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Ecological Discourses in KPK School Textbooks: An Ecolinguistics Analysis of English and Science Texts at Grades 8, 9, and 10 Applying Stibbe's Framework

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ABSTRACT

This paper focuses on the language and graphical representation of the environmental problems and nature in English and Science textbooks of Grades 8, 9, and 10 in Khyber Pakhtunkhwa (KPK), Pakistan. By applying the ecolinguistic framework by Stibbe (2015), the study analyses textbook discourses as beneficial, ambivalent, or destructive, using investigative tools such as representation of nature, lexical pattern analysis, metaphorical framing, and visual discourse analysis. Data was collected exclusively from assigned textbook chapters and pages. The findings indicate that ambivalent and destructive discourses which portray nature as a resource, threat, or passive object are predominant while Beneficial discourses that promote ecological care and agency are underrepresented. The paper emphasizes the need to reform the curriculum to integrate ethically grounded and ecocentric narratives and description that foster environmental responsibility among students.

Introduction

The startling environmental disasters of the twenty-first century, including climate change, biodiversity depletion, deforestation, water shortage, and pollution have created unprecedented interest across the scientific, educational, and other concerned fields. These issues cannot be viewed only as ecological but they are also discursive because they are stabilized, maintained or criticized linguistically (Halliday, 2001; Stibbe, 2015). The way environmental issues are conveyed, explained and identified shapes how communities are aware of their connection to the nature biosphere and it plays a key role in deciding whether ecological harm is confronted or propagated. Education, chiefly formal school education, plays a fundamental role in structuring ecological worldviews. One of the strongest instruments of ideology is academic curricula which is usually considered to be neutral, authoritative, and unquestionable knowledge source (Apple, 1993). In the Pakistani society and in the Khyber Pakhtunkhwa (KPK) in particular, course books are centrally prescribed and uniformly applied as a result, they act as powerful instruments to shape the consciousness of the young learners and their perception of nature, environment, and the relations between human beings and nature.

The Language which is patterned in textbooks perform more than conveying of the scientific facts; it creates ecological meanings. A focus on scientific objectivity, anthropocentric and economic utilitarianism framing may unintentionally make the environmentally destructive practices legitimate by presenting them look normal, unavoidable, or value-free (Halliday, 2001). On the other hand, language that emphasizes responsibility, interdependency, care, and moral engagement can foster ecological consciousness and sustainable beliefs (Fill & Mühlhäusler, 2001).

Ecolinguistics has emerged as a central interdisciplinary field, which explore the impact of linguistic structures and discourses influence ecological behavior and thinking. Among ecolinguistic intellectuals, Arran Stibbe (2015) provides one of the most systematized and well applicable frameworks for evaluating environmental discourse. His model classifies discourses into beneficial, ambivalent, and destructive, contingent on whether they uphold ecological wellbeing, remain ethically neutral, or promote the normality of environmental harm.

In spite of the increasing global application of ecolinguistic analysis, Pakistani school textbooks—particularly at the secondary education level are still largely under researched. The research on ecolinguistics based on textbooks has admitted a significant gap in the literature since previous research has been confined to policy documents or media discourse. The present study addresses this gap by examining English and Science textbooks in Grades 8, 9 and 10 in KPK, applying Stibbe's comprehensive ecolinguistic model to both textual and visual data.

Despite the fact that the environmental issues and the themes are included in the Pakistani school curricula, the linguistic and discursive construction creates serious apprehension. Preliminary observation indicate that nature is often conceptualized as a commodity for human exploitation, a threat to human safety, or a passive background for human activity. Such framings may implicitly reinforce anthropocentric and exploitative views on the environment.

In addition, environmental concerns are often articulated in scientific or technical expressions without moral consideration or emotional appeal. This may lead to what Stibbe (2015) calls ambivalent discourse—language that informs but does not motivate taking care, responsibility, or action. In certain instances, discourses may even be destructive, normalizing and legitimizing practices such as pollution, deforestation, and overexploitation through impartial, unbiased or depersonalized language.

Systematic research is deficient in terms of investigating:

- Representations of nature: English vs. Science,
- Or the differences between discourses at different grades (8-10),

And whether textbook language is in line with sustainability based educational objectives. Without such analysis, the reforms of the curriculums are likely to be faux, where the content is included, but there is not discursive change.

The study aims to:

- Apply Stibbe's (2015) ecolinguistic model to classify textbook discourses as beneficial, ambivalent, or destructive
- Assess ways of lexically, metaphorically, and narratively framing nature
- Compare ecological discourses in subjects as well as grade levels
- Determine discursive gaps and promote ecolinguistically-based textbook development suggestions

Research Questions

Q.1.How is nature linguistically and visually represented in English and Science textbooks at Grades 8, 9, and 10?

Q.2.What lexical patterns and metaphors dominate environmental discourse in these textbooks?

Q.3.To what extent do textbook discourses align with beneficial, ambivalent, or destructive ecolinguistic categories?

Q.4.How do ecological representations differ across grades and subjects?

This research has a theoretical contribution by extending the application of Stibbe's ecolinguistic model to the discourse of textbook in South Asia in general, and Pakistan and the Khyber Pakhtunkhwa region in particular. Practically, it demonstrates how ecolinguistic tools can be applied to curriculum analysis in a systematic manner. Practically, the findings provide evidence-based insights for policymakers, curriculum developers, textbook authors, and other stakeholders seeking to align education with sustainability agenda.

Literature Review

Ecolinguistics inspects the role of language in shaping ecological relationships, focusing on how lexical and grammatical choices affect the human cognitions and understandings of the natural world (Fill & Mühlhäusler, 2001). Halliday (2001) argues that current patterns of lexical and grammatical structures of contemporary languages support the ideologies of economic growth that favour exploitation and consumption at the cost of ecological balance.

Early ecolinguistic research studies highlighted how metaphors such as “natural resources” and “environmental management” frame nature as an object to be controlled (Harré et al., 1999). These linguistic constructions vague ethical responsibility and legitimize environmental degradation.

Stibbe (2015) further develops ecolinguistics by proposing a normative evaluative framework. In contrast to descriptive discourse analysis, his model clearly evaluates whether discourses support or challenge ecological welfare and safety.

He classifies discourses as:

1. Beneficial: Encourage balance, care, interdependence, and sustainability.
2. Ambivalent: Provide information but lack ethical or emotional engagement.
3. Destructive: justify or normalize environmental damage.

Stibbe further suggests investigative tools including:

- representation of nature,
- lexical pattern analysis,
- metaphor analysis,
- narrative framing,
- visual discourse analysis.

This research applies both the evaluative categories and analytical tools.

Reconstruction of Nature in Educational Texts

The empirical study of environmental representation in textbooks suggests that there is still an anthropocentric bias. According to Poole (2016), in science textbooks ecosystems are often described as a mechanistic system, whereas English texts aestheticize nature without agency. According to Huang (2020), the issues of environment are recurrently introduced without human responsibility thus generating discourses of inevitability.

In the context South Asian, Islam and Alam (2021) believe that the textbooks are overly focused on the factual information ignoring the ethical reflection. According to Pakistani researchers (Khan and Ahmed, 2023) endorse that environmental content is present but discursively weak, which is controlled by a neutral scientific register.

The main element of ecological thought is metaphors (Lakoff and Johnson, 1980). The assumptions concerning environmental issues are influenced by constructs like nature as resource, nature as machine and nature as threat. As Goatly (2017) proves, even poetic metaphors can humanize nature, and at the same time make it passive. According to Stibbe (2015), metaphors should be considered ecologically, not aesthetically, to unveil the ethical meaning and the moral overtones.

A crucial role is also played by Visuals in meaning-making (Kress & van Leeuwen, 2006). Environmental imageries can either endow viewers or induce vulnerability. Studies has shown that the visuals used in textbooks tend to show pollution and deforestation without the human intervention and solutions and thus create an active sense of environmental emergencies (Machin, 2013).

In spite of worldwide progress in ecolinguistics, no comprehensive study has applied Stibbe’s inclusive framework to both English and Science textbooks across Grades 8–10 in KPK. The current research addresses that gap by assimilating textual and visual analysis within a coherent ecolinguistics model.

Research Methodology

Research Design

The research paper is based on qualitative descriptive study design that is based on critical ecolinguistic discourse study. Its purpose not to simply measure frequency but to decipher the manner in which language and visual create

ecological meanings, values, and ideologies in school textbooks. This is a paradigm sort of study that is interpretive and evaluative, and which is in line with the ecolinguistic paradigm by Stibbe (2015) that quantifies discourse based on its ability to affect ecological wellbeing.

Theoretical Framework: Stibbe's Ecolinguistic Model

The research study is theoretically placed in Arran Stibbe's (2015) ecolinguistic framework, which assimilates ethical evaluation with linguistic analysis. The framework has two interlocked levels:

A. Evaluative Classifications

Stibbe (2015) classifies discourses into:

- Beneficial discourses: Encourage ecological balance, interdependence, care and sustainability.
- Ambivalent discourses: Provide information but lack ethical, emotional, or moral engagement.
- Destructive discourses: Normalize, justify, or obscure environmental harm.

B. Analytical Tools

To identify these discourses, the framework scrutinizes:

- Representation of nature
- Lexical pattern analysis
- Metaphorical discourse
- Nature framed as resource, threat, or passive object
- Visual content analysis

This dual structure ensures conceptual clarity and methodological consistency, allowing discourse to be both evaluated linguistically and evaluated ecologically.

Data Sources

The data comprise completely of official Khyber Pakhtunkhwa Textbook Board materials, strictly limited to the chapters and page numbers provided by the researcher.

Textbooks Analyzed

Grade 8

Science: Ecology (pp. 1–16)

English: Environment (pp. 26–32)

Grade 9 English

Chapter Title: Daffodils (pp. 33–34)

Chapter Title: Biodiversity in Pakistan (pp. 134–137)

Grade 10 ENGLISH

Chapter Title: Water Scarcity in Pakistan

Page No. 109-112

Chapter Title: They Have Cut Down the Pines (Poem)

Page No. 120-122

Grade 10 – Science

Chapter Title: Environmental Problems and Management

pp. 114–140

Chapter 9: Water Resources

Page No. 84-91

Data Selection Criteria

Phrases, sentences and visuals were chosen based on the following criteria:

Explicit reference to nature, environment, ecology, biodiversity, pollution, or sustainability

Discursive applicability to human nature relations

Potential association with beneficial, ambivalent, or destructive discourse types

Analytical Procedure

Textual chapters were extracted verbatim from the textbooks. - Linguistic peculiarities (grammar, lexis, metaphor) were determined.

All the units were categorized according to the evaluative categories of Stibbe. The images were examined based on the ecolinguistic visual discourse principles. This was followed by the provision of interpretive explanations to the linking of findings to the ecolinguistic theory.

Data Analysis and Interpretation

This section introduces a grade-wise and subject-wise ecolinguistic analysis of the data from English and Science textbooks (Grades 8–10). Each table is followed by thorough interpretation, clearly associating textbook data with Stibbe’s ecolinguistic model.

Grade 8 – English

Chapter Title: Environment (pp. 26–32)

Table : Ecolinguistic Analysis of Grade 8 English

S.No. Selected Textbook Sentence	Pg	Linguistic Feature	Discourse Type (Stibbe, 2015)	Ecolinguistic Interpretation
1. “Pollution means when harmful things get into our environment and can make it dirty, unhealthy, or unsafe.”	26	Evaluative adjectives	Beneficial	Pollution explicitly framed as ecological harm
2. “Pollution can be harmful to plants, animals, and people.”	26	Inclusive noun grouping	Beneficial	Humans positioned as part of ecology
3. “I think pollution is greed.”	26	Moral metaphor	Beneficial	Ethical responsibility foregrounded
4. “Big companies are the worst.”	26	Judgmental evaluation	Beneficial	Corporate accountability emphasized
5. “Factories that pollute the air or our rivers make us less healthy.”	26	Cause–effect construction	Beneficial	Environmental harm linked to human wellbeing
6. “Everybody needs to think about how we can reduce pollution.”	26	Collective modality	Beneficial	Shared ecological responsibility promoted
7. “Deforestation is the destruction of native forests.”	31	Nominalization	Ambivalent	Process described without moral agency
9. “Forests act as carbon sinks.”	31	Scientific metaphor	Ambivalent	Functional framing, limited ethical depth
9. “Every minute, 2,400 trees are felled.”		Temporal quantification	Beneficial	Crisis discourse intensified
10. “The Billion Tree Tsunami project aims to repair past harm.”	31	Restorative narrative	Beneficial	Hope and ecological repair foregrounded

Data Interpretation

The beneficial ecological discourse is mainly used in Grade 8 English textbook primarily through affective language, collective responsibility and moral judgment. Pollution is describe not only as a technical issue but as an ethical failure which aligning strongly with Stibbe’s concept of beneficial discourse. The human agency is specifically recognized, especially the ones referring to corporations and factories, which helps to overcome the common practice of abstraction of responsibility.

Nevertheless, the occurrence of ambivalence; the act of deforestation and ecological functions are described through scientific nominalizations, thus, diminishing emotional engagement. Although factual accuracy is maintained, yet moral richness is rarely brought to the foreground. In general, the text has significant potential of ecoliteracy, but it should be more focused on ecological agency and moral introspection

Grade 8 – Science

Chapter Title: Ecology (pp. 1–16)

Table : Ecolinguistic Analysis of Grade 8 Science (Ecology)

Selected Textbook Sentence	Page.no	Linguistic Feature	Discourse Type	Interpretation
1.“Oxygen cycle plays an essential role in the existence of life.”	1	Necessity modality	Beneficial	Interdependence emphasized
2.“Plants release oxygen as a by-product.”	2	Passive scientific framing	Ambivalent	Functional, non-ethical
3.“Combustion adds carbon dioxide to the atmosphere.”	4	Agentless clause Destructive	Destructive	Human responsibility obscured
4.“Global warming is the increase in average temperature.”	4	Technical definition	Ambivalent	Ambivalent Lacks moral urgency
5.“Deforestation is the unplanned removal of trees.”	5	Nominalization	Destructive	Destructive Harm normalized
6.“Forests are natural carbon sinks.”	13	Ecological metaphor	Beneficial	Climate regulation emphasized
7.“Reforestation reduces greenhouse gases.”	13	Solution-oriented discourse	Beneficial	Restoration foregrounded
8. “Hunting disturbs the natural balance.”	11	Causal framing	Beneficial	Ecological equilibrium highlighted

Interpretation of the data

The Grade 8 Science curriculum has profound dependency on ambivalent discourse, using empirical scientific explanations to the detriment of ethics. However, beneficial discourses shown in sections, addressing reforestation, cultivation and ecological balance. Agency permeates the agent-neutral terminology and, in spite of the stress on the ecological approach to the issues, the repetitive use of this model dilutes the human responsibility, and, therefore, has been proven to promote the destructive narrative introduced by Stibbe as one in which harmful effects are quietly approved.

On the other hand, there are passages in the text that present positive ecological interventions, including the reforestation efforts, the sustainable use of cultivated land, and ecological balance maintenance. These pedagogic excerpts highlight the ability of the textbook to foster environmental awareness, given the systematic incorporation of ethical framing and overt agency

Grade 9 – English**Chapter Title: “The Daffodils” (Poem)****Unit 4, pp. 33–34****Table : Ecolinguistic Analysis of Grade 9 English**

No.	Selected Textbook Line	Page	Linguistic Feature	Stibbe’s Discourse Type	Ecolinguistic Interpretation
1	“I wandered lonely as a cloud”	33	Simile	Ambivalent	Nature used as metaphor for human emotion
2	“A host of golden daffodils”		Collective noun + color imagery	Beneficial	Nature depicted as abundant and lively

3	“Fluttering and dancing in the breeze”	33	Personification	Beneficial	Nature given vitality and movement
4	“Continuous as the stars that shine”	33	Cosmic simile Beneficial	Beneficial	Nature connected to universal harmony
5	“The waves beside them danced”	34	Personification Beneficial	Beneficial	Interconnectedness of natural elements
6	“A poet could not but be gay”	34	Human-centered evaluation	Ambivalent	Nature valued for emotional benefit to humans
7	“What wealth the show to me had brought”	34	Metaphor of wealth	Destructive (subtle)	Nature framed as commodity
8	“They flash upon that inward eye”	34	Psychological metaphor	Ambivalent	Nature internalized, not agentive
9	“My heart with pleasure fills”	34	Affective language	Ambivalent	Emotional gain foregrounded
10	“And dances with the daffodils”	34	Symbolic union	Beneficial	Human–nature harmony suggested

Interpretation of the Data

The poem primarily sketches nature as passive and aesthetic, serving as a source of human emotional contentment. Although the extensive personification provides nature with vitality and energy, agency remains symbolic rather than ecological. According to Stibbe (2015), such discourse is ambivalent because it is infatuated with beauty without creating responsible and caring attitudes.

Nevertheless, beneficial discourses are formed through harmony metaphors and interconnected imagery that finely promote ecological appreciation. Although the absence of environmental risk or human influence situates nature outside ethical apprehension, it reinforcing a romanticized yet passive ecological worldview.

Grade 9 – English

Chapter Title: “Biodiversity in Pakistan”

Chapter 4, pp. 134–137.

Table: Ecolinguistic Analysis of Grade 9 English

No.	Selected Textbook Sentence	Page	Linguistic Feature	Discourse Type	Interpretation
1	“Pakistan is blessed with several natural beauties.”	134	Evaluative adjective	Ambivalent	Appreciation without responsibility
2	“Many animal and plant species are threatened.”	134	Passive construction	Ambivalent	Threat acknowledged, agent missing
3	“Deforestation and overgrazing are major threats.”	135	Nominalization	Destructive	Harm naturalized
4	“Snow leopard is endangered.”	135	Scientific classification	Ambivalent	Informative, emotionally neutral
5	“Accidental mortality is attributed to fishing nets.”	136	Agent suppression Destructive	Destructive	Human responsibility obscured
6	“Contamination of river water affects dolphins.”	136	Cause–effect	Beneficial	Ecological harm made explicit

7	“Juniper forests are one of the oldest ecosystems.”	137	Superlative emphasis	Beneficial	Ecological value highlighted
8	“This national heritage is facing threat.”	137	Metaphor of heritage	Beneficial	Moral responsibility implied
9	“Immediate attention is needed to protect the ecosystem.”	137	Modal obligation	Beneficial	Conservation urgency foregrounded
10	“The government has shortlisted parks for protection.”	137	Institutional action	Beneficial	Policy-level responsibility shown

Interpretation of the data

The chapter being discussed has a heterogeneous ecolinguistic profile. Constructive discourses can be observed when the notion of biodiversity is introduced as national heritage when protective actions on it are brought into the limelight by modal depictions of concern. These remarks are rather cogent with Stibbe’s theoretical framework which focuses more on discourses attaching preference to ecological maintenance and conservation.

However, repeated use of nominalization and passive voice results in destructive discourse by obscuring human responsibility for biodiversity loss. While ecological threats are described, the lack of explicit agents weakens ethical engagement, placing the text between ambivalent and destructive discourse. The text occupies a vacuum between the ambivalent and destructive discursive positions.

Grade 10 – ENGLISH (<https://awazeinilab.com/english-book-for-10th-class-kpk-textbooks-board-pdf/>)

Chapter Title: Water Scarcity in Pakistan

Page. No. 109-112

Chapter Title: They Have Cut Down the Pines (Poem)

Page No. 120-122

No	Chapter & Text Exact Example	Page No.	Linguistic Feature	Discourse Type (Stibbe .2015)	Ecolinguistic Insight
1	“Pakistan is facing a serious shortage of water.”	109	Nominalization	Ambivalent	Problem stated, causes erased.
2	“Water is used for agriculture, industry and domestic purposes.”	110	Passive + utilitarian verbs	Destructive	Water reduced to human utility.
3	“Large dams help in storing water.”	111	Positive evaluative verb	Destructive	Development ideology foregrounded.
4	Water Scarcity in Pakistan “Water resources are being wasted.”	112	Passive voice	Ambivalent	responsibility obscured.
5	They Have Cut Down the Pines (Poem) “They have cut down the pines.”	120	Active verb + pronoun	Beneficial	Human responsibility foregrounded.
6	They Have Cut Down the Pines “The tall pines that touched the sky.”	120	Metaphor	Beneficial	Nature given dignity and presence.

7	They Have Cut Down the Pines “The song of birds is silenced.”	121	Metaphor	Beneficial	Ecological loss highlighted.
8	They Have Cut Down the Pines “The hills look naked now.”	121	Personification	Beneficial	Nature represented as living entity.
9	They Have Cut Down the Pines “Greed drove them to destruction.”	122	Abstract noun	Beneficial	Ideological critique of exploitation.
10	They Have Cut Down the Pines “Who will answer for this loss?”	122	Rhetorical question	Beneficial	Ethical accountability demanded.

Interpretive Note

The Grade 10 English textbook explains contrasting ecolinguistic discourses that are expressed in prose and poetry. The chapter under consideration, titled *Water Scarcity in Pakistan*, makes use of ambivalent and destructive discourses to a greater extent through nominalization and passive constructions. These linguistic choices misrepresent human responsibility and largely represent water as a utilitarian resource. Development-oriented expressions such as dam construction reinforce anthropocentric and control-based ideologies. Moral interaction with the degradation of the ecological space is relatively limited in the prose text. On the other hand, the poem, *They Have Cut Down the Pines*, is always a positive construction of ecological discourses.

Human verbs and pronouns are actively used to assign the blame of destroying the environment. Metaphor and personification give nature back its agency, dignity and emotional presence. The destruction of the ecology is discussed as both a moral and culture loss rather than a technical failure. Greed in the poem reveals a hidden destructive philosophy. On the whole, poetic text is also well matched with ecolinguistic sustainability, which is sharply contrasted with instrumental orientation of the prose narration.

Grade 10 – Science

Chapter Title: Environmental Problems and Management
pp. 114–140

Table: Ecolinguistic Analysis of Grade 10 Science

No	Selected Textbook Sentence	Page	Linguistic Feature	Discourse Type	Interpretation
1	“Development has been achieved at the cost of environmental degradation.”	114	Cause–effect	Beneficial	Environmental cost acknowledged
2	“We all inhabit the same planet Earth.”	144	Inclusive pronoun	Beneficial	Shared ecological identity
3	“Forests are cleared for agriculture.”	115	Passive voice	Destructive	Human agency hidden
4	“Land degradation has resulted.”	115	Nominalization	Destructive	Damage normalized
5	“Ozone layer absorbs harmful radiation.”	116	Protective metaphor	Beneficial	Nature as life-support system
6	“CFCs destroy ozone molecules.”	116	Active causation	Beneficial	Human-caused harm exposed
7	“Industrial waste should be treated properly.”	118	Modal obligation	Beneficial	Ethical responsibility stated

8	“Excessive use of television is harmful.”	137	Moral evaluation	Ambivalent	Human health prioritized
9	“Mobile phone misuse causes health problems.”	139	Cause–effect	Ambivalent	Environment secondary
10	“Excessive computer use affects children’s development.”	140	Social impact framing	Ambivalent	Ecological link absent

Interpretive Note: Grade 10 Science

The Grade 10 Science presents a strong scientific but ethically inconsistent discourse. Beneficial discourse appears where environmental degradation is explicitly linked to development as well as where global responsibility is emphasized. These align closely with Stibbe’s ecological ethics.

However, the continuation of passive constructions in deforestation and land degradation sections shifts responsibility away from human agents, hence supporting a devastating discourse. Later sections shift focus from ecology to individual health, thus minimizing the importance of the ecological issue, and end up with an ambivalent framing.

Grade 10 – GENERAL SCIENCE

Unit 9: Water Resources

Page No. 84-91

No.	Chapter Exact Example		Linguistic Feature	Discourse Type (Stibbe)	Ecolinguistic Insight
1	“Water is an important resource for all living organisms.”	84	Evaluative noun	Ambivalent	Life acknowledged but framed instrumentally
2	“It is a renewable resource as its supply is not affected by its use.”	84	Declarative generalization	Destructive	Ecological limits erased.
3	“It is used in various ways, for example in domestic and industrial activities.”	84	Passive construction	Destructive	Human-centered utility foregrounded.
4	“About 71 percent of the Earth’s surface is covered by water.”	84	Quantification	Ambivalent	Nature reduced to statistics
5	“Rivers are regarded as the life line of a country.”	86	Metaphor	Ambivalent	Value tied to national benefit.
6	“Rivers are the main source of water for irrigation in an area.”	86	Functional framing	Destructive	Rivers reduced to service providers.
7	“Springs are good source of drinking water.”	86	Evaluative adjective	Anthropocentric	Human consumption prioritized.
8	“Glaciers are a source of water when they melt in the summer season.”	87	Cause–effect framing	Destructive	Glaciers valued for utility only.
9	“Industries consume large quantities of water.”	91	Material verb (consume)	Destructive	Extractive ideology normalized

10	“Agricultural sector of Pakistan is the largest consumer of water.”	91	Comparative evaluation	Destructive	Nature framed as production input.
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Interpretation of the Data

The Grade 10 General Science unit Water Resources predominantly constructs water through ambivalent and destructive ecolinguistic discourses. Although water is acknowledged as essential for living organisms, it is repeatedly framed as a “resource,” reinforcing an instrumental worldview. Declarative generalizations about renewability erase ecological limits and encourage overuse. Passive constructions obscure human accountability for water exploitation. Quantification reduces water to numerical coverage rather than a living system. Metaphors such as “lifeline of a country” link nature’s value to national productivity. Rivers and springs are consistently represented as service providers for irrigation and drinking. Glaciers are valued only for their seasonal utility, not ecological vulnerability. Industrial and agricultural consumption is normalized through neutral material verbs. Extractive ideologies remain unchallenged throughout the unit. Ethical or emotional engagement with water scarcity is absent. Overall, the text reinforces anthropocentric and utilitarian discourses misaligned with ecological sustainability (Stibbe, 2015).

Discussion, Conclusion, And Recommendations

Chapter Introduction

This chapter is a synthesis of the results of the ecolinguistic analysis seen in Chapter 4. Based on the explicit application of the ecolinguistic framework by Stibbe (2015), the arguments assess the ways in which the English and Science textbooks in Grade 8, 9, and 10 in Khyber Pakhtunkhwa feature the construction of ecological meaning using language and images. The chapter incorporates the patterns of positive, ambivalent, and destructive discourses, determines cross-grade and cross-subject trends, and evaluates them in terms of their impact on environmental education. In the chapter, the author ends by providing some recommendations to curriculum designers, textbook writers and policy makers.

Discussion of Key Findings

Representation of Nature Across Grades and Subjects

This is shown in the analysis that nature is highly anthropocentric in all grades. Nature in Science textbooks has been mostly conceived as a system, resource, or process, which has been functional in terms of energy transfer, oxygen production, and agricultural utility. This depiction is quite consistent with what Stibbe (2015) refers to as the ambivalent discourse, in which the information is being presented in a manner that does not engage with the ethical dimension and does not appeal to the emotions.

Nature is less taught in the English textbooks, especially those in Grades 8 and 9 which give it a more affective presentation employing emotional language, moral judgment, and aesthetic appreciation. Nevertheless, even such writings often represent nature as something dormant, which exists mainly to help humans emotionally, economically or aesthetically. These representations may not be explicitly detrimental, but in general, they do not attribute ecological agency to nature, and hence do not have a capacity to develop environmental responsibility.

Lexical Pattern Analysis and Ideological Implications

The frequency of the use of nouns, in terms of resources, forests, land, water, and species, is high, and this observation is especially common in the textbooks of Science. The extractive relationships with nature are normalized through these nouns and verbs such as use, exploit, clear and manage. Halliday (2001) asserts that these patterns in language are in support of a pattern of linguistic growth-oriented ideology which considers human needs to be prioritized over ecological balance.

In contrast, English textbooks employ more evaluative and emotive adjectives (e.g., harmful, beautiful, dangerous, precious), which align more closely with beneficial discourse. However, the limited use of action-oriented ecological verbs (protect, restore, heal) indicates a discursive gap between awareness and agency. This lexical imbalance undermines the ethical force of environmental education.

Metaphorical Discourse: Nature as Resource, Threat, and Passive Object

Metaphor analysis reveals three dominant patterns:

Nature as Resource

The utilitarian view of the world is strengthened by such phrases like forests provide timber and rivers irrigation. This metaphor was the most notable in science textbooks and is associated with the destructive discourse in the model by Stibbe as it justifies exploitation without any moral control. Nature is framed as something to be feared or to be controlled using references to floods, disasters and environmental hazards. Although it is factual, this framing usually does not include human responsibility, thus transferring the blame onto anthropogenic activities.

Nature is aestheticized and romanticized particularly in poetical and descriptive passages, but deprived of agency. Although metaphorical framing is emotionally evocative yet ambivalent as it does not promote the idea of stewardship or ecological action.

There is a significant lack of metaphors of the nature as nurturer, member of the community, and rights-bearing being, which Stibbe (2015) identifies as central to sustainable discourse.

Ecological Meaning and Visual Content

As can be visually seen, both the English and the Science textbook contain images that mostly support the passive or mechanistic perception of the nature. Food chains and energy pyramids represent nature as an abstract system, whereas pictures of pollution and deforestation represent the damage that the environment has, with no human actors or solutions depicted.

This lack of empowering images, that is, community conservation or ecological restoration locally, restricts the power of students to visualize themselves as ecological actors. According to Kress and van

Leeuwen (2006), visuals shape meaning as powerfully as language; therefore, hence such omissions contribute to ecological disengagement.

General Ecolinguistic Analysis

The overall assessment of the concerned ecolanguage appears to be heterogeneous, but the focal tendencies appear to be:

In terms of the whole in the framework of what Stibbe suggests:

- Positive discourses are only seen in isolated places, primarily in English textbooks, and in passages that encourage conservation or reforestation.
- The ambivalent discourses prevail especially in the Science textbooks where neutrality and technicality override the moral reflections.
- The destructive discourses are created by agentless constructions, nominalizations and resource-based metaphors which normalize the harm to the environment.

This unbalance shows that although environmental issues are introduced in the curriculum, ecological ethics are not always engrained in the textbook discussion.

Conclusion

The paper shows that the language and visual representation of nature in the KPK secondary-level textbooks is biased and uneven in terms of ideology and restricted in terms of ecology. The use of the ecolinguistic model by Stibbe makes it clear that the discourse used in the majority of textbooks is not transformative, but informative. The prevalence of indeterminate and devastating discourses may make learners informed about the environment but disinterested in morality.

The results emphasize the importance of going beyond the content inclusion to the discursive transformation, so that even language itself would encourage ecological responsibility, care, and sustainability.

Recommendations

Findings based recommendation:

Curriculum Reform

Incorporate ecolinguistic principles into the guidelines of textbook development.

Explicit Human Agency

Instead of using passive constructions, use clauses that explicitly state that human beings are the cause of environmental damage.

Ethical and Emotional Framing

Incorporate moral evaluation, affective language, and ecological values alongside scientific explanations.

Metaphorical Reorientation

Introduce metaphors that depict nature as a living system, community, or a mother.

Localized Visual Representation

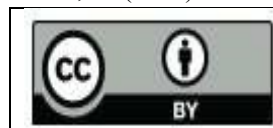
Include images of KPK's ecosystems, conservation initiatives, and community participation.

Teacher Training

Educators should be trained and provided with ecolinguistic awareness to critically engage with textbook discourse.

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