

## Ecological Discourse and Environmental Education in English Textbooks: A Multimodal Eco-critical Discourse Analysis

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### ABSTRACT

*While ecolinguistics studies in revealing ecological discourse have been appealed to and executed by several scholars, the eco-critical discourse analysis combining text and visual analysis of ecological discourse in textbooks seems largely unexplored. In response to the gap, this study aims to uncover text and visual-ecological discourse and inquire about the environmental education in English as a Foreign Language (EFL) textbook utilised in Indonesian senior high schools (SHSs). The textual discourses were categorised and coded based on the mood ecological element system and justified by the ecological concept. Similarly, visual illustration was analysed and categorised by ecosophy judgment. The ecological text and task were examined critically to decide the environmental education presented in the textbook. The result indicates that eco-beneficial discourse is demonstrated chiefly, while only a few eco-ambivalent and eco-destructive discourses are presented. The visual discourses likely exhibit a similar propensity to portray more eco-beneficial illustrations. The finding also unveils that only a small proportion of the highest environmental skills are embedded, mainly catering for the lowest level of environmental education skills. Therefore, stakeholders, including curriculum developers, book authors, and English teachers, are advised to be more aware of and incorporate environmental education and its concepts into their teaching practices.*

*Keywords: Ecological Discourse; Environmental Education; Textbook; Multimodal; Ecolinguistics*

### INTRODUCTION

Efforts to prevent and reduce environmental issues have still been endeavoured by the government of Indonesia. Several concrete actions have been taken in response to the pressing nature of the problem. In addition to government actions, public awareness and knowledge of environmental problems are essential since it is not a simple problem confronted by the country or even the world. Environmental education is acknowledged as one solution to surmount environmental problems to increase environmental awareness and knowledge among the general population. According to a scholar in the field, achieving the objectives of environmental education requires developing sensitivity to environmental issues, acquiring essential knowledge about the environment, understanding the relationship between human actions and their impact on the environment, adopting a broader perspective on environmental problems, developing problem-solving skills, critically evaluating potential solutions, and actively participating in efforts to address ecological issues as stated in the United Nation's 1976 environmental education objectives (Jacobs in Fill &

Penz, 2018). While the absence of people's awareness and knowledge may hinder the efforts to have a sustainable future and worsen the environment (Rahmani et al., 2021), the inclusion of environmental education in the school curriculum is required to realise the objective of environmental education. One effective way to incorporate environmental education into school curricula is by integrating it into different subjects, including language subjects like English as a Foreign Language (EFL), which can facilitate communication about varied environmental topics. Paradedwari et al. (2018) suggest that EFL, as an international language, should promote ecological awareness and responsibility. In addition, pedagogy practitioners are responsible for addressing global crises, particularly environmental problems, as stated by Rivers (1976, p. 96, as cited in Nkwetisama, 2011). Therefore, the government of Indonesia has included environmental education in classroom instruction, including EFL, with a focus on social attitude competence learning outcomes. Learners are expected to demonstrate honesty, discipline, responsibility, caring behaviour, open-mindedness, cooperation, politeness, and determination while collaborating with the social and natural environment within the scope of society and existence.

Enclosing environmental education in the textbook is a pathway to developing learners' environmental consciousness. In the EFL classroom, textbooks serve multiple crucial functions. It can direct learners' purposes, be employed as a curriculum, and be the principal guide for the learner in the instruction (Alimi et al., 2021; Ariffin & Enh, 2022; Farashaiyan et al., 2018). In addition, it works for educating goals and provides socialising goals such as social norms, cultures, gender, environment, and other values (Inayati et al., 2016; Manoharan et al., 2022). The content in the textbook consists not only of linguistic features but also of other messages delivered consisting of cultural aspects, social issues, and environmental issues. It is consistent with Curdt-Christiansen (2008) and (Gebregeorgis (2016), who stated that textbooks contain certain ideologies, culturally appropriate meanings, socially widespread norms, and beliefs that are either openly or implicitly embedded and impose the matters on the learners.

Environmental aspects in the language used in a textbook are openly uncovered by applying principles of eco-critical discourse analysis. This assumption is a recent inclination in linguistic studies to investigate education's social and ecological context. The previous research studies conducted by Jacobs and Goatly (2000), Al-Jamal and Al-Omari (2014), Stibbe (2014), and Xiong (2014) have successfully revealed the presence of environmental education in textbooks. However, the use of multimodal analysis in revealing the ecological issues in a textbook is still infrequently executed. Such a notion is crucial since non-linguistic materials must be generally considered when interpreting meaning due to their illuminating function in textbooks (Weninger, 2020). Therefore, neglecting the visual aspect may result in an uncomprehensive analysis and be ecologically destructive.

This study seeks to apply multimodal analysis to meticulously analyse the textbook's written discourse and visual representation. Eco-critical discourse analysis is executed to scrutinise the text, and visual environmental communication is applied to examine the visual illustration in an EFL textbook used in Indonesia for 12<sup>th</sup> graders. A thorough textbook analysis is expected to disclose the environmental discourse and environmental education embedded in the textbook. The environmental education discourses were analysed and classified as eco-beneficial, eco-ambivalent, or eco-destructive using Cheng's (2022) ecosophy concepts. For visual presentation, applying the microsemiotic analysis will disclose the tendency of the visual meaning toward the environment. In response, this study strives to answer the following research questions:

1. What ecosophy categories do the textbook's written and visual environmental discourses fall into?
2. How does the environmental content contribute to environmental education for students?

## THEORETICAL FRAMEWORK

### ECO-CRITICAL DISCOURSE ANALYSIS

Ecolinguistics can be defined as a study of analysing text about the environment, like road signs in their topographical locations in the environmental discourse, such as political speeches, green ads, and articles on the environment. The other level of ecolinguistics study, however, focuses more on analysing the interaction among organisms, including humans and the natural environment. Using eco-critical discourse analysis, it generally aims to advocate those who deteriorate most from the dominance and inequality of the oppressive discourse, such as plants, forests, rivers, or future generations (Stibbe, 2014). Moreover, eco-critical discourse analysis also seeks to unearth ecologically destructive discourse or environmental protection and preservation discourse to apply this knowledge practically by increasing awareness or sensitivity of the language in ecological devastation, conservation, enlightening policy, enlightening educational improvement, or generating ideas for revising texts or creating new texts in the future.

The requirement in justifying the ecological orientation of discourse is the connection between the concept of ecosophy, “diversity and harmony, interaction, and co-existence” (Cheng, 2022), and ecological properties embodied in the discourse. Texts can be categorised as a positive discourse if they promote ecosophical concepts in generating awareness of caring for and preserving the environment. On the other hand, the discourse that contributes to environmental destruction is categorised as oppressive. Given this, eco-critical discourse analysis was applied in the present study to reveal the textbook's positive and oppressive discourse. The text in the investigated schoolbooks will be considered positive discourse if it encourages readers, in this case, the learners, to protect the ecosystems, and its ideology resonates with ecosophy's concepts. Conversely, if the negative exposure is provided and causes the learner to extinguish the environment, it is categorised as oppressive discourse.

In addition, eco-critical discourse analysis examines a discourse by concentrating on linguistic features analysis, which can construct specific worldviews or “cultural codes” using a stated or unstated ecological philosophy (ecosophy) to determine the criteria of worldview. When the process type, participant role, and circumstantial role support the ecosophy concepts, it is classified as eco-beneficial discourse. Otherwise, it will be categorised as eco-destructive discourse. Meanwhile, when the mood ecological element system factors neither follow nor abuse the ecosophy concepts, it is classified as eco-ambivalent discourse. The analysis primarily focuses on the metaphors, pronoun use, vocabulary use, and other linguistic features that could result in ways of discussing nature (Stibbe, forthcoming in Stibbe, 2014; Sultan & Ramli, 2015). In this study, in analysing the linguistics feature of the discourse, the concept of the mood ecological element system in interpersonal metafunction framed by He et al. (2021, as cited in Cheng, 2022) is adopted. The interpersonal metafunction is the development of the mood, modality, and appraisal systems in Systemic Functional Linguistics (SFL) to accurately determine and uphold appropriate personal and social connections with other people. In this instance, it also encompasses the relationship between the living and non-living things necessary to reveal the discourse's linguistics feature and determine the ecological orientation.

### VISUAL ENVIRONMENTAL COMMUNICATION

This study implemented the principles of analysing visuals for the environment developed by Hansen as cited in Fill and Penz (2018) to reveal the visual text in the textbook. This approach concerns mediated communication of the environment in its broader social, political, and cultural context. It is described that visual environmental communication theorises and examines visual imagery, such as photographs, film, and scientific/graphical representations in the form of charts and graphs, maps, models, drawings, cartoons, paintings, artistic exhibits, installations, or performances. They help convey or construct information about the environment because visuals generally underlie the comprehension of social, political, and cultural construction and the environmental aspects. This approach discusses three primary contexts: communicative, cultural, historical, and significant sites: production, content, and consumption.

### ENVIRONMENTAL EDUCATION

Environmental education is represented in several criteria that become knowledge of basic ecological concepts, environmental sensitivity or appreciation, awareness of environmental issues and problems, and skills and behaviour to prevent and resolve the problems as critical attributes of the environmentally literate individual (McBride et al., 2013). In Al-Jamal and Al-Omari (2014), ecological sensitivity or awareness is a general awareness of critical environmental issues such as pollution, resources, global warming, environment, institutional efforts, and ethical aspects. Finally, ecological knowledge is personal conduct knowledge, which interprets awareness into action, such as experience, analysis, definition, information, and examples.

Ecological skill further relates to a student's learning capability to analyse problems, thinking skills, problem-solving skills, personal and social skills, undertaking projects, learning by doing, roleplay, illustration, and hand-made material. Meanwhile, the ecological contribution is embodied in how learners acquire the skill through experiences and practice, such as decision-making, activities, campaigns, tree-planting, photographs/postures, associations, expert talks, and speeches. By categorising the discourses offered in a textbook, environmental education concepts and their consequences on the learners' ecological literacy can be thoroughly identified.

### RESEARCH ON ENVIRONMENTAL CONTENTS IN TEXTBOOKS

Prior research in analysing environmental issues in textbooks has been carried out by Stibbe (2004) by investigating 26 EFL textbooks employed in Japan. It focuses on discovering the kinds of environmental education offered and the representation of intercultural communication incorporated into instruction. The textbook analysis is concerned explicitly with four assumptions. The assumptions are that overconsumption of resources enhances life quality, nonhuman creatures have no innate account, and humans are the world's centre. Furthermore, indigenous are disadvantaged to be blamed for ecological devastation. The research results disclosed that the textbooks could not expose the criticism of the cultural values of the environmental crisis.

Likewise, Al-Jamal and Al-Omari (2014) have examined 10<sup>th</sup>-grade EFL textbooks on ecological education representation through descriptive and critical content analysis. Al-Jamal and Al-Omari (2014) found that only one-third of the textbooks consisted of sensitivity to the ecological environment, less than 20% reflected knowledge, and 12.35% extracted the ecological contribution themes. To conclude, Al-Jamal and Al-Omari suggested that teachers emphasise

efforts to raise learners' ecological awareness by using meaningful theme-based communication, considering that the proportion of ecological problems presented in textbooks is relatively small.

Another research was conducted by Xiong (2014) by scrutinising five series of state-sanctioned ESL textbooks used in China. It aimed to uncover the level of environmentalism represented in the textbooks. In examining the textbook, content analysis and eco-critical discourse analysis were adopted. The study revealed that the textbooks' environmental content primarily aims to promote awareness of environmental issues rather than persuade the learners to actual participation and transformational practice.

Based on similar previous studies, eco-critical discourse analysis and visual analysis in revealing the ecological issues in a textbook is still infrequently executed. However, the visual aspect of such books seems essential to represent and communicate the meaning of a text and complement the performance of the meaning. Therefore, non-linguistic materials should be considered in analysing the meaning due to their supporting role in revealing the meaning in the textbook (Weninger, 2020).

## RESEARCH METHOD

This study carefully examines the environmental content of an EFL textbook employed by twelfth-grade students and its effects on the learners. The selection of the materials is based on the consideration that this book is mandated by the government to be distributed and used throughout Indonesia. The textbook, entitled "*Bahasa Inggris*" or English Language, was published by the Ministry of Education and Culture of Indonesia and was written by Widiati and Furaidah (2017). The book comprises 11 chapters on 176 pages, constituting several aspects: cover, preface, vocabulary builder, pronunciation practice, dialogue, vocabulary exercise, grammar review, speaking, reading comprehension, writing, and reflection. Besides, the twelve graders' student book has been selected since these learners are in the formal operational stage in the theory of cognitive development by (Jean Piaget (1970), in which they begin to think of ethical, logical, and communal issues that require abstract reasoning to explain more clearly how environmental education theme in the textbook is intended to encourage these skills. The environmental education theme is also presented in one of the chapters in the book as it is designed to encourage hard and soft skills for the learners, including environmental education, as stated in its learning outcome.

The frequency of ecological discourse was measured and analysed using eco-critical discourse analysis. This method involves three stages proposed by Cheng (2022): first, deciding on the framework for the study under the principle of ecological philosophy (ecosophy) combined with linguistic theory; secondly, discovering the linguistic features by discourse analysis to expose the ecological orientation and the hidden reasons; and finally, identifying ecological measures such as guiding people's ecological behaviours and promoting the harmony of the ecosystem.

The framework used to reveal the linguistic features and ecological orientation is the concept of the mood ecological element system in interpersonal metafunction framed by He et al. (2021, as cited in Cheng, 2022). This analysis examined the ecological properties of speech roles, motivation, and the textbook's discourse targets based on ecosophy concepts of harmony, interaction, and co-existence. The discourse in the textbook was classified into four mood system types: declarative, imperative, interrogative, and internal. Within each type of mood system, several ecological elements were identified, including ecosystem types (natural or social), speech role, speech motivation, and speech target, covering the type and impact factors of the discourse.

This analysis can reveal the identity, status, relationships, attitudes, and judgments of speech roles within the ecosystem by categorising and coding the environmental discourse based on the mentioned frame. It is then classified as eco-beneficial, eco-ambivalent, or eco-destructive.

Similar to the textual analysis, the visual data containing ecological content were collected, totalled, and analysed by visual environmental communication by Hansen as cited in Fill and Penz (2018). This analysis was conducted by identifying the basic elements of semiotics, such as the notion of denotation, connotation, and ideology (Barthes, 1977; Hansen, 2018, as cited in Fill & Penz, 2018) and critical discourse analysis, which can reveal the hidden ideology in this case, ecological ideology, by concerning on the sources, content and social implications of the textbook. The ecological ideology is categorised by an ecological orientation, which is eco-beneficial, eco-ambivalent, and eco-destructive. After the analysis of textual and visual ecological content has been accomplished, the analysis of the environmental education aspect was executed by identifying the tasks provided in the textbook by considering the criteria of environmental education, which are ecological sensitivity/awareness, ecological knowledge, ecological skill, and ecological contribution. Then, the tasks were counted and analysed to determine their effect on the learners.

## RESEARCH FINDING

In this section, three results of the analysis are explained. The first is the analysis of ecological discourse construction in the textbook covering discourse classified as eco-beneficial, eco-ambivalent, and eco-destructive. The second analysis provides visual analysis showing images in the textbook that belong to eco-beneficial, eco-ambivalent, and eco-destructive aspects. Finally, the identification of environmental education is provided.

TABLE 1. Ecological discourse construction

Discourse Construction	Frequency	Percentage
Eco-beneficial	55	87%
Eco-ambivalent	5	8%
Eco-destructive	4	6%

The presentations of ecological discourse can be used to gauge the authors' awareness of inserting environmental issues in the textbook. Chapter 7, titled "It's Garbage In, Art Works Out," primarily focuses on showcasing how waste can be transformed into art, thus exposing learners to the concept of recycling. Besides, the textbook exhibits more than three-quarters of eco-beneficial discourses, categorised and analysed by the ecological element system and justified by the ecosophy concept. However, as shown in Table 1, eco-beneficial discourse is not the only type of ecological discourse included in the textbook. Eco-ambivalent and eco-destructive discourse are also present, albeit in smaller proportions of less than 10% each.

The analysis also uncovers that eco-beneficial discourses are presented in four mood systems. First, twenty-four parts of the discourse portray the declarative mood system. Secondly, fourteen interrogative eco-beneficial sentences are depicted in this textbook. Then, fifteen imperative eco-beneficial discourses are represented in the textbook. Finally, the result also reveals

that twenty-one discourses of the internal discourses are depicted in the book as reading texts or vocabulary exercises.

Meanwhile, the textbook mainly discovers five eco-ambivalent discourses in the reading texts or vocabulary exercises. They are primarily noticed as an internal mood system using the modal that generates a low emphasis on an eco-beneficial action. Lastly, the eco-destructive discourse was found four times in the textbook. Those discourses of the ecological content in the textbook can be seen in Table 2, which can only present several extracts due to the limited section.

TABLE 2. Extracts of Ecological Texts

Extract	Text	Ecosophy Justification
Extract 1	<i>"It's so sad that many spectators _____ (throw) trash in the city stadium during the final football match last week."</i>	eco-beneficial
Extract 2	<i>"Has Indonesia implemented the three Rs so far?"</i>	eco-beneficial
Extract 3	<i>"Find some information about plastic recycling. You can find it on the Internet, newspapers or magazines."</i>	eco-beneficial
Extract 4	<i>"Every household in our city should think of how to _____ (reduce) the amount of (trash) _____ taken to the _____ (landfill). The three Rs should be in the mind of all people."</i>	eco-beneficial
Extract 5	<i>"Environmentally concerned city architects will (incorporate) _____ environment-friendly features in their design of the city planning."</i>	eco-ambivalent
Extract 6	<i>"My mother told me that it was difficult to buy soupy kinds of food in the old time. We had to bring our own _____ (container) from home because plastic _____ (container) were not as popular as they are now."</i>	eco-destructive
Extract 7	<i>"The toll road connection will give the public alternative access to ease congestion on Jl. Sawangan and Jl. Margonda in Depok, which is the only major route to Jakarta from Depok."</i>	eco-beneficial
Extract 8	<i>"If you listen to a news report about an artist that turns plastic bags into art, what question can you ask? Discuss it with your partner."</i>	eco-beneficial
Extract 9	<i>"Find some information about plastic recycling. You can find it on the Internet, newspapers or magazines."</i>	eco-beneficial

The result indicates three types of discourse images depicted in the textbook. Mainly, they belong to beneficial ecological discourse, while only an insignificant number of occurrences portrayed the eco-ambivalent and eco-destructive discourse. Examples of visual ecological content in the textbook are visualised in Figure 1 to Figure 4.



Attendees at the 3R Forum look at toy motorcycles made from recycled parts, Surabaya, Indonesia. (Petrus Riski/VOA)

FIGURE 1. Eco-beneficial picture of people

3. Book a night at one of the many cozy B & Bs or resorts available throughout the Sun Juan Islands. Cozy bed and breakfasts are the perfect way to enjoy the friendly island culture. If you have enough time, tour the numerous art galleries in Friday Harbor. You can

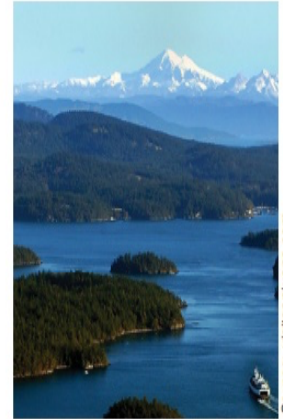


FIGURE 2. Eco-beneficial picture of nature

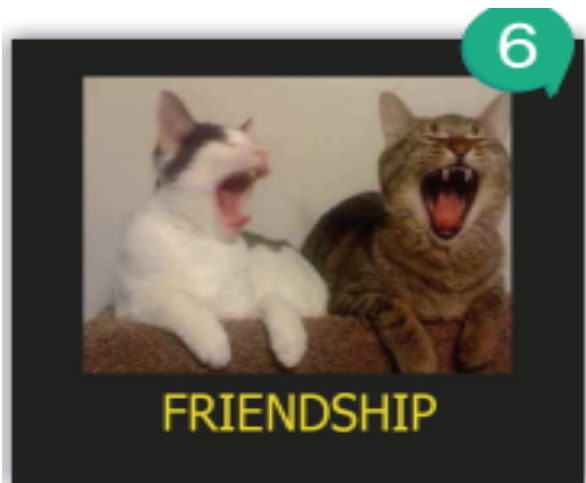


FIGURE 3. Eco-beneficial picture of animals

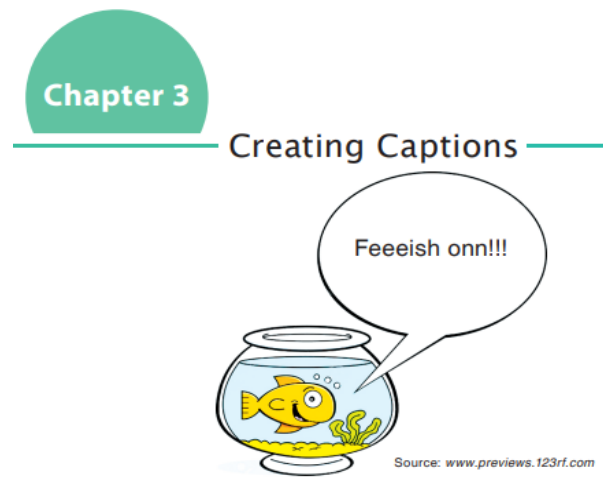


FIGURE 4. Eco-destructive visual of an animal

This study likely uncovers the environmental education incorporated into English language instruction, as presented in Table 3. Ecological sensitivity covered almost all of the environmental education aspects presented in the textbook. This fundamental environmental education aspect reaches the highest number of occurrences at 73%, followed by the higher level of environmental education aspects respectively at 15%, 13%, and 0.6%. Such portions demonstrate that the environmental education skill with the most significant potential impact on the environment is conveyed inadequately.

TABLE 3. The Percentage of Environmental Education Aspect

Environmental Education Aspect	Frequency	Percentage
Ecological Sensitivity	45	73%
Ecological Knowledge	9	15%
Ecological Skill	8	13%
Ecological Contribution	1	0.6%



## DISCUSSION

### ECO-BENEFICIAL DISCOURSE

Based on the ecological discourse construction percentages, eco-beneficial discourse exceeds three-quarters of the total occurrences. It has been demonstrated in various moods, including declarative, interrogative, internal, and imperative mood ecological systems. Declarative mood system analysis includes the ecological property of the status and interpersonal relationship between information giver and receiver, the subjective of complementary information, and motivation. It was then analysed by the ecosophy concept (Cheng, 2022). Extract one shows that the ecosystem type built in this discourse is natural, showing the interaction between "spectators" as a group of humans and nature represented in public places mentioned as "the city stadium." The discourse is the primary information the authors give, represented as a vocabulary exercise in the textbook. It aims to provide information about somebody's feelings about an eco-destructive action made by the spectators. The word "so sad" shows a negative appraisal to disagree with the target in this statement, which is an action of non-environmentally friendly behaviour. This statement adheres to one of the ecosophy principles, interaction. The authors' representation of the discourse aims to heighten students' awareness of ecological issues. It is anticipated that, after receiving such exposure, the student will not engage in the same behaviour as the spectators and will take the position that littering the municipal stadium is harmful.

The interrogative eco-beneficial discourse analyses three aspects. First, there are references to speech roles, speech motivation, and objectives (Cheng, 2022). By posing the questions in Extract 2, the authors aim to seek new content, information, or knowledge from the learners of how the subject "Indonesia" as the country implemented an ecosophy concept called the "three Rs." The three Rs is a waste management system prioritising reducing, reusing, and recycling waste. Created in Yes/No questions, the authors expect the learners to conduct research and meditate on the program. Ecological knowledge incorporates the process of reflection and analysis of the issues. The cognitive behaviour of reflective thinking is believed to foster problem-solving skills (Kandasamy et al., 2022; Mcgregor, 2007). With the reflection inquiries, students are expected to contribute more to environmentally beneficial action.

In analysing the imperative mood, the judgment of identity and status of the speaker, addressee, and imperative target was identified. The most potent imperative discourse is in the authors' instruction to the learners to accomplish a task, as demonstrated in Extract 3. The authors use their control to command the learners to perform an environmentally beneficial action representing a project of finding information about plastic recycling. It indicates that the authors influence the learner to engage in future activities, such as researching plastic recycling. The sentences are classified as directives mainly used to command others to do something (Quirk et al., 1985). Besides, the authors give choices to the learners to determine how they can complete the assignment by stating alternatives to using the Internet, newspapers, or magazines. By following the command from the authors, it is expected that the learners will discover and be exposed to information related to plastic recycling. The learners will comprehend the issues of plastic recycling from various sources such as the Internet, newspapers, and magazines. It demonstrates that the learners should be able to utilise any media to figure out an issue of ecological maintenance. Upon completing the task, the learners will be prompted to be environmentally conscious and take eco-friendly actions during the learning process.

The internal mood system is mainly developed from the modality system (Halliday & Matthiessen, 2014). Its analysis includes the speaker's subjective attitude, judgment, stance

concerning the address, lexico-grammatical devices, and certain expressions (He et al., as cited in Cheng, 2022). From Extract 4, it can be seen that the relationship shown in the discourse is between humans, presented as "every household in our city", and natural problems, presented as "the amount of trash." The word "should" signifies the inclination. Eggins (2004) postulated that the modality conveys the authors' or speakers' judgment or inclination toward events and actions. The disposition is described as the suggestion to execute the actions proposed. The agent "every household" is suggested to "reduce the amount of trash taken to the landfill". Besides, the word "should" also inclines the concepts of the three Rs (reduce, reuse, and recycle) that all people should possess. By exposing the learners to this eco-beneficial suggestive discourse, the learners will be imposed by an ideal state of how to solve an ecological issue: waste management. The discourse can be an example of the eco problem-solution exposed to the learners. In addition, by completing the exercise to complete the environmental vocabulary, the authors anticipate that the learner's ecological knowledge will increase.

#### ECO-AMBIVALENT DISCOURSE

The discourses that make up eco-ambivalent discourse are those that neither adhere to nor transgress the concepts of ecosophy. The textbook mainly presents five eco-ambivalent discourses in the reading text or vocabulary exercise. They are primarily noticed as an internal mood system using the modal. The use of the modal generates a low emphasis on an eco-beneficial action. In Extract 5, the interaction between humans and nature is demonstrated in this discourse. As an agent, the architects completed the phrase environmentally concerned, showing that architects should also be concerned with the environment. The term "will" signifies the likelihood of performing an action. It represents the greatest degree of probability (Celce-Murcia & Larsen-Freeman, 1999). The action that will likely occur is "incorporating eco-friendly elements into their urban planning design." According to the probability of occurrence, it is not urgently required. Urban planning based on green urbanism is crucial for encouraging environmentally friendly growth. It may involve reducing the amount of material and energy consumed (Manea et al., 2014). It is suggested that the authors emphasise the importance of addressing green urbanism, as it can influence the learners' perception of the issue.

#### ECO-DESTRUCTIVE DISCOURSE

Even though the majority of discourses in the textbook are eco-beneficial, the result indicates a few eco-destructive discourses in the textbook. One of the examples is presented in Extract 6. The information in the first sentence portrays an idea of the "old-time," stating that "it was difficult to purchase soupy food." The word "difficult" indicates a negative appraisal of buying soupy food. The second sentence obligates the agent "we" using the word "had to" to do an action. "It implies there is a force to do the action of "bring your container to buy soupy food." The use of the word "popular" for plastic indicates that many people use it. Therefore, it can be inferred that the speaker intends to state that a plastic container, which is popular nowadays, eases him/her, fulfilling the need to purchase soupy food. In this case, a positive perception or idea of plastic container use is presented, while plastic containers are environmentally hazardous; as Parker (2019) adds, they can kill millions of animals, such as birds, fish, or other ocean organisms.

### VISUAL ECOLOGICAL DISCOURSE CONSTRUCTION

In visual environmental communication, the interactions of several semiotic elements such as language, gesture, dress, architecture, proximity lighting, movement, gaze, and camera angle are investigated (O'Halloran et al., 2011). Moreover, Kress (2011) adds that the need for textual and visual analysis of multimodal discourse analysis examines meaning-making by agency, identity, social semiosis, knowledge, and power. Some categories of visual representations are inquired about in this study. The ecological visual discourse includes people, nature, and animals are included in the ecological visual discourse (Fill & Penz, 2018).

This study reveals two eco-beneficial portraits depicting the relationship between people and ecological issues. One of the pictures, Figure 1, portrays a group of people wearing formal attire attending the 3Rs (reduce, recycle, and reuse) conference. From the text following and the caption, it can be identified that the Surabaya mayor, Tri Rismaharini, the woman wearing a black veil, accompanies the attendees at the forum. The text also characterised the mayor as a successful, influential figure in managing municipal waste through the 3Rs program. As it can be identified, the mayor and the attendees smiled upon recognising a miniature motorcycle made from recycled materials. The smile illustrates a positive expression that may distribute a sense of nurturance and the power to perform positive energy and exaggerate the effectiveness of interpersonal communication (John, 2019). The picture implies the positive energy in encouraging the positive environmental movement. By portraying the concept, the authors induce the learners to have the same idea in viewing the positive environmental movement. Therefore, the representation of pleasure in supporting the eco-beneficial movement is categorised as eco-beneficial discourse.

The view depicted in Figure 2 is an island called San Juan. The picture portrayed the island's beauty, which contained the view of blue sky, mountains, the island, and the ocean. The island of Sun Juan in the picture is full of lush and thick trees, showing the excellent tourism of Sun Juan, which is wildlife. Learners' awareness of wildlife will be affected by the concept of a wildlife tourism object. A beautiful, pristine, and verdant environment symbolises it. It demonstrates an appreciation for aesthetics and is a source of positive depictions of nature. In addition, making it an attractive tourist attraction will influence the learners' perspectives. The concept of ecotourism is eco-beneficial in some ways as eco-tourists can obtain the conservation efforts knowledge, such as the ecosystem in the site, and money earned by ecotourism flows to conservation efforts. Repopulating endangered species and reforestation occur in this instance. Two distinct cats are shown in Figure 3, sitting and chuckling together. Additionally, there is calligraphy in the image that reads "friendship." Utilising creatures to comprehend human relationships with others is advantageous. It tends to acknowledge that the animals are included and have life/interaction with other animals. How animals are socially constructed affects how they are treated by society (Stibbe, 2001). Furthermore, neither explicit nor implicit oppression nor exploitation ideology is depicted in the image.

However, keeping a fish in a basin or aquarium, as depicted in Figure 4, is considered an eco-destructive demonstration. The goldfish in the bowl is smiling, signifying a joyful existence. However, PETA asserts that fish should be allowed to migrate freely in their natural habitat. They can swim in a bowl in a few cubic inches of water. It does not provide the necessary space or oxygen for the goldfish. Few can distinguish individuals, employ instruments, and maintain complex social relationships. Due to their isolation and confinement in a basin, they cannot use their ability. The word "Feeeish onn", as a fish says, is also unidentified. It is examined as the word fish, which in Urban Dictionary means a male interest in a sexually feasible female. A student will justify a destructive ecological illustration in a textbook upon viewing it. It can also influence their

behaviour to match that of Ibañez and Manes (2012), who assert that context influences all brain processes, from visual perception to social interaction.

#### ENVIRONMENTAL EDUCATION ASPECT

Based on the research findings, ecological sensitivity encompasses almost all of the environmental education aspects presented in the textbook. It demands learners' awareness of the environment and its associated problems (Jacobs et al., 2022). Listening to an article about recycling will elicit awareness of the problem and its dangers (Al-Jamal & Al-Omari, 2014). In this EFL textbook for 12<sup>th</sup> graders, ecological sensitivity is primarily presented in reading activities, vocabulary exercises, and grammar reviews as the text exposes the learners to environmental topics. As found in a reading activity, the learners are given a news text in Extract 7. In this activity, the learners need to answer several questions to comprehend the structure of the news item. The learners are provided with information on how to deal with environmental problems, specifically "congestion." It implies that the learners can be aware of the environmental problem and perceive the proposed solution, which is presented as a "toll road connection."

In 15% of cases, ecological knowledge was significantly lower than ecological sensitivity. This aspect of environmental education entails a conception of the world and the related issues. It may embed information about the ecosystem. For instance, when learners are provided with the text for reading comprehension on pollution, it might embrace learners' knowledge of the pollution's causes and other related issues (Al-Jamal & Al-Omari, 2014). One of the examples in the textbook presents ecological knowledge in listening activity and asking questions about environmental action, as stated in Extract 8. The question in the activity is categorised as ecological knowledge since it generates action by analysing an environmentally friendly action. The students learn how plastic bags are turned into art and use their cognitive skills to question the other non-explained things about the issues. The result of the analysis discloses fewer occurrences of ecological skill, which is a significant skill in environmental education. The most apparent activity depicted in the ecological skill is instructed in Extract 9. The learners are instructed to do a project on finding information about plastic recycling. Following the activity, the roleplay of being a broadcaster, reporter, actor, and witness is instructed. They need to do a roleplay under the environmentally related issues.

Ecological contribution is obtained when learners use their experience and practice noticeably. It transforms all sensitivity/awareness, knowledge, and skills into real action. It might be the highest skill of ecological education since it directly impacts the environment. In the textbook, the limited number of ecological contributions was revealed. In only one occurrence, the ecological contribution is merely depicted by asking the learners to discuss environmental problems, such as neighbourhood and school. Afterwards, students are asked to discuss how to make their schoolmates aware of the issue and propose solutions on what students can do to address it. A more practical solution that can be followed in the exercise is absence.

Ideally, successful language learning encompasses an equally successful integration of acquired micro and macro skills, such as ecological education, which provides a wealth of material for communication. Renewing and expanding the objectives of teaching English as a second or foreign language is another motivation for inclusion in environmental education. Jacobs et al. (2022) affirmed that ecological education is recognised as cross-curricular since the environment comprises all study zones. Foreign language education can improve the effectiveness of student learning and directly involve environmental protection.

## CONCLUSION

The present study reveals that there is an effort from the authors to incorporate environmental content and education in the textbook aimed at EFL 12<sup>th</sup> graders. The embodiment of the environmental contents was indicated in both textual and visual discourse. The majority of the environmental content was conveyed in an eco-beneficial manner. The eco-beneficial discourse comprises various tenses, including declarative, interrogative, imperative, and internal. In addition, the concept of ecosophy categorises certain discourses as eco-ambivalent and eco-destructive. Therefore, eco-ambivalent and eco-destructive discourse findings should be considered when delivering content to students. The eco-beneficial visual construction is visually presented in three aspects: people's behaviour, nature representative, and animal respect. Unfortunately, one eco-destructive picture was chosen by the authors as an illustration of a topic. Aside from that, the finding demonstrates that the environmental education skill covered in the textbook is primarily the fundamental skill that introduces students to eco-texts that raise students' awareness of the issue. However, the ecologically focused advanced environmental education talent is presented inadequately. The contribution skill has a direct and significant effect on the environment. Moreover, based on the findings of the research, it is recommended that textbook authors, curriculum designers, and English teachers promote environmental education at all skill levels, including the highest skill level, for the benefit of the environment. The present study also proposes that the choice of textual and visual discourses in textbooks should consider and avoid the eco-destructive discourse and provide the learners with more ecologically appropriate input.

## ACKNOWLEDGEMENTS

This work was supported by the Research Fund provided by Universitas Negeri Yogyakarta.

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