



Exploring Ecolexicons in Balinese Text Book for Elementary Student Grade IV

I Komang Sulatra¹, Desak Putu Eka Pratiwi²

Komang_sulatra@unmas.ac.id, desakekapratiwi@unmas.ac.id

Universitas Mahasaraswati Denpasar^{1,2}

Abstract

Balinese language is not only a means of communication but also the identity of the Balinese ethnic. The language has captured the development of Balinese, including the ecology of Balinese life. This study aims to explore the form of ecolexicons found in the textbook of Bahasa Bali for the fourth grade of elementary school. This study is qualitative. The data were collected from four texts entitled *Bébé*, *Lelipi Gilik*, *Mamacul* and *Segara*. The observation method was applied through reading, note-taking, and classifying the categories of the ecolexicons. This study used ecolinguistics theory as the umbrella and the theory of morphology as the supporting theory. The findings were presented by formal and informal methods. The result shows that the ecolexicons found are nouns (both biotic and abiotic) and the verb category. The forms of ecolexicons are base form, derivative form, inflected form, and compound. Teaching ecolexicons to the young generation is not only to maintain the language but to increase the ecological awareness of the Balinese.

Keywords: ecology, eco-lexicon, language, student textbook

Introduction

Balinese language is not only a means of communication, but this is also one of the main elements of Balinese culture. Balinese language is multifaceted since it acts as a vital cultural aspect, as an ethnic marker within Balinese, while the language of Bahasa Indonesia and international languages like English also exist and are important in the social aspect of life. Balancing the position of those languages in the global era is not an easy task.

Knowing the importance of the Balinese language, Balinese society needs to preserve its ethnic language because this is one of the main identities of the Balinese. One of the main efforts in maintaining the Balinese language is by teaching the subject of Balinese language as a compulsory subject in school. Facing a decline in daily use among younger generations, this effort, which is covered by government regulations, ensures the role of the Balinese language as Balinese identity and heritage.

Learning the Balinese language at school, besides increasing the skills of using language, it will also help the younger generation learn the local wisdom of the Balinese in viewing life. The Balinese language is a living document that has stored knowledge and stories of Bali. One of the things that can be learnt is how the Balinese view ecology because language and ecology can't be separated. In linguistics, it is known as Ecolinguistics.

The study of language and ecology has been done by many researchers. Yuniawan et al. (2019) have done quantitative research dealing with conservation ecolexicon literacy. The study aims to map the understanding levels of conservation ecolexicon literacy of teachers of Elementary Schools around UNNES campus. The study was done by employing conservation ecolexicon questionnaires in the form of value and character pillar lexicon, art and culture pillar lexicon, and natural resource and environment pillar lexicon as its instruments. The next study was done by Kardana et al. (2020). It aimed to analyze the dynamics of Balinese ecolexicon use in the tourist area of Sanur, Bali. Another research focusing on ecolinguistics was done by Yusuf et al. (2020), who explored the ecolexicon in children's storybooks about North Sumatran folktales. Their study provides a fairly detailed overview of the ecolexicon in folktales, using ecolinguistic theory as an umbrella theory. In addition, Sulatra and Pratiwi (2022) also explored the use of ecolexicon in one of the Balinese fables entitled *Siap Selem*. Sulatra and Pratiwi (2022) stated that introducing the environment is an important aspect of fairy tales. Through fairy tales, Balinese ancestors provide education and knowledge about nature.

Moreover, Gul et al. (2025) explored the role of language in promoting environmental responsibility by analyzing discursive practices, metaphors, and narratives that either reinforce unsustainable paradigms or advocate for ecological sustainability. This research includes comparative analyses of environmental discourse in corporate sustainability reports, indigenous communities' eco-centric lexicons, and climate change communication in media. Suardana et al. (2025) analysed ecolexicon of Balinese Medical Plants. The data were taken from *Lontar Usada Putih* 'Usada Putih Manuscript'. This research was qualitative research which was intended to analyze *lontar Usada Putih* as a guideline for traditional medicine using an Ecolinguistic perspective.

Those previous works are ecolinguistic studies which concern of relation between language and ecology. Yuniawan et al (2019), Kardana et al. (2020), Yusuf et al. (2020), Sulatra and Pratiwi (2022) discussed the ecolexicon, which has a close relation to this study. They focused their study on the ecolinguistics approach. The recent study used text textbook for elementary students as a data source, focusing on the form of the ecolexicon and the relation with educational perspective. This study covers not only Balinese ecolexicons, but it also tries to observe how teaching those ecolexicons will increase students' ecological awareness. The research done by Gul et al. (2025) is an ecolinguistics study that concerns the ecocritical study, which is different in focus from this study. The last study done by Suardana et al. (2025) is similar to this study, in which both studies are concerned with ecolexicons in Balinese texts. Suardana et al. (2025) used a medical manuscript, while this study uses text textbook.

Ecolinguistics is the study of language and ecology. It has a wide scope of discussion, one of which is the relation between ecolinguistics and education. It is an interesting subject in the development of linguistics; therefore, this study is mainly focused on exploring the ecolexicons used in textbooks for elementary students in grade four and the relation of those ecolexicons in increasing the ecological awareness of the younger generation of Balinese society.

Literature Review

This theoretical framework is founded on ecolinguistics approach to language. Ecolinguistics is an interdisciplinary study of linguistics and ecology. The idea was initiated by Gumperz (1962), who stated that sociolinguistics is the study of verbal behavior which is related to the social characteristics of speakers, their cultural background, and the ecological nature of the environment in which they interact (Gumperz, 1962: 137). The next scholar who is more in this idea is Haugen (1972). He proposed a definition of language ecology, namely the study of interactions between language and the environment. Ecolinguistics is the study of interactions between language and its environment.

The idea of ecolinguistics is deepened by Fill (1993:126) in Lindo and Simonsen (2000: 40). He states that ecolinguistics is an umbrella for all research on language that is linked to ecology. Language can represent facts about natural, social, and cultural life that exist in the environment (Fill and Muhlhauser, 2001). The ecolinguistics approach needs a supporting theory. The form of ecolinguistics can be analysed by applying the morphological theory of words. One of the scholars who is concerned with morphology is Booij (2027). He argues that 'the lexicon specifies the properties of each word, its phonological form, its morphological, and syntactic properties, and its meaning (Booij, 2007:16). Morphology is the study of the internal constituent structure of words (Booij, 2007: 4). The lexicon is considered to be able to determine the nature of each word, its phonological form, morphological form, and syntactic properties as well as the meaning of the lexicon. Booij (2007) states that knowledge of a language involves knowledge of the system of relationships between word forms and word meanings. He explained the influence of changes in word structure on word classes and word meanings.

Method

This research applies a qualitative method. Data are in the form of a lexicon, which represents ecological diversity. The data source of this study is entitled *Bahasa Bali untuk SD kelas 4*. The data were collected from four texts found in that textbook, entitled *Bébé*, *Lelipi Gilik*, *Mamacul* and *Segara*. Those four texts are short texts; therefore, the data were collected by applying the observation method with several techniques, such as reading, note-taking taking and classifying the lexicon. The collected data were analyzed by using a descriptive qualitative method. The ecolinguistics theory becomes the umbrella in this study, which was helped by the theory of morphology. The findings of this study were presented by formal and informal methods. A formal method was applied by presenting the findings in a table. An informal method was applied by explaining the findings in a narrative text.

Findings and Discussion

The findings of ecolixicons used in the text are presented in a table. The finding shows the forms of lexicon and the references found in nature. Based on the text, the lexicons found are categorized into nouns and verbs. The noun lexicons are found in the ecological references, both in biotic and abiotic environments. The use of ecolixicons in the text will enhance the knowledge of the students about the terms used to refer to the environment in Balinese.

Table 1. Ecolixicon Used in Balinese text for students of an Elementary School

No.	Ecolixicon	Gloss	Category		Reference	
			noun	Verb	biotic	abiotic
1.	<i>tegal</i>	field	✓	-	-	✓
2	<i>bikul</i>	mouse	✓	-	✓	-
3	<i>nyingnying</i>	mouse pups	✓	-	✓	-
4	<i>majalan</i>	pref.- <i>ma-v</i> 'walk'		✓	-	-
5	<i>amah</i>	eat	✓	-	-	-
6	<i>punyanan</i>	tree-suffix- <i>an</i>	✓	-	✓	-
7	<i>amah-amah an</i>	eat- reduplicative form-suffix- <i>an</i> 'foods'	✓	-	✓	-
8	<i>ikut</i>	tail	✓	-	✓	-
9	<i>batu</i>	stone				
10	<i>veh</i>	water				
11	<i>mamacul</i>	prefix <i>ma</i> -hoe 'hoeing'		✓		-
12	<i>langit</i>	sky	✓	-	-	✓
13	<i>endut</i>	mud				
14	<i>bongkol bukit</i>	foothills (compound)	✓	-	-	✓
15	<i>carik</i>	rice field	✓	-	✓	✓
16	<i>petani</i>	farmer	✓	-	✓	
17	<i>pondok</i>	hut	✓	-	-	✓

18	<i>ngetis</i>	prefix <i>N-</i> ‘fresh(adj)’ take shelter	✓	-	-	-
19	<i>sumi</i>	straw	✓	-	✓	-
20	<i>angin</i> <i>nglinus</i>	wind spinning	✓	-	-	✓
21	<i>alas</i>	forest	✓	-	✓	-
22	<i>lelipi</i>	snake	✓	-	✓	-
23	<i>masisik</i>	prefix <i>ma-</i> shell having shell	-	✓	-	-
24	<i>ngembeng</i>	flood	-	✓	-	-
25	<i>blabar</i>	big flood	✓	-	-	✓
26	<i>buron</i>	animal	✓	-	✓	-
27	<i>semal</i>	squirrel	✓	-	✓	-
28	<i>kedis</i>	bird	✓	-	✓	-
29	<i>luu</i>	rubbish	✓	-	-	✓
30	<i>segara</i>	sea	✓	-	-	✓

The table above shows that language becomes an effective tool to cover the existing things in ecology. The table followed the statement of Haugen (1972), who stated about language ecology, namely the study of interactions between language and the environment. Based on the findings, the use of ecolexicons found in the textbook of Balinese language for grade four of elementary students can be divided into two categories, namely nouns and verbs. Noun categories are mainly related to the environment, which are divided into biotic and abiotic elements, such as *carik* ‘ricefield’, *langit* ‘sky’, *segara* ‘sea’, *petani* ‘farmer’, *bikul* ‘mouse’, *nyingnying* ‘mouse pup’. Verb categories are related to the activity or action, such as *mamacul* ‘hoeing’ and *ngetis* ‘take shelter’.

Fill and Muhlhausler (2001) give deeper ideas about ecolinguistics, they stated that language can represent facts about natural, social, and cultural life that exist in the environment. The lexicon in the category of nouns, such as *tegal* ‘field’ *bongkol bukit* ‘foothills’, *carik* ‘rice field’, *segara* ‘sea’, *tukad* ‘river’, are important parts of ecology. Based on the morphological aspect, the ecolexicons such as *tegal*, *carik*, and *segara* are in the form of base form. There are no affixes attached, as stated by Booij (2007) base form refers to the simplest, non-derived form of a word in the context of morphology, a field of linguistics. The ecolexicon *bongkol bukit* ‘foothill’ is a compound noun since it is formed by combining two roots, *bongkol* ‘butt’ and *bukit* ‘hill’. The compounding process creates a new word ‘*bongkol bukit*’, which means the bottom part of a hill.

Those environments have a complex system of ecology where abiotic elements can be found, such as *batu* ‘stone’, *yeh* ‘water’, *endut* ‘mud’, and biotic elements like animals and trees that live there, such as *buron* ‘wild animal’, *bikul* ‘mouse’, *nyingnying* ‘mouse pup’, *kedis* ‘bird’, *semal* ‘squirrel’, *lelipi* ‘snake’ *punyanan* ‘tree’, and *sumi* ‘straw’. The students are taught how the biotic and abiotic elements work together in building and developing the complex ecological system.

In the social and cultural aspects, the ecolexicons, such as *carik* ‘ricefield’, *petani* ‘farmer’, *mamacul* ‘hoeing’, *ngetis* ‘take shelter’, and *pondok* ‘hut’ led the students to understand how the environment is not only related to biotic and abiotic elements working together, more than that the environment will develop social and cultural life.

Humans, as the leading element or the agent ‘actor’ in the ecology, have developed their social and cultural life based on the ecology where they live. The ecolexicon *mamacul* ‘hoeing’ is formed by adding the derivational suffix *ma-* to the root *pacul* ‘hoe’. It creates a new lexeme from the noun ‘*pacul*’ to the verb ‘*macul*’ and then the prefix *ma-* is reduplicated into *mamacul* ‘hoeing’. Based on Boij (2007) derivation as a morphological process that creates a new lexeme (a new word with its own entry in the lexicon) from an existing word or base, often changing its syntactic category or adding substantial new meaning. The ecolexicon *blabar* ‘flood’ gives information on how natural disasters might happen in ecology where humans live. The disaster might happen because of the nature or of human mistake. Through the use of this ecolexicon, the students get the knowledge that ecology has a big influence on human life, therefore, the need to preserve nature.

The diversity of ecolexicons, which cover the knowledge of the environment, is told in the form of fairy tales such as *Bébé*, *Lelipi Gilik*. The story of *Bébé* talks about a mouse named *Bébé* that lives in the field, and *Lelipi Gilik* talks about a snake that has a round, round-shelled body ‘*masisik*’. The text *Mamacul* ‘hoeing’ and *Segara* ‘sea’ talk about sociocultural topics. *Mamacul* is a common activity done by farmers; the text talks about the Balinese way of living; therefore, the students are informed about how to work in a rice field and what elements of ecology can be found there. The text of *Segara* let the student understand how important the sea is for human life, especially for Hindus. The text found is not only to enhance the reading skill of the students but also to inform or deliver the ecological knowledge through literacy; besides, it will be impactful in increasing the self-awareness to preserve nature. The data on the use of ecolexicons in the text are presented below.

Data 1. *Di tegale ane linggah ada bikul madan Ni Bébé*

In the middle of a large field there is a mouse named *Ni Bébé*.

I Bébé ngelah panak madan I Nyingnying

I bebe has a pup named I Nyingnying

Data 1 shows the use of eco-lexicon *tegalé* ‘field’ and *bikul* ‘mouse’. The ecolexicon *tegalé* is formed by attaching suffix *-é* to the root *tegal* ‘field’. Suffix *-é* in Balinese shows possession. Based on Boij (2007), affixes can be divided into two sub-categories, namely, inflectional and derivational affixes. Since suffix *-e* has the function to show possession, this is an inflectional suffix. The ecolexicon *bikul* ‘mouse’ is one of ecolexicons that covers the diversity of naming of animals in Balinese. The reference is biotic. The word *bikul* is the base word. Balinese language also has a specific term to name a young mouse, which is *nyingnying*. The word *nyingnying* is marked because it carries the meaning of young, meanwhile *bikul* is unmarked. Based on Fill and Muhlhausler (2001), the utterance *Di tegale ane linggah ada bikul madan Ni Bébé. I Bébé ngelah panak madan I Nyingnying* represent facts about natural, social, and cultural life that exist in the environment. It is easy to find animals like *bikul* ‘mouse’ and *nyingnying* ‘mouse pup’. This animal is related to the sociocultural aspects of Balinese life. *Bikul* and *nyingnying* usually live in the rice field. It has an important function in a complex network of interconnected food chains within an ecosystem. For Balinese culture ‘Hindu culture’, there is a tradition of *Ngaben Bikul* (ritual cremation

for *Bikul* ‘mouse’). This is a tradition associated with the agrarian life of the Balinese people, aimed at controlling rat infestations in rice fields (Adi Arsana et al, 2024).

Data 2. *I Nyingnying majalan paek punyan kayu gedé*
Nyingnying walked near a big tree

The use of ecolexicon *Nyingnying* ‘pups’ and *punyan kayu* ‘tree’ is found in data 2. Both of the lexicons are nouns. *Punyan kayu* ‘tree’ shows that in the field, it is common to find big trees. *Punyan kayu* in the reference represents the biotic environment. According what Fill and Muhlhausler's (2001) theory, the ecolexicon will give the facts about the existence of elements of the environment. The data *I Nyingnying majalan paek punyan kayu gedé* brings to the situation where the environment is still natural, where animals like *bikul* ‘mouse’, *nyingnying* ‘mouse pups’, *semal* ‘squirrel’, and *kedis* ‘bird’ are still living freely. This sentence informed the learner that the existence of animals and trees is very important for our lives.

Data 3. *Yening sampun masan sabeh sinah akeh pesan wenten luu di segara*
On rainy season, many rubbish are in the sea

Nguntungang luu ke tukade makada blabar agung.
Throwing rubbish to the river caused big flood.

Data 3 shows the use of ecolexicon *sabeh* ‘rain’, *luu* ‘rubbish’, *segara* ‘sea’, *tukad* ‘river’, and *blabar agung* ‘big flood’. Those ecolexicons belong to the noun category and all of them are found in abiotic reference. Nowadays, Bali has a big problem in handling *luu* ‘rubbish’, which caused *blabar agung* ‘flood’. The two ecolexicons are very popular among the Balinese. Rubish and flood are very crucial issues in Bali. The use of ecolexicons in the textbook has proven that the ecolexicon shows the facts about natural, social, and cultural life that exist in the environment (Fill and Muhlhausler, 2001). The students are taught the impact of throwing rubbish into the river, which causes flood ‘*makada blabar agung*. This is very important to socialize and promote the good habit of managing rubbish in a good manner.

Balinese language is taught in school as an obligatory subject in all schools in Bali, starting from elementary school to high school. This is one of the programs to maintain the existence of the Balinese language. Besides learning the Balinese language in an applicative aspect through mastering the four skills of language, such as speaking, listening, reading, and writing, the students also gain knowledge of culture and ecology. The topics presented in the textbook are mainly about Balinese culture and the socioecological aspects of living in Balinese society. In the ecological perspective, students are taught to learn about their environment.

Conclusion

The form of ecolexicons found in Balinese textbooks for elementary students in grade four can be categorized into two broad categories, namely nouns and verbs. The category of nouns represents biotic (animals, people, and trees) and abiotic (sea, river, rain, sky) references. The ecolexicons are mainly in the form of base form, derivative form, inflected form, and compound form. The example of a derivational prefix found

in the text is prefix *ma-* and *n-*, which functions to form an active verb. Suffix *-e* shows the use of an inflectional affix that functions to show possession. Learning the local language, in this case the Balinese language, is not only a matter of learning the four skills of learning language, but it also plays a big role in preserving the culture and maintaining the language itself. Besides, the eco-lexicon used in the text will increase the awareness of the learner in preserving nature.

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