ECO-LITERATURE IN THE EFL/ESL CLASSROOM: A PATHWAY TO ENVIRONMENTAL AWARENESS AND LANGUAGE LEARNING USING AI TECHNOLOGIES

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Abstract
In his essay "Literature and Ecology", William Rueckert used the word Eco-literature. The growing ecological crisis calls for immediate awareness among the present and upcoming generations. As literature reflects one's life, society, nature and environment, a unique range of genres is regarded as Eco-literature as it consists of poetry, fiction, non-fiction, etc., conveying moral and ethical consciousness among the readers. Imparting this knowledge in the upcoming generation is easy if expressed through the growing student community. Thus, Eco-literature as a part of the curriculum at the school and university levels significantly impacts the ecological responsibility of the student community. Through an Experiential Classroom Intervention methodology among grade IX learners, the study scrutinises the effectiveness of AI-assisted ESL and EFL classrooms in promoting LSRW skills. In this contemporary era, language acquisition can be done in many ways, using digital technology and AI. Traditional methodologies, like grammar-translation, drill, and repetition, have become outdated. Methods like Technology-Enhanced Language Learning (TELL), Content and Language Integrated Learning (CLIL), and Multimodal and Arts-based Learning have the required impact on contemporary language learners. As the inventions take place, the influence of AI has impacted the pedagogical methodologies in ESL and EFL classrooms. Such potential technology can be used to teach eco-literature to contemporary 21st-century students. The findings also suggest that AI-supported eco-literature serves the educational goals of language development and environmental consciousness.
Keywords: Eco-literature, Language Acquisition, ESL, EFL, Environment, AI Technology

INTRODUCTION

Eco-literature emphasises the relationship between humans and nature, thus focusing on ecological themes. Applying this moral study in ESL and EFL classrooms promotes ethical consideration of living and environmental responsibility among the students. This paper further investigates the role of AI tools in promoting eco-literature while enhancing children's language proficiency and ecological consciousness. Therefore, the interdisciplinary approach of pedagogy, educational technology, language acquisition and literature growth can be seen. An Experiential Classroom Intervention methodology was

used with 45 students from grade IX to check the practical application of AI tools in promoting eco-literature while also concentrating on language proficiency. The result supports the aim that Eco-literature, through the help of AI, achieves a dual purpose of language acquisition and environmental responsibility.

This dual integration develops cognitive seeding about ecological awareness and fosters global citizenship of empathy and thoughtfulness towards the environment and nature. As AI is inevitable in this contemporary era, the interdisciplinary approach of pedagogy in maintaining eco-conscious language acquisition will play a remarkable role in sculpting future learners and curricula.

LITERATURE REVIEW

Literature has always been a call to humans about their mistakes against nature and its impact on the future. Eco-criticism in literature (Eco-literature) started with the effects of environmental movements during the 1960s and 1970s. Amitav Ghosh has warned readers about the rising water levels due to the climate crisis. (D'Cunha, 2020). Therefore, eco-criticism of literature will lead to rural and urban ecology and its criticism, thereby leading to Eco-literature. Stories like "The Spinning and Weaving of Yarns around the Fire" emphasise empathy and emotional connection between children and nature while eliminating ecophobia for their age. Therefore, imaginative storytelling is essential to inculcate an ecological awareness among the children. However, limited exposure is given to these environmental topics compared to social issues. (Hindhede, 2024).

In old English literature, Eco-literature was not the central focus of the plot, but a part of the web of human and non-human interaction. Ecology was combined with theological awareness as the same entity. The nature theme was just a backdrop and not an active part of the plot's theme. As time passes, the portrayal of the ecosystem has shifted from human versus non-human interaction to human flaws, culpability and powerlessness, that is, the destruction of the ecosystem under anthropogenic pressure. (Abigail, 2022) In the novels of Arundhati Roy, nature and human life are emphasised as being a single entity. (In works like The God of Small Things and The Ministry of Utmost Happiness). The writer has emphasised themes like the growing destruction of biodiversity, corporate globalisation, eco-resistance, post-colonial environmental feminism, personal and ecological identity, etc. (Ranith et.al, 2023)

In the works of Umberto Eco, environmental ethics and eco-politics are the central themes in his works like The Name of the Rose and The Prague Cemetery, which showcase the hegemonic system of power, market, politics and religion's influence on the ecosystem and its degradation. His concept of 'Ur-Fascism' consists of a set of ideological traits in the socio-political ecosystem, which can extend to cultural environments. He says that this fascist ideology rejects enlightenment thinking in this modernist context and ultimately leads to a 'closed system' where change is resisted. (Malendowicz, 2022) Similarly, concepts like cultural ecology and transcendentalist values are found in the works of Emerson and Whitman, that is, perceiving nature as a divine force and human superiority can never be overstepped. Their works' central idea is anthropomorphic rather than anthropocentric. In Emerson's poem "Hamatreya", the Earth is personified and speaks to humans, assuring that every part of the land is reclaimed and humans do not have authority over it. Whitman's "The Splendid, Silent Sun" differentiates the appreciation made for nature by rural and urban life. Therefore, such texts from the literary figures are seen as 'Sustainable textualities'. Because they inspire self-reflection, cultural renewal and eco-consciousness. (Mülazımoğlu, 2021) Eco-literature is not limited to themes, and the tone varies across different regions,

and the perception is influenced by the locality of the eco-texts they read. The test was conducted with the eco-texts extracted from 'Refuge' by Terry Tempest Williams and 'Ceremony' by Leslie Marmon Silko to ensure environmental and socio-political relevance. The students perceived the plot influenced and altered based on gender, socio-economic background, and urban vs. rural upbringing. (Nualsiri, 2017)

With these abundant eco-texts, AI integration in education further bridges the gap of redundant work for teachers. In a classroom, the interpretation part of a lesson is always assisted by a teacher or manual representation by researchers. Implementing AI models like GPT-4V gives easy access to the analysis and interpretive part of the study. It allows the teachers and researchers to analyse multimodal data without requiring machine learning expertise. Because the AI can easily access images and texts, provide instant feedback, classroom interactions, etc. Thus, AI can support and bring more pedagogical reflection and open new frontiers for dynamic and instructional effectiveness. (Lee et.al, 2024)

In another study, the researchers discuss the four foundational pillars of AI Literacy across all levels of education while emphasising the scope and technical dimensions, ethical AI usage and future implications of AI. For example, KG students can be given fun AI Activities, and higher education students can be given a deep dive into professional integrity, generative AI use, etc. As there is an urgent need to teach people about AI responsibility, understanding the societal consequences is also critically examined. Moreover, along with the existing skills, using AI is a necessary and inevitable current trend. (Tadimalla.et.al, 2024)

THEORETICAL FRAMEWORK

a. Eco-criticism and Eco-literature

Eco-criticism is an interdisciplinary framework for literature that evokes awareness of emerging global concerns. Scholars like Cheryll Glotfelty and Lawrence Buell suggest that literature is the strongest tool in shaping environmental awareness in people's minds. Environmental themes like disasters, ethical imperatives, climate change, ecological justice, species extinction, etc., often influence eco-literature.

b. Language acquisition in ESL and EFL classrooms.

In general, second language acquisition (SLA) aims at communication competency, socio-cultural influence, and meaningful content, aiming for language enrichment. Eco-literature provides awareness and 'ecological consciousness' while improving vocabulary development, reading comprehension and critical thinking.

c. AI in Language Acquisition

AI technologies like machine learning, language processing and adaptive learning platforms like Chatgpt, Grammarly and AI-powered reading apps help students self-learn while promoting personalisation, reducing language errors and providing feedback, ultimately accelerating student autonomy and motivation.

d. Pedagogical Rationale

Eco-literature creates awareness of global issues among the students while contextualising language use in socially relevant situations. It creates emotional engagement, cross-cultural dialogue and critical discourse. Authors like Amitav Ghosh, Barbara Kingsolver, Rachel Carson, etc, offer ecological literary works that can lead to a thematic understanding of real-world environmental degradation.

e. Unified Multimodal engagement

Eco-literature is adapted into multimedia forms like audio, videos, infographics, podcasts, etc. These are traditional forms of aids. Currently, we use AI, which comprises all the media together in one form, reflecting ecological themes and ethical consciousness.

PRACTICAL IMPLEMENTATION REVIEW

A Study examined the impact of AI-powered learning platforms for school and college students in Karnataka.

a. Sakshi AI is an AI tutoring system which prepares students for engineering coding education. It uses Socratic tutoring methods and gives comprehensive feedback to learners. This system is ready to be adopted in multiple institutions in India due to its scalability and effectiveness in enhancing student participation and respective outcomes of the learning.

b. AI Teaching assistance has been developed by the Odisha School of Engineering and named 'Alice'. This humanoid robot works for about 6 hours a day and answers the students' questions. It is a voice-activated device that answers various doubts on science-related topics using Chatgpt as its database. This is an excellent example of upcoming technological advancements that aid educators and students in learning.

c. OMOTEC (On My Technology) is a Mumbai-based EdTech firm recognised as a great success by integrating AI and STEM education. It has won many awards, including the Microsoft Imagine Cup for creating non-hands-on learning and integrating AI into students' curriculum.

d. Willowdown Primary School, Somerset, England, uses AI-generated images for students' descriptive writing. This visual representation promotes discussion and creativity for students' engagement in the writing process. This helps the students in AI-enhanced descriptive writing, educational impact, broader educational context, etc. This approach made the traditional pedagogical framework more interactive and brainstorming.

RESEARCH GAP

Although the previous studies focus on Eco-literature in fostering environmental awareness, exploring pedagogical strategies in ESL and EFL contexts remains unexplored. As AI focuses on grammar correction, vocabulary acquisition or general LSRW skills, the previous studies rarely interlink AI with Eco-literature. Making the students aware of the environment while imparting language acquisition with the help of AI is discussed in this paper. The existing pedagogical framework focuses mainly on linguistic proficiency and has a limited focus on ecological thinking, eco-ethical reasoning and empathy towards nature. Additionally, existing methods like CLIL and TELL focus on gaining traction, and minimal attempts or case studies have been made on eco-themed applications in developing LSRW skills.

OBJECTIVE OF THE STUDY

This study further aims to:

1. Examine the scope of pedagogical implications in Eco-literature. Also, engaging students with real-world practical application of the learnt information.
2. Evaluating the impact of AI-assisted classrooms in improving learners' linguistic performance while achieving environmental awareness.
3. Comparing the outcomes of ESL and EFL classrooms with and without the assistance of AI, respectively.
4. Creating an interdisciplinary framework on literature, technology and pedagogy.

METHOD

The sample study was conducted to study the impact of AI-assisted classrooms in teaching Eco-literature among 45 students in grade 9. This study took place for 4 weeks in ESL and EFL classrooms. The students from EFL and ESL classrooms are divided into two categories for the tests. One group is taught with AI-assisted resources on eco-texts, and the other is without AI-assisted resources. The students are tested for improved LSRW skills before and after using AI tools. The required assistance from AI resources enhances each skill.

a. A pre-test was conducted for the students on listening, writing, reading, and speaking. The scores of students from ESL and EFL classrooms are recorded in Table 6 along with post-test scores.

b. Participants:

Table 1

Classroom	Group A (with AI Tools)	Group B (without AI Tools)	Total
EFL	12	11	23
ESL	11	11	22
Total	**23**	**22**	**45**

c. Activity breakdown: (weekly basis)

Week 1: Reading and Writing Skills (summary writing)

Table 2

Group	Activity Using AI	Activity Without AI
EFL – Group A	Use AI (e.g., ChatGPT) to generate summaries, check the grammar of student-written summaries, and build vocabulary from eco-texts.	Manual summary writing, peer-checking
EFL – Group B	Same as above	Same as above
ESL – Group A	AI-assisted annotation, highlighting eco-terms with definition pop-ups	Manual annotation and teacher guidance
ESL – Group B	Same as above	Same as above

For reading eco-texts, the poem "The Snake Trying" talks about human fear of wild creatures, meanwhile promoting respect for all life forms. Students already know the poem as their English teacher has already taught it. They attempted to write a summary and got it corrected using AI tools. To analyse the poetic devices, the AI tools helped the students by annotating the poem for each poetic device. Whereas in the activities without AI tools, the students were assisted by the teacher for correction and annotations

Week 2: Pronunciation Practice of Eco Terms

Table 3

Group	Activity Using AI	Activity Without AI
EFL – Group A	Use tools like Google Text-to-Speech and ELSA Speak to practice eco-terminology pronunciation.	Teacher-modelled pronunciation
EFL – Group B	Same as above	Same as above
ESL – Group A	AI pronunciation trainers with a repeat-feedback loop	Peer reading and correction
ESL – Group B	Same as above	Same as above

During this week, students were taught the prose genre. For this, the researchers selected "Water – The Elixir of Life" by C.V. Raman, discussing the significance of water for living beings and the need for its conservation. This lesson creates awareness about deforestation and improper water usage. Some of the words from this lesson, like Elixir, Essential, equilibrium, Phenomenon, reservoirs, etc., require a pronunciation guide, which was provided throughout this week. After the session, the students' pronunciation was tested by peer interaction and oral tests.

Week 3: Listening Skills Using Eco-texts.

Table 4

Group	Activity using AI	Activity Without AI
EFL – Group A	Use podcasts, audiobooks, and AI-generated summaries	Use teacher-narrated stories and group listening
EFL – Group B	Same as above	Same as above
ESL – Group A	Interactive AI listening Quizzes	Recorded readings + comprehension questions
ESL – Group B	Same as above	Same as above

Spotify podcasts on environmental concerns have been given to the children this week. 'A Sustainable Mind' was given to the students, and it only focused on the critical part of the ecosystem or the core idea. The children listened to the podcasts carefully, and AI tools quizzed them at different levels of understanding. (Easy and difficult levels).

Week 4: Evaluation

Table 5

Skill Area	Tools Used (language)	Tools (Eco-literature)

Reading & Writing	Rubrics, Grammarly (AI group), Manual feedback (non-AI group)	Reflection of the student (oral)
Pronunciation	AI-based scoring tools (AI group), phonetic rubrics (non-AI)	Questionnaire (quiz on the lesson)
Listening	Online quizzes (AI group), paper-based (non-AI)	Group Discussion

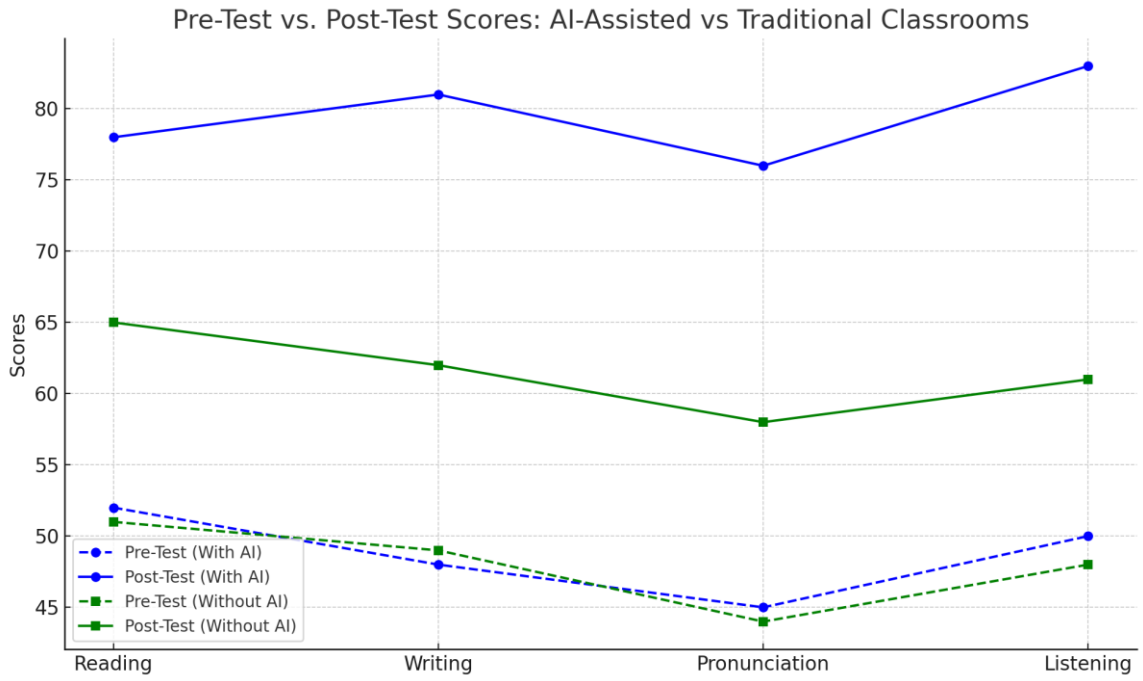
The activity evaluation has been done immediately after the children have completed it each week.

Results: Pre-test vs. Post-test (Total score - 100)

Table 6

Classroom	Group	Skill Area	Pre-test Avg	Post-test Avg	% Improvement
EFL	A (AI)	Reading Comprehension	52	78	**+50%**
		Summary Writing	48	81	**+68.75%**
		Pronunciation Accuracy	45	76	**+68.9%**
		Listening Comprehension	50	83	**+66%**
ESL	B (No AI)	Reading Comprehension	51	65	+27.5%
		Summary Writing	49	62	+26.5%
		Pronunciation Accuracy	44	58	+31.8%
		Listening Comprehension	48	61	+27.1%

A comparison of scores before and after conducting the pilot study



Graph 1 shows the pre-test and post-test scores in a comparative analysis.

Key observation: Group A (AI-assisted) showed higher improvements across all skills, especially in writing and pronunciation, in which AI support is almost double the progress compared to the non-AI group.

RESULTS

Week 1 - During the first week, the children in EFL and ESL classrooms were introduced to the new AI-assisted environment. The students were given Reading Comprehension and Writing proficiency with AI assistance in EFL and ESL classrooms. The students scored 78 points, higher than the pre-test, 52. The improvement can be seen as half more than the previous test. When AI assisted in revising the poem "The Snake Trying", it became easy for the students as the AI generated a summary of the poem in the desired way. (Paragraph, bullet points, mind maps and graphic representation). Also, the AI tools efficiently pointed out the poetic devices for deeper analysis. Additionally, the AI gave pop-ups filled with glossaries to help readers read difficult words immediately. The students entered their doubts clearly in the prompts, and they were able to clear out the doubts they had. This activity was completed in an hour.

The second division, EFL and ESL classrooms, were assisted by the summary prepared by the teacher. Once the children had revised the poem, they proceeded to write their summary, replicating the sentences used by the teacher. The peers did the correction and it consumed the performance time. The time taken for correction is more than the time to write in an hour. When the students were doubtful, they asked the teachers and the teacher sourced some books for complicated words. Meanwhile, some students lost track of revising the summary while waiting for the teacher to clear up their doubts. During the post-test, the students scored 65 points, which is less than AI-assisted classrooms but more than the pre-test scores. (27% improvement)

Students were asked to represent their views on the poem at the end of every session. Some students shared their personal experiences which shaped their opinions on environmental issues and respect for other living beings.

Week: 2 – Pronunciation and vocabulary practice

After week one, the students were given tasks on pronunciation of terminologies of Eco-literature. To detect the preferred accent (British Accent) the student used Google Text-to-Speech and ELSA Speak to check the pronunciation and practice with the repetition method. In the selected prose, words like elixir, condensation, infiltration, precipitation, etc., Students liked the voice of the AI and the accent which is entirely different from the Indian English accent. Once they listened to the pronunciation, they repeated the pronunciation within their peer groups. They also checked the pronunciation again in the Google Pronunciation Guide. These classrooms scored 81 in post-test which is higher than 48 in pre-test. (69% of improvement)

In the classrooms without AI, students were guided by Teacher-modelled pronunciation, and the corrections in pronunciation were modified by peer reading. This method was time-consuming, with limited exploration and uneven student participation. This classroom scored 62 points, which is higher than 49 in the pre-test, but less than the improvement in AI-assisted classrooms. (27% of improvement)

Week: 3 – Listening Skills Using Eco-texts

A Sustainable Mind is a podcast released on Spotify. The entire week was spent listening to the podcast. After every session, AI generated a summary of that episode. During the start of the week, children reported that it was difficult for them to catch the speed of the speaker. On day 3, they got used to it and started listening to the information about the environment, nature and global warming—the AI-generated comprehension questions within no time to check the understanding and listening skills of the students.

In a traditional classroom, the teacher narrates the newspaper's environmental awareness information. The children listened to it for 40 minutes. Students felt monotonous and lost track of hearing at times. Still, the teacher managed to get the students back to attention and asked questions to check their comprehension. All the questions from the list were displayed on the projector, and students selected the answers individually.

This week, the students were exposed to different environmentalists and current environmental topics. They discussed the further implications and precautions that a student should follow inside and outside school.

Week–4 Evaluations

This week, all the pre-test and post-test scores were compared and the percentage of improvement was calculated. Table 6 shows that the EFL and ESL classrooms with and without AI have shown improvement from the pre-test, and the scores differ at the level of enrichment of the students.

DISCUSSION

The sampling observation conducted in ESL and EFL classrooms offers an insight into the impact of AI-assisted pedagogy with integrating Eco-literature in improving language proficiency. The respective study differentiates the AI-assisted classrooms and the pedagogical advantages of using AI with traditional classrooms.

1. **Enhanced engagement and autonomy**

Students were allowed to generate summaries and analyses of the selected poem and prose through AI like ChatGPT. They also checked summaries and listening comprehension through Grammarly and ELSA or Google-speaking assistants. This helped the students get personalised feedback, encouraged exploration and cleared their doubts instantly without hesitation, as commonly happens in traditional classrooms. AI-generated summaries, grammar checks, pronunciation help, and glossary guides helped students understand the dynamics of our environment and ecosystem.

2. Improved LSRW Skills with AI Support

The AI classrooms well-impacted the foundational skills – Listening, speaking (pronunciation), Reading and Writing – and showed significant improvement. In an AI-assisted classroom, reading comprehension improved by 50%, writing by 68.75% and pronunciation by 68.9%. This is such a huge difference compared to the classrooms without AI, as the most significant improvement is up to 31.8%. These scores confirm that AI facilitates more efficient, effective and individualised learning, enabling students to progress immediately after relevant and quick feedback from their AI assistants.

3. Eco-literature and environmental awareness

The lesson plan for each week, like the prose "Water-The Elixir of Life" and the poem "The Snake Trying", not only aims at language acquisition but also introduces the students to real-world environmental themes. The students' discussion helped them brainstorm their ideas on conservation, empathy towards nature and sustainable living. Thus, it fulfils the study's primary goal that is, creating ecological awareness. Podcasts like A Sustainable Mind and the respective overview generated by AI improved comprehension among the students to further improve the understanding of language usage and environmental discourse.

4. Time-Efficiency and Teacher Support

The notable advantage of the integration is time efficiency. The corrections and feedback after every session throughout the week were made easily by the AI resources within no time. In contrast, the traditional classrooms followed traditional methods like peer correction, and teacher-led explanations were time-consuming and sometimes delayed. This observation assures that AI resources can be a complementary guidance system for teachers and educators by reducing redundant work and helping focus on the next level of tasks. This way, the teachers continuously note the students' progress, which leads to emotional engagement.

5. Notable challenges

Along with the benefits, the challenges were also notable:

- Initially, the students found it challenging to adapt to the AI usage and AI-generated voices, as it prompted a definite accent.
- It was observed that not all the students were already familiar with digital tools. Some were familiar with AI tools and grade levelsd the needed summaries and corrections.
- Thus, the researchers found a learning curve in the AI-assisted classrooms.
- Peer reading and correction created inconsistencies in feedback quality. This led to a concern about inaccuracy and participation in the previous classes of the traditional classrooms.

6. Pedagogical approach

In this contemporary era where AI and other advancing technologies accelerate everything, education is no exception. Integrating AI in pedagogy will bring unimaginable advancements to the field of education. As far as the study is concerned, combining Eco-literature with AI tools offers a holistic approach aimed at dual goals: linguistic and environmental awareness. This is a massive step towards a progressive teaching strategy for 21st-century classrooms, especially in multicultural contexts.

STUDENT EMOTIONAL ENGAGEMENT – ECOLOGICAL IDENTITY

A significant impact of the study, integrating eco-literature in EFL and ESL classrooms, is that the students emotionally and thoughtfully connect themselves to environmental themes. During the post-sessions after activities like the reflective sessions and discussions, students volunteered to share their personal experiences related to nature and ecological loss. Some students also shared their admiration for specific species or places. This emotional engagement of the students after the intervention in the classroom is the 'ecological identity'. Ecological identity is the students' self-perception of seeing themselves as part of the environment. The selected literary texts are especially great eco-texts for emotional literacy. The idea not only fostered the vocabulary and language but also fostered ecological empathy internally. In the AI-assisted and traditional context of classrooms, the learners reflected the attitude towards nature called ‘eco-empathy’. Moreover, using AI technology helped students retrieve the content as per their needs and level of understanding. Adding to that, eco-literature not only develops ecological awareness or emotional development but also leads to identity formation, which ultimately fulfils the requirement of holistic education.

ETHICAL CONSIDERATIONS IN ECO-LITERATURE PEDAGOGY

Integrating AI in eco-literature created engagement and participation, although it must be handled cautiously, as these AI tools have inherent biases and ethical concerns. AI models like ChatGPT are created with predominantly centred datasets and Westernised worldviews. Therefore, the eco-text generated by AI favours Anglo-American environmental perspectives, non-Western ecological narratives, marginalising indigenous peoples, etc. For example, when students generated summaries and text analysis in AI, it significantly pointed out the problem of climate change as a reflection of North America’s environment. This neglects region-specific issues in India, like water scarcity or deforestation in Southeast Asia. This content bias can influence students' reflection on their ecological identity and eco-empathy, which is also altered by cultural hierarchies.

Other ethical concerns include:

1. AI tools can sometimes misinterpret the prompt and facts and misquote the authors, but produce a sound result with inaccuracy.
2. Over-reliance on AI for interpretation and analysis may inhibit critical thinking, concealing the originality of thoughts.
3. Some AI platforms collect user inputs and raise the issues of data security and consent, particularly with minors.

To mitigate these issues, it is crucial to:

1. Ensure teacher-mediated AI use where educators guide how AI tools should be used and critically analyse their outputs.
2. Ensure students cross-check the AI-generated answers with authentic literary websites or scholarly resources.
3. Ensure that the localised prompt highlights environmental issues concerning the student's local community.

4. Ensure that a questionnaire or exercise is included to help students analyse the authenticity of AI-generated output.

By these ethical dimensions in integrating AI in eco-literature, educators and teachers should use AI as a supportive tool and not as a primary or dominant tool. This will foster balanced, inclusive and engaged EFL and ESL classrooms.

RESEARCH SCOPE

1. Curriculum Development

This research supports the integration of Eco-literature in EFL/ESL contexts and curricula. This will lead to interdisciplinary inventions in technology, literature, pedagogy and ELT to promote linguistic proficiency and ecological literacy. AI can be used to develop a personalised learning experience, time efficiency, dual learning (language and ethics), enhanced skill acquisition, and promote critical and digital literacy.

2. Teacher Training Programs

To fit well in the advancing school environment, the teacher trainees must be given enough exposure and training in effectively utilising AI tools while maintaining safety and ethical technology usage. This will help the teachers efficiently complete their tasks and improve the students' performance. Redundant tasks like correcting the notebooks, test papers, sending worksheets by own preparations, facilitating the entire class, etc, will be reduced and the teacher can focus on more activities simultaneously.

3. Scalable Models for AI Integration at all levels

This pedagogical approach can be applied to all grade levels, which will enable the schools to have quality education, especially in under-resourced ones. This ensured consistency, efficiency and adaptability across various organisational hierarchies.

4. Policy Relevance

This study suggests the need for educational reforms that suggest the integration of AI and current thematic content like Eco-literature with the aim of language acquisition at all levels of grade. The core of the study supports NEP 2020's policies like multilingualism and language development, experiential learning and interdisciplinary learning, etc. Also, it promotes environmental literacy in schools, such as sustainability and ecological responsibility, climate literacy, etc.

INCLUSIVITY AND DIFFERENTIATED INSTRUCTION

The significant advancement in the discussed integration of AI is that it supports inclusivity and differentiated instruction, which is core to equitable education. ESL and EFL classrooms consist of diverse learners with different language proficiencies, cognitive abilities and digital access in their homes. AI tools usage in schools and universities can help bridge this gap by providing personalisation to the needs and language proficiency of the children.

a. A support system: Students with lower comprehension capacity and bloomers can use AI tools to get simplified answers that suit their comprehension level. Also, AI can provide vocabulary support, glossaries, and real-time examples, as well as scaffolded question-answer sessions at an easy level. Translation of content, which makes eco-texts easily available, etc, can foster inclusivity.
b. Learning for Gifted Students: AI can create extended learning opportunities for gifted or advanced learners. It can give extended analysis and interpretation of literary texts, generate interdisciplinary analysis through the lens of science, ethics

and activities, debate environmental policies through research summaries by AI and many others.

INTEGRATION WITH NATIONAL EDUCATIONAL POLICY (NEP) 2020

In future, AI-assisted Eco-literature as a NEP model can serve as a new and contemporary pedagogical model in ESL and EFL classrooms. This can foster:

1. The promotion of multilingual and contextual learning with the help of AI tools that simplify, analyse, summarise, and translate the localised eco-texts.
2. The implementation of personalisation in one's learning by language proficiency and engagement leads to individual attention.
3. Project-based and interdisciplinary education in environmental studies, technology and blended literature.
4. The awareness of digital literacy thus leads to global citizenship with proper media awareness.

All these crucial curriculum designs can lead to ethically aware citizens with contemporary relevance in every field. Moreover, this model should be implemented in teacher training programmes as discussed. Also, NEP 2020 seeks an education system that fosters holistic development and interdisciplinary thinking. In support of this, the study also provides findings closely related to the objectives of NEP 2020.

CONCLUSION

This study showcases the potential advancement in integrating language acquisition and the development of ethical and ecological awareness with the help of AI assistance in the context of EFL and ESL classrooms. The results from the experiential classroom implementation in the selected EFL and ESL classrooms provided insights into the impact of AI-assisted pedagogy. The observation also showed significant improvement in their language skills. Moreover, the pedagogical model enhances LSRW proficiency and adds to the input on creating ecological awareness and ethical responsibility among the future generation of good citizens. Engaging the students with environmental texts on real-world issues makes them concerned, empathetic, and thoughtful, making them global citizens who are a responsible part of the ecosystem. Incorporating AI resources like Grammarly, ChatGPT and speech recognition applications improves personalisation and accelerates learning by bridging the gap between traditional and contemporary advanced classrooms.

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