



Correlation of Ethnobotanical Knowledge with Students' Environmental Concern Attitude at SMP PGRI 2 Denpasar

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ABSTRACT

This study aims to analyze the correlation between ethnobotanical knowledge and environmental awareness among students at SMP PGRI 2 Denpasar. The study was conducted at SMP PGRI 2 Denpasar. This study is an ex post facto correlational study. The quantitative research method used was simple random sampling to select respondents through questionnaires. Data were analyzed using the Pearson product-moment correlation coefficient and simple linear regression. The results show that the correlation between students' level of ethnobotanical knowledge and their environmental care attitudes is strong, and the results of the regression analysis show a significance value. This indicates a strong relationship between the level of ethnobotanical knowledge and students' attitudes toward environmental care at SMP PGRI 2 Denpasar. The results of this study indicate a highly significant correlation between ethnobotanical knowledge and environmental awareness. This suggests that the better students' ethnobotanical knowledge, the greater their environmental awareness.

INTRODUCTION

The environment is a natural resource that is vital to life. These natural resources are used to meet human needs. However, humans often exploit existing natural resources, which can cause environmental damage and pollution. According to Law No. 23 of 1997, the environment is a spatial unity comprising all objects, powers, conditions, and living creatures, including humans and their behavior, that affect the continuity of life and the well-being of humans and other living creatures.

The environment is a system in which living things interact, forming an interdependent network of life (Uar et al., 2016). When environmental management is not aligned with spatial planning, the impact is environmental damage and ecosystem imbalance (Riskanita & Widowaty, 2019). Recurring natural processes can cause environmental problems, even if the impact is minimal and can be remedied naturally. However, contemporary environmental issues cannot be ignored. This occurs due to human intervention as the primary catalyst of environmental degradation, with implications for environmental and natural governance (Herlina, 2015).

Rapid changes in knowledge, technology, and information are aimed at improving the quality of life, but they also have negative impacts, including global warming, energy crises, and environmental damage (Rahayu, 2017; Alfonso, Gesto, & Sadoul, 2021). Environmental damage leads to unproductive agricultural land and the extinction of rare plants and animals (Sembiring, 2016). The loss of many ecosystems and green open spaces is also a consequence of environmental damage. Pollution from waste results in increasingly hot air, flooding, and water pollution. This environmental damage is primarily caused by human behavior.

This study aims to analyze the correlation between ethnobotanical knowledge and environmental awareness among students at SMP PGRI 2 Denpasar. This research is expected to encourage students' active participation in conservation efforts, such as reducing plastic use, planting trees, and conserving energy, thus generating significant positive impacts.

The results of this study are expected to provide educators with new insights into the importance of ethnobotanical knowledge in fostering students' environmental awareness, particularly regarding plant conservation. Furthermore, it aims to develop individuals as agents of change capable of contributing to environmental sustainability at both local and global scales.

LITERATURE REVIEW

Environmental care is an attitude and action that seeks to prevent damage to the surrounding natural environment and to repair damage that has already occurred (Wahyuni, 2016). Environmental care is a character trait that students must possess (Pujilestari, Mulyana, Marasabessy, Azzahra, Puteri, Sari, & Rahmayanti, 2024). According to Widianita, 2023, environmental characteristics can influence student learning and student-teacher interactions with the environment. Human attitudes and behaviors will determine the quality of an environment. Environmental care is proactive actions to maintain and improve

environmental quality. This includes efforts to prevent environmental damage, preserve biodiversity, and develop habits that support environmental sustainability (Priyanka & Selamat, 2023).

Ethnobotany is a branch of science that studies the relationship between human culture and the surrounding flora (Hakim, 2017). Ethnobotany studies how communities use and view plants, including how they manage them. Ethnobotany can provide insights into biodiversity and culture. Ethnobotanical knowledge can aid in plant and natural resource conservation efforts. The reduction of natural forests in tropical regions not only results in the loss of plant diversity but also of local knowledge about plant species and their benefits (Ramirez, 2007). The loss of local knowledge about plant diversity is expected to affect concern for the sustainability or existence of plants in the surrounding environment.

METHODOLOGY

This type of research is an ex post facto correlational study that aims to determine whether a relationship exists, how close it is, and whether it indicates no relationship. A simple random sampling technique was used, yielding 50 samples. The research sample was grade VII students of SMP PGRI 2 Denpasar. Data collection used a test of ethnobotanical knowledge and an environmental care attitude questionnaire, supported by an observation sheet and an interview guide.

The data in this study were quantitative, consisting of ethnobotanical knowledge test scores measured using 30 multiple-choice questions, and environmental attitude scores (30-item Likert-scale questionnaire). Both measuring instruments have been tested for validity and reliability. The ethnobotanical knowledge and environmental attitude data were analyzed descriptively and quantitatively to determine the overall total score and the scores for each indicator. The criteria for students' levels of ethnobotanical knowledge are based on Arikunto's (2010) opinion (Table 1).

Table 1. Criteria for Students' Level of Ethnobotany Knowledge

No	Skor	Criteria
1	81 - 100	Very high
2	61 - 80	high
3	41 - 60	moderate
4	21 - 40	Low
5	0 - 20	Very low

Data on the criteria for students' environmental concerns are presented in Table 2 as follows:

Table 2. Criteria of Environmental Awareness

No	Skor	Criteria
1	80 - 100	Very good
2	70 - 79	Good

3	60 - 69	Moderate
4	< 60	Low

Bertram (2012, in Siregar and Quimbo 2016)

Data were analyzed using the Pearson product-moment correlation coefficient and simple linear regression to find the correlation between the independent variable (X) and the dependent variable (Y). This study carried out a correlation analysis of the variables, namely the relationship between ethnobotanical knowledge and students' environmental care attitudes.

RESEARCH RESULTS

Based on the test results, 78% of students' ethnobotanical knowledge was in the high category. The average score obtained from the ethnobotanical knowledge test was 74.99 ± 7.77 . These results prove that the learning activities carried out by the teacher have facilitated students to actively participate in interacting with plants. Meanwhile, the results of the questionnaire on environmental care attitudes showed that most students' environmental care attitudes were good, namely 72%. The average score obtained from the attitude questionnaire was 74.97 ± 6.70 . The average high score obtained from environmental care attitudes was in the indicator "having awareness and gratitude for the role of plants in the survival of God's creation".

The results of the ethnobotanical knowledge test and the questionnaire met the prerequisite tests for simple linear regression, namely the Kolmogorov-Smirnov and Lavene normality tests for homogeneity testing. The data obtained were normally distributed and homogeneous. Next, a simple linear regression test was conducted. The results were then categorized based on the level of relationship between ethnobotanical knowledge and environmental awareness, referring to Sugiyono (2019) (Table 3).

Table 3. The Relationship Between Ethnobotanical Knowledge And Environmental Awareness

Correlation Value	Coefficient	Interpretation
0,00 - 0,199		Very low
0,20 - 0,399		Low
0,40 - 0,599		Moderate
0,60 - 0,799		Strong
0,80 - 1,00		Very Strong

Sugiyono, 2017

The research results show that the correlation between students' level of ethnobotanical knowledge and their environmental care attitudes is 0.697. The results of the correlation analysis of ethnobotanical knowledge with students' environmental awareness attitudes are presented in Table 4.

Table 4. Correlation Test Results Between Ethnobotanical Knowledge and Environmental Concern

<i>Correlations</i>		
	Ethnobotanical Knowledge	Environmental Care Attitude
<i>Pearson Correlations</i>	0,697**	0,697**
<i>Sig.(2-tailed)</i>	0,000	0,000
N	50	50
<i>** Correlation is significant at the 0.01 level (2-tailed)</i>		

This means that the relationship between ethnobotanical knowledge and students' attitudes toward environmental care is strongly positive, with a contribution of 10%. Therefore, there is a significant relationship between the level of ethnobotanical knowledge and students' attitudes toward environmental care at SMP PGRI 2 Denpasar.

To determine whether there is a significant influence of ethnobotanical knowledge on students' environmental attitudes, a simple linear regression test was conducted. The results of the linear regression analysis are presented in Table 5.

Tabel 5. Analysis Results of Simple Linear Regression

Variable	R Square	t	t table	F	F table
Ethnobotanical Knowledge and Environmental Care Attitudes	0.485	6.726	1.677	45.243	4.04
		Sig			0.000
	Unstandardized Coefficients				17.764
	Koefisien Regresi				0.314

The regression analysis results showed an F value of 45.243 > the F table (4.04), and a t value of 6.726 > t table (1.677). The regression coefficient was 0.314, so the regression equation for the two variables was ($Y = 17.764 + 0.314X$), with a significance value of 0.000 < 0.005. This indicates a significant influence of ethnobotanical knowledge on students' environmental attitudes. The R-squared value of 0.485 indicates that ethnobotanical knowledge accounts for 48.5% of the variation in environmental attitudes.

DISCUSSION

Most students' environmental awareness is in the good category because it is influenced by the implementation of environmental activities implemented in schools. Environmentally aware policies and the implementation of an environmentally focused curriculum strongly support active participation by the school community. The implementation of activities includes conducting learning activities on planned environmental protection and management for the school community, including utilizing school land and facilities for the protection of plants that are beneficial to health, clean Friday activities, class cleanliness

competitions, school garden maintenance activities by each class, such as managing class gardens, and planting family medicinal plants (toga). This is in accordance with the opinion of Mustakim (2011) view that schools play a role in fostering environmental awareness in students.

Schools that provide facilities and infrastructure that support environmental activities can also encourage students to participate more actively (Iswari & Utomo, 2017). Good school facilities and infrastructure, including those that support environmental education, such as school gardens, and positive social interactions related to environmental issues, can increase awareness and pro-environmental actions among adolescents (Haryadi, 2021). Self-awareness, personal values, and personal experiences are important internal factors, while family, school, and community serve as external factors that influence these attitudes.

In the context of environmentally conscious behavior, both internal and external factors influence students' attitudes. Internal factors encompass elements originating from within the student, while external factors encompass influences from the external environment, such as family, school, and community. These values can be transferred through education and daily experiences (Fajar & Putra, 2021). Internal and external factors interact to shape students' environmentally conscious attitudes.

PGRI 2 Denpasar Junior High School is an Adiwiyata school. Adiwiyata gives the impression of being a good and ideal place. This image refers to a place where various knowledge, norms, and ethics are acquired serving as the basis for humans towards realizing a prosperous life and pursuing the ideals of sustainable development (Silvia & Tirtoni, 2023). The program's objective is to create school citizens who are responsible for environmental protection and management efforts (Alfiyah, 2019). This is in accordance with Krajhanzl's theory, which states that the intended goal of the Adiwiyata program is a form of manifestation of environmentally conscious behaviour. Several Adiwiyata components are directly related to the formation of environmentally conscious behaviour, which is described as comprising three aspects: knowledge, attitude, and behaviour. As an Adiwiyata school, the teachers instil environmental awareness in every learning activity and extracurricular activity. Schools that instil environmental awareness in their students are truly shaping a smart generation. This is because children are not only taught theory but also trained to apply their knowledge in maintaining cleanliness, reducing the use of single-use plastics, and planting trees.

The high category obtained from students' ethnobotanical knowledge indicates that students actively participate in interacting with plants through learning and in all activities outside of learning. School garden maintenance activities by each class, such as managing gardens and planting medicinal plants (toga), demonstrate students' involvement in interacting with plants.

By understanding the benefits of plants, students will become more aware of the existence of plants, both those growing in their yards and in school gardens. Local ethnobotanical knowledge is acquired through interactions, processes, and attitudes regarding plant use by the community (Iswandono,

Ervizal, Agus, & Nandi, 2015). The more frequent interactions with plants, the better their ethnobotanical knowledge will be.

Ethnobotanical knowledge tends to be closely linked to environmental values and behaviors. People with ethnobotanical knowledge often have a greater appreciation for biodiversity and an understanding of the practical and cultural roles of plants (Nabhan, 2016). Conversely, the higher the level of knowledge and understanding of the natural environment, the more pronounced the influence of ethnobotanical knowledge. Ethnobotanical knowledge fosters a deeper connection to nature, strengthening individuals' motivation to care for and protect the environment. Ethnobotanical knowledge reflects how communities interact with their environment, particularly in utilizing plants for various purposes, thereby contributing to environmental conservation (Berkes, 2000). Individual experiences interacting with plants can also shape environmental attitudes. Thus, ethnobotanical knowledge plays a crucial role in shaping environmental attitudes, particularly in environmental conservation, both in the context of biodiversity conservation, natural resource management, and the development of sustainable products and practices.

Daily attitudes and behaviors reflect concern for others and the environment. Caring for the environment demonstrates emotional and spiritual intelligence. Only those with emotional and spiritual intelligence can feel their connection to nature and recognize that their actions and attitudes will have a significant impact on nature and their lives. This must be done considering that humans are highly dependent on the environment to meet their basic needs, such as air to breathe, water and food to consume, and the need for protection and comfort. Therefore, a sustainable environment is crucial for human survival.

The results of this study indicate a highly significant correlation between ethnobotanical knowledge and environmental awareness among students at SMP PGRI 2 Denpasar. This suggests that the better a student's ethnobotanical knowledge, the greater their environmental awareness. Further research is needed to identify other factors and Design more effective interventions to promote a clean, green, comfortable, and sustainable environment.

CONCLUSIONS AND RECOMMENDATIONS

There is a highly significant correlation between ethnobotanical knowledge and environmental awareness. The relationship between ethnobotanical knowledge and students' environmental awareness is considered strong. This indicates that the better the ethnobotanical knowledge, the more students care about their environment. Ethnobotanical knowledge strengthens individuals' motivation to care for and protect the environment. Individual experiences interacting with plants can also shape environmental awareness. Therefore, ethnobotanical knowledge plays a crucial role in fostering environmental awareness, particularly in biodiversity conservation and sustainable natural resource management.

ADVANCED RESEARCH

Further research is needed to identify other factors and Design more effective interventions to promote a clean, green, comfortable, and sustainable environment.

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