

Ecolinguistic study of the writing works of achieving students of Bali State Polytechnics in 2020

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Abstract - Bali State Polytechnic (PNB) has used the label "green", such as the "green campus" and "green tourism", as a flagship program to show its concern for ecological awareness. Ecolinguistics is a combination of linguistics and ecology studying the relationship between the use of language in discourse related to the environment. This study aims to see how the ecological insights possessed by outstanding students are revealed through their written works (languages). From the primary data source in the form of 10 written works of achieving students in 2020, ecological insights will be identified in which they are revealed in the choice of words containing ecological content. The results show that the average ratio of ecological word used and the number of words in writing is 0.84%, while the average vocabulary, 9 types of ecological words for each writing contain an average of 2065 words. With the assumption based on the cognitive linguistic theory that thoughts are expressed through language, it can be concluded that students' ecological insight and awareness have not developed optimally as far as it is expressed through word choice (diction). It suggests that the PNB students need to broaden their ecological insights through language learning, especially reading texts based ecolinguistics.

Keywords: ecolinguistics, ecology, environment, students' writing

1. Introduction

Advances in science and technology-driven by the enlightenment movement in the Western world since the beginning of the 19th century by focusing on the superiority of human rationality have brought great changes in human civilization. From the Industrial Revolution 1.0 with the invention of the steam engine, it continues until the Industrial Revolution 4.0 with the internet network and digitization of all lines of life with various advances and convenience of human life. However, this great achievement grabbed by science and technology must be paid dearly with environmental damage that is increasingly acute and threatens all life on this planet. So at the beginning of the 21st century, there were thoughts and movements to save the environment. Ecology is becoming an increasingly strong theme in multi-disciplinary studies so that the label "green" is increasingly popular and globalized as a sign of concern for environmental sustainability.

The objective of this "green" movement is to develop ecological awareness in the present and future generations. Starting with non-governmental organizations, then supported by the state, business institutions also joined and did not miss educational institutions, especially universities. Bali State Polytechnic (PNB), as one of the vocational higher education institutions in Bali, intelligently reads the signs of this era by taking strategic steps to participate in flying the "green" banner through its superior programs such as "green campus" and "green tourism". As an educational institution, PNB with "green" programs has, of course, the main goal to produce graduates who have ecological insight and competence. To achieve this goal, ecological aspects should be integrated into the learning process both intra-curricular and extra-curricular. Bali State Polytechnic (PNB) has set its vision "to become a vocational higher education institution producing professional graduates with international competitiveness by 2025". With the quality of graduates as "professionals with international competitiveness", it means that besides mastering certain competencies (hard skills), graduates are expected to have ecological insight and conceptions that have also become a global concern. Gardner (1993) with his *Multiple Intelligence Theory* identified the existence of Natural Intelligence in every human being, namely the ability to respect and care for the environment. Natural intelligence is innate but needs to be cultivated through education, especially habituation. Natural Intelligence or also called Ecological Intelligence is an important aspect of the character.

This study is grounded by two theories, namely ecolinguistics and cognitive linguistics. Ecolinguistics is often classified in the branch of applied linguistics began with the publication of the work of Eniar Haugen, a Norwegian linguist, entitled *The Ecology of Language* in 1972. Furthermore, ecolinguistics has developed with multidisciplinary studies, especially with social sciences and humanities. One of the definitions of ecolinguistics relevant to this study was conveyed by Alexander and Stibbe (2010), ecolinguistics is the study of the impact of language use in the process of survival bridging the relationships between humans and other living things, as well as the physical environment aiming for the preservation of sustainable relationships and life.

In connection with the relationship between language and the environment, Fill and Mushausler (2001) convey four important things that need to be considered, namely (1) language is free and rich in meaning, (2) language was created by the world, (3) the world was created by language and (4) language interrelated with the world. However, Sapir (2001) emphasizes that the relationship between language and environment is limited to the lexicon (vocabulary) level, not at the phonological and morphological levels. Briefly, ecolinguistics claims that language is influenced by the environment in which it is used, especially its lexicon (Muhlhauser, 1995; Stibbe, 2015).

Starting from the great interest in the study of the relationship between language and thought in the 1970s, Cognitive Linguistic theory began to develop by involving multi-disciplinary research, especially in the fields of psychology and neuroscience. Broadly speaking, there are five principles on which cognitive linguistic theory is based, namely:

- (1) Rejecting the idea of separate and autonomous language skills in the human mind as conveyed by generative grammar theory.
- (2) Grammar is understood in connection with conceptualization. The linguistic data stored in the human mind is not that different from any other knowledge.
- (3) Knowledge of language arises from the use of language (language in use). The use of language to understand reality uses the same cognitive abilities as non-linguistic tasks.
- (4) Language skills are not innate as stated by Chomsky (1967), but come from the learning process, the same as other abilities.
- (5) Meaning is the focus and central in language, the other structures are related to semantics. Cognitive linguistics seeks to understand how semantics and syntax work together, how the relationship between language and thinking, how the conceptualization process through language.

Based on empirical findings from other disciplines, cognitive linguists tried to create psychological models for language concerning categorization, conceptualization, memory, and imagery in cognitive processes, for example, mental space (Fauonnier, 1994), image schema (Johnson, 1987), gestalt (Lakoff, 1987). These psychological models serve to describe how language skills are a cognitive process to understand the world and build knowledge and experience. Shortly, cognitive linguistics conveys that language is a part of the cognitive process (Lakoff, 1993; Langacker, 1991; Fillmore, 1982). In other words, the content of the mind will be concretely expressed through language. Mbete (2002) conducted ecolinguistic research entitled "Phrases in the Lio Language and Their Functions in Preserving the Environment". The findings of this study are the existence of a form of Lio language survival related to the environment due to the public's interest in preserving verbal expressions functioning to harmonize human relationships and the natural surroundings. This resilience is maintained because it contains values and norms conceptually and cognitively so that it functions through verbal expressions related to environmental preservation. These findings are relevant to the research that will be carried out because it is proven that the conceptual and cognitive aspects of ecology are revealed through language, in this case, spoken language, while in the research that will be carried out in the form of written language.

Combining those two theories, therefore, this ecolinguistic study aims to see how ecological awareness absorbed in students' minds can be revealed through language and expressed in their written works. Thus, this research may be needed to find out scientifically the extent to which the ecological concept and awareness are embedded in PNB students.

2. Method

This research is descriptive-qualitative by involving in-depth and thorough investigations of qualitative data in the form of written works (text). The main activity is collecting qualitative data, identifying, analyzing, and describing it. Sutopo (2002) said this type of research can also be categorized as an embedded case study because the object, focus, and problems to be studied have been determined before the researcher carries out his activities. Two types of analysis will be carried out by calculating: (1) the ratio of ecological words used and the number of all words in the written work, (2) the ratio of ecological vocabulary, and the number of words used in the written work.

Data are taken from ten writing works of achieving students with criteria the work containing at least 2000 words. Identification is done to discover words containing ecological aspects, then these words are calculated to determine the ratios. Based on the ratios, interpretation is done to find out how extended the students' ecological awareness expressed through their writing works.

3. Results and Discussion

From the identification of ecological words revealed in 10 papers as data sources, the following results are obtained:

Table 1 The Ratio of Ecological Words to Number of Words

No	Title	Number of words	Word	Ratio (%)
1	Rekontruksi Ekonomi Melalui Semangat Kreativitas Usaha Mikro Kecil Menengah (UMKM) Pada Era New Normal (Economic Reconstruction with Spirit of Creativity for Small and Middle Business (UMKM) in New Normal Era)	2143	14	0,65 %
2	<i>Mengimplementasikan Sikap Certawas (Cerdas, Tanggap, dan Waspada) sebagai Upaya Mengatasi Problematik Rekonstruksi Ekonomi di Era New Normal (Implementation of Certawas Attitude (Smart, Responsive, Alert) as Efforts to Overcome the Economic Problem in New Normal Era)</i>	2012	15	0,74 %

3	<i>Terapkan Germas Proavid 19 dengan Psicopath untuk Hidupkan kembali Perekonomian dalam Tatanan New Normal (Implementation of Germas Proavid19 with psychopath for Economic Revitalization in New Normal Era)</i>	2040	24	1,17 %
4	<i>Persiapan dan Kesiapan Ekonomi menuju Era New Normal (Preparation and Economic Readiness toward New Normal Era)</i>	2015	14	0,69 %
5	<i>New Normal Pulihkan Ekonomi dari Dampak Pandemi (New Normal to Recover Economy from the Impacts of Pandemic)</i>	2060	20	0,96 %
6	<i>Meningkatkan Sektor Pertanian dan Perkebunan dalam Pemulihan Ekonomi di Era New Normal (Increasing Agriculture and Plantation Sector to Recover Economy in New Normal Era)</i>	2064	20	0,96 %
7	<i>Perspektif Ekonomi Digital terhadap Kontribusi Pertumbuhan Ekonomi di Era New Normal (Perspective of Digital Economy for Contributing Economic Growth)</i>	2008	13	0,64 %
8	<i>Dimensi Digitalisasi UMKM Solusi Rekonstruksi Ekonomi dalam Upaya Harmonisasi terhadap Pandemi (Dimention of Small and Middle Business Digitalization as Solution for Economic Reconstruction and Harmonization against Pandemic)</i>	2118	23	1,08 %
9	<i>Upaya Pemulihan Perekonomian di Masa Kenormalan Baru (Effort to Economic Recovery in New Normal Era)</i>	2212	13	0,58 %
10	<i>Paradigma Pembangunan Kesehatan Masyarakat (Paradigm for Development of Public Health)</i>	2124	24	1,12 %
	<i>Total</i>	20648	174	

Based on Table 1, the average use of ecological vocabulary as a whole : ecological words used total words count = 174: 20,648 x 100% = 0.84%. The highest ratio is 1.17% and the lowest is 0.58%. Sarmi (2015) in a dissertation entitled "The

Nature of Natural Environment Lexicon in the Dynamics of Using Language Speeches: Ecolinguistic Studies" found that (1) the linguistic forms of the natural environment lexicon of the Using Language consist of basic form lexicons, affixed derivatives, re-forms and forms. compound; (2) word categories in the form of noun lexicons and verb lexicons; (3) functions for naming flora and fauna; (4) lexicon dynamics due to linguistic factors, speaker factors, and ecological change factors. These findings indicate a link between ecological changes and changes in the language (lexicon) used by speakers. Human experiences in their interactions with the natural surroundings are revealed through language, especially the diversity and dynamics of the lexicon. The research that will be carried out is to find out whether the ecological concepts possessed by students both through their interactions within the campus environment and outside the campus are revealed through their written work (language). Although there are no standard criteria, with such a ratio, it means that the use of the ecological words in written works of PNB students is still not optimal.

In addition to the number of ecological words used in the written works, the vocabulary is also identified, as follows.

Table 2 Ecological Vocabulary Used in Written Works

No	Word	Varian	No	Word	Varian
1	<i>aman</i> (safe)		42	<i>lingkungan</i> (environment)	
2	<i>air</i> (water)		43	<i>matang</i> (rape)	<i>kematangan</i> (rapeness)
3	<i>adaptasi</i> (adaptation)		44	<i>menumbuhkan</i> (grow)	<i>pertumbuhan</i> (growth)
4	<i>ancaman</i> (threat)		45	<i>metamorfose</i> (metamorphosis)	
5	<i>alam</i> (nature)	alami (natural)	46	<i>mutasi</i> (mutation)	
6	<i>bencana</i> (plaque)		47	<i>musim</i> (season)	
7	<i>bibit</i> (seed)		48	<i>mentah</i> (raw)	
8	<i>bersih</i> (clean)		49	<i>merawat</i> (care)	
9	<i>buah-buahan</i> (fruits)		50	<i>menyebar</i> (spread)	<i>penyebaran</i> (spreading)
10	<i>berkembang</i> (grow)		51	<i>mencegah</i> (prevent)	
11	<i>berdampingan</i> (coexistence)		52	<i>menyelamatkan</i> (save)	
12	<i>bakteri</i> (bacteri)		53	<i>melindungi</i> (to shelter)	
13	<i>bahan mentah</i> (raw material)		54	<i>memangkas</i> (prun)	
14	<i>bumi</i> (earth)		55	<i>mengalir</i> (flow)	
15	<i>cuci tangan</i> (hand washing)		56	<i>natur</i> (nature)	<i>natural</i> (natural)
16	<i>cocok tanam</i> (cultivation)		57	<i>pangan</i> (food)	
17	<i>dampak</i> (impact)	<i>terdampak</i> (impacted) <i>berdampak</i> (impacting)	58	<i>pertanian</i> (agriculture)	
18	<i>desiminasi</i>		59	<i>perkebunan</i>	

	(desimination)		(plantation)
19	<i>disinfektan</i> (disinfectant)		60 <i>pandemik</i> (pandemic)
20	<i>desa</i> (village)	<i>pedesaan</i> (rural)	61 <i>petani</i> (farmer)
21	<i>epidemi</i> (epidemy)	<i>epidemiologis</i> (epidemiology)	62 <i>perikanan</i> (fishery)
22	<i>fase</i> (step)		63 <i>peterernakan</i> (vetenary)
23	<i>gunung</i> (mountain)		64 <i>pebukitan</i> (hill)
24	<i>harmoni</i> (harmony)		65 <i>pemukiman</i> (settlement)
25	<i>infeksi</i> (infection)	<i>terinfeksi</i> (infectious)	66 <i>pencegahan</i> (prevention)
26	<i>imunitas</i> (imunity)		67 <i>penularan</i> (transmission) <i>tertular</i> (infectious)
27	<i>interaksi</i> (interaction)		68 <i>penyakit</i> (disease)
28	<i>jaring</i> (net)		69 <i>pengendalian</i> (control)
29	<i>keberlangsungan</i> (sustainibiity)		70 <i>pola sebaran</i> (pattern of spread)
30	<i>keindahan alam</i> (beauty of nature)		71 <i>pemulihan</i> (recovery)
31	<i>karbohidrat</i> (carbohydrate)		72 <i>rehabilitasi</i> (rehabilitazion)
32	<i>kebun</i> (garden)		73 <i>rimpang</i> (ginger)
33	<i>kuman</i> (germ)		74 <i>rantai penyebaran</i> (chain of spread)
34	<i>kehidupan</i> (life)		75 <i>sabun</i> (soap)
35	<i>kehutanan</i> (forestry)		76 <i>subur</i> (vertile)
36	<i>kehancuran</i> (destruction)	<i>menghancurkan</i> (to destroy), <i>penghancuran</i> (demolish)	77 <i>stimulus</i> (stimulus)
37	<i>kekayaan alam</i> (natural richness)		78 <i>sakit</i> (sick)
38	<i>kepulauan</i> (islands)		79 <i>sayuran</i> (vegetables)
40	<i>kerusakan</i> (destruction)		80 <i>sumber daya alam</i> (natural resources)
41	<i>lumbung</i> (food store)		81 <i>suplemen</i> (supplement)
82	<i>sanitizer</i> (sanitizer)		
83	<i>sehat</i> (health)		
84	<i>suhu</i> (temperature)		
85	<i>tanaman</i> (plant)		
86	<i>tumbuhan</i> (plant)		
87	<i>virus</i> (virus)		
88	<i>vitamin</i> (vitamin)		
89	<i>vaksin</i> (vaccine)		
90	<i>wabah</i> (pandemic)	<i>mewabah</i> (contagious)	

Table 2 above shows that there are 90 types of words (vocabulary) with ecological variants used in ten (10) written works. On average, each writer uses (90: 10 = 9, ninety divided by ten is nine) nine ecological words in his writing. When compared with the average number of words per writing of 20,648:10 = 2065 words (rounded), it can be said that the ecological vocabulary is less varied. This reflects the

lack of developing vocabulary through ecological discourses, especially through reading ecological texts. This finding is relevant to Yuniawan (2018) in his research entitled "Ecolinguistic Study of Conservation News Texts in Indonesian Mass Media", found that "environmental-related vocabulary in news about conservation in media in Indonesia is in the form of basic words, derivative words, noun phrases, verb phrases, and adjective phrases. This finding shows that there is a diversity of lexicons used to convey matters related to environmental preservation, meaning that speakers (journalists) use various forms of lexicons to express their reports through written language (news). The result of the report is the output of cognitive fact processing, which is then manifested through written language".

Based on cognitive linguistic theory (Lakkof, 1993), language skills and thinking are intertwined or, in other words, what is in the mind will be revealed through language. Thus, the low ratio of the use of words with ecological dimension can be interpreted as a reflection of the low awareness and ecological insight built into the minds of students.

4. Conclusion

From the findings above, it appears that students' ecological insight already exists but is still relatively limited as far as it is reflected through the use of language, especially written language. Therefore, it is necessary to make efforts to increase and develop ecological insight and awareness through language learning based on ecolinguistics. To support this goal, it is necessary to develop a Language Text Book containing ecological discourses.

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