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Original Research

Integrating Environmental Literacy into ELT to Promote Environmentally Responsible Behavior in EFL Learners: A Diary Study

Zahra Dolati¹ & Abdorreza Tahriri²

¹Corresponding author, Department of English Language and Literature, Faculty of Literature and Humanities, University of Guilan, Rasht, Iran; dolati.zhr@gmail.com

²Department of English Language and Literature, Faculty of Literature and Humanities, University of Guilan, Rasht, Iran; atahriri@gmail.com

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Abstract

Due to the undeniable role of education in raising environmental awareness, and as an effort to promote environmental literacy in ELT, this study sought to investigate the integration of environmental themes into English language classes to probe into its impact on EFL learners' understanding and perception of environmental issues, and their motivation to act environmentally responsibly, and to shed light on any perceived differences between L1-based and L2-based environmental literacy instruction. To this end, twelve female English learners who were selected through convenience sampling participated in content-driven English sessions on environmental issues and recorded their diaries after each session of instruction. To analyze the qualitative data from the diary entries, bottom-up data-driven thematic analysis was used in order to extract recurring ideas, viewpoints, experiences, and reflections. The results of open coding showed that the participants' understanding and awareness of environmental issues and their motivation to act responsibly to environment partially increased as a result of participating in environmentally focused English sessions. Although some participants declared no difference or prioritized mother tongue instruction for environmental literacy, a majority of them perceived differences in their experiences of learning about environmental issues in English versus their mother tongue, identifying perceived prestige of the language, unfiltered access to information, and association with a worldwide perspective among other factors, which made the English content more persuasive for them. The implications highlight that integrating environmental themes into ELT can promote environmental awareness.

Keywords: English Language Teaching; Environmental Literacy; Environmentally Responsible Behavior; Diary Study.

1. Introduction

Due to escalating environmental issues, the environment now stands out as a major public concern, and environmental research has gained prominence in various fields of study, including science, economics, law, and public policy since the 1980s (Buell, 2009). More recently, it has been recognized as a cross-disciplinary area of research that involves certain humanities fields as well. For instance, Jena and Behera (2017) in the field of psychology link human well-being as associated with a balanced environment to the human psyche, which can reduce the environmental consequences of human actions.

Considering the cultural influences on ecological and environmental decline, Paulo Freire advocates a literacy-based approach to critical awareness and reflective practice that should be adopted by all cultures (Bowers, 2004). This stance highlights the role of education in empowering individuals to think critically regarding environmental issues and to foster informed decision-making, considering that their actions and the environment are interconnected.

Environmental literacy is defined as the interaction between various aspects, which include attitudinal dispositions, knowledge, and skills to show environmentally responsible behavior in a context-appropriate manner

(Hollweg et al., 2011). Environmentally responsible behavior is aimed at benefiting the environment by addressing problems and challenges, and it encompasses a range of actions, including those directed at mitigating the negative impact of human influence on the natural world, considering the future consequences of specific actions, and making sustainable choices (Lee et al., 2013).

Educational systems play a pivotal role in enhancing environmental literacy and helping the learners to develop the skills necessary for responsible citizenship. Accordingly, the need to address environmental issues and attention to environmental literacy have always been recognized in educational systems and by educational policy makers (Rusda et al., 2023). This need is becoming more pressing as issues related to the environment and sustainability get more complex (Wheaton et al., 2018). Thus, there should be collective actions taken by all the stakeholders in the educational system to enhance environmental literacy, which hopefully would induce environmentally responsible behavior (ERB). Subsequently, ERB would be conducive to environmental sensitivity and the mitigation of environmental deterioration.

This endeavor is so demanding that it takes all the disciplines and realms of education to participate abreast, including English language teaching. This can be done by incorporating environmentally related content into English language classes in the form of content-based instruction. As far as content-based instruction is concerned, language can be learned through the provision of natural and authentic content, while the content is learned through the medium of a foreign or second language (Larsen-Freeman & Anderson, 2013).

The impact of content-based English language instruction revolving around the issue of environment has been researched in various EFL contexts and shown to have positive effects both on language learning and environmental literacy development (Ali et al., 2024; Rusda et al., 2023; Silvhiany et al., 2023). More specifically, in Iran, English is viewed as “cool”, “modern”, and “prestigious” as well as the medium of providing information (Zarrabi & Brown, 2015, p. 3485), and the Iranian education system devotes considerable time to English language teaching and learning, beyond the additional hours many students spend at language institutes outside of school. Keeping in mind that language power can influence persuasion (Areni & Sparks, 2005), the effects of this positive attitude toward English as a powerful language (Dutta, 2019) can be investigated in terms of the integration of environmental literacy into English language classes. In other words, the possibility of positive change toward ERB can be explored, particularly regarding whether students find it more convincing to act environmentally friendly when presented with content in English that calls for ERB. Since the influence of integrating environmental literacy in a content-based instruction format hasn't been fully explored in the context of ELT in Iran, this research addressed this gap by examining Iranian learners' thoughts and feelings on environmentally focused English sessions.

2. Literature Review

The framework under which “environmental literacy” and “environmentally responsible behavior” are explicated is that of Hollweg et al. (2011), which is the most cited one (Wheaton et al., 2018). Hollweg et al. (2011, pp. 20-30) defined environmental literacy in terms of “dispositions”, “competencies”, “context”, and “environmentally responsible behavior”. Environmental literacy, in this respect, is defined as the “dispositions” toward the environment including attitudes, worldview, and motivation, and “competencies” which are the skills and abilities that can be used in perceiving, deciding and acting upon environmental issues, all of which cannot be done without a consideration of the “context” which is an appreciation of the personal, social, and cultural influences that guide responsible environmental action. The final aspect in this definition is “environmentally responsible behavior,” which is “the expression of knowledge, dispositions, and competencies within a context” (p. 27), regarding environmental issues and proper stewardship.

The inclusion of environmental content into ELT classes has been shown to have positive effects both on developing learners' English proficiency and on enhancing their environmental literacy (Ali et al., 2024; Cad et al., 2022; Hauschild et al., 2012; Rusda et al., 2023; Silvhiany et al., 2023). Moreover, the need for incorporating environmental themes and content into English materials (Bulan et al., 2024; Faramarzi & Janfeshan, 2021) and developing teachers' awareness and competencies regarding environmental issues has been manifested (Ramadhan et al., 2019).

Rusda et al. (2023) investigated the experiences of four young language learners in a project-oriented environmental course where the participants were required to collect data on an environmental topic and present it through

digital storytelling using the English language. In the Indonesian context of this study, English is used as a foreign language. The data gathered through interviews with the participants and their language achievements support the idea that integrating environmental content into language education can address environmental concerns while fostering language skills. A similar study has been done in Indonesia by Ali et al. (2024), in which the authors investigated the environmental content in English textbooks and its impact on students' eco-friendly behavior. After tracing the environmental content in textbooks, they interviewed teachers and students, the analysis of which showed a significant positive impact on students' daily activities regarding their immediate environment at school.

In the same vein, Silvhiyany et al. (2023) conducted a project-oriented research in an EFL context in which they incorporated environmental topics, more specifically climate change, into an English writing course. Twenty preservice English teachers participated in the project, whose discussions while doing the project and the final draft of their work were used as the data of the research. The study showed a significant increase in the participants' awareness of climate change.

Hauschild et al. (2012) in "Going Green" enumerated various advantages of content-based language instruction in general and CBI with the focus on environmental education. CBI involves the integration of skills, more comprehensible input, more relevant and interesting topics, and an opportunity to enhance critical thinking skills. Among all the themes that are relevant to language learners, environmental topics are the most urgent ones to be addressed. Hauschild et al. (2012, p. 5) stated that "in addition to promoting language and content learning, environmental topics allow educators to help students understand how changes in daily behaviors can benefit Mother Nature".

In the EFL context of Iran, the integration of environmental content into ELT classes is an unexplored area. By considering the positive attitude that Iranian EFL learners hold toward English language (Aliakbari & Monfared, 2014; Sadeghi & Richards, 2015; Zarrabi & Brown, 2015), the effect of enriching English language classes with environmental content can be investigated in terms of the extent they can enhance environmental literacy and the extent they can be successful in convincing learners to act environmentally responsible. Therefore, the following research questions are addressed:

1. How does the incorporation of environmental themes into English language classes influence EFL learners' understanding and perceptions of environmental issues?
2. How do EFL learners perceive the effect of integrating environmental literacy into English language classes in terms of their willingness to engage in environmentally responsible behaviors?
3. How do EFL learners perceive the differences in their engagement with environmental topics and environmentally responsible behaviors when these are presented in English versus their mother tongue?

3. Methodology

The present diary study gathered qualitative data on how students perceive and react to the integration of environmental literacy into English language classes. Diary studies are introspective studies that capture ongoing in-depth personal experiences and reflections (McKay, 2006). The diary entries in this study are semi-structured. The participants responded to specific prompts or considered them when writing about their personal experience of and reflection on the English language class with the focus on environmental issues. The participants could deviate from the prompts whenever they felt the need to address other issues regarding their perception of the experience of attending an English class centered on environmental topics.

3.1. Participants

The participants of this study were 12 upper-intermediate to advanced-level female English learners, with a mean age of 18. It should be mentioned that the study started with 14 participants, two of whom dropped out of the study after the first session. Despite the fact that an adequate sample size in qualitative research should eventually be determined based on judgment of the quality and informativeness of the data collected (Sandelowski, 1995), Dornyei (2011) asserted that an initial sample size of 6-10 participants would be adequate for qualitative research. Convenience sampling was employed, as participants were selected based on their availability and willingness to participate (Ary et al., 2019). This sampling method was chosen for its practicality and efficiency. A consent form was provided to participants prior to the

study, which offered a brief description of the study and its procedures, emphasizing the confidentiality and anonymity of the data and that participation was completely voluntary.

3.2. Materials and the Instrument

In this study, the main materials utilized to facilitate the research process and enhance participant engagement in the content-driven English sessions were two documentary films focused on environmental issues. These documentaries were selected for their relevance and potential to provoke thoughtful discussions on environmental issues among participants. "A Life on Our Planet" is a documentary narrated by David Attenborough released in 2020. In this documentary, humans' impact on Earth as well as the actions to be taken to save the planet are displayed and discussed. "2040," directed by Damon Gameau (2019), focuses on several environmental issues, including climate change, from the perspective of a father who is eager to envision a livable future with a sustainable planet for his daughter.

Moreover, infographics, which are visual representations of data in relation to introduced environmental topics in the form of PowerPoint slides, accompanied by teachers' explanations were used. The slides focused on local environmental issues. Overall, documentary films, infographics, classroom discussions, and teacher talk were the materials for this study.

Additionally, as stated above, after participating in each environmentally focused session, semi-structured diaries written by students were used to collect the data for analyzing students' understanding and perceptions of environmentally focused English sessions, their possible emergent tendencies to act environmentally responsible, and the perceived differences between environmental instructions given in their mother tongue and English.

3.3. Procedure

The participants attended two content-driven sessions centered on environmental issues designed to enhance their environmental literacy. Each session lasted approximately an hour and a half. There was a two-week interval between the sessions. The participants were asked to record their perceptions and reflections after each session, focusing on how their understanding of environmental issues had evolved and how they could relate that understanding to their previous experiences, considering the prompts. They were encouraged to note any relevant comments, and viewpoints, and how they could apply their learning to real-world context. They were requested to spend as much time on writing their diary entries as they spent in the classroom (McKay, 2006).

The first session started with a short discussion regarding students' previous experience of learning about environmental issues. The students were also provided with vocabulary items in relation to the environment, which they could use during the discussions, and they needed to better understand the documentary. Parts of "A Life on Our Planet" were played in the first session. This documentary can be divided into three sections. In one section, humans' destructive impact on the planet to date is explained. Next, the consequences of humans' activities in the future have been manifested. Finally, some general solutions are provided to reverse the decline of the planet. Parts of the first and second sections were played during the first session, which gave rise to a chain of discussions among students. In addition to summarizing the main points in the documentary as a way to check students' comprehension, the discussions mostly revolved around the most important environmental challenges, the comparison between the vision of the future displayed in the documentary film and the present reality, and possible worldwide solutions to the challenges.

The prompts given to students after this session to direct their diary entries asked about students' background knowledge on environmental issues and the sources of the knowledge acquired so far, students' thoughts and emotions on the topics presented in the session, and any feelings of change regarding their motivation, attitude, and eagerness to learn more about environmental issues.

The second session focused on the most pressing environmental issues in the local context, which were presented to students through a couple of slides that were complemented by the teacher's explanations. Students commented on the slides as well and shared their views about these local environmental issues. Next, parts of "2040," which were about successful community-led environmental initiatives, were played. Discussions were held regarding the applicability of these solutions to students' local context.

The prompts addressed to students in this session were about the differences or similarities that students perceived in learning about environmental challenges in English compared to learning them in their mother tongue, any improvement in their understanding regarding the environmental issues, and their attitudes about integrating environmental literacy into English language classes. Undoubtedly, these two sessions were designed to open the space for exploring initial perceptions, reflections, and meaning-making by the students when exposed to English sessions on environmental topics, and not the long-term change.

3.4. Data Analysis

Thematic analysis was used to analyze the qualitative data from the diary entries. This approach to qualitative data analysis is used to find the recurrent themes or patterns in the data based on a chosen type of coding (Riazi et al., 2023). More specifically, in this study, bottom-up data-driven thematic analysis was applied to uncover recurring ideas, viewpoints, experiences, and reflections by the participants regarding content-driven language classes about environmental issues. Based on Braun and Clarke's explanation (2006), in this approach, the qualitative data is the main source of developing coding categories and themes. Therefore, open coding is used to identify the recurrent themes, while related studies and theoretical frameworks are used at later stages to discuss the themes that have emerged. To systematically analyze qualitative data, MAXQDA 24, which provides a structured coding environment, was used.

To ensure intercoder reliability, a second coder independently coded 25 percent of the documents. The intercoder agreement percentage was calculated through MAXQDA for code frequency in the coded documents, which showed a percentage of 82.14. According to Miles and Huberman (1994), for percentage agreement approaches, a standard of 80% agreement is acceptable.

4. Results

The data for this study consisted of the diary entries that were written by the participants after participating in each session, meaning that each participant contributed two diary entries to the study. On average, each participant wrote around 370 words for each entry, making up a total of 8915 words to be analyzed. The entries for each participant were gathered in a single document and imported into MAXQDA 24 to be explored precisely. Using open coding while considering the research questions, the documents were coded in order to discover the recurring themes, the participants' reflections, perceptions, experiences, and attitudes toward the environmentally focused English sessions. The participants' overall writings in the diary entries, as directed by the prompts given by the researcher, were devoted to six categories, which are presented in Table 1.

Table 1. *Main Categories Emerged out of the Data*

	Segments	Percentage
General Reflections	59	31.05
Attitudes toward Environmentally Focused English Sessions	59	31.05
Perceived Differences in Language of Instruction	26	13.68
Summary of the Session	19	10.00
Previous Knowledge of Environmental Topics	18	9.47
Introductory Narratives	9	4.74
TOTAL	190	100.00

As shown in Table 1, the least percentage of the coded segments is related to "introductory narratives". As suggested by the name of the category, in these segments, usually at the beginning of the entries, the participants set the scene to start writing their entries. In some of the segments, more specifically, 10 % of the coded segments, the participants summarized the content presented to them in the sessions, including what was presented to them in the documentary films, through the discussions, or via the slides. A fair amount of the entries (31.05 %) was allocated to participants' "general reflections" regarding environmental issues. In these segments, the participants noted down their concerns and hopes regarding the current condition of the environment, commented on how to reverse the decline of the planet, raised rhetorical questions about humans' misconduct regarding the environment, and wished for a better future.

Through the prompts, the participants were asked to write about their previous knowledge of environmental topics, their experience, and the sources of this knowledge. In 9.47 % of the coded segments, the participants described

their previous experience of learning about environmental topics, and they attributed this learning to school, family, and media. Figure 1 shows the number and percentage of coded segments relating to each of the sources of participants' previous knowledge and experience of environmental topics.

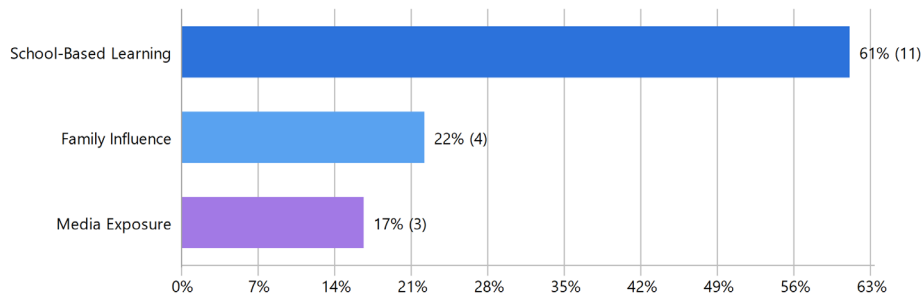


Figure 1. Sources of Participants' Previous Knowledge of Environmental Topics

With respect to school-based learning of environmental topics, around 42 % of the participants mentioned the science curriculum as the source of their learning. This, for example, includes geography courses. Teacher influence (33.33 %) and school projects (16.67 %) were other sources of learning mentioned by the participants, which are shown in Table 2.

Table 2. Sources of Participants' School-Based Learning

	Frequency	Percentage	Percentage (Valid)
Science Curriculum	5	41.67	62.50
Teacher Influence	4	33.33	50.00
School Projects and Activities	2	16.67	25.00
DOCUMENTS with code(s)	8	66.67	100.00
DOCUMENTS without code(s)	4	33.33	-
ANALYZED DOCUMENTS	12	100.00	-

The first research question dealt with the influence of environmentally focused English sessions on participants' understanding and perceptions of environmental issues. Moreover, the second research question concerned the influence of environmentally focused English sessions on participants' willingness to engage in environmentally responsible behavior. In other words, it was assigned to find out whether content-driven English sessions about environmental topics would lead to participants' increased awareness regarding environmental issues and a change in their motivation to participate in environmentally responsible behavior. These two questions are answered under the category of "attitudes toward environmentally focused English sessions". Based on Table 1, the participants wrote about their attitudes toward the sessions in 59 segments, which make up around 31 % of the coded segments, and they fully showed a positive attitude toward these sessions. Making note of their attitudes, they referred to the information and awareness gained during the sessions regarding environmental topics and issues, how this extended awareness engaged them, occupied their attention, and motivated them to act environmentally friendly in the future, and finally, how these sessions with a readily tangible content enhanced their learning experience of English. The percentage of the participants who wrote about each of these aspects is presented in Table 3.

Table 3. Attitudes Toward Environmentally Focused English Sessions

	Frequency	Percentage	Percentage (valid)
Increased Awareness	11	91.67	91.67
Engagement and Interest	11	91.67	91.67
Motivation to Act	9	75.00	75.00
Enhanced Learning Experience	4	33.33	33.33
DOCUMENTS with code(s)	12	100.00	100.00
DOCUMENTS without code(s)	0	0.00	-
ANALYZED DOCUMENTS	12	100.00	-

According to Table 3, 11 participants declared that their awareness regarding environmental issues had increased as a result of participation in these sessions. Therefore, in response to the first research question, it can be concluded that

environmentally focused English sessions positively contributed to participants' understanding and awareness of environmental issues. Moreover, 9 participants acknowledged that attending the environmentally focused English sessions motivated them to act environmentally friendly in the future. Accordingly, in response to the second research question, it can be assumed that environmentally focused English sessions moderately contributed to participants' willingness to engage in environmentally responsible behavior.

The third research question dealt with the differences perceived by learners in their understanding and engagement with environmental topics and environmentally responsible behaviors when these are presented in English versus their mother tongue. Based on Table 1, around 14 % of the coded segments in the diary entries were devoted to writing about this issue by the participants. Out of 26 pieces of evidence in participants' writings, in 2 segments, the participants prioritized the mother tongue as the language of instruction in enhancing the understanding and engagement with environmental topics due to a stronger emotional connection with the language and easier comprehension. In 5 segments, the participants declared that they perceived no difference in their experience of learning about environmental topics in English versus their mother tongue. Finally, in 19 segments, they wrote about their different experience of learning a specified content in English as compared to learning it in their mother tongue. They also wrote about how they perceive others reacting to the content presented in foreign languages, more specifically, English. Figure 2 shows how they described their experience of learning the content in English.

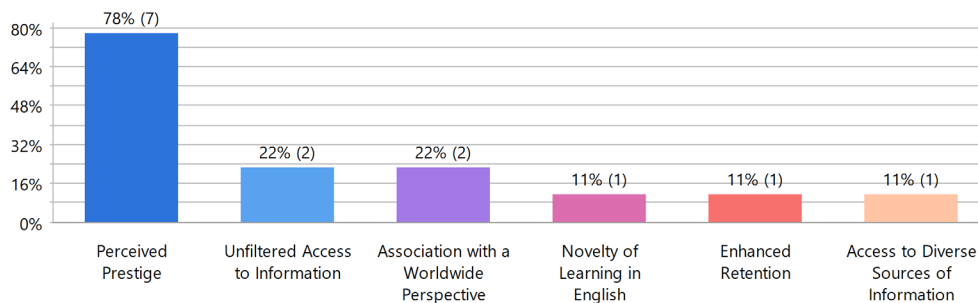


Figure 2. Attributes of English Experience

As shown in Figure 2, the diary entries included six aspects of the participants' perceptions of English, which might make the content more persuasive for them. The most important aspect is the prestige they attach to English. They perceive English to be "scientific" and the information they get in English to be "factual", "authentic", and "knowledge-based". Two other aspects of their perception were unfiltered access to information and association with a worldwide perspective. 22 % of the participants believed that the content they receive in English does not include distortions, omissions, and censorship. Moreover, they mentioned that the content in English as an international language can be associated with a more global perspective of the issue, in this case, environmental issues. This highlights the exigencies of the planet on a worldwide scale. Three other aspects were mentioned by the participants, though they were not frequently raised in the data. One participant referred to the experience of learning English in a content-driven class as a novel experience, which made it more attractive. Another participant believed the content that is presented in English to be more retainable. Finally, access to diverse sources of information in English was a factor mentioned by one participant that would make the content presented in English seem more truthful and genuine. The code matrix browser is given in the appendix to provide code transparency (See the Appendix).

According to these comments made in the diary entries, Iranian students perceive the English experience of learning about environmental topics to be somewhat different from the Persian experience of learning the same content, with the English experience being more effective at least in changing the participants' understanding of the environmental crisis.

5. Discussion

This study investigated the integration of environmental literacy into English language classes and how Iranian students perceive the effect of such integration through studying the participants' diary entries. Furthermore, it explored whether participants felt a difference in their understanding and engagement with environmental topics when the content

is presented in English versus their mother tongue. The results showed that content-driven English sessions on environmental topics could promote environmental awareness and motivation to act environmentally friendly, which are in line with the previously reviewed studies (Ali et al., 2024; Cad et al., 2022; Hauschild et al., 2012; Rusda et al., 2023; Silvhiany et al., 2023). In addition, participants acknowledged the different perception of receiving the content in English compared to their mother tongue, referring to perceived prestige of the English language, unfiltered access to information, and association with a worldwide perspective, among other factors.

With respect to the above-mentioned results, some points can be discussed. As participants wrote about their previous knowledge of environmental topics and the sources of their environmental knowledge, two thought-provoking patterns of discussion of the issue have emerged. One was about how a particular teacher influenced their perception of environmental issues and raised their environmental awareness. As one participant noted that “from the first year of high school in the 10th grade, my view of the environment changed a lot under the influence of the geography teacher at school”. This profound influence of teachers on how students think or act is also confirmed by previous literature. Referring to the indubitable importance of teacher conduct, Asif et al. (2016) stated that “students’ personality reflects the personality of their teachers, and they mold themselves into the image of their teachers”. In the same vein, Wang (2022) ascribes any changes in students’ learning behaviors to changes in teachers’ teaching behaviors, highlighting the importance of teacher influence over other sources of change in students. Therefore, based on participants’ statements, teachers could be a source of inspiration, directing students’ attention to the environment and fostering their development into more environmentally responsible citizens.

Another point was about the limited role of media, more specifically social media, in enhancing students’ environmental awareness despite its powerful tools in convincing people to act in certain ways which have been confirmed by research in recent years in various areas, for example influencing consumer purchase intentions (KV et al., 2021), or affecting vaccine acceptance in health administration (Limaye, 2021). Surprisingly, very few participants referred to the media as a source of their environmental knowledge. Moreover, reflecting on environmental problems, the participants suggested that various types of media could be used to increase people’s awareness regarding environmental issues. Concerning this pattern of discussion, one participant pointed out that:

Media, including movies, images, texts, and music, can have a significant impact on people’s perspective and mentality, and how good it would be if the media and their undeniable power in changing cultures and providing information were used to promote protecting the environment. Most specifically, today most people are connected with this powerful tool.

Based on the results, the environmentally focused English sessions were successful in giving participants useful information about the environment, raising their awareness, and partially increasing their motivation to act environmentally friendly. Yet, based on their writings, some participants seemed to be trapped in the bandwagon fallacy and were disappointed by the community’s conduct regarding the environment. They believe that the majority of people do not respect the environment, and the efforts toward reversing the decline of the planet have a low chance of becoming successful. On the other hand, some other participants admitting the negligence of the majority of people were still hopeful in the power of education and learning in making changes in people’s behavior regarding the environment.

Another important factor to consider regarding how participants perceived the environmentally focused English sessions is the significance they placed on the documentaries, which were played during the sessions in enriching their understanding in relation to environmental issues, as one participant expressed:

Participating in these classes made me look more at the nature around me and try to protect it and research environmental protection. Especially the documentary we saw in class made me realize how important my environment is and how it affects my life, and if I don’t try to preserve it, it will cause me harm.

This is in line with the abundance of research on the benefits of using audiovisual aids in teaching both the language and the specific content of teaching (Hasan et al., 2025; Macwan, 2015; Nicolaou, 2021; Perez, 2022; Rasul, 2011). Macwan (2015) highlights the use of audiovisual aids and, more specifically, documentary films in language learning, declaring that the application of these materials involves students’ complete attention, which would lead to improvements in group discussions and critical thinking skills. The study by Hasan et al. (2025, p. 946) confirms the results of the previously mentioned study regarding the use of audiovisual aids in enhancing critical thinking skills, stating

that these materials “can enrich the learning environment, nurture exploration, experimentation and discovery”. Based on the diary entries written by the participants in this study, it can be concluded that using audiovisual aids, especially documentary films, helps students think critically about the environment and the impact of their behavior on it.

The last point extracted from the diary entries is about the differences perceived by the participants between presenting the material about environmental issues in English versus their mother tongue. The participants referred to various factors, which made the English content more convincing, which were introduced earlier. However, most of the participants also mentioned factors other than language, which could make the content more persuasive. These factors include the presenter’s gender, social status, prestige, tone, appearance, and art of expression. The fact that the presenter provides documents and proofs would also be effective. Therefore, it must not be neglected that a multitude of factors might affect what is being presented and how it is being processed by the audience.

6. Conclusion

This study explored Iranian students’ thoughts, perceptions, and feelings about English content-driven sessions on environmental issues and challenges. The study showed an overall positive attitude toward these classes and led to an improvement in students’ awareness about the environment and motivation to act environmentally responsible. The study also found out differences in terms of students’ willingness to engage in eco-friendly actions when the environmental content is presented in English compared to their previous experiences when the content was presented in their native language.

The findings of this study can inform curriculum developers, syllabus designers, English teachers, researchers in other educational fields, and environmental enthusiasts. The insights from this study can aid curriculum developers and syllabus designers in integrating environmental literacy into English language programs in a way that ensures both linguistic and environmental enriching content. Moreover, teacher training programs should be developed to equip teachers with the knowledge and skills to effectively incorporate environmental themes into their classes. English teachers can use the findings of this study as a resource to make language learning more relevant and engaging through environmental content, which is directly related to students’ lives. Furthermore, the findings of this study may encourage researchers in other educational fields to explore similar interdisciplinary topics and their impact on students’ learning and behavior. Finally, this study can direct environmental enthusiasts’ efforts by emphasizing the potential of education, especially ELT, to promote environmental consciousness and environmentally responsible behavior.

While the findings of this study underscore the positive effects of integrating environmental themes into English language classes on students’ understanding and awareness of environmental issues, it is crucial to acknowledge the limitations that might have influenced the results. The two environmentally focused English sessions were held in two weeks with a limited number of participants. Therefore, the results are not expected to be effective in the long run. Although advanced learners of English were selected as the participants of the study, there are chances that they have not included some of their viewpoints and reflections in the diaries due to insufficiencies in language proficiency. The selection of participants out of this language proficiency level might also introduce biases to the results because their pre-existing interest in learning English and engaging with English content could potentially affect their engagement with environmental themes in the language class. Moreover, studying the diary entries may lead to a level of subjectivity in the findings; however, this qualitative method was selected to probe the participants’ inner thoughts and reflections. Finally, while language learning happened as part of the classroom context, the focus of the design of this study was on the delivery of the environmental content and participants’ reflections on it, marginalizing language teaching and language development because of its primary objective to investigate the integration of environmental themes in English classes and its effect on students’ environmental understanding and awareness.

Future research on integrating environmental themes into English language classes can explore the longitudinal impact of environmentally focused English sessions on students’ awareness and behavior toward the environment. Moreover, comparative studies can be done in relation to participants’ gender, age range, and level of English proficiency. In this study, teacher influence was shown to be very important in shaping students’ mindset regarding the environment. Therefore, it is informative to investigate teachers’ perspectives on integrating environmental themes into English language classes. Finally, quantitative and experimental studies can be pursued to bring objectivity to the findings of studies with regard to the integration of environmental themes into English language classes.

Information on Informed Consent or any Data Privacy Statements

A consent form was provided to the participants prior to the study, which offered a brief description of the study and its procedures, emphasizing the confidentiality and anonymity of the data and that their participation was completely voluntary.

Author Contributions

Both authors equally contributed to the work and approved the final version of the manuscript.

Conflict of Interest

The authors declare no conflict of interest.

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Appendix

Code Matrix Browser

	P. 1	P. 2	P. 3	P. 4	P. 5	P. 6	P. 7	P. 8	P. 9	P. 10	P. 11	P. 12
Perceived Differences in Language of Instruction > No Perceived Difference between English and Mother Tongue	0	0	1	1	0	1	1	1	0	0	0	0
Perceived Differences in Language of Instruction > English Experience > Unfiltered Access to Information	0	0	0	1	0	0	0	0	0	2	0	0
Perceived Differences in Language of Instruction > English Experience > Novelty of Learning in English	0	1	0	0	0	0	0	0	0	0	0	0
Perceived Differences in Language of Instruction > English Experience > Enhanced Retention	1	0	0	0	0	0	0	0	0	0	0	0
Perceived Differences in Language of Instruction > English Experience > Access to Diverse Sources of Information	1	0	0	0	0	0	0	0	0	0	0	0
Perceived Differences in Language of Instruction > English Experience > Association with a Worldwide Perspective	0	1	0	0	0	1	0	0	0	0	0	0
Perceived Differences in Language of Instruction > English Experience > Perceived Prestige	0	2	0	0	1	1	2	0	0	3	1	1
Perceived Differences in Language of Instruction > Mother Tongue Experience > Stronger Emotional Connection	0	1	0	0	0	0	0	0	0	0	0	0
Perceived Differences in Language of Instruction > Mother Tongue Experience > Easier Comprehension	0	0	0	0	1	0	0	0	0	0	0	0

General Reflections	3	8	3	9	3	5	4	8	2	6	0	8
Attitudes toward Environmentally-Focused English Sessions > Positive Attitudes > Enhanced Learning Experience	1	1	0	0	0	0	1	0	0	0	1	0
Attitudes toward Environmentally-Focused English Sessions > Positive Attitudes > Motivation to Act	1	1	1	1	3	2	0	0	2	0	1	3
Attitudes toward Environmentally-Focused English Sessions > Positive Attitudes > Increased Awareness	2	3	1	3	2	2	1	0	1	1	2	5
Attitudes toward Environmentally-Focused English Sessions > Positive Attitudes > Engagement and Interest	2	1	0	1	2	1	1	1	2	1	4	1
Introductory Narratives	2	0	0	1	0	1	1	2	0	1	0	1
Previous Knowledge of Environmental Topics > Media Exposure	0	0	0	1	1	0	0	0	0	0	1	0
Previous Knowledge of Environmental Topics > Family Influence	1	0	0	1	1	0	0	0	0	1	0	0
Previous Knowledge of Environmental Topics > School-Based Learning > Science Curriculum	1	0	0	1	0	0	1	0	0	0	1	1
Previous Knowledge of Environmental Topics > School-Based Learning > School Projects and Activities	1	0	0	0	0	0	0	0	0	0	0	1
Previous Knowledge of Environmental Topics > School-Based Learning > Teacher Influence	0	0	1	0	0	0	0	1	0	1	0	1
Summary of the Session	1	3	2	1	1	0	3	1	2	1	4	0



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