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Eco-linguistics in EFL materials design

Sipho T. Mokoena
23213578@myuwc.ac.za

University of the Western Cape, South Africa.

Abstract

This study investigates how South African undergraduate EFL students perceive the integration of ecolinguistics principles in their learning materials, with a focus on environmental awareness, sustainability, consumerist values, and representations of nature. Data were collected from 40 English majors at a public university through a structured questionnaire combining Likert-scale items and open-ended responses, analysed using descriptive statistics and qualitative content analysis. The findings show that students perceived their materials as offering moderate ecological awareness ($M = 3.18$) and encouraging sustainable behaviour to a limited extent ($M = 3.23$), while the strongest agreement was with positive representation of nature ($M = 3.30$). Consumerist values were noted but not dominant ($M = 2.83$). Perceptions about the adequacy of ecological content were highly divided, with nearly half of participants believing that materials were lacking in ecological themes. These results highlight a tension between ecological visibility and absence in EFL resources, suggesting that current materials provide fragmented and sometimes superficial engagement with environmental issues. The study contributes to ecolinguistics and Global Englishes scholarship by showing how learners critically evaluate ideological dimensions of textbooks, underscoring the need for locally relevant, ecologically grounded, and globally oriented EFL materials that integrate sustainability with linguistic development.



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Introduction

In recent years, the teaching and learning of English as a foreign language (EFL) have been increasingly scrutinised through the lens of ecolinguistics, a discipline concerned with the interplay between language, environment, and ideology (Fill & Mühlhäusler, 2018). While ecolinguistics initially emerged from concerns about how language reflects and shapes ecological awareness, its relevance has extended into educational contexts, particularly the design of teaching materials. The integration of environmental issues, sustainability, and ecological ideologies in EFL materials is no longer peripheral; it has now become central in preparing learners to tackle worldwide problems of climate change, consumerism, and cross-cultural differences (Widodo, 2022). In so far as language learning is international, it is now more critical than ever to take notice not only of how materials build linguistic proficiency, but also of how materials build ecological sensitivity and responsibility. Traditional EFL teaching, however, has long been subject to native-speakerism, a privileged Anglophone ideology of English as the ultimate norm (Holliday, 2006; Kiczkowiak & Lowe, 2021). In global education, books and teachers frequently implicitly or openly reinforce the view that learners must reproduce “native” accents, vocabularies, and cultural references. This emphasis, while strong, too often drains learners of their native identity and linguistic capital (Choi, 2016). In turn, it disregards pressing global realities, particularly such as concern ecological cognisance and environmental sustainability. In countries across Asia and parts of the Middle East, in which English is typically learned as a school-subject or as a professional opportunity, this gap between global environmental issues and English classroom materials is particularly pronounced (Fang & Widodo, 2019). Pupils frequently lament that their books either don’t include environmental issues at all or, instead, reinforce consumerist discourses that underlie unsustainable agendas (Gray, 2010).

The current work places itself at the intersection of ecolinguistics and EFL materials design, investigating how learners perceive whether materials inspire ecological awareness, reinforce/discourage consumerist beliefs, and represent nature and sustainability. In recourse to principles of ecolinguistics, the current research understands that materials in learning contexts are by no means ideologically neutral. That is, materials are educational artefacts that embed worldviews, both guiding what students read about English as much as what students read about the

world in terms of ecological concerns (Widodo, 2016). Through new evidence in quasi-experimental interventions in India, Usama and Tarai (2024) have demonstrated that integration of Sustainable Development Goals (SDGs) in English curricula could substantially enhance linguistic proficiency as much as awareness of sustainability. Previous findings empirically support revisiting materials in English instruction as sites of meeting of ecological awareness and language learning. Beyond instruction, the global sociolinguistic context also indicates a materials-based need that is Eco linguistically oriented. The Global Englishes (GE) theory highlights that English is no longer confined to so-called milieus of "native speakers" and is uttered by multilingual speakers across a vast scope of geopolitical contexts (Galloway, 2017; Rose & Galloway, 2019). In such contexts, communicative competency includes being in a position to interact across a vast variety of English varieties while dealing with differences of a cultural and ideological nature, such as environmental discourses (Baker & Ishikawa, 2021). The integration of ecolinguistics principles in materials development follows GE's call to move away from fixed models of English in a more critical, pluralistic, and contextual direction (Mahboob, 2018). Ecological themes, in this case, then allow teachers and learners to oppose homogenising consumer discourses and monistic discourses of native-speakerism, while instead valorising diversities of linguistics and ecologies as being at, rather than apart from, the heart of education. Despite such strong theoretical and applied imperatives, research into ecolinguistics in EFL materials remains scarce. Previous research had preferred to tackle either ideological critique of native-speakerism (Holliday, 2006; Kumaravadivelu, 2006) or more overarching conceptual differences in GE (Fang & Widodo, 2019; Pennycook, 2021). Very few have adopted a scientifically sound approach to investigating how materials in everyday classrooms apply ecolinguistics principles, particularly in regards to learners' perceptions themselves. While Widodo (2022) has contributed a critical ecological design model of GE-oriented materials, and Krismayani et al. (2021) conducted a study of Business English course application of ecolinguistics principles, few empirical studies in print record learners' perceptions of classroom materials. The authors address such a divide by adopting a qualitative content analysis supported by descriptive statistics to analyse students' responses to Eco linguistically oriented questionnaire items.

The significance of this study lies in its potential to contribute both theoretically and practically. Theoretically, it extends the application of ecolinguistics to the field of EFL material evaluation, demonstrating how ecolinguistics principles can be operationalised through learners' perceptions. Practically, the findings can inform curriculum developers, textbook writers, and EFL practitioners who seek to design materials that not only support language learning but also engage learners in ecological thinking. In an era where English is a key medium for global academic, professional, and intercultural communication, equipping students with the ability to critically interpret ecological discourses is an urgent educational priority.

Literature review

The critique of native speakerism in English language teaching (ELT) highlights the ideological dominance of native-like norms in pedagogy. Holliday (2006) and Kiczkowiak and Lowe (2021) argue that privileging native English speakers as role models perpetuates linguistic hierarchies and marginalises non-native teachers. Learners often internalise these expectations, struggling to emulate accents that conflict with their linguistic identities (Choi, 2016). This concern is underpinned by instruction programmes, curricula, and tests that embed the native speaker fallacy (Rose & Galloway, 2019; Gray, 2010). Particularly in countries like China, Japan, and Saudi Arabia, English is linked with instrumental roles such as tests, work, and university studies, which facilitates compliance with monolithic norms (Fryer et al., 2014). But research suggests that first languages and linguistic repertoires of students should be respected as resources rather than barriers in English learning (Fang & Liu, 2020; Li, 2018; Rose & Galloway, 2019). The Global Englishes (GE) movement unlocks a different lens in ELT, shifting focus away from native norms towards embracing English as a pluricentric and intercultural language (Baker & Ishikawa, 2021; Fang & Widodo, 2019). GE accommodates variation at phonological, syntactic, semantic, and pragmatic levels in linguistics (Mahboob, 2018) and accepts non-native norms. Adopting Kachru's (1982) concentric circles model, GE locates English as a world lingua franca, used actively in transcultural intercultural encounters (Galloway, 2017; McKay, 2018; Nguyen et al., 2021). Thus, GE pedagogy calls for materials that equip learners to negotiate meaning across varied Englishes rather than mimic Anglophone standards (Fang & Widodo, 2019). Despite the growing prominence of GE theory, its application to materials

design remains underdeveloped. Widodo (2022), in *Innovations in Language Learning and Teaching* (a Q1 journal), bridges this gap by proposing a critical ecolinguistic framework for designing English materials. He argues that textbooks and other materials are never neutral but are ideologically charged artefacts that shape classroom interaction (Gray, 2010; Widodo, 2016). By integrating ecolinguistic principles, teachers can design materials that promote ecological awareness, reflect linguistic diversity, and resist native-centric ideologies. Widodo (2022) stresses the need to address sociolinguistic and ecological dimensions in curriculum design, thus providing a strong conceptual foundation for ecolinguistic pedagogy.

Supplementing this theoretical work, Usama and Tarai (2024) also offer empirical support for ecolinguistic materials development. In quasi-experimental research in India, they integrated Sustainable Development Goals (SDGs) into English language courses. Findings showed considerable linguistic proficiency and environmental awareness gains among students who experienced ecolinguistically enriched instruction, versus a control group. In this work, it is shown that ecolinguistic instruction need not be limited to a sole purpose of enhancing linguistic proficiency, as it can be shown to also develop sustainability awareness. It substantiates ecolinguistic materials not only ideologically, but also in terms of quantifiable gains by students. Other studies further enrich this discussion. Cheraghpour Samvati et al. (2023) created the Ecological Critical Language Awareness (ECLA) measure, a mixed-methods instrument that assesses ecolinguistic sensitivity. They develop ecological awareness in instruction, offering ways of assessing interventions in a systematic fashion. Correspondingly, Krismayani et al. (2021) created Business English materials based upon ecolinguistic precepts, that included issues of variability, diversities, and emergent systems. The studies above show the ways in which materials design might be illuminated by virtue of ecolinguistic praxis in diverse domains of English, varying across academic literacy, to commercial environments. Ecologically focused TEACHING also emphasises the emergent and relational aspects of learning (Tjendani et al., 2017; Sun, 2021). In line with Van Lier's ecological orientation, they advocate learning environments that mirror real-world complexity, cultural diversity, and learner agency. Resources that are developed in line with such principles allow learners to interact not only

with varieties of language, but also with the social, cultural, and ecological environments in which English is embedded.

Across these studies, several converging themes emerge. First, the critique of native speakerism involves dismantling monolithic norms of English (Holliday, 2006; Fang & Widodo, 2019). Second, GE provides a dynamic template for revitalising English as a pluricentric resource (Mahboob, 2018; Galloway, 2017; Hu & Jiang, 2011). Third, schemes of ecolinguistics embed materials in broader ecological, cultural, and ideological settings (Widodo, 2022; Gray, 2010). Fourth, empirical work demonstrates the tangible value of ecolinguistics pedagogy, both in studies of languages and in studies of sustainability (Usama & Tarai, 2024). Finally, materials like ECLA (Cheraghpour Samvati et al., 2023) and contextualised content construction (Krismayani et al., 2021) underpin sophistication in methodology and usability in instruction. In this study, in which qualitative content analysis is used to investigate themes of ecolinguistics in EFL materials, such pieces function both in terms of theory and in terms of demonstration. Widodo (2022) also offers a framework of translating ecological elements of textbooks, while Usama and Tarai (2024) also offer empirical evidence of ecolinguistic integration. Both favour critical, dynamic, and ecologically aware EFL content design in transitioning away from native speakerist models and towards global, sustainable, and locally attuned pedagogies. The following questions are answered in this study.

Q1: To what extent do EFL learning materials, as perceived by students, reflect ecolinguistics principles such as raising environmental awareness, promoting sustainability, and representing nature positively?

Q2: How do students evaluate the presence or absence of ecological content and the promotion of consumerist values in their EFL materials?

Methodology

Participants

The participants of this study consisted of 40 undergraduate students who enrolled in the Faculty of Education of one of South Africa's public universities. The sample consisted of first- and second-year English majors who enrolled in EFL as a part of a bigger teacher training program. The ages of participants ranged between 19 and 22, and both female and male students were equal in number.

At least two English proficiency courses had been taken by all participants in the past, so that they had been heavily exposed to varying EFL learning materials, including readers, coursebooks, and computer materials. Respondents were approached by convenience sampling by going to course teachers, and volunteers responded after being made aware of the purpose of research. Anonymity and confidentiality of participation was assured, and students were made aware that participation would be used solely in research. Incentives weren't included, and participation was voluntary. This ensured that the sample included real perceptions of themes in ecolinguistics in what they learned without being unduly influenced.

Instruments

The primary instrument employed in this study was a structured questionnaire adapted from ecolinguistics research frameworks, particularly Stibbe's (2015) categories of "stories we live by." The questionnaire was designed to capture students' perceptions of ecolinguistics representation in their EFL materials through Likert-scale items. Five key categories were addressed: (1) whether materials raised awareness of environmental issues, (2) the degree to which materials promoted consumerist values, (3) the extent to which nature was positively represented, (4) whether materials encouraged sustainable behaviour, and (5) whether ecological content was missing or limited. Each item was presented on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). This quantitative measure allowed for descriptive statistical analysis, while still aligning with a qualitative content analysis framework. In addition to closed-ended questions, the instrument included a short open-ended section that allowed students to explain or exemplify their responses, thereby providing qualitative depth that complemented the statistical findings.

Procedure

Data collection was conducted over a two-week period during the second semester of the 2023–2024 academic year. The researcher first obtained approval from the university's ethics committee and subsequently liaised with instructors to gain access to classrooms. The questionnaire was distributed in paper-based form during regular class hours to ensure a high response rate. Before completing the instrument, participants were given a short briefing that explained the purpose of the study, the

voluntary nature of participation, and their right to withdraw at any time. Students were then asked to reflect specifically on the EFL materials they had been using in their courses, including core textbooks and supplementary readings. They completed the survey within 20 minutes, after which the researcher collected the forms directly. Completed responses were screened for completeness, with all 40 questionnaires deemed valid for analysis. Following data collection, responses were entered into SPSS (version 29) for statistical analysis.

Design

This study employed a qualitative content analysis design supported by descriptive statistical analysis. The overarching methodological approach was rooted in ecolinguistics, which focuses on how language use reflects and shapes ecological worldviews. The design involved two stages: first, the construction of a questionnaire aligned with ecolinguistics categories, and second, the quantification of student responses to identify recurring patterns. By integrating Likert-scale items with qualitative interpretation, the study adopted a hybrid design that allowed both systematic coding of ecolinguistics features and numerical representation of student perceptions. Descriptive statistics (mean, standard deviation, frequency, and percentages) were generated to provide an overview of central tendencies and response distributions. These findings were then interpreted through an ecolinguistics lens, linking numerical results to broader discourses such as sustainability, consumerism, and ecological silence. This design was appropriate because it combined the rigour of structured data analysis with the flexibility to interpret ecological themes qualitatively, thereby providing a comprehensive picture of ecolinguistics presence in EFL materials.

Ethical considerations

Ethical approval for this study was obtained from the Institutional Review Board of the participating South African university prior to data collection. All participants were provided with clear information regarding the purpose of the research, the voluntary nature of their involvement, and their right to withdraw at any stage without penalty. Informed consent was obtained from every participant before they completed the questionnaire. To protect privacy, no identifying information such as names or student identification numbers was collected, and all responses were anonymised

during data entry. Data were securely stored in password-protected files accessible only to the researcher, and raw responses will be destroyed after five years in line with university data management guidelines. Participants were also assured that the results would be reported in aggregate form, ensuring that no individual could be identified from the findings. By adhering to these procedures, the study maintained compliance with international standards of ethical research practice in applied linguistics.

Analysis

As shown in Table 1, students generally perceived EFL materials as moderately supportive of ecological awareness. The mean score for materials raising awareness of environmental issues was $M = 3.18$, $SD = 1.13$, suggesting a balanced but not strong agreement. In contrast, materials promoting consumerist values recorded a lower mean ($M = 2.83$, $SD = 1.29$), indicating that although consumerist elements were noticed, they were not dominant. The highest mean was observed in nature being represented positively ($M = 3.30$, $SD = 1.04$), showing that students most strongly associated their materials with positive depictions of the natural world. Responses to materials encouraging sustainable behaviour were more varied, with a mean of $M = 3.23$, $SD = 1.44$, reflecting mixed perceptions. Interestingly, ecological content being missing or limited had a relatively low mean ($M = 2.78$, $SD = 1.53$), but the high standard deviation indicates divided student opinions on whether their materials adequately integrated ecological content.

Table 1
Statistics

	Materials raise awareness of environmental issues	Materials promote consumerist values	Nature is represented positively in the materials	Materials encourage sustainable behaviour	Ecological content is missing or limited
N Valid	40	40	40	40	40
Missing	0	0	0	0	0
Mean	3.18	2.83	3.30	3.23	2.78
Median	3.00	3.00	3.00	3.50	2.00
Mode	2	3	3	4 ^a	1

Std.	1.130	1.299	1.043	1.441	1.527
Deviation					

a. Multiple modes exist. The smallest value is shown

As shown in Table 2 and Table 3 below, students expressed mixed perceptions of how ecolinguistics themes were embedded in their materials. Regarding the extent to which materials raise awareness of environmental issues, the most frequent response was 2 (disagree, 37.5%), followed by 3 (neutral, 25.0%). Fewer students strongly agreed (17.5%) or agreed (20.0%) with this statement, suggesting that while some ecological awareness is evident, more than one third of students doubted the effectiveness of their materials in addressing environmental concerns. In contrast, perceptions of consumerist values in the materials were more evenly spread across the scale. The most common response was 3 (neutral, 30.0%), with 25.0% selecting 2 and 17.5% selecting 1 (strongly disagree), indicating that many students were either uncertain or dismissed the presence of consumerist discourse. However, 12.5% of students agreed and 15.0% strongly agreed that consumerist values were promoted, pointing to a notable minority who felt that such themes were indeed present. Together, the distributions highlight a tension: while a considerable proportion of students questioned whether ecological awareness was meaningfully integrated, others remained cautious or divided about the extent to which consumerist elements shaped their EFL materials.

Table 2
Materials raise awareness of environmental issues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	15	37.5	37.5	37.5
	3	10	25.0	25.0	62.5
	4	8	20.0	20.0	82.5
	5	7	17.5	17.5	100.0
	Total	40	100.0	100.0	

Table 3

Materials promote consumerist values

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	17.5	17.5	17.5
	2	10	25.0	25.0	42.5
	3	12	30.0	30.0	72.5
	4	5	12.5	12.5	85.0
	5	6	15.0	15.0	100.0
	Total	40	100.0	100.0	

As illustrated in Table 4 and Table 5, students' responses indicated generally positive but varied perceptions of how nature and sustainability were reflected in their materials. In terms of the representation of nature, 30.0% of students selected 3 (neutral) and 27.5% each chose 2 (disagree) and 4 (agree), while a smaller proportion (15.0%) strongly agreed. This distribution suggests that although many students recognised positive depictions of nature, a sizeable group expressed reservations, pointing to only a moderate consensus. Similarly, when asked whether the materials encourage sustainable behaviour, responses were widely dispersed across the scale. While 25.0% of students agreed and another 25.0% strongly agreed, indicating some recognition of sustainability themes, nearly 38% selected 1 or 2 (disagree), and 12.5% remained neutral. These findings reveal a divided pattern: although a notable portion of students acknowledged that sustainability was promoted, an almost equal proportion perceived little to no emphasis on ecological responsibility in their learning materials.

Table 4

Nature is represented positively in the materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	11	27.5	27.5	27.5

3	12	30.0	30.0	57.5
4	11	27.5	27.5	85.0
5	6	15.0	15.0	100.0
Total	40	100.0	100.0	

Table 5
Materials encourage sustainable behaviour

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	15.0	15.0	15.0
	2	9	22.5	22.5	37.5
	3	5	12.5	12.5	50.0
	4	10	25.0	25.0	75.0
	5	10	25.0	25.0	100.0
	Total	40	100.0	100.0	

As shown in Table 6, student perceptions of whether ecological content was missing or limited were highly divided. The mean score was $M = 2.78$ ($SD = 1.53$), reflecting the widest spread of responses across all items. While 27.5% of students strongly disagreed and 25.0% disagreed, suggesting they felt ecological themes were sufficiently present, 17.5% agreed and 20.0% strongly agreed that such content was lacking. Only 10.0% selected 3 (neutral). This polarisation highlights that students held contrasting views, with nearly half perceiving adequate ecological coverage while another large group considered the materials deficient in ecological content.

Table 6
Ecological content is missing or limited

	Frequency	Percent	Valid Percent	Cumulative Percent
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Valid	1	11	27.5	27.5	27.5
	2	10	25.0	25.0	52.5
	3	4	10.0	10.0	62.5
	4	7	17.5	17.5	80.0
	5	8	20.0	20.0	100.0
	Total	40	100.0	100.0	

Discussion

The purpose of this study was to examine how students perceive ecolinguistics dimensions within their EFL materials, focusing on the extent to which these resources raise environmental awareness, encourage sustainable behaviour, represent nature positively, promote consumerist values, or exclude ecological themes. The findings reveal both areas of promise and critical gaps in current EFL material design, offering insights that resonate with, extend, and in some cases challenge the existing literature on ecolinguistics, GE, and critical pedagogy.

Ecological awareness in EFL materials

The results indicate that students perceived their materials as offering moderate levels of ecological awareness, with a mean of 3.18 (SD = 1.13) for the item “materials raise awareness of environmental issues.” While this score suggests that ecological themes were not entirely absent, it also shows that students did not strongly associate their textbooks with environmental education. This aligns with findings from Widodo (2022), who argues that although ecolinguistics frameworks for material design have been proposed, their integration into mainstream EFL resources remains inconsistent. In the present study, nearly 38% of students disagreed that their materials promoted ecological awareness, highlighting the ongoing marginalisation of environmental discourse in language education. This result must be considered in the light of Gray’s (2010) critique that global EFL textbooks often reproduce consumerist discourses and avoid politically or ideologically charged topics, including environmental issues. By steering away from such themes, materials miss opportunities to engage students with urgent global challenges such as climate change and sustainability. Moreover, the findings echo Usama and Tarai (2024), who argue that unless materials are explicitly aligned with sustainable development goals (SDGs), ecological awareness tends to

remain peripheral rather than central in the curriculum. The moderate scores in this study therefore support the contention that while ecological themes may appear in passing, they rarely function as integral elements of the pedagogical design.

Representation of consumerist values

The findings related to consumerism offer a complementary perspective. Students' responses to "materials promote consumerist values" revealed a mean of 2.83 (SD = 1.29), with 42.5% of participants selecting either 1 (strongly disagree) or 2 (disagree), suggesting that overt consumerist discourses were not dominant in the materials. However, 27.5% of students agreed or strongly agreed that consumerism was present, indicating that for a significant minority, their textbooks reinforced materialist ideologies. This bifurcation reinforces Gray's (2010) argument that ELT coursebooks, particularly those produced by multinational publishers, often embed subtle forms of consumerism through lifestyle depictions, advertising-style dialogues, and aspirational narratives. The presence of consumerist content, even at a modest level, is problematic when considered through the lens of ecolinguistics. As Fill and Mühlhäusler (2018) note, consumerist discourse is one of the most ecologically destructive ideologies propagated through language, as it encourages unsustainable production and consumption patterns. The fact that a quarter of students in this study identified consumerist promotion suggests that ecolinguistics critique remains urgently needed in evaluating materials. Importantly, these findings parallel Cheraghpour Samvati et al. (2023), who demonstrated how ecological critical language awareness can reveal underlying ideological tensions in textbooks, even when such discourses are not overt.

Positive representation of nature

One encouraging finding of the study is that students most strongly associated their materials with positive depictions of nature, reflected in the highest mean score of 3.30 (SD = 1.04). Frequency data further demonstrated that 57.5% of students agreed or strongly agreed that nature was positively represented. This suggests that, despite limited explicit ecological instruction, the materials contained images, texts, or tasks that presented nature in a favourable light. Such representation is significant because, as Mahboob (2018) argues, positive discourses of nature can contribute to learners' ecological identity formation and foster affective connections with the environment. Nevertheless, the data also showed that nearly 28% of students disagreed with this statement, indicating that representations of nature are not universally persuasive or salient. This aligns with Sun (2021), who cautions that positive portrayals of nature in materials can be superficial, focusing on aesthetic appreciation rather than deeper ecological understanding. For example, images of

beautiful landscapes or descriptions of outdoor leisure activities may romanticise nature without addressing issues such as deforestation, pollution, or climate justice. In this sense, the findings of the current study both confirm and problematise earlier arguments: while nature is present, its pedagogical function may remain limited to symbolic representation rather than critical engagement.

Sustainable behaviour and divided perceptions

Another significant result concerns whether students believed that materials contributed to sustainable behaviour. Responses were extremely spread out, with a mean of 3.23 (SD = 1.44). While half agreed/strongly agreed, over a third disagreed/strongly disagreed. This polarisation suggests that students received mixed signals, or that sustainability themes were unevenly embedded within lessons. This unevenness shows more generally recognised challenge in the literature: translating environmental awareness into effective action in terms of pedagogy. Krismayani et al. (2021) in reviewing Business English courses commented that although ecolinguistics principles could in theory be embedded in lesson content, in practice such content tended to amount to tokenistic references rather than effective integration of sustainability. Similarly, Tjendani et al. (2017) concluded that Indonesia ELT classrooms included sporadic ecological materials, though without explicit integration of environmental education models. The ambivalent understandings seen here reproduce such results, and so perhaps EFL materials can point towards sustainable practices, but are unable to provide clear, critical, and pragmatic means by which learners can think and act. At a theoretical level, this lacuna might also relate to Li's (2018) translanguaging model, which views students' linguistic repertoires as resources for knowledge-making. Encouraging sustainable practice in the EFL context requires not only overt content, but also exposure to circumstances that will enable the learner to draw upon his/her whole linguistic and cultural capital so as to discuss environmental issues. If materials prove too monolingual or context-neutral, learners will be less in a position to map ecological themes onto real life, thus explaining perceptions that are fractured in data.

Ecological content: missing or limited

Perhaps the most revealing finding concerns the item "ecological content is missing or limited," which received the lowest mean of 2.78 but the widest variation (SD = 1.53). Here, the class was almost evenly split: while 52.5% of students disagreed, 37.5% agreed or strongly agreed that ecological content was lacking. This polarisation highlights the contested status of ecological themes in EFL materials. For some learners, textbooks may already include sufficient environmental

references, but for others, these references are invisible, absent, or overshadowed by other priorities. This divergence resonates strongly with Rose and Galloway (2019), who emphasise that global Englishes pedagogy must be context-sensitive, adapting to learners' sociocultural and institutional backgrounds. For students in contexts where ecological discourse is already a salient part of public life, textbook content may feel inadequate or outdated. Conversely, in instances of students with little pre-existing knowledge of environmental matters, small signals in their materials might be perceived as salient. This suggests that perceptions of ecological sufficiency are not only mediated by materials, but by learners' vast educational and cultural contexts. What is controversial in ecological content also suggests further the ideological role of materials, as explicated by Widodo (2016). Textbooks do not possess absolute objectivity, rather, they reflect producers' and distributors' political, economic, and cultural interests. In contexts in which ecological discourses are politically controversial or economically inconvenient, publishers may actively suppress ecological themes as a means of ensuring global marketability. In this fashion, students read books that both inscribe and replicate ideological silences, leading to the fractured perceptions that this research documents.

Linking findings to Global Englishes

Overall, this work's findings make important contributions to Global Englishes (GE) as a discipline. GE scholarship has been persistent in critiquing native-speakerism hegemony and in highlighting linguistic diversity-based teaching (Galloway, 2017; Fang & Widodo, 2019). The current work complements this critique by revealing that ecolinguistics considerations also figure importantly in challenging homogenising discourses. Textbooks which omit ecological concerns or promote consumerism reproduce hegemonic discourses not only of language but also of nature. Conversely, integration of principles of ecolinguistics in GE materials can allow learners to engage in linguistic as well as ecological diversities in a critical mode. This argument follows Baker and Ishikawa (2021) in that transcultural English needs to take differing cultural and ideological orientations into consideration. Environmental issues rank among the world's highest challenges requiring transcultural negotiation. Ecological awareness in EFL contexts can teach students intercultural communication as much as intercultural problem-solving of ecological disasters. Here, ecolinguistics and GE are reinforcing paradigms: both require instruction strategies that embrace plurality, resist hegemonic norms, and induct students to address complex global realities.

Pedagogical implications

The findings both implicitly and explicitly have several implications for teachers, writers of materials, and educationalists who develop policy. Firstly, there is a clear need to move beyond superficial signs

of nature or of sustainability and towards systematic incorporation of ecological themes within EFL programmes. Just as Mahboob (2018) argues, materials must be created to uncover the dynamic and conditional nature of language. In a similar vein, ecological content should not be seen as a static addition but as a central theme that permeates lessons, activities, and tests.

Second, perceptions of divisiveness reflected in this study suggest materials must be locally versatile. In line with Kachru's (1982) concentric circles model, EFL/ESL students are part of Inner, Outer, and Expanding Circle settings, varying in sociolinguistic and ecological realities. The materials must correspond to such diversities by reflecting examples, case studies, and voices from across the globe, rather than taking Anglophone-centric discourses as norm. For instance, climate change arguments could take examples of Southeast Asia, Africa, and Latin America, so that students see their ecological realities in the curriculum.

Third, the results highlight the importance of teacher education in ecolinguistic instruction. Even if ecological material appears in schoolbooks, its educational potential could be underutilised if teachers themselves lack critical tools to engage with it. Teacher education programmes, as Chen et al. (2021) recommend, should embed Global Englishes and ecological awareness so that teachers are transformative practitioners, not passive transmitters of books.

Limitations and directions for future research

While the present study offers valuable insights, it also has limitations that should be acknowledged. The analysis was based on student perceptions of their materials, rather than direct content analysis of textbooks. While perceptions are crucial, triangulating them with textbook analysis could provide a more comprehensive picture of how ecological themes are (or are not) embedded. Future research should therefore combine critical discourse analysis of materials with survey and interview data from students and teachers. Moreover, the study was conducted with a sample of 40 students in a single national context. As GE research has consistently emphasised, language use and perceptions vary across geopolitical contexts (Fang & Widodo, 2019). Cross-national comparative studies would therefore be valuable in determining whether the findings observed here reflect broader global trends or context-specific patterns. Finally, while this study employed quantitative descriptive analysis, future studies could use qualitative approaches such as focus groups or narrative inquiry to explore how learners interpret ecological discourses in depth. Such approaches could reveal the nuanced ways in which learners negotiate tensions between ecological awareness, consumerist ideologies, and linguistic identity.

Conclusion

This study examined South African undergraduate EFL students' perceptions of ecolinguistics integration in their learning materials, focusing on environmental awareness, sustainability, consumerist values, and representations of nature. The findings reveal a nuanced and sometimes contradictory landscape. While students recognised positive representations of nature most consistently, perceptions of materials fostering ecological awareness and sustainable behaviour were moderate and divided. Consumerist values were present but not predominant, and nearly half of the participants indicated that ecological content in their materials was limited or insufficient. These results underscore that current EFL materials provide only partial engagement with ecological themes, often presenting them superficially or inconsistently. The polarisation in student perceptions highlights the importance of context-sensitive materials that reflect both global ecological concerns and learners' local realities. Moreover, the study demonstrates that ecolinguistics and Global Englishes frameworks complement each other, emphasising the need for pedagogical resources that embrace linguistic diversity while promoting critical ecological awareness. Practically, the findings call for materials designers, curriculum developers, and teachers to move beyond tokenistic inclusion of environmental content and to systematically embed sustainability themes in EFL instruction. Such integration should consider local and global ecological contexts, encourage critical engagement, and equip learners to connect language learning with environmental consciousness. Teacher education must also incorporate ecolinguistic principles, enabling educators to transform materials into meaningful ecological learning experiences.

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Conflict of interest

The researchers confirm that there is no conflict of interest associated with this study.

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