kang, 1997; Nkwetisama, 2011; Mete, 2018; Arikan, 2009; Laalouna & Tamer, 2022; Setyowati & Utami, 2014; Appleby, 2017; Hauschild, et al. 2012; Yastibas, 2021; Jodoin & Singer, 2019; Jodoin, 2022; Saiful & Setyorini, 2022; Fauzan, 2013; Jacobs, et al. 2006; Ramadhan, et al. 2020; Al-Jamal & Al-Omari, 2014)
	Sustainability skill	• Creative Thinking Skills (Bushal, 2020; Putri, 2018) • Innovative Thinking Skills (Putri, 2018)
	Multimedia literacy	• Multimedia literacies (Putri, 2018)
	Social responsibility	• Social responsibility (Yastibas, 2021)
Communities	Pro-environmental behaviors	• Addressing local environmental problems in the communities (Putri, 2018; Suyanti et al. 2023; Vilbar, 2023)

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This study identified approximately 48 teaching approaches/ methods for addressing environmental issues in English lessons, accounting for 66% of the 116 papers reviewed. These approaches significantly expand upon previous related review studies, which identified no more than 10 suitable instructional methods for teaching environmental issues in ELT (see Appleby, 2017; Hauschild et al., 2012; Meighan, 2023; Yu et al., 2024). A comprehensive list of these approaches is detailed in Chapter 5. Additionally, the study disclosed six research methods typically used in the Eco-ELT research: quantitative, qualitative, mixed methods, action research, review, and research and development, detailed in Chapter 6.

This study found that Eco-ELT efforts have spanned 44 years, from 1980 to 2024 (see Figure 8). Several significant historical events have driven the Eco-ELT movement (see Figure 9).

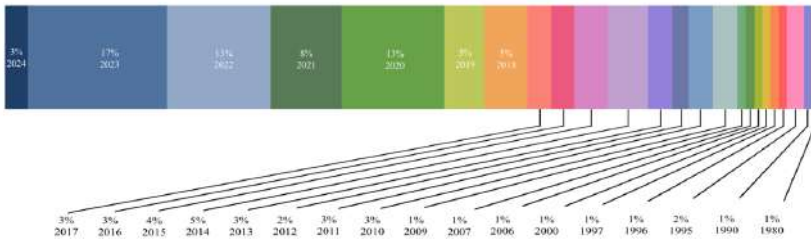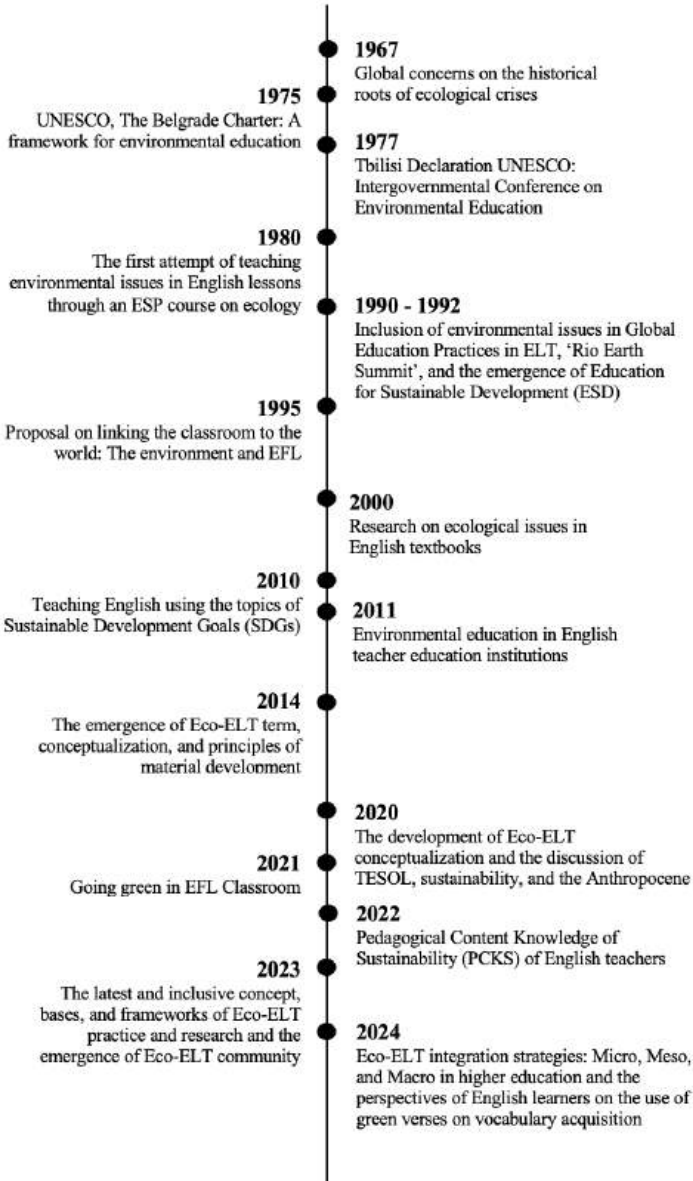**Figure 8** *The Chronicle of Eco-ELT Attempts*

Figure 9 *The Important Events in the History of the Eco-ELT Movement*

1967
Global concerns on the historical roots of ecological crises

1975
UNESCO, The Belgrade Charter: A framework for environmental education

1977
Tbilisi Declaration UNESCO: Intergovernmental Conference on Environmental Education

1980
The first attempt of teaching environmental issues in English lessons through an ESP course on ecology

1990 - 1992
Inclusion of environmental issues in Global Education Practices in ELT, 'Rio Earth Summit', and the emergence of Education for Sustainable Development (ESD)

1995
Proposal on linking the classroom to the world: The environment and EFL

2000
Research on ecological issues in English textbooks

2010
Teaching English using the topics of Sustainable Development Goals (SDGs)

2011
Environmental education in English teacher education institutions

2014
The emergence of Eco-ELT term, conceptualization, and principles of material development

2020
The development of Eco-ELT conceptualization and the discussion of TESOL, sustainability, and the Anthropocene

2021
Going green in EFL Classroom

2022
Pedagogical Content Knowledge of Sustainability (PCKS) of English teachers

2023
The latest and inclusive concept, bases, and frameworks of Eco-ELT practice and research and the emergence of Eco-ELT community

2024
Eco-ELT integration strategies: Micro, Meso, and Macro in higher education and the perspectives of English learners on the use of green verses on vocabulary acquisition

As shown in Figure 9, the first attempt at teaching environmental issues was identified in France in 1980. This initiative was part of an English for Specific Purposes (ESP) course at a university, focusing on

the topic of ecology (see Rossiter, 1980). The most recent effort was in Indonesia in 2024, involving empirical research on EFL learners' perceptions of using English translations of green verses from holy texts to promote incidental vocabulary acquisition (see Saiful, 2024c).

Before 1980, several significant events spurred the rise of environmentalism, including the incorporation of environmental education across disciplines. In 1967, global concerns about environmental crises were highlighted when White (1967) published an article in the *Science* journal on the historical roots of environmental crises, raising awareness among the scientific community about human encroachment on nature. Following this, key environmental movements emerged, such as UNESCO's promotion of environmental education in 1975 through the Belgrade Charter and the 1977 Tbilisi Declaration.

After 1980, the efforts of Eco-ELT increased, but gradually. In 1990, environmental issues were integrated within the global education approach (see Cates, 1990). From 1990 to 1992, two significant events laid the groundwork for environmental movements in education: the United Nations Conference on Environment and Development (UNCED), known as the 'Rio Earth Summit,' and the emergence of the Education for Sustainable Development (ESD) framework (York University, 2024), which aims to achieve Sustainable Development Goals (SDGs) through education.

In 1995, Stempleski (1995) provided compelling reasons for studying environmentalism in ELT, along with approaches and materials for teaching environmental issues in ELT. By 2000, Jacobs and Goatly (2000) conducted a study on the content of ecological issues in English textbooks. A decade later, Bowden (2010) highlighted the potential for teaching SDGs topics in ELT, emphasizing the relationship between ELT and SDGs. In 2011, the integration of environmental education was introduced into higher education, particularly within English teacher education institutions.

In 2014, the term and conceptualization of "Eco-ELT" along with the principles of material development were introduced (see Saiful, 2014). By 2020, the conceptualization of Eco-ELT had further developed (see Saiful, 2020), highlighting the strong relationship between TESOL and sustainability, especially in today's Anthropocene era (see Goulah & Katunich, 2020; Katunich, 2020). In 2021, the notion of green education in ELT became more pronounced (see Deetjen & Ludwig, 2021). In 2022, Saiful and Ari (2022) introduced the concept of Pedagogical Content Knowledge of Sustainability (PCKS) in ELT, explaining the knowledge of English teachers in teaching sustainability issues, including environmental topics, in their lessons.

In 2023, the most recent and comprehensive conceptualization of the Eco-ELT framework for both research and practice emerged (see Saiful, 2023). Additionally, a global Eco-ELT community was established on Facebook, providing a platform for English teachers, scholars, and the public to discuss and share resources on doing Eco-ELT research and practice (see the group link: https://web.facebook.com/share/MhGxZtDWYFVewe5R/).

In 2024, studies and practices in Eco-ELT continue to evolve. Saiful (2024a) proposed strategies for Eco-ELT practice and research in higher education across three levels: micro, meso, and macro. Saiful (2024c) also explored the potential of using green English verses or religious English texts as teaching materials for environmental issues and their benefits for vocabulary acquisition.

Eco-ELT Concept

Eco-ELT, which stands for Ecological English Language Teaching, has undergone various stages of conceptual development. It represents an integrative approach to studying and practicing environmental education within ELT. This concept has evolved through several key phases, as detailed by Saiful in 2014, 2020, and 2023.

In the latest conceptualization of Eco-ELT in 2023, Saiful (2023) discusses the rationale behind the name "Eco-ELT" instead of

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alternatives like "green ELT," "blue ELT," or other color-based terms. The term "Eco" represents "ecology," which emphasizes a broad focus on environmental issues affecting all aspects of ecosystems. This terminology allows for a variety of approaches, models, and methods in environmental teaching and research within ELT. Saiful (2023) argues against using popular color-based terms like "green," which can lead to land-based thinking, as proposed by Dobrin (2021). This perspective often associates "green" with unpolluted, problem-free nature, potentially causing an undue focus on terrestrial environmental issues.

Dobrin (2021) suggests "blue ecocriticism" to focus on water or ocean issues. However, Saiful (2023) counters that using "blue" could similarly narrow the focus to oceanic problems. Instead, the term "Eco" encompasses all environmental concerns, including those related to land, oceans, air, and the entire cosmos. It also signals ELT's commitment to addressing inclusive environmental crises. The hyphen in "Eco-ELT" represents the union of two interdisciplinary fields—ecology studies and English Language Teaching—working together to tackle environmental crises. The inclusion of "ELT" clarifies the focus on the field of English Language Teaching.

The following is the historical movement of Eco-ELT conceptualization from 2014 to 2023.

1. Initial Conceptualization (Saiful, 2014): Eco-ELT initially focused on using environmental literary works within ELT to instill a love for the environment and the virtues of local wisdom in children. This stage highlighted the importance of environmental themes in literary texts as a tool to foster environmental awareness and appreciation among young learners.

2. Ecocriticism Approach (Saiful, 2020): The concept was further refined by incorporating ecocriticism, a critical approach that examines the representation of nature in literature and its impact on readers' environmental consciousness. This stage

emphasized the use of both printed and digital literary works to teach environmental topics in ELT. The "Eco" in Eco-ELT thus came to represent this ecocriticism approach, underscoring the belief that literary works can effectively embed and disseminate environmental virtues while simultaneously enhancing students' English language skills. Here, English is not just a medium for language proficiency but also a tool to address ecological issues within the broader social and humanitarian context.

3. Extended Conception (Saiful, 2023): The most recent stage of Eco-ELT extends the concept to encompass a broader study and practice of environmental education within ELT. This includes diverse methodological research and instructional practices aimed at integrating ecological issues into ELT. As an umbrella term, Eco-ELT applies to all contexts of ELT, such as TESOL, reflecting its versatility and comprehensive nature. This stage highlights the dual focus on both human and environmental well-being, advocating for more significant attention to the natural world in ELT practices and research.

Inclusive Conceptualization: Eco-ELT is defined as the study and practice of environmental education into English Language Teaching (ELT). Its primary goal is to foster the well-being of the natural environment by addressing environmental crises. Eco-ELT employs a multi-faceted approach, evolving from the use of ecocriticism to encompass a wide range of ecological studies and practices within ELT. This approach aims to instill environmental virtues, a love for and protection of nature, and build English language proficiency simultaneously. As a versatile and comprehensive framework, Eco-ELT applies to all ELT contexts and emphasizes the interconnectedness of English education and environmental studies.

Eco-ELT Bases

The bases of Eco-ELT are built upon two crucial elements: language studies and environmental studies and education as pronounced by Saiful (2023). These components create a comprehensive framework that integrates ecological concerns with English Language Teaching (ELT), promoting both nature's well-being and English language proficiency, as seen in Figure 10.

Figure 10 *Bases of Eco-ELT*
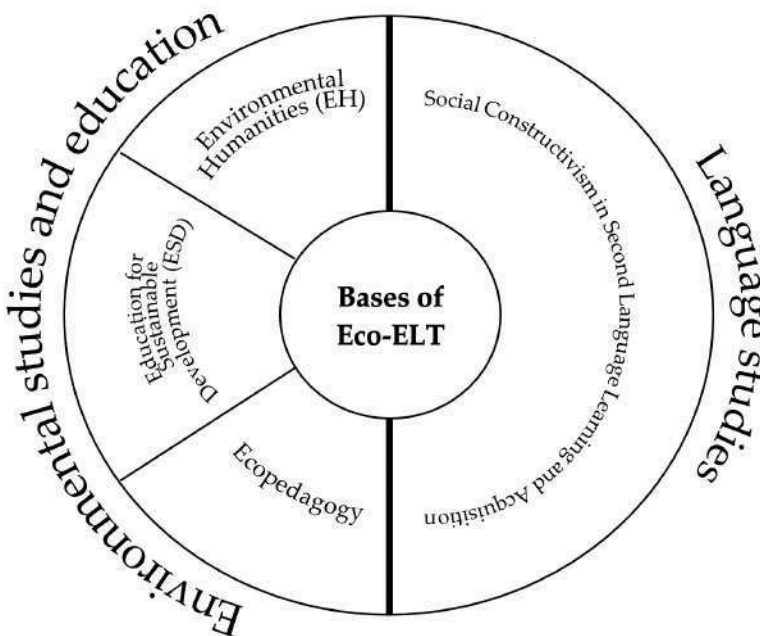
1. Language Studies: The language element of Eco-ELT is grounded in **social constructivism theory** in **second language learning and acquisition**. Social constructivism emphasizes that language learning is a dynamic, interactive process where knowledge is constructed through social interaction and cultural experiences. In the context of Eco-ELT, this approach facilitates a learning environment where students actively engage with environmental topics through language. It encourages learners to construct

their understanding of environmental issues collaboratively, using English as a medium to explore and discuss ecological concepts. This method not only enhances their language skills but also deepens their comprehension of environmental issues by integrating language practice with meaningful content.

2. Environmental Studies and Education: The environmental component of Eco-ELT draws from several interdisciplinary fields, including environmental humanities, education for sustainable development (ESD), and ecopedagogy. **Environmental humanities** provide a broad understanding of the relationship between humans and the environment, exploring how literature, history, philosophy, and other fields collaboratively address ecological concerns. This perspective enriches Eco-ELT by incorporating diverse viewpoints on environmental issues into English language teaching and research. Furthermore, **Education for Sustainable Development (ESD)** focuses on equipping learners with the knowledge and skills necessary to contribute to sustainable development. In Eco-ELT, ESD principles are applied to foster students' understanding of sustainability and their role in promoting environmental stewardship. This includes educating them about sustainable practices, encouraging them to think critically about their environmental impact, and implementing appropriate solutions. **Ecopedagogy** seeks to transform educational systems that contribute to socio-economic inequality, environmental degradation, and anthropocentrism. Eco-ELT incorporates these ecopedagogy principles while also valuing and integrating various approaches from ESD and EE. It emphasizes the importance of all forms of environmental engagement, including basic nature appreciation, and supports diverse efforts to address global environmental issues through English language teaching and research.

CHAPTER 5

RESULTS AND DISCUSSION

8 How are the present landscape and future directions of Eco-ELT practice?

8 Chapter 5 provides a comprehensive overview of the Eco-ELT practice. It outlines the assumptions of practice, framework, curriculum, learning objectives, teaching approaches/methods, teaching materials, assessment methods, characteristics of Eco-ELT teachers, and future recommendations for Eco-ELT practice.

—- Eco-ELT Voices —-

Given the urgent challenges facing the world today, it is crucial to teach students about significant social, environmental, and economic issues in meaningful ways, while also equipping them with the English skills needed to engage with their surroundings. (Jodoin & Singer, 2019)

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Environmental education should be incorporated at all levels of formal education, from kindergarten to pre-service teacher training. It can be offered as a standalone course or integrated into other subjects. In foreign language teaching, specific approaches and techniques can facilitate this integration, offering learners the dual benefits of meaningful language acquisition and increased environmental awareness. (Gursoy, 2010)

Due to the widespread environmental crisis and its daily risks, language educators might feel compelled to incorporate these issues into their curriculum and teaching methods. Cross-cultural discussions can be used to foster critical environmental awareness among both teachers and students. As our planet faces significant challenges, raising awareness about environmental issues can be integrated into language instruction. (Sharma, 2020)

The Present Landscape of Eco-ELT Practice

Assumptions on Eco-ELT practice

This study identified eight underlying assumptions about Eco-ELT practice from a review of 116 articles. This finding adds to previous related studies, which did not discuss the assumptions or underlying reasons behind Eco-ELT practice (see Appleby, 2017; Hauschild et al., 2012; Saiful, 2023; Yu et al., 2024). This study provides new and important knowledge by highlighting these eight assumptions, which are elaborated upon as follows.

1. Empowerment and Agency
   Three scholars believe that ELT serves as a means of empowerment and agency for both English teachers and learners to become environmental agents of change. Bowden (2010) emphasizes that engaging ELT teachers and learners in sustainability values empowers them to act as agents of change. Furthermore, Afrin and Saha (2023) postulate that exploring social and

environmental issues in ELT can foster critical understanding and actions. Lastly, Delavan (2020) asserts that TESOL educators have a responsibility to empower students to resist unsustainable practices and promote sustainable values.

2. Responsibility and Relevance

Four scholars argue that language teaching, especially ELT, shares a responsibility with other fields of study to address environmental crises and to construct relevant content for the present and future lives of English learners. Muller and Herrera (2023) emphasize that ELT should recognize the constant relationship between individuals and their environment, highlighting the importance of addressing environmental crises. Mercer et al. (2022) add that language teaching is integral to broader educational responsibilities, including addressing content relevant to learners' present and future lives. Hameed (2023) asserts that ELT should incorporate contemporary global crises, such as environmental issues, to achieve sustainable goals. Lastly, Cad et al. (2022) state that ELT classrooms can address pressing issues like environmental crises, making learning relevant to students' lives.

3. Integration of Global Issues

Two scholars argue that ELT has significant potential and a growing interest in addressing global issues. For example, Setyowati (2022b) states that there is an increasing interest in integrating global issues, including environmental protection, into ELT. Similarly, Gursoy and Saglam (2011) note that global issues, such as environmental topics, are popular contexts for purposeful language learning.

4. Promotion of Environmental Literacy

Two scholars assert that ELT can serve as a catalyst for promoting environmental literacy. Deetjen and Ludwig (2021) state that ELT can foster environmental literacy and raise awareness of climate change. Jodoin and Singer (2019) further elaborate that

ELT should meaningfully introduce students to important social, environmental, and economic topics.

5. Promotion of Critical Thinking and Ecological Consciousness
Three scholars argue that the nature of ELT instruction concerning the environment can foster critical thinking and ecological consciousness. Nkwetisama (2011) states that ELT should develop critical thinking strategies that support environmental sustainability. Mete (2018) further suggests that ELT can enhance critical reading skills by using authentic texts on ecological issues. Xiong (2014) asserts that ELT instruction has the potential to challenge anthropocentric views and promote ecological thinking, thereby fostering democratic citizenship.

6. Interdisciplinary Approach
Two scholars emphasize that ELT instruction is and should be interdisciplinary, incorporating diverse approaches such as environmental education and Indigenous perspectives to teach sustainability. Yatibas (2021) suggests that ELT instruction, when integrated with environmental education, should adopt an interdisciplinary approach to raise awareness about the negative impacts of human activities. Nakagawa (2020) similarly notes that TESOL should include Indigenous perspectives and knowledge on sustainability.

7. Development of Global Citizenship
Two scholars argue that ELT can be a platform for advocating global citizenship, including environmental justice. Jacobs et al. (2006) suggest that English teachers can model advocacy for global citizenship and environmental responsibility. Cates (1990) adds that ELT can empower students to address global issues as world citizens.

8. Ethical Environment
A scholar asserts that ELT can be a platform for developing positive environmental ethics. Beigel (1996) argues that ELT

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instruction is suitable for comprehensive intellectual and philosophical discussions about nature, which can contribute to the development of a personal environmental ethic, such as through literary teaching.

Framework of Eco-ELT practice

This study developed a framework for Eco-ELT practices, which includes two essential elements: the well-being of the natural environment and language proficiency. Both elements should be given equal emphasis in Eco-ELT practices. The framework's overview is presented in Figure 11 and is briefly explained in Table 6.
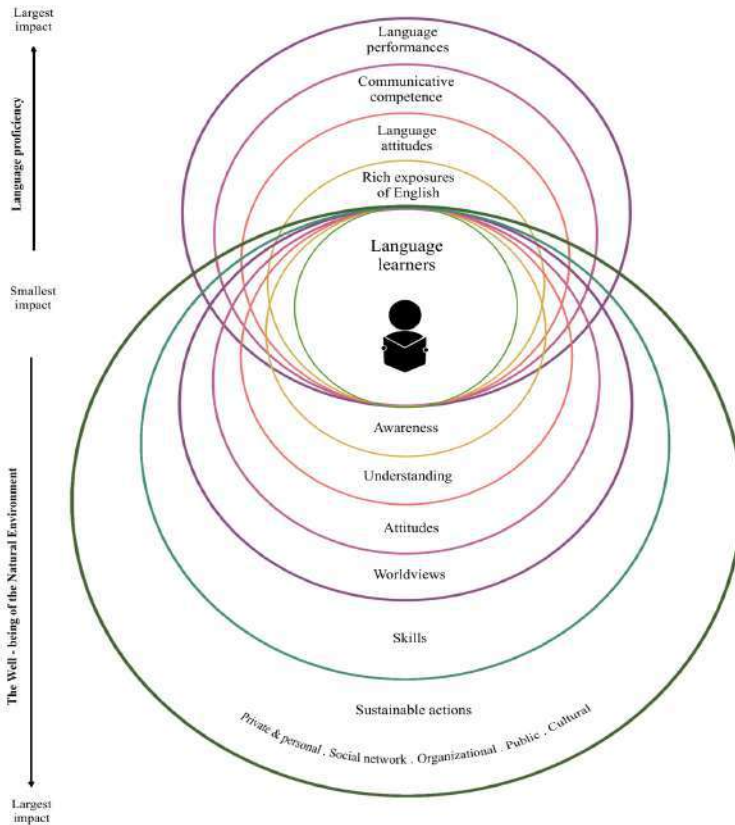
Figure 11 *The Framework of Eco-ELT Practice*

Table 6 *The Framework of Eco-ELT Practice*

Phases	The Well-being of the Natural Environment	Phases	Language Proficiency
1	**Developing awareness:** environmental awareness	1	Providing rich exposures of English
2	**Developing understanding:** knowledge about environment	2	**Developing favorable language attitudes**: what you believe, feel, and intend to do something about English
3	**Developing attitudes:** nature empathy and emotional entanglement with nature or feelings of inclusion with nature	3	**Developing communicative competence**: What you know about language which include linguistic, social, strategic, psychosocial, and operational competence.
4	**Shaping worldviews:** non-anthropocentric worldviews about nature-human relationships		
5	**Developing skills** necessary for environmental protections		
6	**Enabling sustainable actions**: 1. <u>Private & personal</u>, such as donating money for environmentalism, walking, and reducing, reusing recycling wastes. 2. <u>Social network,</u> such as teaching, persuading, and supporting others to do environmental protection	4	**Enabling language performances** (listening, speaking, reading, and writing): how you use your knowledge in actual language production and comprehension

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Phases	The Well-being of the Natural Environment	Phases	**Language Proficiency**
	3. <u>Organizational</u>, such as changing unstainable processes and procedures and sharing ideas about Eco-ELT. 4. <u>Public</u>, creating laws, protest, vote, and campaign which foster the well-being of nature 5. <u>Cultural</u>, such as changing unstainable norms and systems which harm nature.		

Figure 11 and Table 6 present the framework of Eco-ELT practice which include two elements: the well-being of the natural environment and language proficiency. The framework is generated based on the reviewed articles in this study.

The Element of The Well-being of the Natural Environment

Regarding the element of the well-being of the natural environment, the goal of Eco-ELT practice is for students to protect nature, starting with developing environmental awareness and progressing to sustainable actions for nature's well-being. This study adapted the framework for environmental justice based on Mete (2018), who formulated a framework for environmental education in English lessons according to Bloom's Taxonomy. However, the framework is not inclusive. Hence, this study adds a domain of shaping worldviews, as advocated by Saiful (2023) that the ultimate goal of Eco-ELT is to transform English learners' paradigms to be more ecocentric, promoting an egalitarian worldview on the human-nature relationship. This perspective posits that humans are not the masters of nature, nor is nature merely a servant to humans; instead, they are interconnected and play vital roles in maintaining the ecosystem's balance.

This study found that 19 papers have articulated the potential of Eco-ELT to develop English learners' environmental awareness (see Afrin & Saha, 2023; Appleby, 2017; Cad et al., 2022; Centikaya et al., 2015; Chowdhury, 2014; Elsherif, 2013; Fauzan, 2013; Gursoy, 2010; Kang, 1997; Konovalova et al., 2021; Manurung & Ria, 2018; Nugraha & Ridwan, 2019; Papi & Haque, 2023; Setyowati et al., 2022a; 2020; Stempleski, 1995; Suyanti et al., 2023; Suwaed, 2022; Veselinovska & Kirova, 2013). Eco-ELT can also help students gain environmental knowledge (see Griffiths & Jodoin, 2023; Paramanathan & Syed-Abdullah, 2022), including climate science (see Goulah, 2015). Furthermore, after fostering environmental awareness and knowledge, Eco-ELT can facilitate English learners' connection to nature (see Saiful, 2023; 2024b) and empathy towards nature (see Saiful, 2023).

The next phase is the development of positive environmental attitudes. This study identified four articles that support the potential of Eco-ELT to nurture such attitudes (see Asgher et al., 2021; Fauzan, 2013; Jodoin & Singer, 2019; Setyowati et al., 2022b). Additionally, Eco-ELT can encourage language learners to adopt non-anthropocentric worldviews regarding the relationship between humans and nature. Saiful (2023) discusses the importance of ecocentric or egalitarian views.

The next phase involves developing skills necessary for environmental protection. The reviewed articles that align with this idea are as follows. Kang (1997) discusses case setting, cooperative problem solving, critical and creative thinking, non-violent conflict resolution, communication, and informed decision-making skills. Svien (2018) highlights four skills: research, presentation, opinion-sharing, and critical thinking. Jodoin (2019) mentions critical thinking, systems thinking, and proactive and cooperative learning. Brown et al. (2017) emphasize social and collaboration skills. Ludwig (2021) identifies critical and problem-solving skills. Muller and Herrera (2023) focus on social-emotional skills such as self-management and self-awareness. Chowdhury (2014) adds the essential skill of

interdisciplinary thinking. Lastly, Brown et al. (2017) and Westervelt (2007) mention science inquiry skills.

The final phase is sustainable actions to achieve the well-being of nature. Mete (2018) suggests providing ample opportunities for students to engage in pro-environmental actions, such as campaigning for climate change awareness and joining environmental movements. To ensure these actions positively impact nature, this study outlines five levels of personal actions, ranging from the least to the most impactful, adapted from Amel et al. (2017). These levels represent an individual's spheres of influence on ecosystem conservation and include: (1) private and personal, (2) social network, (3) organizational, (4) public, and (5) cultural, as detailed in Table 6. Eco-ELT practices can encourage students to take action across all levels, from personal to cultural. For instance, this study identified three instances of Eco-ELT practices that addressed environmental issues in the "public" sphere (see Putri, 2018; Suyanti et al., 2023; Vilbar, 2023), tackling local environmental problems within their communities.

The Element of Language Proficiency

In addition to promoting the well-being of the natural environment, Eco-ELT practices must also focus on enhancing learners' language proficiency, as a core objective of ELT is to develop students' English skills. This study provides evidence from the review showing that Eco-ELT can achieve this goal. Four stages for attaining language proficiency within the Eco-ELT framework are outlined in Figure 11 and briefly described in Table 6. This language proficiency framework expands the previous work in Eco-ELT, which primarily emphasized environmental frameworks, such as Mate (2018). Earlier related studies, including those by Jodoin (2022), Saiful (2023), and Yu et al. (2024), also did not address the framework for developing language proficiency in Eco-ELT lessons. This study fills this gap by detailing the stages of achieving language proficiency in Eco-ELT lessons, elaborated in the following paragraphs.

The first stage is to provide learners with rich exposure to English. Saiful (2023) suggests that Eco-ELT teaching materials about the environment are abundant and authentic, offering comprehensible input for language learning and acquisition. Through these materials, learners can acquire new vocabulary, grammar knowledge, and pronunciation skills. Saiful's latest study (2024c) highlights the potential of using "green" verses from holy texts as teaching materials, which can aid in vocabulary acquisition. In short, there is a vast and diverse range of English teaching materials, both printed and digital, available to expose students to the English language.

The second stage involves fostering positive attitudes towards the language. Favorable language attitudes are crucial for language proficiency, as they influence learners' beliefs, feelings, and behavioral intentions toward learning the target language. Eco-ELT practices can help students develop positive beliefs about English, a love for the language, and a desire to learn and improve their proficiency. This review found that incorporating environmental topics into English lessons can create a comfortable learning environment for students (see Dato Paris et al., 2012). Similarly, engaging in nature writing activities can reduce stress associated with writing (see Manookin, 2018).

The third stage involves developing communicative competence. This study identified two articles supporting the contribution of Eco-ELT to the development of communicative competence (see Corzo & Lopera, 2016, and Griffiths & Jodoin, 2023). Communicative competence includes not only linguistic competence, such as vocabulary (see Asgher, et al. 2021; Cad, et al. 2022; Chai & Bin Swanto, 2020; Goulah, 2015; Iswandari, et al. 2017; Lavrysh, 2020; Paramanathan & Syed-Abdullah, 2022; Saiful, 2023; 2024c; Templer, 2018;), pronunciation (Saiful, 2023), and grammar (see Arican, 2009; Saiful, 2023), but also other competencies including social, strategic, psychological, discourse, and operational skills.

After acquiring communicative competence, Eco-ELT practice should facilitate the development of integrated language skills:

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listening, speaking, reading, and writing. This review identified articles highlighting the benefits of Eco-ELT practice on listening skills (see Saiful, 2023; Thanya & Suganthan, 2023), speaking skills (see Asgher et al., 2021; Manurung & Ria, 2018; and Kang, 199; Saiful, 2023;), reading skills (see Templer, 2018; and Thanya & Suganthan, 2023; Saiful, 2023), and writing skills (see Iswandari et al., 2017; Lavrysh, 2020; Nugraha & Ridwan, 2019; Saiful, 2023; Setyowati et al., 2019; 2020; 2022a).

Through the four stages—providing rich exposure to the target language (English), fostering positive language attitudes, developing communicative competence, and enhancing language performance—Eco-ELT practice can help students achieve English proficiency. This proficiency will be instrumental in empowering learners to advocate for and mobilize global communities toward environmental protection.

Eco-ELT Curriculum

Based on a review of 116 articles, this study identified key elements of the curriculum (see Figure 12) and outlined principles for curriculum development in the context of environmental education in ELT, as detailed below. These principles aim to help ELT achieve the goals of environmental education, which include fostering appreciation for natural resources, encouraging participation in conservation activities (Ardoin et al., 2020; Masalimova et al., 2023), and shaping individuals› environmental attitudes, values, and knowledge, while also promoting pro-environmental behaviors (Ardoin et al., 2020).

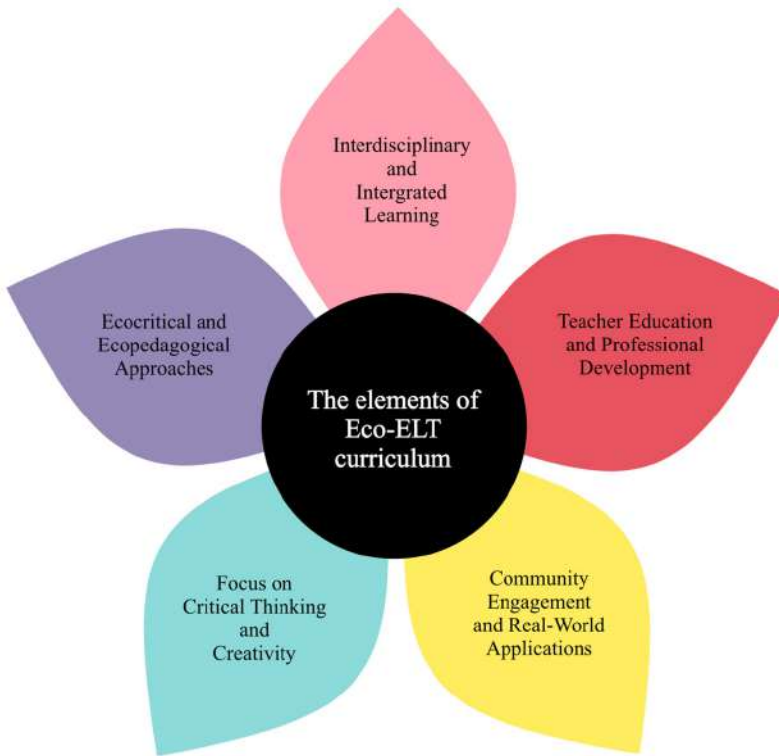**Figure 12** *The Elements of Eco-ELT Curriculum*

Figure 12 shows the elements of the Eco-ELT curriculum identified from the reviewed articles. This study found five key elements, which are elaborated upon as follows.

1. Interdisciplinary and Integrated Learning

   Two scholars, Bowden (2010) and Silvhiany et al. (2023), advocate for an interdisciplinary approach within the Eco-ELT curriculum. They assert that the curriculum should shift from isolated, subject-based learning to integrated, interdisciplinary approaches that connect language skills with real-world environmental issues. Additionally, Saiful (2020) and Jacobs and Goatly (2000) highlight the importance of using diverse, authentic materials to construct integrated learning experiences around environmental topics in English lessons.

2. Ecocritical and Ecopedagogical Approaches

    Within the Eco-ELT curriculum, two scholars Saiful and Setyorini (2022) and Haggag (2023) emphasize the exploration of ecological themes and crises through literature and other cultural texts to raise environmental awareness. The curriculum should also incorporate green pedagogy to enhance eco-literacy and encourage sustainable behavior among students (Haggag, 2023).

3. Focus on Critical Thinking and Creativity

    The Eco-ELT curriculum should also encourage the development of critical thinking, creativity, and problem-solving skills through discussions and activities related to environmental issues (see Bowden, 2010; Centinkaya et al., 2015).

4. Community Engagement and Real-World Applications

    The Eco-ELT curriculum should involve community engagement where students are given ample opportunities to engage with local communities and real-world environmental projects to provide students with practical experiences and enhance their understanding of sustainability (Suyanti et al., 2023; Nkwetisama, 2011). The curriculum should also promote the concept of eco-schools or green schools to foster a culture of sustainability within educational institutions (Nur et al., 2022).

5. Teacher Education and Professional Development

    The Eco-ELT curriculum must also be devoted to training for pre-service and in-service English teachers. It must emphasize the importance of environmental education in teacher training programs to equip future educators with the necessary skills and knowledge (Asgher et al., 2021; Yatibas, 2021).

Beyond the elements of Eco-ELT curriculum, this study also found six principles of curriculum development as follows. The first is Relevance and Authenticity, selecting materials and designing activities that are relevant to students' lives and reflect real-world environmental issues (Elsherif, 2013; Li, 2013). The second is

Flexibility and Adaptability, ensuring the curriculum is adaptable to different contexts and can incorporate various environmental topics as needed (Mueller & Herrera, 2023). The third is Student-Centered and Experiential Learning, focusing on student-centered approaches that prioritize experiential learning, allowing students to explore and engage with environmental issues actively (Goulah, 2020; Nalliah & Thiyagarajah, 1995). The fourth is Multimodal and Multidisciplinary Approaches, using multimodal resources and encouraging interdisciplinary collaboration to address complex environmental issues comprehensively (Silvhiany et al., 2023). The fifth is Sustainability and Responsibility, fostering a sense of responsibility and commitment to sustainability in students, preparing them to be active participants in addressing environmental challenges (Centinkaya et al., 2015; Ninuk, 2015). The sixth is Continuous Reflection and Improvement, encouraging ongoing dialogue and reflection among educators, students, and the community to continually improve and align the curriculum with ecological and educational goals (Bowden, 2010; Saiful & Setyorini, 2022).

Learning Objectives of Eco-ELT Practice

Based on the reviewed articles, this study identified nine learning objectives of Eco-ELT practice as follows.

1. **Enhance Environmental Awareness:** Develop students' awareness of global and local environmental issues, including their causes, consequences, and potential solutions (see Fauzan 2013; Kang, 1997; Nkwetisama, 2011).

2. **Promote Critical Thinking and Problem-Solving Skills:** Encourage students to engage in critical thinking and problem-solving related to environmental challenges. This includes analyzing environmental issues, evaluating solutions, and developing informed decision-making skills (see Nkwetisama, 2011; Kang, 1997; Saiful 2024a).

3. **<u>Foster Effective Communication and Language Skills</u>:** Improve students' ability to communicate effectively about environmental topics using appropriate language skills. This includes reading, writing, speaking, and listening in ways that contribute to meaningful dialogue about environmental issues (see Brown et al., 2017; Chowdhury, 2014; Saiful, 2024a).

4. **<u>Inspire Environmental Concern and Action</u>:** Cultivate a sense of concern for environmental issues and motivate students to take action, both within and outside the classroom, to contribute to environmental protection and sustainability (see Fauzan, 2013; Kang, 1997; Setyowati et al., 2022a).

5. **<u>Integrate Environmental Education with Language Learning</u>:** Seamlessly integrate environmental education into English language learning, using real-life environmental contexts to make language instruction more relevant and meaningful (see Nkwetisama, 2011, Sangsongfa & Rawang, 2016, and Saiful, 2024a).

6. **<u>Promote Interdisciplinary Learning and Critical Engagement</u>:** Encourage interdisciplinary approaches by connecting environmental issues with other subjects such as science, mathematics, and arts, thereby enriching students' overall educational experience and understanding of environmental sustainability (see Brown et al. 2017; Rossiter, 1980; Sangsongfa & Rawang, 2016).

7. **<u>Utilize ICT and Community Resources</u>:** Leverage ICT tools and community resources to enhance students' learning about environmental issues, making use of technology and local expertise to support and enrich the educational process (see Fauzan, 2013; Saiful, 2024a).

8. **<u>Support Personal and Cultural Connections to Nature</u>:** Foster students' personal and cultural connections to the natural world, using their own experiences and backgrounds to deepen their

engagement with environmental topics (see Brown et al., 2017; Sangsongfa & Rawang, 2016).

9. **Encourage Lifelong Learning and Responsibility:** Instill a lifelong commitment to environmental stewardship and responsibility, equipping students with the knowledge and motivation to continue learning about and acting on environmental issues beyond the classroom (see Nkwetisama, 2011; Setyowati, et al. 2022b; Saiful, 2024a).

Eco-ELT Teaching Approaches/Methods

EE facilitates a deeper understanding of environmental issues, nurturing problem-solving skills, critical thinking abilities, and ecological attitudes toward nature (Sari et al., 2023). Teachers play a crucial role in ensuring that these benefits are reached by incorporating relevant models, methods, techniques, and tools of environmental education into their lessons (Husamah et al., 2022). Based on the reviewed articles, this study identified 48 potential and relevant teaching approaches and methods for implementing Eco-ELT. These approaches and methods were found in 76 of the 116 articles reviewed. These approaches and methods significantly expand upon previous related review studies, which identified no more than 10 suitable instructional methods for teaching environmental issues in ELT (see Appleby, 2017; Hauschild et al., 2012; Meighan, 2023; Yu et al., 2024). The following provides a brief overview of these approaches and methods.

1. **Post-methods (Saiful, 2023):** This approach emphasizes flexibility in teaching methods, allowing educators to adapt strategies based on the specific context and needs of their students. In the context of environmental issues, it suggests integrating various ecological perspectives and teaching methods to address environmental topics effectively.

2. **Ecocriticism (Saiful, 2020; Saiful & Setyorini, 2022):** Ecocriticism involves analyzing literature and texts with a

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focus on environmental themes and issues. In English lessons, this approach encourages students to examine how texts reflect and engage with environmental concerns, fostering a deeper understanding of nature and human-environment relationships.

3. **Environmentally Responsive Pedagogy (Jung & Dos Santos, 2022):** This pedagogy involves adapting teaching methods to respond to environmental issues and promote sustainability. It integrates environmental themes into the curriculum, encourages critical thinking about ecological impacts, and aims to foster a sense of responsibility towards environmental stewardship.

4. **Ecocomposition (Bruce, 2011; Elsherif, 2013; Lavrysh, 2020) / Nature Writing (Konovalova et al., 2021; Manookin, 2018; Setyowati et al., 2020; 2022a) / Nature Journaling (Muller & Herrera, 2023):** Focuses on integrating environmental concerns into writing instruction, encouraging students to consider ecological impacts in their writing and explore nature through composition. **Nature Writing:** Involves writing about natural environments, promoting a personal connection to nature and raising awareness about ecological issues through creative expression. **Nature Journaling:** Encourages students to keep journals documenting their observations and reflections about nature, enhancing their connection to the environment and promoting reflective writing practices.

5. **Content-Based Teaching about Environment (Setyowati et al., 2022b):** This strategy integrates environmental content into English language instruction, using environmental topics as the subject matter for language practice. It helps students learn about environmental issues while developing their language skills.

6. **Think-Pair-Share Strategy (Manurung & Ria, 2018):** A collaborative learning strategy where students first think individually about a question or topic, then discuss their thoughts with a partner, and finally share their ideas with the larger

group. This method encourages active participation and deeper exploration of environmental issues.

7. **Digital Storytelling (DST) (Putri, 2018; Rusda et al., 2023):** Uses digital tools to create and share stories about environmental topics. This approach combines multimedia elements like text, images, and audio to engage students in exploring and communicating environmental issues creatively.

8. **Critical Environmental Education (Putri, 2018):** Focuses on developing students' critical thinking skills regarding environmental issues. It encourages students to question and analyze environmental policies, practices, and their impacts, fostering a deeper understanding of sustainability and environmental justice.

9. **Community Practice (Suyanti et al., 2023):** Involves engaging students in community-based environmental projects and initiatives. It emphasizes collaboration with local communities to address environmental challenges and apply classroom learning in real-world contexts.

10. **Experiential Learning in Nature (Aker et al., 2022; Alter, 2015; Apriyanti, 2017; Asgher et al., 2021; Snider, 2016; Suyanti et al., 2023;):** Involves direct, hands-on experiences in natural settings. Students learn about environmental issues through activities such as field trips, nature explorations, and outdoor projects, which enhance their understanding and connection to the environment.

11. **Multi-Channel Learning Approach (Nalliah & Thiyagarajah, 1995):** Uses various channels and media (e.g., text, audio, video) to teach environmental topics. This approach caters to different learning styles and helps students engage with environmental issues through diverse formats.

12. **Problem-Based Learning (PBL) (Asgher et al., 2021; Chai & Bin Swanto, 2020; Iswandari et al., 2017):** Students work on

real-world environmental problems, collaboratively finding solutions and applying their knowledge. This approach enhances critical thinking and problem-solving skills while addressing environmental   challenges.

13. **Ecopedagogy (Papi & Haque, 2023; Pokhrel, 2023; Silvhiany et al., 2023; Timothy & Obiekezie, 2019):** Focuses on integrating ecological and pedagogical principles to promote environmental awareness and sustainability. It emphasizes the development of eco-conscious attitudes and behaviors through education.

14. **Critical Language Awareness (Micalay-Hurtado & Poole, 2022):** Encourages students to critically examine how language shapes and is shaped by environmental issues. It helps students understand the role of language in environmental discourse and promotes more informed and responsible communication.

15. **Discussion Method (Asgher et al., 2021; Konovalova et al., 2021):** Involves structured discussions about environmental topics, allowing students to explore different perspectives and develop their understanding of environmental issues through dialogue.

16. **Field Trips (Asgher et al., 2021):** Provides students with firsthand experiences in natural settings or environmental sites. Field trips enhance learning by allowing students to observe and engage with environmental issues directly.

17. **Project-Based Learning (PBL) (Asgher et al., 2021; Manookin, 2018; Nugraha & Ridwan, 2019; Suwaed, 2022;):** Students work on projects related to environmental issues, applying their knowledge to create solutions or raise awareness. This approach promotes active learning and real-world application of environmental   concepts.

18. **Drama (Asgher et al., 2021; Dato Paris et al., 2012):** Uses dramatic techniques and performances to explore environmental themes. Students act out scenarios or create plays that

address environmental issues, fostering empathy and deeper understanding through creative expression.

19. **Place-Based Pedagogy (Deetjen & Ludwig, 2021; Eyarud, 2020; Templer, 2022; Westervelt, 2007):** Focuses on using the local environment and community as a context for learning. It involves studying and addressing environmental issues specific to the students' local area, connecting classroom learning to real-world contexts.

20. **Seminars (Deetjen & Ludwig, 2021):** Organizes formal discussions or presentations on environmental topics. Seminars provide a platform for in-depth exploration of environmental issues and facilitate knowledge sharing among students and experts.

21. **Picturebooks (Cad et al., 2022):** Uses picturebooks with environmental themes as teaching tools. These books combine visuals and text to engage younger students in learning about nature and environmental issues.

22. **Theme-Based Teaching (Chowdhury, 2014; Gursoy, 2010; Sharma, 2020):** Integrates environmental themes into various subject areas. By focusing on specific environmental topics, this approach helps students make connections across different content areas and deepens their understanding of environmental issues.

23. **Interactive Student-Centered Activities: Superior-Inferior Arrangement, Combining Arrangement, Cooperative Arrangement, and Individual Arrangement (Kang, 1997):** Uses various interactive arrangements to engage students in learning about environmental issues. These arrangements include group work, cooperative activities, and individual tasks that cater to different learning preferences and encourage active participation.

24. **Content and Language Integrated Learning (CLIL) (Goulah, 2020; Jodoin, 2020; Nkwetisama, 2011; Svien, 2018; Templer,**

2018): Integrates content about environmental issues with language instruction. Students learn about environmental topics while simultaneously developing their language skills, promoting both subject knowledge and language proficiency.

25. **Task-Based Language Teaching (Nkwetisama, 2011; Thanya & Suganthan, 2023) / Task-Based Digital Language Teaching (Ramadhan et al., 2020):** Focuses on using tasks related to environmental issues as the basis for language learning. Students complete tasks that involve researching, discussing, and presenting environmental topics, enhancing their language skills through practical application.

26. **Environmental Peace Education (Arikan, 2009):** Promotes peace and environmental sustainability through education. It emphasizes the interconnectedness of environmental issues and social justice, fostering a holistic understanding of both.

27. **Genre-Based Approach (Manookin, 2018; Setyowati & Utami, 2014):** Focuses on teaching specific genres of texts related to environmental issues. This approach helps students understand and produce different types of environmental writing, such as persuasive essays or reports.

28. **Model-Based Learning (Peng & Chen, 2023):** Uses models to teach and understand environmental concepts. Students interact with and create models to explore and analyze environmental issues, enhancing their comprehension through visual and practical tools.

29. **Content-Based Instruction (CBI) (Corzo & Lopera, 2016; Goulah, 2020; Gursoy, 2010; Hauschild et al., 2012; Manookin, 2018; Rossiter, 1980; Sharma, 2020; Vilbar, 2023):** Integrates environmental content into language instruction. This approach allows students to learn about environmental issues while simultaneously developing their language skills.

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30. **Communicative Language Teaching (CLT) (Afrin & Saha, 2023):** Focuses on using communication as the primary means of learning. In the context of environmental issues, CLT encourages students to discuss, debate, and interact about ecological topics, improving both language skills and environmental awareness.

31. **Role-Playing (Konovalova et al., 2021):** Uses role-playing activities to explore environmental issues. Students take on different roles and scenarios related to environmental topics, promoting empathy and deeper understanding through experiential learning.

32. **Project Presentation (Konovalova et al., 2021):** Involves students presenting their projects on environmental topics. This strategy encourages students to research, develop, and communicate their findings, enhancing their understanding and presentation skills.

33. **Ecomusicology (Alter, 2015; Saiful, 2024b; Summer, 2021):** Integrates music and environmental themes by using songs about nature. This approach helps students connect with environmental issues through musical expression and enhances their appreciation of ecological topics.

34. **International Teleconference Project (Yakovaleva et al., 2019):** Facilitates global collaboration and learning through teleconferences. Students from different countries discuss and address environmental issues together, promoting cross-cultural understanding and shared solutions.

35. **Language Education for Sustainable Development (LESD) (Jodoin, 2022):** Focuses on integrating sustainable development principles into language education. This approach helps students understand and address environmental challenges while developing their language skills.

36. **Heritage Language Pedagogy (HLP) (Meighan, 2019; 2020b; 2021; 2023a; 2023b):** Emphasizes the use of heritage languages in teaching environmental issues. It promotes the inclusion of local

languages and cultural perspectives in environmental education, fostering a deeper connection to local environmental issues.

37. **Whole-Language Classroom (Beigel, 1996):** Uses a holistic approach to language instruction, integrating reading, writing, speaking, and listening skills. In the context of environmental issues, this approach involves using diverse texts and activities to explore ecological topics comprehensively.

38. **Discursive Strategies for Earth Democracy (Delavan, 2020):** Employs discursive strategies to address environmental issues and promote sustainability. This includes using data to highlight environmental risks, exploring historical contexts, and creating inclusive Anglophone identities that support sustainability.

39. **Post-Truth Pedagogy (Kouritzin, 2020):** Addresses the challenges of misinformation and "post-truth" in environmental education. This pedagogy encourages critical thinking and fact-checking to combat environmental misinformation and promote accurate understanding.

40. **Incorporating Lived Experiences and Principles of Spirituality (Sharma, 2020):** Integrates students' personal experiences and spiritual perspectives into environmental education. This approach emphasizes the importance of personal connection and spiritual values in understanding and addressing environmental issues.

41. **Learning Using Local Contexts and History of Land (Nakagawa, 2020):** Focuses on using local environmental contexts and historical land use as a basis for learning. This approach helps students connect with their local environment and understand its significance in the context of environmental issues.

42. **ICT Use on the Topic of Environment (Fauzan, 2013):** Incorporates Information and Communication Technology (ICT) tools to teach environmental topics. This strategy uses

digital resources and online platforms to enhance learning and engagement with environmental issues.

43. **<u>Extensive Listening: Journals about Nature</u> (Kurniawati & Indrasari, 2023):** Uses extensive listening activities involving nature-related audio materials. This approach helps students improve their listening skills while gaining insights into environmental topics.

44. **<u>Inquiry-Based Learning</u> (Ludwig, 2021; Westervelt, 2007):** Encourages students to explore environmental issues through inquiry and investigation. Students ask questions, conduct research, and analyze data to develop a deeper understanding of environmental topics.

45. **<u>Problem-Based Service-Learning (PBSL)</u> (Westervelt, 2007):** Combines problem-based learning with community service. Students work on solving environmental problems while actively engaging with their communities, applying their knowledge in real-world contexts.

46. **<u>Global Education Approach</u> (Cates, 1990):** Focuses on global perspectives in education, including environmental issues. This approach helps students understand the interconnectedness of global environmental challenges and encourages international cooperation.

47. **<u>Transdisciplinary Approach: Science, Mathematics, English, and Virtual Arts</u> (Brown et al., 2017) / <u>STREAM Education Approach</u> (Saiful, 2024a):** Integrates multiple disciplines (Science, Technology, Reading, Engineering, Arts, Mathematics) to address environmental issues. This approach promotes a comprehensive understanding of environmental problems through collaborative learning across different subject areas.

48. **<u>Eco-Spiritual or Religiosity Learning, Using Green Verses</u> (Saiful, 2024c):** Incorporates eco-spiritual or religious teachings, such as green verses, into environmental education.

This approach combines ecological principles with spiritual or religious perspectives to promote environmental awareness and stewardship.

Eco-ELT Teaching Materials

Based on the reviewed articles, this study found various forms and characteristics of Eco-ELT teaching materials as follows.

1. <u>Relating to Personal, Local, and Global Environmental Concerns</u>: According to Bowden (2010), teaching materials should connect with students' personal experiences and local environmental issues while also addressing broader global debates. This approach can include using students' own opinions and experiences as discussion bases, rather than solely relying on set texts, and incorporating authentic texts for critical analysis.

2. <u>Eco-Literary Works</u>: Saiful (2020) suggests that materials should fulfill the ecocritical teaching aims by instilling a consciousness of environmental awareness and promoting self-awareness about the human-nature relationship. These materials can include a wide range of eco-literary works such as poetry, novels, short stories, folklore, films, video clips, scripts of plays or dramas, textbooks, nature writing, traditional or modern songs, etc. These resources serve a dual purpose: teaching English linguistic aspects and addressing ecological issues or crises.

3. <u>Practical Environmental Engagement</u>: Suyanti et al. (2023) describe how the English Corner Community in Sidetapa Village uses non-formal education, like English courses, to support rural tourism and encourage environmental conservation. This practical engagement includes initiatives like exchanging plastic waste through a local waste bank, demonstrating how language education can intersect with community-based environmental action.

4. <u>Current Events and News</u>: Kang (1997) emphasizes using press and news sources to discuss current environmental issues, providing students with relevant, real-world content.

5. Green Resources and Visual Aids: Setyowati & Widiati (2014) highlight the use of various "green" resources, including environmental curricula, lesson plans, pictures, flashcards, poems, songs, videos, graded readers, and art projects, available from diverse sources such as environmental organizations, teaching experts, and government institutions.

6. Textbook Integration: Hauschild et al. (2012) note that many language textbooks now include chapters on environmental topics. Additionally, teachers can leverage internet resources to find and adapt environment-related materials to fit their students' language and content-learning needs.

7. Digital Materials: Ramadhan et al. (2020) developed task-based digital language teaching materials incorporating environmental education for middle school students, showing the value of innovative, technology-enhanced approaches.

8. Sustainable Development Goals (SDGs) Topics: Naing & Mar (2023) emphasize the role of ELT in promoting sustainable development, aligning lessons with the United Nations' SDGs to address issues like poverty, climate change, and inequality.

9. Green Holy References: Saiful (2024c) explores using English translations of green verses related to nature to aid in incidental vocabulary acquisition.

Principles of Selecting Eco-English Teaching Materials

Based on the reviewed articles, this study found the principles of selecting Eco-ELT teaching or learning materials as follows.

1. **Relevance to Learning Topics and Audience**: Eco-English materials should align with the topics of the curriculum and be suitable for the students' age, language proficiency, and cultural context (Saiful, 2014).

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2. **Source and Authenticity**: Materials can be sourced from both online and offline literary works. They must be authentic and provide a variety of assessment opportunities (Saiful, 2014).

3. **Ecological Content**: The materials should contain ecological issues that are related to human life and the broader human experience (Saiful, 2014).

4. **Theory-Creation**: Materials should facilitate the construction of "green" knowledge through the process of theory creation, encouraging critical thinking and deeper understanding (Saiful, 2014).

5. **Engagement and Interest**: Materials should be engaging and interesting to capture students' attention and foster a positive learning environment (Saiful, 2014).

6. **Incorporation of Background Knowledge and Experiences**: The selection of materials should consider students' background knowledge, personal experiences, and preferences. This approach helps shape their pro-environmental attitudes and behaviors (Laaloua & Tame, 2022).

7. **Balance of Dimensions**: While environmental knowledge is important, other dimensions such as personal relevance and emotional engagement should also be emphasized. This balance helps in planning and selecting appropriate content and activities (Laaloua & Tame, 2022).

8. **Reflection of Immediate and Global Concerns**: Texts should present environmental issues relevant to students' immediate surroundings while also connecting them to global environmental concerns (Alter, 2015).

9. **Actionability**: Materials should present issues that students can influence, helping them see that they can actively contribute to improving environmental situations (Alter, 2015).

10. **<u>Awareness and Appreciation of Nature</u>**: Texts should encourage students to reflect on their environmental surroundings and develop an awareness of the beauty and value of nature (Alter, 2015).

11. **<u>Encouragement of Action</u>**: Beyond raising awareness, materials should motivate students to take concrete actions to address environmental issues (Alter, 2015).

Principles of Developing Eco-English Teaching Materials

Based on the reviewed articles, this study found the principles of developing Eco-ELT teaching materials as follows.

1. <u>Natural Language Use</u>: Eco-English materials should use natural language that is appropriate and authentic, mirroring real-life communication (Saiful, 2020).

2. <u>Comprehensive Skill Exposure</u>: Materials should provide a wide range of exposure to English skills and components, including reading, writing, speaking, and listening (Saiful, 2020).

3. <u>Ecological and Humanitarian Themes</u>: The content should incorporate ecological issues related to human experiences and broader humanitarian concerns (Saiful, 2020).

4. <u>Engaging Tasks and Clear Instructions</u>: Include tasks that are engaging and challenging, with clear instructions for both language skills and ecological awareness (Saiful, 2020).

5. <u>Contextual Relevance</u>: Materials should be tailored to the specific cultural and educational context, considering the needs and interests of the target learners (Putri, 2018; Saiful, 2014).

6. <u>Appropriate Difficulty Level</u>: Ensure that materials are suitable for the students' developmental and English proficiency levels, using pre-testing or other measures to gauge appropriateness (Holownych, 2010).

7. <u>Diverse Formats and Resources</u>: Include a variety of formats such as textbooks, modules, vodcasts, podcasts, worksheets, and

multimedia elements to cater to different learning preferences and enhance engagement (Nur et al., 2022).

8. <u>Inquiry-Based Learning</u>: Integrate questions of inquiry that encourage students to investigate and question environmental issues, fostering critical thinking and deeper understanding (Svein, 2018).

9. <u>Local and Global Connections</u>: Connect environmental issues to both local and global contexts, helping students relate to the material and understand the broader implications (Svein, 2018; Veselinovska & Kirova, 2013).

10. <u>Project-Based Learning</u>: Incorporate academic projects such as research papers, presentations, debates, and role-plays to promote autonomy, critical thinking, and practical application of knowledge (Svein, 2018).

11. <u>Fieldwork and Experiential Learning</u>: Whenever possible, include field trips or hands-on activities that provide real-world exposure to environmental issues and allow students to engage directly with their community (Svein, 2018).

12. <u>Reflection and Feedback</u>: Encourage students to reflect on their learning experiences and provide feedback. This helps in assessing their progress, understanding their perspectives, and refining future materials (Svein, 2018).

13. <u>Teacher and Student Collaboration</u>: Encourage collaboration between teachers and students in creating and developing materials, such as collecting articles, creating surveys, or discussing local environmental issues (Veselinovska & Kirova, 2013).

Assessment Methods in Eco-ELT Practice

Incorporating Eco-ELT necessitates a comprehensive and nuanced approach to assessment, which serves as a crucial component in evaluating both language proficiency and environmental

understanding. This study found an article from Saiful (2014) which provides general outlooks of the assessments of Eco-ELT practice which can be guidance for English teachers. According to Saiful (2014), the assessment of Eco-ELT should be conducted consistently, systematically, and in an orderly manner, ensuring that it accurately reflects the students' learning journey. A variety of assessment methods can be employed, including both test and non-test formats for measuring students' environmental awareness to actions and language proficiency. Written assessments might include traditional tests or essays, while spoken assessments could involve presentations or oral examinations. Non-test methods encompass observational assessments, performative tasks, and practical assignments such as projects or products. Additionally, homework and portfolios provide opportunities for continuous assessment, allowing for the documentation of student progress over time. Self-assessment encourages students to reflect on their learning, fostering a deeper understanding of their own progress and areas for improvement. Assessments in Eco-ELT should also accommodate both individual and group work, acknowledging the importance of collaboration and communication in addressing environmental issues. By utilizing these diverse forms of assessment, educators can create a holistic evaluation framework that not only measures language skills but also assesses students' grasp of environmental concepts and their ability to apply these ideas in real-world contexts.

Characteristics of Eco-ELT teachers

This study identified several characteristics of effective English teachers based on the reviewed articles, highlighting the multifaceted role of educators as both language instructors and environmental advocates. These characteristics extend beyond merely incorporating relevant models, methods, techniques, and tools of environmental education into lessons (Husamah et al., 2022). They include several key aspects. Firstly, effective English teachers must be **critical thinkers**

and reflective practitioners, as Bowden (2010) suggests. They should challenge the inherent assumptions within the English language and facilitate critical awareness among learners, linking classroom activities to broader societal and sustainability debates. They must also be **"environmental" moral agents**, as Saiful (2020) and Saiful (2023) advocate, embedding environmental virtues and promoting sustainable behaviors within their teaching. This involves not only imparting language skills but also fostering a sense of belonging and responsibility towards nature.

English teachers should also **exercise autonomy and creativity** in curriculum design, as Jung and Dos Santos (2022) note, allowing for the integration of environmental education (EE) themes at all levels. They should develop their own environmental literacy, as Mercer et al. (2022) highlight, to engage students with relevant content and encourage discussions around environmental issues. **Contextual relevance** is also crucial; as Elsherif (2013) and Setyowati et al. (2022a) point out, teachers should connect language learning to students' local environments and cultural contexts, thereby enhancing their engagement and understanding.

English teachers are also **agents of change**, as Cad et al. (2022) describe, who introduce interdisciplinary connections and promote environmental citizenship through creative methods like picturebook creation. This role involves facilitating discussions, problem-solving, and encouraging learner autonomy, as Kang (1997) and Hauschild et al. (2012) emphasize. They should also be **knowledgeable and passionate** about environmental issues, as Yatibas (2021) and Mohamed & Halim (2023) stress, to effectively integrate EE into their lessons and inspire students to take action.

Lastly, a good English teacher for EE should be **adaptive and resourceful**, as Sharma (2020) and Al-Jamal and Al-Omari (2014) suggest. They should not be constrained by traditional materials but should innovate and incorporate theme-based instruction that supports both language learning and environmental awareness.

This includes recognizing the importance of social responsibility, as Cates (1990) highlights, and fostering a classroom environment that encourages sustainable practices and critical thinking. Overall, these characteristics collectively enable teachers to not only teach English but also prepare students to engage thoughtfully and responsibly with global environmental challenges.

Recommendations for Future Directions of Eco-ELT Practice

This study found several suggestions for the future directions for Eco-ELT practice from the reviewed articles as follows.

1. Professional Development and Training

   There is a clear need for comprehensive Continuing Professional Development (CPD) opportunities that focus on integrating environmental issues into English Language Teaching (ELT). Mercer et al. (2022) highlight the importance of supporting teachers through CPD to ensure they can sustainably incorporate environmental topics alongside language objectives. This training should also reach educators who may not have an inherent interest in environmental issues but work in contexts where ecoliteracy is a required part of teaching.

2. Raising Awareness and Transformative Pedagogy

   Teacher education programs should explicitly raise awareness that teaching English is closely connected with addressing global and social issues like the climate crisis. Mercer et al. (2022) advocate for a critical and transformative approach in teaching practices, encouraging educators to view their role as not just language instructors but also as facilitators of critical thinking and social change.

3. Grassroots Activism and Institutional Support

   There is a burgeoning grassroots activism among teachers who are passionate about environmental education. However, this

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is often done in the absence of adequate institutional support, coherent frameworks, and resources. Future efforts should focus on bridging the gap between national policy, institutional discourse, and classroom practice, ensuring that teachers have the necessary resources and institutional backing (Mercer et al., 2022).

4. Content-Based and Theme-Based Approaches
   Integrating environmental topics into writing and other language lessons through content-based or theme-based approaches can help students engage with real-life issues. This not only raises their awareness but also encourages critical thinking and action towards environmental protection (Setyowati et al., 2022b).

5. Decolonizing English Language Teaching
   Meighan (2020a) suggests a need to decolonize the English language to challenge ecologically destructive assumptions and perceptions embedded within it. This involves questioning the mainstream Western worldview that often marginalizes alternative, sustainable ways of knowing and being, such as those from Indigenous perspectives. Educators should consider incorporating ecocentric worldviews and addressing the colonial and assimilationist legacy of the English language.

6. Developing Sustainable Teaching Practices
   There is a growing need to develop sustainable teaching practices that incorporate environmental issues without overburdening educators. This involves creating manageable ways to integrate these topics into language lessons, potentially through small-scale projects or specific activities that align with existing curricula (Mercer et al., 2022).

7. Encouraging Critical Literacy and Reflection
   Future directions should include fostering critical literacy skills among both teachers and students. This involves critically engaging with texts, questioning underlying assumptions,

and reflecting on how language shapes our understanding of environmental issues. This critical engagement can lead to more informed and responsible global citizens (Mercer et al., 2022).

CHAPTER 6

RESULTS AND DISCUSSION

8

How are the present landscape and future directions of Eco-ELT research?

> Chapter 6 provides a comprehensive overview of research on Eco-ELT. It outlines the principles of research, research methods, participants, educational interventions, data collection instruments, data analysis methods, and recommendations for future directions of Eco-ELT research.

—- Eco-ELT Voices —-

Language education should go beyond just teaching grammar and vocabulary. It should address complex and challenging topics to foster critical thinking, collaborative skills, diverse learning abilities, academic socialization, and personal growth. (Lavrysh, 2020)

Teacher education institutions play a key role in shaping society. Pre-service teacher programs should provide comprehensive training on integrating environmental issues into course content. Education

faculties must emphasize teachers' roles in environmental education, offering trainees opportunities to learn relevant activities, gain knowledge on environmental topics, and engage in interactive studies. (Asgher et al., 2021)

The literature review revealed that English language teacher education programs (ELTEPs) have not been evaluated from an anthropocentric perspective. Given teachers' crucial role in preparing future citizens to protect and sustain the environment, their pre-service and ongoing professional development training is essential. (Yatibas, 2021)

The Present Landscape of Eco-ELT Research

Principles of Research on Eco-ELT

This study identified an article by Saiful (2023) that outlines general principles for researching Eco-ELT. These principles provide a comprehensive framework for conducting research on Eco-ELT, ensuring that studies are inclusive, interdisciplinary, and focused on promoting environmental sustainability through English education. These principles represent novel findings, expanding upon previous related studies that only explored frameworks for incorporating SDGs topics into ELT, covering the three pillars of sustainability: economic, environmental, and social (see Jodoin, 2022). Other studies have also just focused on suitable teaching materials and approaches/methods (see Appleby, 2017), as well as teacher development programs, assessment, and challenges (Yu et al., 2024). The following are the elaborations of these principles of research on Eco-ELT.

1. Interdisciplinary Integration: Eco-ELT research should integrate various academic disciplines to explore environmental sustainability within the context of English Language Teaching (ELT). This interdisciplinary approach helps in connecting linguistic education with ecological and environmental studies.

2. <u>Holistic Educational Levels:</u> Research should address Eco-ELT across all educational levels, from primary education to higher education. This includes examining how environmental sustainability can be embedded in the curriculum and teaching practices at each stage of a learner's journey.

3. <u>Diverse Educational Settings:</u> Studies should consider a wide range of educational settings, including formal education (schools, colleges, universities), informal education (community programs, online learning), and nonformal education (workshops, extracurricular activities). This diversity helps in understanding how Eco-ELT can be applied in different learning environments.

4. <u>Global Contexts and Variability:</u> Research should encompass various global contexts, including TESL (Teaching English as a Second Language), TEFL (Teaching English as a Foreign Language), and TESOL (Teaching English to Speakers of Other Languages). This allows for a comprehensive understanding of how Eco-ELT can be adapted and implemented in diverse cultural and linguistic settings.

5. <u>Diverse Forms and Methods:</u> Eco-ELT research should explore various forms, including instructional activities, teaching materials, curriculum design, policy development, and assessment methods. This diversity ensures that all aspects of language education are considered in promoting environmental sustainability.

6. <u>Focus on Environmental Sustainability:</u> Central to Eco-ELT research is the focus on environmental sustainability. Studies should investigate how ELT can contribute to raising awareness, fostering positive attitudes, and encouraging behaviors that support environmental conservation and sustainability.

7. <u>Focus on Language Proficiency:</u> Eco-ELT research also focuses on English proficiency of learners. Studies should investigate

how ELT about the natural environment can contribute to raising English proficiency of learners.

8. <u>Focus on Eco-ELT Teacher Professional Development</u>: Eco-ELT research also focuses on the professional development of pre-service and in-service English teachers on implementing Eco-ELT, especially their Pedagogical Content Knowledge of Sustainability (PCKS).

9. <u>Practical and Theoretical Contributions</u>: Research should aim to contribute both practically and theoretically. Practically, it should provide insights into effective teaching strategies, materials, and practices that promote environmental awareness. Theoretically, it should develop frameworks and models that explain how language education can intersect with ecological concerns.

10. <u>Innovative Approaches and Technologies</u>: The research should explore innovative approaches and technologies that can enhance the teaching and learning of environmental issues within ELT. This includes digital tools, multimedia resources, and interactive platforms that can facilitate a deeper understanding of environmental topics.

11. <u>Ethical and Cultural Considerations</u>: Research should consider both ethical and cultural dimensions, ensuring that studies on ELT adhere to research ethics and that the integration of environmental topics respects learners' cultural backgrounds and promotes inclusivity.

12. <u>Collaboration and Community Engagement</u>: Eco-ELT research should encourage collaboration among educators, researchers, policymakers, and communities. This collaborative approach can help in creating a supportive ecosystem for implementing Eco-ELT initiatives and promoting environmental sustainability on a broader scale.

Framework of Eco-ELT Research

This study identified the general framework of Eco-ELT research based on Saiful›s 2023 study. Saiful (2023) describes Eco-ELT research as adopting an interdisciplinary framework that integrates knowledge from various disciplines to explore and examine environmental education practices within English Language Teaching (ELT). The research areas are diverse and encompass all aspects of the language education ecosystem. For instance, Eco-ELT research can be conducted across all educational levels, from pre-nursery to tertiary education, and in various settings, including formal, informal, and nonformal education. It also applies to different contexts such as TESL, TEFL, TESOL, and more, and can focus on various forms like instructional activities, materials, curriculum, policy, and assessment. Moreover, Eco-ELT research is open to any research paradigm, conceptual and theoretical frameworks, and research designs. Researchers have full autonomy to explore any topics related to Eco-ELT.

Research Methods

This study found diverse research methods that reflect the multifaceted nature of Eco-ELT, highlighting the importance of using a range of approaches to explore the intersection of environmental education and ELT. These findings on research methods and designs are crucial for Eco-ELT researchers planning their studies. This result expands previous related research (see Goulah, 2023; Hauschild et al., 2012; Jodoin, 2022; Meighan, 2023; Saiful, 2023; and Yu et al., 2024), which did not fully address the range of research approaches and designs in Eco-ELT. The following section details the typical research approaches and designs used in Eco-ELT research.

- Quantitative Research in Eco-ELT
  Quantitative research methods are employed in Eco-ELT to measure and analyze data numerically, providing statistical insights into environmental education within English language teaching. Seventeen articles (15%) utilized quantitative

approaches, including case studies (e.g., Setyowati et al., 2022a; Jodoin, 2020), cross-sectional designs (e.g., Setyowati et al., 2022b), and experimental designs (e.g., Chai & Bin Swanto, 2020; Haggag, 2023; Iswandari, et al. 2017; Sadykova, et al. 2014; Thanya & Suganthan, 2023). Descriptive quantitative methods were also common (e.g., Gursoy & Saglam, 2011; Setyowati, et al. 2020), alongside survey designs (e.g., Asgher, et al. 2021; Bekteshi & Xhaferi, 2020; Dato Paris, et al. 2012; Naing & Mar, 2023) and correlational studies (e.g., Peng & Chen, 2023). These methods help quantify learners' attitudes, knowledge, and behaviors towards environmental issues within the ELT framework.

- Qualitative Research in Eco-ELT

  Qualitative research in Eco-ELT provides in-depth understanding and exploration of complex phenomena related to environmental education. Twenty-three articles (20%) adopted qualitative methods, including instrumental case studies (e.g., Goulah, 2015; Goulah, 2020; Putri, 2018; Nugraha & Ridwan, 2019) and general case studies (e.g., Brown et al., 2017). Multimodal discourse analysis was employed by Nur et al. (2022) and Rusda et al. (2023), while textbook analysis was utilized by Jacobs & Goatly (2000) and others (e.g., Pranoto & Levinli, 2022; Afrin & Saha, 2023; Mohamed & Halim, 2023; Al-Jamal & Al-Omari, 2014). Other qualitative methods included narrative inquiry (Pokhrel, 2023), classroom ethnography (Silvhiany et al., 2023), and qualitative methods without specified designs (e.g., Paramanathan & Syed-Abdullah, 2022; Yastibas, 2021). Additionally, specialized methods such as ecocritical discourse analysis (Xiong, 2014) and an ecolinguistic approach to critical discourse analysis (Eyraud, 2022) were used. These studies offer rich, contextual insights into the experiences and practices surrounding environmental education in ELT.

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- Mixed Methods in Eco-ELT

  Mixed-methods research integrates both quantitative and qualitative approaches to provide a comprehensive understanding of Eco-ELT. Twelve articles (10%) employed mixed-method designs, including explanatory sequential designs (e.g., Mercer et al., 2022) and congruent/convergent parallel designs (e.g., Arikan, 2009; Hameed, 2023; Laalouna & Tamer, 2022). This approach allows for a broader exploration of research questions, combining numerical data with detailed qualitative insights. Studies using mixed methods often explore the interplay between environmental content and language teaching, addressing both teachers' and learners' perspectives.

- Action Research in Eco-ELT

  Action research involves a reflective process of progressive problem solving led by individuals working within a community of practice. Six articles (5%) applied action research methods, with classroom action research being used by Manurung & Ria (2018) and others (e.g., Cad et al., 2022; Corzo & Lopera, 2016). Community action research was conducted by Suyanti, et al. (2023), focusing on practical solutions and improvements in specific settings. Project action research, as seen in the works of Griffiths and Jodoin (2023) and Summer (2021), explores the implementation and outcomes of specific projects aimed at integrating environmental education in ELT.

- Reviews in Eco-ELT

  Review articles synthesize existing literature to provide an overview of research trends and findings in Eco-ELT. Fifty-five articles (47%) were identified as free-standing reviews, encompassing a wide range of topics. Notable reviews include those by Saiful (2023, 2020), Bowden (2010), and others (e.g., Centikaya, et al. 2015; Deetjen & Ludwig, 2021; Yu et al., 2024; Katunich, 2020; Meighan, 2023c). These reviews critically analyze

previous studies, identify gaps in the literature, and suggest directions for future research, contributing significantly to the field's theoretical and methodological development.

- Research and Development (R&D) in Eco-ELT

R&D involves the creation and testing of new educational tools, materials, and methods. Three articles (3%) focused on R&D, including works by Holowniych (2010), Hapsari (2015), and Ramadhan, et al. (2020). These studies typically involve designing and evaluating innovative curriculum materials and teaching approaches, aiming to enhance the integration of environmental education within ELT.

Participants in Eco-ELT Research

Eco-ELT research involves a diverse range of participants, reflecting the multifaceted nature of environmental education within English language teaching contexts. The diverse participants illustrate the broad scope of Eco-ELT research, encompassing educators, students, community members, and future teachers across various educational levels and cultural contexts. This diversity enables a comprehensive understanding of how environmental education can be effectively integrated into English language teaching.

One notable group of participants includes English Language Teaching (ELT) teachers, as highlighted by Mercer et al. (2022). This study involved 91 ELT teachers who were members of the online community 'ELT Footprint,' a not-for-profit network of educators dedicated to incorporating environmental issues into their teaching. The purposeful sampling targeted this specific group to explore their attitudes and experiences with integrating environmental topics in their classes.

Students of various educational levels also play a significant role in Eco-ELT research. For instance, Setyowati (2022a) focused on 17 students from an English Language and Literature program who participated in an essay writing class. Similarly, Setyowati et al.

(2022b) examined 23 students from the Department of English at a state university in Malang, Indonesia, who were also enrolled in an essay writing course. At the secondary education level, Manurung and Ria (2018) involved 32 senior high school students from Methodist 2 Palembang, while Paramanathan & Syed-Abdullah (2022) conducted their study at a Chinese Independent high school in Malaysia, where students communicate primarily in Chinese.

Community-based participants are another critical demographic in Eco-ELT studies. Suyanti et al. (2023) conducted research at the English Corner Community in Sidetapa Village, Bali. This study included a diverse group of informants: Komang Rena, the head of the community; Wayan Ariawan, a coach and key figure in the community's formation; Ketut Siti Amerta Sari, a student; and Komang Sutini, a volunteer. These participants provided insights into the process of implementing environmental awareness education within the community setting.

University-level educators also contribute to Eco-ELT research. Hameed (2023) collected data from English language teachers across several Saudi universities, including Prince Sattam Bin Abdulaziz University and Prince Sultan University. The study received 66 responses, offering a glimpse into the perspectives of higher education faculty on environmental education.

Future teachers represent another significant participant group. Gürsoy and Sağlam (2011) surveyed 224 third-year ELT teacher trainees at Uludağ University in Bursa, Turkey, to assess their awareness of environmental issues and their attitudes towards integrating environmental education into their future teaching practices. This study highlighted demographic factors, such as gender and membership in environmental organizations, which could influence trainees' perspectives.

Lastly, the study by Bekteshi & Xhaferi (2020) involved students from the Faculty of Education in Kosovo, specifically targeting future teachers in their 2nd, 3rd, and 4th years of study. The online questionnaire

distributed to these students explored their knowledge and attitudes towards sustainable development, sustainable development goals (SDGs), and the integration of these topics into ELT.

Educational Interventions in Eco-ELT Research

In Eco-ELT research, a variety of educational interventions are employed to integrate environmental education into English language teaching. One such intervention is the use of environmental topics in writing classes. Setyowati (2022a) and Setyowati et al. (2022b) both explored this approach, where students were encouraged to write essays on environmental issues. This method not only developed their writing skills but also heightened their awareness and critical thinking about environmental topics. By engaging with real-world issues, students were able to express their opinions and deepen their understanding of environmental concerns.

Another innovative intervention was implemented by Putri (2018), who introduced a collaborative digital storytelling project for student teachers. In this project, participants created digital stories focusing on "Subak," a traditional water management system in Bali, to identify and propose solutions to environmental problems. The digital storytelling (DST) project was designed to prepare prospective teachers to analyze local environmental issues and develop educational materials for children using simple, accessible tools. This collaborative approach not only fostered technological and creative skills but also encouraged participants to engage deeply with environmental content.

In a different context, Suyanti et al. (2023) described the educational model used by the English Corner Community in Sidetapa Village, Bali. This community-based initiative provided non-formal education focused on English language learning and environmental awareness. Children were taught English to improve their communication skills, particularly with tourists, thus supporting local tourism. Concurrently, they received education on

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environmental awareness, aligning with the community's broader goal of promoting sustainability in a culturally significant area.

Chai and Bin Swanto (2020) explored the use of environmental problem-based learning (PBL) to enhance vocabulary acquisition among Malaysian primary school students. In their experimental study, one group of learners was taught vocabulary through environmental PBL, while a control group used conventional memorization methods. The results demonstrated that students in the PBL group showed significant improvement in vocabulary acquisition compared to the control group. The PBL approach not only improved language skills but also fostered cooperative learning and problem-solving abilities. This suggests that integrating environmental themes into PBL can be an effective method for teaching vocabulary to young learners.

Data Collection Instruments in Eco-ELT Research

This study found diverse research instruments possibly used in Eco-ELT Research. Few instances are elaborated as follows.

1. Survey

   Some studies used survey as research instruments are Mercer et al. (2022) to collect data from 91 participants, Putri (2018) and Gursoy and Saḡlam (2011) to gather information on attitudes and awareness, and Setyowati et al. (2022a) to measure students' attitudes towards environmental issues.

2. Interviews

   Studies which used interviews to collect data are as follows. Mercer et al. (2022) used semi-structured interviews. Suyanti et al. (2023) and Hameed (2023) employed in-depth interviews. Setyowati (2022a) and Setyowati et al. (2022b) using chat interviews.

3. Observations

   Studies which used observations for data collection methods are as follows. Manurung & Ria (2018) and Suyanti et al. (2023) used Field Observations to observe the implementation of educational

interventions. Suyanti et al. (2023) employed Participatory Observations as a part of the triangulation method.

4. Tests

   Test could also be used to collect data in Eco-ELT research. For example, Chai & Bin Swanto (2020) used pre and post vocabulary test to vocabulary achievement and the impact of environmental PBL.

5. Documentation

   Documentation could also be used to collect data in Eco-ELT research. For example, Suyanti et al. (2023) analyzed various organizational documents and photos and Setyowati (2022a) used chat documentations for recording data.

Data Analysis Methods in Eco-ELT Research

This study found three typical data analysis methods used in Eco-ELT research as follows. These methods are essential in Eco-ELT research to evaluate both the quantitative outcomes (e.g., test scores, survey responses) and qualitative insights (e.g., participant experiences, thematic interpretations) related to environmental education and language proficiency within English language teaching contexts.

1. Quantitative Analysis
   - Descriptive Statistics: it was used by Mercer et al. (2022) to summarize survey data and applied by Setyowati (2022a) to calculate percentages related to students' problems as well as Gursoy and Saǧlam (2011) to identify trends in attitudes and behaviors.
   - Inferential Statistics such as Independent Sample T-Test: it was employed by Chai & Bin Swanto (2020) to compare vocabulary achievement between groups.
   - Scoring Rubric Analysis: it was utilized by Setyowati et al. (2022a) for evaluating student essays.

2. Qualitative Analysis
    *   Inductive Analysis: it was conducted by Mercer et al. (2022) using Atlas.ti to identify core themes from interview data.
    *   Qualitative Content Analysis: it was used by Hameed (2023) and Yastibas (2021) to analyze textual data and extract meaningful units and codes.
    *   Thematic Analysis: it was applied by Setyowati (2022a) and Mercer et al. (2022) to identify and discuss themes from interviews and other qualitative data and implemented by Gursoy & Saglam (2011) to manage and interpret interview data.
3. Mixed Methods Analysis
    *   Combining Quantitative and Qualitative Data: As seen in the studies by Setyowati (2022a) and Mercer et al. (2022), where both types of data are analyzed to provide comprehensive insights.

Recommendations for future directions of Eco-ELT research

This study identified six suggestions for future directions in Eco-ELT research. However, these suggestions are not exhaustive; Eco-ELT researchers can explore additional topics beyond the areas covered in the reviewed articles.

1. Diversity and Identity in Digital Storytelling
    Eco-ELT researchers could investigate how Digital Storytelling (DST) values and reflects diversity among students, considering how cultural and personal identities influence the production of digital stories about local environments (Putri, 2018). They could also explore how DST can address and represent diverse ecological perspectives and identities, enhancing students' engagement with environmental issues.

2. Linguistic and Attitudinal Analysis in Writing

    Eco-ELT researchers could conduct in-depth error analysis of linguistic issues in students' environmental essays to identify common errors and areas for improvement (Setyowati et al., 2022a; Setyowati et al., 2019). Additionally, they could explore the correlation between students' environmental attitudes and their writing performance to understand how environmental awareness impacts their writing skills.

3. Teacher Training and Curriculum Development

    Eco-ELT researchers could examine the effectiveness of current teacher training programs in preparing educators to incorporate environmental topics into English language instruction. This includes addressing constraints such as inadequate learning materials and the need for teachers to continually update their knowledge on environmental issues (Paramanathan & Syed-Abdullah, 2022). Eco-ELT researchers could also explore how professional development programs can better equip teachers for this task.

4. Cross-Cultural and Contextual Evaluations

    Eco-ELT researchers could examine the effectiveness of Eco-ELT programs across different cultural and educational contexts. This could involve comparing different teacher education programs (ELTEPs) and exploring how cultural and local factors influence the implementation and impact of Eco-ELT practices (Yastibas, 2021). They could also examine how different educational settings address environmental issues in language instruction.

5. Innovative Pedagogical Approaches

    Eco-ELT researchers could explore new pedagogical approaches for integrating environmental literacy into ELT, such as through narrative inquiry, photovoice studies, or case studies (Rusda et al., 2023). They could also investigate the use of various media

(e.g., film, pictures, short stories) to teach environmental literacy and how these methods can be adapted for different age groups.

6. Socio-Cultural and Ethical Dimensions of Climate Change
Eco-ELT researchers could investigate how Eco-ELT can address the sociocultural, epistemological, and ontological dimensions of climate change. They could explore how language education can integrate spiritual and cultural perspectives on climate change, fostering an eco-ethical consciousness among learners (Goulah, 2015). They also could consider the intersection of climate change with cultural and religious identities and its impact on language learning and identity development.

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CHAPTER 7

CONCLUSION

Chapter 7 presents the conclusion of this study.

—- Eco-ELT Voices —-

The TESOL field should enhance English learners' access to climate-related education and equip ESL teachers to engage with the interdisciplinary area of climate science and climate change. (Goulah, 2020)

Being a language teacher involves more than just teaching the language; it also includes guiding students to use it meaningfully, such as expressing ideas for disaster mitigation and nature conservation. (Setyowati et al., 2022a)

Incorporating ecological and real-life issues into the English language classroom serves three main objectives: (1) increasing students' interest in current issues that may impact their futures, (2) teaching them how to contribute to a sustainable world, and (3) promoting language learning and meaningful communication. (Chowdhury, 2014)

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This study aims to explore the concept, bases, and global historical development of Eco-ELT, examine its current practices and future directions, and identify the present state and future trends in Eco-ELT research. These objectives are addressed in the following sections.

The conceptualization of Eco-ELT has evolved through several key phases, as outlined by Saiful in 2014, 2020, and 2023. Eco-ELT, or Ecological English Language Teaching, involves integrating environmental education into English language teaching. Its primary goal is to promote environmental well-being by addressing environmental crises. Initially grounded in ecocriticism, Eco-ELT has expanded to include a broad range of ecological studies and practices within ELT. This approach aims to foster environmental virtues and a love for nature while simultaneously enhancing English language proficiency. As a versatile and comprehensive framework, Eco-ELT applies to all ELT contexts, highlighting the connection between language education and ecological well-being.

Regarding the historical development of Eco-ELT, this study reviewed 116 articles on global Eco-ELT initiatives. It found that Eco-ELT efforts span 44 years, from 1980 to 2024. Contributions have come from 37 countries across five continents: Asia, Africa, the Americas, Europe, and Oceania, with Indonesia leading, followed by the USA and Canada. Of the 116 articles, 107 (92%) addressed environmental issues broadly, mentioning "environmental issues" without specifying particular problems. Only a few articles focused on specific global issues such as climate change, plastic waste, forest fires, bush fires, peatland fires, ocean debris, and electronic waste. The study also identified two main areas of significance: benefits to nature and benefits to humans. Additionally, it highlighted that Eco-ELT is based on two crucial elements: language studies and environmental studies and education. These components form a comprehensive framework that integrates ecological concerns with English language teaching, promoting both environmental well-being and language proficiency.

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The review of 116 articles on Eco-ELT practice reveals several key assumptions: empowerment and agency, responsibility and relevance, integration of global issues, promotion of environmental literacy, critical thinking, ecological consciousness, an interdisciplinary approach, development of global citizenship, and an ethical environment. The Eco-ELT framework includes two essential elements: environmental well-being and language proficiency. To achieve environmental well-being through Eco-ELT, six stages are proposed: (1) Developing environmental awareness, (2) Fostering understanding of environmental issues, (3) Nurturing positive attitudes toward the natural environment, (4) Shaping non-anthropocentric worldviews, (5) Enhancing environmental skills, and (5) Enabling sustainable actions. Besides, to achieve language proficiency, four stages are proposed: (1) Providing extensive exposure to English, (2) Developing positive language attitudes, (3) Building communicative competence, (4) Enabling performances in language skills in listening, speaking, reading, and writing.

Eco-ELT curriculum involves five key elements: interdisciplinary and integrated learning, ecocritical and ecopedagogical approaches, focus on critical thinking and creativity, community engagement and real-world applications, teacher education and professional development. This study also found six principles of curriculum development as follows: relevance and authenticity, flexibility and adaptability, student-centered and experiential learning, multimodal and multidisciplinary approaches, sustainability and responsibility, continuous reflection, and improvement. Besides, the learning objectives of Eco-ELT practice are enhancing environmental awareness, promoting critical thinking and problem-solving skills, fostering effective communication and language skills, inspiring environmental concern and action, integrating environmental education with language learning, promoting interdisciplinary learning and critical engagement, utilizing ICT and community

resources, supporting personal and cultural connections to nature, and encouraging lifelong learning and responsibility.

This study identified 48 potential teaching approaches and methods for implementing Eco-ELT, which were highlighted in 76 of the 116 articles reviewed. Among these approaches and methods are post-methods, content-based teaching, digital storytelling, experiential learning, ecocomposition, problem and project-based learning, drama, place-based pedagogy, Content and Language Integrated Learning (CLIL), task-based language teaching, and ecomusicology. Additionally, the study revealed various forms and characteristics of Eco-ELT teaching materials. These include materials related to personal, local, and global environmental concerns; eco-literary works; practical environmental engagement; current events and news; green resources and visual aids; textbook integration; digital materials; Sustainable Development Goals (SDGs) topics; and green religious references. The study also outlined principles for selecting and developing Eco-ELT teaching and learning materials.

In terms of assessment methods for Eco-ELT practice, assessments should be conducted consistently, systematically, and orderly to accurately reflect students' learning progress. Various assessment methods can be used, including both test and non-test formats, to evaluate students' understanding of nature and their language proficiency. Additionally, the study identified several key characteristics of effective English teachers, as highlighted in the reviewed articles. These include being critical thinkers and reflective practitioners, "environmental" moral agents, exercising autonomy and creativity, maintaining contextual relevance, being agents of change, being knowledgeable and passionate, and being adaptive and resourceful. This study also identified several future directions for Eco-ELT practice based on the reviewed articles. These suggestions include: enhancing professional development and training, promoting awareness and transformative pedagogy, supporting grassroots activism and institutional backing, adopting content-based and

theme-based approaches, decolonizing English language teaching, and developing sustainable teaching practices.

This study identified several principles for Eco-ELT research, including interdisciplinary integration, a holistic educational approach, diverse educational settings, global contexts and variability, varied forms and methods, a focus on environmental sustainability, language proficiency, teacher professional development, practical and theoretical contributions, innovative approaches and technologies, ethical and cultural considerations, and community engagement. Additionally, the study highlighted that research methods should reflect the multifaceted nature of Eco-ELT. These methods include: Quantitative Methods: Case studies, cross-sectional designs, experimental designs, and correlational designs; Qualitative Methods: Case studies, narrative inquiry, and classroom ethnography; Mixed Methods: Explanatory sequential designs and congruent/convergent parallel designs; Action Research: Classroom action research, community action research, and project action research; Review Designs: Free-standing reviews and systematic literature reviews; and Research and Development Designs. These varied research methods emphasize the importance of exploring the intersection of environmental education and ELT from multiple angles.

Eco-ELT research involves a diverse range of participants, reflecting the multifaceted nature of environmental education within English language teaching contexts. The diverse participants illustrate the broad scope of Eco-ELT research, encompassing educators, students, community members, and future teachers across various educational levels and cultural contexts. This study identified a range of research instruments commonly used in Eco-ELT research, including surveys, interviews, observations, tests, and documentation. Additionally, it found that data analysis methods were diverse, encompassing quantitative analyses such as descriptive and inferential statistics, qualitative analyses including inductive, content, and thematic analyses, and mixed methods analyses. Lastly,

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this study identified six suggestions for future directions in Eco-ELT research. However, these suggestions are not exhaustive; Eco-ELT researchers can explore additional topics beyond the areas covered in the reviewed articles. The topics are diversity and identity in digital storytelling, linguistic and attitudinal analysis in writing, teacher training and curriculum development, cross-cultural and contextual evaluations, innovative pedagogical approaches, and socio-cultural and ethical dimensions of climate change.

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AUTHOR'S SHORT BIOGRAPHY

Jepri Ali Saiful, Ph.D. is the pioneer of Eco-ELT and the founder and leader of the global Eco-ELT community. He holds bachelor's, master's, and doctoral degrees in English Education, all of which he completed with first-class honors. He earned his doctoral degree in the International PhD Program of Education and Human Development (IGPEHD) at the College of Social Sciences, National Sun Yat-sen University, Taiwan, in just 2 years and 10 months.

He has been personally and professionally involved in environmentalism for over 13 years. His journey began in high school as an active member of an eco-ranger community. During college in 2013, he was selected as one of 100 ASEAN Youth Eco-leaders under the ASEAN Youth Volunteer Programme (AYVP). In 2014, he became an alumnus of the 100 Young Southeast Asian Leaders Initiative (YSEALI) program. In 2015, his team won a youth and community development grant from the U.S. State Department to conduct a project called the "ASEAN Youth Energy Institute Camp." They selected 29 youths and empowered them to become ASEAN energy rangers. In 2014, he coined a term "Eco-ELT," which stands for Ecological English Language Teaching, referring to the study and practice of environmental education in ELT. He further developed the concept in 2020 and 2023. In 2023, he initiated a global community movement on Eco-ELT, which now has over 500 members, including

ELT teachers and scholars worldwide (see and join the Eco-ELT community group in Facebook in this link: https://web.facebook.com/share/MhGxZtDWYFVewe5R/).

His research interests include Eco-ELT, language teacher cognition and professional development, ecocriticism, and inclusive education. He has published research articles in several reputable journals indexed by SSCI and SCOPUS Q1 & Q2. Currently, he is an active member of national and international English language education associations, including TESOL International Association, Asia TEFL, and TEFLIN (The Association for the Teaching of English as a Foreign Language in Indonesia).

He also serves on the editorial board and as a reviewer for reputable national and international journals in education and language education, including Studies in Second Language Learning and Teaching, the Cambridge Educational Research e-Journal (CERJ) from the Faculty of Education at the University of Cambridge, United Kingdom, The Asia Pacific Education Researcher (TAPER), and the International Review of Research in Open and Distributed Learning (IRRODL). Additionally, he has experiences teaching English at the primary and secondary levels in Taiwan and Indonesia. He can be contacted via his email at jepriali1@gmail.com.

This book represents a significant milestone in the environmental movement within the field of English Language Teaching (ELT). Titled Eco-ELT: Trends and Developments in the Study and Practice of Environmental Education within English Language Teaching, it delves into the emerging subfield of Ecological English Language Teaching (Eco-ELT) and its transformative influence on English language education and the natural environment.

Through a thorough literature review of 116 global articles spanning from 1980 to 2024, this research-based book provides an in-depth examination of Eco-ELT. It covers the historical evolution of environmentalism in ELT, the concept and foundations of Eco-ELT, and its significance. The book offers extensive insights into Eco-ELT practices for ELT educators, including the core assumptions, framework, learning objectives, curriculum design, teaching approaches and methods, materials, and assessment strategies. It also outlines the characteristics of effective Eco-ELT teachers and offers recommendations for the future of Eco-ELT practice.

In addition, the book provides a detailed overview of Eco-ELT research, outlining the principles and framework guiding this research, typical methods and instruments used, educational interventions, and data collection and analysis techniques. It also includes recommendations for future research directions in Eco-ELT.

ECO-ELT

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