sustainability

MDPI

Review

Sustainability in English Language Teaching: Strategies for Empowering Students to Achieve the Sustainable Development Goals

Beibei Yu [1], Wu Yuan Guo [2,*] and Hongpeng Fu [3]

[1] College of Teacher Education, Zhejiang Normal University, Jinhua 321004, China; katherine@zjnu.edu.cn
[2] Department of Curriculum and Instruction, The Education University of Hong Kong, Hong Kong SAR, China
[3] Khoury College of Computer Science, Northeastern University, Seattle, WA 98109, USA; fu.hongp@northeastern.edu
* Correspondence: s1124027@alumni.eduhk.hk

Abstract: This article systematically reviews the studies integrating sustainability into English Language Teaching (ELT), underlining the critical role of education in addressing global environmental challenges through language learning. Through an extensive literature review encompassing empirical studies, theoretical articles, and case studies from 2013 to 2023, we evaluate the methodologies for incorporating sustainability in ELT, identify the challenges faced by educators, and propose practical solutions. Key findings demonstrate various effective approaches, such as interdisciplinary curriculum designs, innovative classroom activities, specialized teacher training, and novel assessment methods, which enhance language proficiency and significantly raise students' language-learning awareness. Despite challenges such as limited resources and alignment issues between sustainability topics and language-learning objectives, strategies like developing open educational resources and professional development programs have shown promise in overcoming these obstacles. The review underscores the importance of embedding sustainability in ELT to foster informed, responsible global citizens and highlights future research directions to further this aim. It calls for continued innovation, research, and policy support to fully realize the potential of ELT in contributing to a more sustainable future.

Keywords: English Language Teaching; sustainable education; sustainability in English Language Teaching; sustainable development goal; systematic review

Citation: Yu, B.; Guo, W.Y.; Fu, H. Sustainability in English Language Teaching: Strategies for Empowering Students to Achieve the Sustainable Development Goals. *Sustainability* **2024**, *16*, 3325. https://doi.org/10.3390/su16083325

Academic Editor: Sandro Serpa

Received: 26 February 2024
Revised: 3 April 2024
Accepted: 13 April 2024
Published: 16 April 2024

1. Introduction

As global environmental challenges escalated, the United Nations proposed the Sustainable Development Goals (SDGs) to ensure long-term global well-being. In this context, integrating sustainability into education is no longer desirable but an essential part of achieving SDGs [1,2]; it would contribute significantly towards achieving SDG 4 (Quality Education) and SDG 13 (Climate Action). Sustainability in education goes beyond simply teaching environmental content; it necessitates embedding sustainable practices and principles throughout the entire educational system [2,3]. This approach aims to equip learners with the knowledge, skills, values, and attitudes necessary to contribute to a more sustainable world [4,5]. The concept of sustainability in education is broad, covering economic, social, and environmental dimensions, and is crucial for fostering responsible global citizens.

In English Language Teaching (ELT), the integration of sustainability presents a unique opportunity. Language learning goes beyond mere vocabulary and grammar; it is a powerful tool for shaping perceptions, attitudes, and behaviors [6,7]. With sustainability-focused ELT, educators can use the English language to inspire environmental action and foster sustainable practices across cultures [7,8].

The integration of sustainability into ELT is essential for several reasons. First, the global nature of environmental challenges demands solutions that transcend borders [9]. As a global lingua franca, English is a powerful communication tool for addressing these issues collaboratively [10,11]. Moreover, sustainability themes offer a rich, authentic context for language learning [11,12]. By discussing topics like climate change, biodiversity loss, and sustainable development, ELT can improve critical thinking, problem-solving, and student engagement, thus deepening the learning experience. Moreover, integrating sustainability into ELT aligns with the broader educational goals of developing global citizens aware of and engaged with the world's most pressing challenges. It supports the United Nations Sustainable Development Goals, particularly SDG 4 and SDG 13, which aim to ensure inclusive and equitable quality education, promote lifelong learning opportunities for all, and work towards global climate change [9,13].

This systematic review sets out with the following objectives: (1) Evaluate the effectiveness of different methodologies for integrating sustainability into ELT. This includes examining pedagogical approaches, curriculum designs, and teaching resources that facilitate the incorporation of sustainability topics. (2) Identify challenges and solutions associated with embedding sustainability into ELT practices. This involves exploring institutional, curricular, and classroom barriers and proposing strategies to overcome these challenges. (3) Suggest future directions for research and practice in the field of ELT with a focus on sustainability. This includes identifying gaps in current research, proposing innovative teaching methodologies, and highlighting opportunities for further exploration and development.

To guide the literature search and analysis, the following research questions have been formulated: (1) What methodologies have been successfully implemented to integrate sustainability into ELT, and what are their outcomes? (2) What challenges do educators face in incorporating sustainability into ELT, and what solutions or strategies have proven effective in addressing these challenges? (3) How can the integration of sustainability into ELT be improved, and what areas require further research to enhance its effectiveness and impact? By addressing these questions, the review aims to build a detailed picture of the current state of research regarding sustainability in ELT. This research could serve as a resource for educators, curriculum developers, and policymakers, offer valuable insights and recommendations for those committed to advancing sustainability through language education, and contribute significantly towards achieving SDG 4 (Quality Education) and SDG 13 (Climate Action).

2. Materials and Methods

2.1. Literature Search Strategy

The literature search was designed to capture a comprehensive array of sources that discuss the integration of sustainability into ELT [14–17]. A multidatabase search strategy was employed, utilizing academic databases such as Scopus, Web of Science, Education Resources Information Center (ERIC), and Google Scholar (Figure 1) [18–20]. The search was conducted using a combination of keywords and phrases related to sustainability ("sustainability", "sustainable development", "environmental education") and ELT ("English language teaching", "ELT", "English education", "language education"). Boolean operators (AND, OR) were used to refine the search, e.g., "sustainability AND English language teaching", "environmental education OR sustainability in ELT".

The literature search was set from 2013 to 2023, aiming to capture the evolving discourse on sustainability within the context of ELT over the past decade. This period is significant as it encompasses the rising global emphasis on sustainability, marked by establishing the United Nations Millennium Development Goals and subsequent Sustainable Development Goals [9,21].

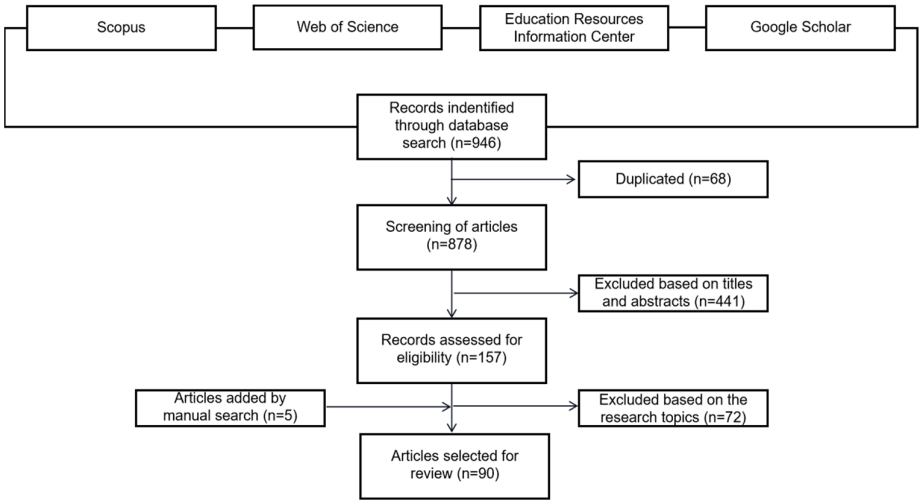

Figure 1. Flow chart of the research article selection process.

2.2. Inclusion and Exclusion Criteria

This study involved manually conducting the article screening through a three-stage process, including title, abstract, and full-text screening. Specific inclusion and exclusion criteria were established to ensure the sources' relevance and quality. Articles were included in this review if they met all of these inclusion criteria (Table 1):

- Published between 2013 and 2023.
- Articles, textbooks, and case studies focusing on integrating sustainability into ELT that include both sustainability and ELT in the title, abstract, or full text.
- Works that provide empirical data, theoretical frameworks, or detailed case studies on methodologies, challenges, and outcomes related to both sustainability and ELT.
- The sources of full texts are available in English to ensure the review's accessibility to a global audience.
- The exclusion criteria are:
- Publications outside the specified date range between 2013 and 2023.
- Studies that do not include sustainability and ELT in the title, abstract, or full text. Studies that are not directly related to sustainability integration into ELT (e.g., general environmental education without a specific focus on language teaching).
- Non-peer-reviewed sources such as blogs, opinion pieces, and non-academic publications are excluded to maintain the scholarly integrity of the review.
- The sources of full texts are not available in English.

Table 1. Inclusion and exclusion criteria.

Criterion	Inclusion	Exclusion
Year	2013–2023	<2013
Peer review	Peer-reviewed	Non-peer-reviewed
Language	English	Non-English
Type of article	Journal article	Book, book chapter, review, proceedings

2.3. Data Extraction and Analysis

Data were extracted from the selected sources using a standardized form to capture key information, including authors, year of publication, geographical focus, study design, ELT context (e.g., ESL, EFL, bilingual education), sustainability topics covered, pedagogical approaches, main findings, and recommendations. This structured approach facilitated the organization and comparison of data across sources.

The analysis of the extracted data employed a thematic synthesis approach, which involved coding the data according to themes related to the research questions. These

themes included pedagogical methodologies for integrating sustainability, challenges encountered in ELT sustainability integration, strategies for overcoming these challenges, and recommendations for future research and practice. The thematic analysis enabled the identification of patterns and trends within the literature and gaps in the current knowledge base.

The synthesis of information aimed to address the research questions by evaluating the effectiveness of different methodologies, identifying common challenges and effective solutions, and highlighting areas requiring further investigation. The analysis also considered the geographical and contextual diversity of the studies to ensure the findings' broad applicability and relevance to the global ELT community.

3. Results

3.1. Type and Location Distribution of Studies

The literature review encompassed a diverse array of 90 sources, including 49 empirical studies, 13 theoretical articles, 8 case studies, 11 reviews, and 9 others (Figure 2), yielding a comprehensive perspective on integrating sustainability into ELT.

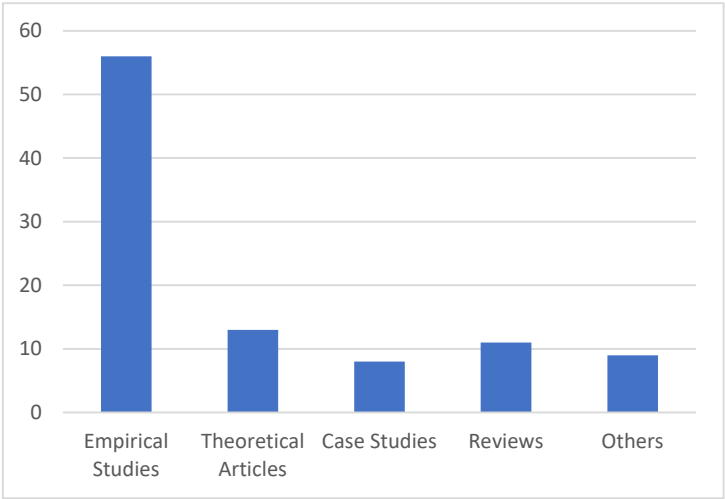

Figure 2. Types of studies.

The geographical distribution of these studies spanned across continents, with notable contributions from Europe (32%), Asia (28%), and North America (31%), and the rest from Africa, South America, and Oceania, reflecting the global interest in this area (Figure 3). The main regions emerged as curriculum design [22], classroom activities [23], teacher training [24], and assessment methods, underlining the multifaceted approach to integrating sustainability in ELT.

Several studies stood out for their exemplary integration of sustainability into ELT and are particularly pointed out here:

Based on a high school in Sweden with 250 students and 20 teachers, the authors conducted and implemented a cross-curricular project. During the cross-curricular project, the students were engaged in a local environmental problem-solving task, conducting research and presenting their solutions in English [25]. The outcome was a significant increase in both language proficiency and environmental awareness among students.

Based on a university in Japan, the authors developed an EFL curriculum centered around sustainability themes, incorporating guest lectures from environmental experts and service-learning projects with local NGOs [26]. The study selected 76 and 75 students, respectively, for two semesters in six separate classes, and the research was conducted over two separate semesters, including a lecture-based course and a similar course that integrated sustainability. The methodology fostered deep engagement with sustainability issues and enhanced language skills, particularly in academic writing and oral presentation.

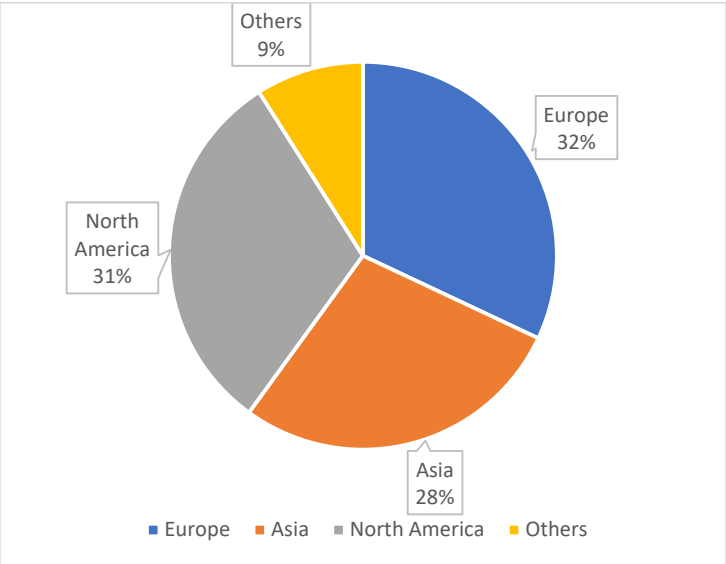

Figure 3. The geographical distribution of studies.

Based on an adult education center in Canada, a study introduced a community-based ESL program that integrated language learning with participation in local sustainability initiatives, such as community gardens and recycling programs [27]. The study involved ESL instructors, the head of language programs, 36 learners from Durham Continuing Education, and regional managers in Durham, utilizing questionnaires and focus groups over three months. This approach not only improved language skills but also facilitated learners' integration into the community and heightened their awareness of environmental practices.

Through content analysis of 58 units in five books, educators in Turkey have developed the Green English Language Teaching (GELT) approach, which focuses on incorporating environmental literacy into the English language curriculum [28]. This includes using texts, videos, and activities that highlight environmental issues. Teachers encourage students to discuss these topics in English, conduct environmentally friendly projects, and participate in outdoor activities that raise awareness about sustainability.

3.2. Theoretical Foundation of the Integration of Sustainability into ELT

The theoretical underpinnings that guide the integration of sustainability into ELT mainly include two interlinked theories, Education for Sustainable Development (ESD) and Second Language Acquisition (SLA). These two theories provide a robust foundation for understanding and implementing strategies to empower students to address global challenges.

ESD advocates for education that imparts the knowledge, skills, values, and attitudes necessary for people to contribute to sustainable development. The United Nations' Sustainable Development Goals serve as a pivotal reference point, emphasizing the role of education in fostering global citizenship, promoting peace and justice, and encouraging the stewardship of our natural environment. ESD's principles of critical thinking, problem-solving, and participatory teaching and learning methods are integral to our approach, enabling learners to engage deeply with sustainability issues. The theories of SLA, particularly those emphasizing communicative competence and sociocultural theory, provide insights into how language learning can be enhanced through contextually rich, meaningful communication about real-world issues to promote cognitive and linguistic development through social interaction and collaboration.

The intersection of ESD and SLA theories presents a compelling framework for integrating sustainability into ELT. By engaging with sustainability themes, language learning transcends traditional boundaries, fostering not only linguistic proficiency but also a deeper understanding of and engagement with global challenges. This approach aligns with trans-

formative learning, where learners critically examine their assumptions and beliefs, leading to a profound shift in perspective towards more sustainable ways of living and interacting with the world.

Some studies attempted to integrate ESD and SLA theories to provide a comprehensive foundation for embedding sustainability into ELT. This theoretical framework not only supports the development of linguistic skills but also cultivates environmentally conscious, socially responsible global citizens. Through this dual focus, ELT becomes a powerful avenue for addressing the complex, interrelated challenges facing our world today, equipping students with the language and critical thinking skills needed to participate actively in the global dialogue on sustainability. Integrating sustainability into English Language Teaching (ELT) has been a growing interest among educators and researchers, reflecting a broader educational mandate to address global challenges through curriculum and pedagogy. Previous research in this field has primarily focused on curriculum design, pedagogical strategies [29], and the competencies required for teachers to integrate sustainability themes into their teaching practices effectively.

In addition, a seminal study by Stibbe introduced the concept of "ecolinguistics" as a framework for incorporating environmental issues into language learning, arguing for the potential of language education to contribute to ecological awareness and sustainability [30]. It focuses specifically on how language structures perceptions and attitudes about the natural world and how language changes how people behave and think about the environment. Ecolinguistics suggests that by analyzing and critically understanding language and discourse we can uncover and challenge patterns of thought and behavior that contribute to environmental crises. It advocates the use of language education as a tool to foster a more sustainable and eco-friendly worldview. This foundational research also worked as a solid theoretical foundation for further investigations into how language teaching can address sustainability. Subsequent research, building upon Stibbe's foundational studies, explores various pedagogical methodologies, including Project-Based Learning (PBL), critical pedagogy, and Content and Language-Integrated Learning (CLIL), as effective approaches for embedding sustainability themes into ELT [31,32].

However, despite the growing body of literature, there remains a notable gap in empirical research on the outcomes of these pedagogical strategies. Few studies have systematically assessed the impact of sustainability education in ELT on learners' environmental consciousness or ability to engage with sustainability issues critically. Additionally, there needs to be more research on the specific competencies teachers need to effectively navigate the interdisciplinary nature of sustainability education within the ELT classroom.

3.3. Methodologies and Outcomes of the Integration of Sustainability into ELT

Practical application of the framework of integration of sustainability into ELT involves designing curricula that incorporate sustainability themes, using pedagogical strategies that encourage active learning, critical thinking, and collaboration. Authentic materials and real-life scenarios related to sustainability serve both as language-learning aids and as catalysts for engaging students in discussions about global challenges, their causes, and potential solutions [33]. Assessment strategies are also adapted to reflect the integrative nature of the learning objectives, focusing on students' ability to use language as a tool for expressing ideas, solving problems, and advocating for sustainable practices [34].

The review highlighted a variety of methodologies successfully implemented to integrate sustainability into ELT, demonstrating a comprehensive approach encompassing curriculum design, classroom activities, teacher training, and assessment methods. These strategies have enhanced language proficiency while raising students' environmental awareness:

Curriculum design: Interdisciplinary approaches were frequently noted, where sustainability themes were integrated through subjects such as environmental science, geography, and ethics [23,24]. This holistic approach ensures that sustainability is not an add-on but a core component of the language-learning process.

Classroom activities: Varied and innovative activities, including project-based learning [35–37], debates on environmental issues [38], simulation games [39,40], and collaborative research projects [41], were identified. These activities not only enhance language skills but also foster critical thinking and a deep understanding of sustainability.

Teacher training: Effective teacher-training programs were crucial, offering educators the knowledge and skills to integrate sustainability topics into their teaching. These programs often included workshops on sustainable pedagogies [42] and access to specialized teaching materials [43,44].

Assessment methods: Innovative assessment methods, such as reflective journals [45], portfolios [46,47], and oral presentations on sustainability initiatives [48,49], were highlighted. These methods assess language proficiency and students' engagement with sustainability issues.

Globally, the integration of sustainability into ELT varies significantly across different cultural and educational contexts, reflecting the diverse pedagogical approaches adopted by educators. For example, Scandinavian countries strongly emphasize experiential learning and outdoor education, with language-learning activities often designed to connect students directly with natural environments [50,51]. This contrasts with practices in East Asian contexts, where a more traditional curriculum may limit opportunities for such experiential approaches. However, there is a growing interest in incorporating sustainability themes through CLIL and interdisciplinary projects [52].

The effectiveness of these diverse pedagogical approaches largely depends on several factors, including institutional support, teacher competencies, and the relevance of sustainability themes to the local context. Studies from Latin America show that project-based learning, especially when connected to community-based environmental issues, can significantly enhance students' engagement and critical thinking skills regarding sustainability [53,54].

Yet, despite these insights, there is a lack of comparative research that systematically evaluates the effectiveness, advantages, and disadvantages of different pedagogical approaches, including curriculum design, classroom activities, teacher training, and assessment methods. Additionally, it is essential to comparatively study these pedagogical approaches integrating sustainability in ELT across various cultural and educational contexts. Such comparative analysis is crucial for identifying best practices and fostering a more nuanced understanding of how sustainability can be most effectively taught in diverse linguistic and cultural settings, considering the effectiveness, advantages, and disadvantages of different pedagogical approaches.

3.4. Importance of Empowering Students through the Integration of Sustainability into ELT

Empowering students to address global challenges through sustainability education in ELT is increasingly recognized as a critical outcome of effective teaching and learning. Research on the impact of sustainability education on student empowerment highlights the importance of developing critical thinking, problem-solving skills, and a sense of agency among learners.

A study by Jenkins found that incorporating sustainability themes into language teaching not only enhances students' language proficiency but also their understanding of global issues and their roles as global citizens [55]. This empowerment is crucial for encouraging active participation in sustainability efforts and fostering a sense of responsibility towards addressing global challenges.

Moreover, research underscores the significance of student-centered pedagogies, such as collaborative learning and critical pedagogy, in facilitating student empowerment. By engaging students in discussions, projects, and activities that relate to their lived experiences and the sustainability challenges facing their communities, educators can help students develop the skills and confidence needed to contribute to sustainable development [56,57].

In conclusion, the literature on sustainability in ELT highlights a growing interest in and commitment to integrating global challenges into language teaching. Despite the

promising methodologies and pedagogical strategies identified, there remain significant gaps in research, particularly regarding the empirical assessment of these approaches' effectiveness and the comparative analysis of global practices. Moreover, the importance of empowering students through sustainability education emerges as a critical theme, underscoring the need for further research to explore how best to achieve this outcome in diverse educational contexts.

3.5. Challenges and Solutions

The literature identified several challenges in integrating sustainability into ELT, including a lack of materials, difficulty aligning sustainability topics with language-learning objectives, and insufficient teacher training [58–62]. Solutions to these challenges were also discussed.

Material shortages: The creation and sharing of Open Educational Resources (OERs) focused on sustainability in ELT emerged as a key strategy, addressing the scarcity of materials [63–65] as such OERs focused specifically on sustainability themes for ELT to help teachers enrich and access quality teaching materials.

Curricular integration: Interdisciplinary collaboration was suggested to align sustainability with language-learning objectives, ensuring that sustainability topics complement rather than compete with language education [66]. Interdisciplinary collaboration between language teachers and subject matter experts could better integrate sustainability topics in a way that complements language goals.

Teacher training: Professional development programs supported by educational institutions were vital. These programs empower teachers to integrate sustainability themes effectively, addressing the gap in teacher training [67]. Targeted and scientifically designed workshops, courses, and learning communities dedicated to sustainability pedagogies for language teachers directly address gaps in teacher preparation.

4. Discussion

The findings from this review underscore the significant potential and urgent need for integrating sustainability into ELT. This integration not only aligns with the global imperative for education to promote sustainable development but also enriches language learning by making it more relevant, engaging, and connected to students' lives and global challenges. The diverse methodologies identified, ranging from interdisciplinary curriculum design to innovative classroom activities and assessment approaches, demonstrate the versatility and creativity possible in teaching sustainability within ELT contexts. These findings directly address the research questions by showcasing effective strategies for embedding sustainability into ELT, candidly examining the challenges faced by educators, and proposing solutions that have proven successful in various settings.

Situating these findings within the broader context of sustainability education, it becomes clear that language education is a powerful leverage point for cultivating environmental awareness and inspiring action [68–71]. Language shapes thought, attitudes, and behavior; thus, ELT has a vital role to play in nurturing a more sustainable future [72–74]. By engaging students with sustainability topics through the medium of English, educators can foster the development of green skills, eco-literacy, and global citizenship. For instance, the case of the Turkish Green ELT (GELT) initiative exemplifies the transformative potential of integrating sustainability into language education [74]. By infusing environmental themes into English lessons through eco-focused texts, videos, and projects, GELT educators not only enhance students' language proficiency but also raise their ecological consciousness and commitment to sustainable living. Such examples underscore the power of ELT to contribute to the global sustainability transition.

However, realizing this potential requires overcoming persistent challenges. Limited availability of sustainability-oriented teaching materials, difficulties aligning sustainability content with language objectives, and gaps in teacher training emerge as key barriers [7,58]. These obstacles point to the need for systemic solutions. The development and sharing

of Open Educational Resources (OERs) specifically designed for teaching sustainability through ELT offer a promising pathway forward [61,62]. By collaboratively creating and freely disseminating lesson plans, activities, and media that integrate sustainability and language learning, the global ELT community can address resource scarcity. Platforms for exchanging these OERs can also facilitate peer learning and inspire educator innovation. Interdisciplinary collaboration emerges as another key strategy for effective integration [6,11]. By partnering with subject matter experts in fields like environmental science, ELT professionals can design curricula and lessons that synergistically advance both language and sustainability competencies. Such partnerships help ensure that sustainability content enhances, rather than competes with, language-learning goals. Interdisciplinary team teaching and project-based learning offer promising models for this integration in practice. Investing in teacher professional development is also crucial [7,64]. Workshops, courses, and learning communities that equip ELT educators with the knowledge, skills, and confidence to engage students with sustainability topics can help bridge preparation gaps. Fostering a culture of reflective practice and action research within ELT can further support educators in refining their sustainability teaching approaches. Ultimately, mainstreaming sustainability within ELT will require enabling policies and institutional commitments. From revising curricular frameworks to allocate time for sustainability themes to providing incentives for sustainability-focused pedagogical innovation and research, policy support can accelerate progress [75–78]. Advocates within the ELT profession have a key role to play in making the case for such policies to decisionmakers.

As the field advances, further research will be vital to inform and inspire continued progress. Empirical studies that rigorously evaluate the impact of sustainability-infused ELT on student outcomes, including language proficiency gains, sustainability knowledge, and eco-friendly behaviors, can help build the evidence base for this approach [79,80]. Longitudinal research that tracks the enduring effects of sustainability-oriented language education on graduates' personal and professional choices could yield particularly valuable insights. Comparative studies that examine how sustainability is integrated into ELT across diverse cultural, linguistic, and institutional contexts can enrich our understanding of the adaptations needed for success in different settings [81,82]. Investigating the role of technology, from digital learning resources to virtual exchange programs, in facilitating sustainability education within ELT is another rich avenue for future inquiry.

By critically examining the challenges, strategically pursuing solutions, and continually pushing the boundaries of what is possible, the global ELT community can realize the transformative potential of integrating sustainability into language education. The journey will not be easy, but the rewards—for our students, our communities, and our planet—make it a path we must pursue. This review hopes to provide a resource for educators, researchers, and policymakers eager to join this vital endeavor.

4.1. Comparison with Previous Research

Comparing these findings with previous research reveals both alignments and advancements. Similar to earlier studies, this review highlights the effectiveness of project-based learning and interdisciplinary approaches, underscoring the value of engaging students with real-world sustainability issues. However, this review also identifies emerging trends, such as using digital tools and social media for sustainability education in ELT, reflecting technological advancements and the increasing importance of online learning environments.

Differences in geographical focus and the identified challenges suggest a shift towards more global and inclusive approaches to sustainability in ELT. Earlier research often emphasized challenges related to resource availability and teacher training [75–77]; while these remain relevant, the current review also highlights the need for systemic support and policy frameworks to facilitate this integration [79–82].

4.2. Strengths and Limitations

This review benefits significantly from its broad and thorough approach, drawing from an extensive array of sources and settings to offer a worldwide perspective on incorporating sustainability into English language teaching. Employing a thematic synthesis method has successfully identified principal trends and tactics, offering crucial insights into what practices work well and the obstacles they encounter.

Nonetheless, this analysis has its shortcomings. One concern is the risk of publication bias. The review's emphasis on peer-reviewed and academically published sources might have led to the inadvertent neglect of gray literature or unpublished yet innovative practices. Moreover, by concentrating on articles available in English, the review might have missed out on pertinent studies and experiences emerging from non-English-speaking regions. These limitations suggest areas for future research, including a more inclusive search strategy that captures a broader spectrum of contributions to the field. Therefore, future studies are indicated in the following several areas. (1) There is a need for more empirical research assessing the impact of sustainability education in ELT on students' language skills, environmental awareness, and behaviors. (2) Investigation of the role of digital tools and online platforms in enhancing sustainability education within ELT, including the effectiveness of virtual and augmented reality, gamification, and social media. (3) Exploration of how sustainability is integrated into ELT in different cultural and geographical contexts, identifying culturally responsive teaching practices. (4) Examining the influence of educational policies on the integration of sustainability into ELT, identifying barriers and enablers at the systemic level. To sum up, by addressing these gaps and exploring emerging trends, future research can continue to advance our understanding of how best to integrate sustainability into ELT, supporting educators and learners in contributing to a more sustainable world.

4.3. Recommendations for Further Research

The review suggests that the integration of sustainability into ELT can be improved by further developing interdisciplinary curricula, enhancing teacher training programs, and expanding the use of innovative assessment methods. For future research, several areas were highlighted:

Firstly, there is a need for more empirical research to assess the impact of sustainability education in ELT on students' environmental consciousness and critical engagement with sustainability issues. Secondly, future studies should explore the specific competencies required by teachers to effectively navigate the interdisciplinary nature of sustainability education within the ELT classroom. Thirdly, comprehensive comparative research evaluating the effectiveness of different pedagogical approaches across various cultural and educational contexts is crucial for identifying best practices in teaching sustainability within diverse linguistic and cultural settings.

These findings offer a comprehensive overview of the current state of sustainability integration in ELT, addressing the research questions by detailing effective methodologies, outlining challenges and solutions, and suggesting directions for future research to enhance the field's effectiveness and impact.

Based on the review findings, some highlighted practical implications for educators, curriculum developers, and policymakers are proposed. One is stressing curriculum development to integrate sustainability themes across all levels of ELT curricula, ensuring that these topics are woven into language learning objectives and activities. Next is offering practical teacher training by enhancing teacher-training programs to include specific modules on sustainability, providing educators with the knowledge, resources, and pedagogical strategies to teach these topics effectively. Another recommendation is offering resource sharing to develop and maintain platforms for sharing teaching materials and resources focused on sustainability in ELT, facilitating access to quality content. Finally, policy support plays a crucial role. Policymakers should advocate for policy changes that

recognize and support the integration of sustainability into language education, including funding for resource development and teacher training.

5. Conclusions

This review has systematically explored the integration of sustainability into ELT, highlighting a growing recognition of the importance of embedding environmental and sustainability education within language learning curricula. The key findings reveal a diverse and innovative methodology for incorporating sustainability themes into ELT, including interdisciplinary curriculum design, engaging classroom activities, focused teacher training, and novel assessment methods. These approaches have been shown to not only enhance language proficiency but also to significantly raise students' awareness of environmental issues and their motivation to engage in sustainable practices. This review's findings underscore ELT's potential to serve as a powerful vehicle for sustainability education. ELT can play a significant role in shaping a more sustainable future by equipping learners with both the language skills and the environmental awareness necessary to navigate and address the complexities of the modern world.

Despite these successes, challenges persist, including a lack of accessible materials, potential misalignment with language teaching objectives, and insufficient teacher preparation. The review offers promising strategies to address these barriers, emphasizing the creation of open educational resources, interdisciplinary collaboration, and targeted professional development. Moreover, the challenges and solutions identified in this review provide valuable insights for educators, curriculum developers, and policymakers, offering a roadmap for integrating sustainability more effectively into ELT practices. As research and practice in this area continue to evolve, the ELT community must remain engaged with and committed to sustainability education, recognizing its profound potential to impact individual learners and the global community.

In conclusion, integrating sustainability into ELT is not merely an educational trend but a necessary shift towards preparing students to be informed, responsible, and proactive global citizens. The continued exploration, innovation, and advocacy in this area will be crucial in harnessing the full potential of ELT to contribute to a more sustainable world.

Author Contributions: Conceptualization, B.Y. and W.Y.G.; methodology, B.Y.; software, H.F.; validation, B.Y.; formal analysis, B.Y.; investigation, B.Y.; resources, B.Y.; data curation, B.Y.; writing—original draft preparation, B.Y.; writing—review and editing, H.F. and W.Y.G.; visualization, H.F.; supervision, W.Y.G.; project administration, H.F. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Fu, H. A Comprehensive Review of Nature-Based Solutions: Current Status and Future Research. *AIMS Environ. Sci.* **2023**, *10*, 677–690. [CrossRef]
2. Micalay-Hurtado, M.A.; Poole, R. Eco-Critical Language Awareness for English Language Teaching (ELT): Promoting Justice, Wellbeing, and Sustainability in the Classroom. *J. World Lang.* **2022**, *8*, 371–390. [CrossRef]
3. Kapranov, O. The Discourse of Sustainability in English Language Teaching (ELT) at the University of Oxford: Analyzing Discursive Representations. *J. Teach. Educ. Sustain.* **2022**, *24*, 35–48. [CrossRef]
4. Ferdous, A.; Shifat, N.F.; Khan, M.E.I. Sustainability of E-Learning in the Undergraduate EFL Classrooms. *FOSTER: J. Engl. Lang. Teach.* **2022**, *3*, 80–89. [CrossRef]
5. Toppo, N.; Rahman, M. Socio-Cultural Sustainability through Study Material: English Language Teaching in India. *Probl. Ekorozwoju* **2021**, *16*, 245–249. [CrossRef]
6. Bekteshi, E.; Xhaferi, B. Learning about Sustainable Development Goals through English Language Teaching. *Res. Soc. Sci. Technol.* **2020**, *5*, 78–94. [CrossRef]
7. Edwards, E.; Burns, A. Language Teacher Action Research: Achieving Sustainability. *ELT J.* **2016**, *70*, 6–15. [CrossRef]
8. Putri, I. Critical Environmental Education in Tertiary English Language Teaching (ELT): A Collaborative Digital Storytelling Project. *Indones. J. Appl. Linguist.* **2018**, *8*, 336–344. [CrossRef]

9. Al Amin, M.; Greenwood, J. The UN Sustainable Development Goals and Teacher Development for Effective English Teaching in Bangladesh: A Gap That Needs Bridging. *J. Teach. Educ. Sustain.* **2018**, *20*, 118–138. [CrossRef]
10. Calvert, K. The Ecology of English: Real-World Experiences in Sustainability and Language Learning. In *Language Learning beyond the Classroom*; Routledge: London, UK, 2015; pp. 202–212.
11. Tuyan, S.E. On the Way to Achieve Sustainability: An Evaluative Look at a Three-Year Action Research Program in an ELT Context. In *Empowering Teacher-Researchers, Empowering Learners*; IATEFL: Faversham, UK, 2018; pp. 19–28.
12. Kwee, C.T.T. I Want to Teach Sustainable Development in My English Classroom: A Case Study of Incorporating Sustainable Development Goals in English Teaching. *Sustainability* **2021**, *13*, 4195. [CrossRef]
13. Römhild, R.; Gaudelli, W. Target Country, Target Culture–Rethinking Cultural Learning in Language Education for Sustainable Development. *Engl. Sustain. Anglistik. Int. J. Engl. Stud.* **2022**, *33*, 15–32.
14. Liu, Y.; Wu, Y.C.; Fu, H.; Guo, W.Y.; Wang, X. Digital Intervention in Improving the Outcomes of Mental Health among LGBTQ+ Youth: A Systematic Review. *Front. Psychol.* **2023**, *14*, 1242928. [CrossRef] [PubMed]
15. Turan, Z.; Akdag-Cimen, B. Flipped Classroom in English Language Teaching: A Systematic Review. *Comput. Assist. Lang. Learn.* **2020**, *33*, 590–606. [CrossRef]
16. John, E.; Yunus, M.M. A Systematic Review of Social Media Integration to Teach Speaking. *Sustainability* **2021**, *13*, 9047. [CrossRef]
17. Nair, V.; Yunus, M.M. A Systematic Review of Digital Storytelling in Improving Speaking Skills. *Sustainability* **2021**, *13*, 9829. [CrossRef]
18. Macaro, E.; Curle, S.; Pun, J.; An, J.; Dearden, J. A Systematic Review of English Medium Instruction in Higher Education. *Lang. Teach.* **2018**, *51*, 36–76. [CrossRef]
19. Nur, S.; Makassar, U.N.; Butarbutar, R.; Musamus, U.; Sri, M.; Ardiningtyas, Y.; Ypup, S.; Andi, M.; Alimuddin, H. A Systematic Review on Integrating MALL in English Language Teaching. *ELT Worldw. J. Engl. Lang. Teach.* **2022**, *9*.
20. van Zyl, L.E.; Gaffaney, J.; van der Vaart, L.; Dik, B.J.; Donaldson, S.I. The Critiques and Criticisms of Positive Psychology: A Systematic Review. *J. Posit. Psychol.* **2023**, *19*, 206–235. [CrossRef]
21. Fu, H.; Dong, X.; Wu, Y.C.; Jian, Y. *Spatial Differentiation and Implementation Mechanism of Sustainable Development Goals from the Perspective of Ecosystem Services*; Elsevier: Amsterdam, The Netherlands, 2023.
22. Mawed, I. *An Exploration of English as a Foreign Language Teachers' Attitudes towards Curriculum Design and Development at the English Language Teaching Department in the Syrian Higher Institute of Languages*; University of Exeter: Exeter, UK, 2016.
23. Leal Filho, W.; Raath, S.; Lazzarini, B.; Vargas, V.R.; de Souza, L.; Anholon, R.; Quelhas, O.L.G.; Haddad, R.; Klavins, M.; Orlovic, V.L. The Role of Transformation in Learning and Education for Sustainability. *J. Clean. Prod.* **2018**, *199*, 286–295. [CrossRef]
24. Laurie, R.; Nonoyama-Tarumi, Y.; Mckeown, R.; Hopkins, C. Contributions of Education for Sustainable Development (ESD) to Quality Education: A Synthesis of Research. *J. Educ. Sustain. Dev.* **2016**, *10*, 226–242. [CrossRef]
25. Olsson, E.; Sylvén, L.K. Cross-Curricular CLIL Projects in Swedish Middle School. *Nord. J. Lang. Teach. Learn.* **2023**, *11*, 348–361. [CrossRef]
26. Jodoin, J.J. Promoting Language Education for Sustainable Development: A Program Effects Case Study in Japanese Higher Education. *Int. J. Sustain. High. Educ.* **2020**, *21*, 779–798. [CrossRef]
27. Piccardo, E.; Hunter, D. Settlement, Integration and Language Learning: Possible Synergies. In *The Linguistic Integration of Adult Migrants/L'intégration Linguistique des Migrants Adultes*; Beacco, J.C., Krumm, H.J., Little, D., Thalgott, P., Council of Europe, Eds.; Some lessons from research/Les enseignements de la recherche, de Gruyter, Berlin-Boston; A Task-Based, Community-Focused Program from the Region of Durham: Durham, OC, Canada, 2017; pp. 175–180.
28. Akbana, Y.E.; Yavuz, A. Global Issues in a Series of EFL Textbooks and Implications for End-Users to Promote Peace Education through Teaching English. *J. Peace Educ.* **2022**, *19*, 373–396. [CrossRef]
29. Lozano, R.; Barreiro-Gen, M.; Lozano, F.J.; Sammalisto, K. Teaching Sustainability in European Higher Education Institutions: Assessing the Connections between Competences and Pedagogical Approaches. *Sustainability* **2019**, *11*, 1602. [CrossRef]
30. Bascopé, M.; Perasso, P.; Reiss, K. Systematic Review of Education for Sustainable Development at an Early Stage: Cornerstones and Pedagogical Approaches for Teacher Professional Development. *Sustainability* **2019**, *11*, 719. [CrossRef]
31. Rojas, M.A. *Developing Students' English Language and Critical Thinking Skills through Galapagos Green Advertising: An Ecolinguistic Approach*; University of Coruna: Coruna, Spain, 2021.
32. Chen, S. Language and Ecology: A Content Analysis of Ecolinguistics as an Emerging Research Field. *Ampersand* **2016**, *3*, 108–116. [CrossRef]
33. Afsyah, S. WhatsApp Application in English Language Teaching (ELT) Context: Media to Describe People. *Utamax J. Ultim. Res. Trends Educ.* **2019**, *1*, 23–28. [CrossRef]
34. Putri, N.S. Kahoot Application in English Language Teaching (ELT) Context: An Alternative Learning Strategy. *ELSYA J. Engl. Lang. Stud.* **2019**, *1*, 11–15. [CrossRef]
35. Potvin, A.S.; Boardman, A.G.; Stamatis, K. Consequential Change: Teachers Scale Project-Based Learning in English Language Arts. *Teach. Teach. Educ.* **2021**, *107*, 103469. [CrossRef]
36. Chang, C.-C.; Kuo, C.-G.; Chang, Y.-H. An Assessment Tool Predicts Learning Effectiveness for Project-Based Learning in Enhancing Education of Sustainability. *Sustainability* **2018**, *10*, 3595. [CrossRef]

37. Ramos, T.B.; Caeiro, S.; Van Hoof, B.; Lozano, R.; Huisingh, D.; Ceulemans, K. Experiences from the Implementation of Sustainable Development in Higher Education Institutions: Environmental Management for Sustainable Universities. *J. Clean. Prod.* **2015**, *106*, 3–10. [CrossRef]
38. Liu, H.-H.; Wang, Q.; Su, Y.-S.; Zhou, L. Effects of Project-Based Learning on Teachers' Information Teaching Sustainability and Ability. *Sustainability* **2019**, *11*, 5795. [CrossRef]
39. Papanastasiou, G.P.; Drigas, A.S.; Skianis, C. Serious Games in Preschool and Primary Education: Benefits and Impacts on Curriculum Course Syllabus. *Int. J. Emerg. Technol. Learn.* **2017**, *12*, 44–56. [CrossRef]
40. Madani, K.; Pierce, T.W.; Mirchi, A. Serious Games on Environmental Management. *Sustain. Cities Soc.* **2017**, *29*, 1–11. [CrossRef]
41. Becker, P.; Humberstone, B.; Loynes, C.; Schirp, J. *The Changing World of Outdoor Learning in Europe*; Routledge: London, UK, 2018; ISBN 1351692569.
42. Bentsen, P.; Jensen, F.S. The Nature of Udeskole: Outdoor Learning Theory and Practice in Danish Schools. *J. Adventure Educ. Outdoor Learn.* **2012**, *12*, 199–219. [CrossRef]
43. Tan, J.C.L.; Chapman, A. Project-Based Learning for Academically-Able Students: Hwa Chong Institution in Singapore. In *Project-Based Learning for Academically-Able Students*; Brill: Boston, MA, USA, 2019; ISBN 9463007326.
44. Leal Filho, W.; Amaro, N.; Avila, L.V.; Brandli, L.; Damke, L.I.; Vasconcelos, C.R.P.; Hernandez-Diaz, P.M.; Frankenberger, F.; Fritzen, B.; Velazquez, L. Mapping Sustainability Initiatives in Higher Education Institutions in Latin America. *J. Clean. Prod.* **2021**, *315*, 128093. [CrossRef]
45. Coppens, T.; Valderrama Pineda, A.; Henao, K.; Rybels, S.; Samoilovich, D.; De Jonghe, N.; Camacho, H. Innovating Education for Sustainable Urban Development through Problem Based Learning in Latin America: Lessons from the CITYLAB Experience. *J. Probl. Based Learn.* **2020**, *8*, 1–18.
46. Jenkins, K. How to Teach Education for Sustainability: Integrating Theory and Practice. In *Educating for Sustainability in Primary Schools*; Brill: Boston, MA, USA, 2015; pp. 33–43, ISBN 9463000461.
47. Abbott, D.; Wilson, G. The Lived Experience of Climate Change. In *Knowledge, Science and Public Action*; Springer International Publishing: Cham, Switzerland, 2015.
48. Azeiteiro, U.M.; Bacelar-Nicolau, P.; Caetano, F.J.P.; Caeiro, S. Education for Sustainable Development through E-Learning in Higher Education: Experiences from Portugal. *J. Clean. Prod.* **2015**, *106*, 308–319. [CrossRef]
49. Voogt, J.; Laferriere, T.; Breuleux, A.; Itow, R.C.; Hickey, D.T.; McKenney, S. Collaborative Design as a Form of Professional Development. *Instr. Sci.* **2015**, *43*, 259–282. [CrossRef]
50. Kalsoom, Q.; Khanam, A. Inquiry into Sustainability Issues by Preservice Teachers: A Pedagogy to Enhance Sustainability Consciousness. *J. Clean. Prod.* **2017**, *164*, 1301–1311. [CrossRef]
51. Kasneci, E.; Seßler, K.; Küchemann, S.; Bannert, M.; Dementieva, D.; Fischer, F.; Gasser, U.; Groh, G.; Günnemann, S.; Hüllermeier, E. ChatGPT for Good? On Opportunities and Challenges of Large Language Models for Education. *Learn. Individ. Differ.* **2023**, *103*, 102274. [CrossRef]
52. De Freitas, S.I.; Morgan, J.; Gibson, D. Will MOOCs Transform Learning and Teaching in Higher Education? Engagement and Course Retention in Online Learning Provision. *Br. J. Educ. Technol.* **2015**, *46*, 455–471. [CrossRef]
53. Wilson, A.K.; Lengeling, M.M. Language Learning in the Time of COVID-19: ELT Students' Narrated Experiences in Guided Reflective Journals. *Íkala Rev. De. Leng. Y Cult.* **2021**, *26*, 571–585. [CrossRef]
54. Vieira, F. Task-based Instruction for Autonomy: Connections with Contexts of Practice, Conceptions of Teaching, and Professional Development Strategies. *TESOL Q.* **2017**, *51*, 693–715. [CrossRef]
55. Barnawi, O.Z. Resisting and Creating Alternatives to Neoliberalism in ELT: A Case Study of Three Transnational Language Teachers in Saudi Arabia. *Crit. Inq. Lang. Stud.* **2022**, *19*, 377–399. [CrossRef]
56. Alqahtani, M.H.; Albidewi, I.A. Teachers' English Language Training Programmes in Saudi Arabia for Achieving Sustainability in Education. *Sustainability* **2022**, *14*, 15323. [CrossRef]
57. Symonenko, S. Complementing Content of English Courses for Enhancing Communication of IT-Professionals for Sustainable Development. *E3S Web Conf.* **2020**, *166*, 10008. [CrossRef]
58. Martyushev, N.; Shutaleva, A.; Malushko, E.; Nikonova, Z.; Savchenko, I. Online Communication Tools in Teaching Foreign Languages for Education Sustainability. *Sustainability* **2021**, *13*, 11127. [CrossRef]
59. Uitto, A.; Saloranta, S. Subject Teachers as Educators for Sustainability: A Survey Study. *Educ. Sci.* **2017**, *7*, 8. [CrossRef]
60. Sund, P.; Gericke, N. Teaching Contributions from Secondary School Subject Areas to Education for Sustainable Development–a Comparative Study of Science, Social Science and Language Teachers. *Environ. Educ. Res.* **2020**, *26*, 772–794. [CrossRef]
61. Reimers, F.; Schleicher, A.; Saavedra, J.; Tuominen, S. Supporting the Continuation of Teaching and Learning during the COVID-19 Pandemic. *Oecd* **2020**, *1*, 1–38.
62. Håkansson, M.; Kronlid, D.O.O.; Östman, L. Searching for the Political Dimension in Education for Sustainable Development: Socially Critical, Social Learning and Radical Democratic Approaches. *Env. Educ. Res.* **2019**, *25*, 6–32. [CrossRef]
63. Goulah, J.; Katunich, J. *TESOL and Sustainability: English Language Teaching in the Anthropocene Era*; Bloomsbury Publishing: London, UK, 2020; ISBN 1350115096.
64. Mambu, J.E. Embedding Sustainable Development Goals into Critical English Language Teaching and Learning. *Crit. Inq. Lang. Stud.* **2023**, *20*, 46–76. [CrossRef]

65. Sun, Q.; Zhang, L.J. Understanding Novice and Experienced Teachers' Cognitions and Practices for Sustainable Teacher Development: The Case of Form-Focused Instruction in English Language Teaching. *Sustainability* **2022**, *14*, 4711. [CrossRef]
66. Meighan, P.J. Transepistemic English Language Teaching for Sustainable Futures. *ELT J.* **2023**, *77*, 294–304. [CrossRef]
67. Ali, Z. The Necessity of Teaching Sustainable Development through English Language Teaching. *IUP J. Engl. Stud.* **2017**, *12*, 95–107.
68. Moulieswaran, N.; Kumar, P.N.S. Investigating ESL Learners' Perception and Problem towards Artificial Intelligence (AI) -Assisted English Language Learning and Teaching. *World J. Engl. Lang.* **2023**, *13*, 290. [CrossRef]
69. Khansir, A.A.; Dehkordi, F.G.; Mirzaei, M. Learning Strategies and English Language Teaching. *Theory Pract. Lang. Stud.* **2021**, *11*, 734–741. [CrossRef]
70. Karim, S.A.; Sulistyo, G.H.; Rachmajanti, S.; Suryati, N. Exploring EFL Teachers' Beliefs about English Language Learning and Teaching: Evidence from Indonesia Context. *Asian EFL J.* **2020**, *27*, 227–246.
71. Yılmaz Fındık, L.; Bayram, I.; Canaran, Ö. Pre-Service English Language Teachers' Conceptions of Sustainable Development: A Case from Turkish Higher Education Context. *Int. J. Sustain. High. Educ.* **2021**, *22*, 423–456. [CrossRef]
72. Power, T. Approaches to Teacher Professional Development in Low-to-Middle-Income Countries. In *Sustainable English Language Teacher Development at Scale: Lessons from Bangladesh*; Bloomsbury: London, UK, 2019; pp. 47–65.
73. Wali, O. Future Undergraduate English Language Curriculum Framework for Sustainable Development in Bangladesh. *Int. J. Engl. Learn. Teach. Ski.* **2018**, *1*, 170–179. [CrossRef]
74. Shamim, F. EMI, ELT, and Social Justice: Case of Pakistan. In *English as a Medium of Instruction in South Asia*; Routledge: London, UK, 2023; pp. 94–112.
75. Boeve-de Pauw, J.; Gericke, N.; Olsson, D.; Berglund, T. The Effectiveness of Education for Sustainable Development. *Sustainability* **2015**, *7*, 15693–15717. [CrossRef]
76. O'Flaherty, J.; Liddy, M. The Impact of Development Education and Education for Sustainable Development Interventions: A Synthesis of the Research. *Environ. Educ. Res.* **2018**, *24*, 1031–1049. [CrossRef]
77. Krashen, S. Second Language Acquisition. *Second. Lang. Learn.* **1981**, *3*, 19–39.
78. Ortega, L. *Second Language Acquisition. The Routledge Handbook of Applied Linguistics*; Routledge: London, UK, 2011; pp. 171–184.
79. Shabani, K.; Khatib, M.; Ebadi, S. Vygotsky's Zone of Proximal Development: Instructional Implications and Teachers' Professional Development. *Engl. Lang. Teach.* **2010**, *3*, 237–248. [CrossRef]
80. Nakata, H.; Ito, Y. CLIL in Practice. *JJCLIL* **2020**, *2*, 39.
81. Saiful, J.A. Eco-ELT for Environmental Research and Praxis in ELT. *J. Engl. A Foreign Lang.* **2023**, *13*, 373–398. [CrossRef]
82. Mannong, A.B.M. The Students' Eyesight: The Effectiveness of Learning-Based Applications on Elt in Pandemic Era. *ETERNAL (Engl. Teach. Learn. Res. J.)* **2020**, *6*, 394–407. [CrossRef]