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Analysis of the Use of Regional Languages in Biology Scientific Terms for Biology Learning in Biology Department Students at Medan State University

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Abstract. Language is a crucial tool in scientific communication, particularly in biology, where precise terminology is essential. While Latin scientific names provide standardization, integrating local languages can enhance students' comprehension and engagement. This study examines the impact of using local languages in biological scientific terms among Biology Department students at Medan State University. A qualitative research approach was applied, using online questionnaires and the Guttman scale for data analysis. The results show that 69.93% of students have a positive perception of local language use in biology learning. Most students believe it improves understanding, preserves cultural heritage, and increases motivation. However, challenges arise when local terms do not align with standardized scientific names, leading to misunderstandings. Some students also find it difficult to translate scientific terms into their local language. Despite these challenges, integrating local language fosters cultural appreciation and active learning. A balanced approach combining local and scientific terms is necessary to ensure clarity and accuracy in biology education.

Keywords: Regional language; Biological scientific; Students; Biology learning

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INTRODUCTION

Language is one of the ways to communicate something to many people. The Latin terminology was developed from the Italic language that originated in Latium, an area of Italy around the city of Rome. This language became important because of the emergence of the Roman empire where Latin was the official language (Kameswari, 2022). Language is a manifestation of ideology, culture, and situations that exist in a community, tribe, or country. In other words, language has undergone a process of change for tens, hundreds, thousands, even millions of years, where the development of language makes social contexts such as situations, culture, and ideology closely intertwined with language. In detail, every element of language contains ideological, cultural, and situational content, and becomes a representation of a country's identity or identity. In another way, language functions as an element that forms the identity of a nation, including identity in terms of ideology, culture, and situation, so that human behavior is greatly influenced by language, especially in the process of forming national identity (Bujangga, 2019).

Language is one of the characteristics that distinguishes humans as creatures with extraordinary abilities to communicate, think conceptually, and build culture. In the course of the history of science, the origin of language has been a subject of great interest, especially as it relates to human biological and social evolution. The ability to speak is not only seen as a means of communication, but also as a manifestation of cognitive and biological development that allows humans to create symbols that describe the world around them (Nurjannah et al., 2024)

Language is one of the main foundations in the process of learning and absorbing knowledge. The ability to communicate effectively and use good and correct language is the key to success in studying various disciplines, including biology. Biology is a complex field of science and requires good communication skills to convey concepts that are often abstract and have special terminology. Use of Standard Indonesian in Biology Learning has a very important role. Therefore, the use of standard and rule-based language is very important to ensure accurate and effective understanding (Sinaga et al., 2024)

The naming system for living things has a special function in biological scientific terms., example in flora and fauna. Initially, the name given to a plant species was determined in the native language of the individual who gave the name. As a result, one plant species can have various names depending on the language of the person who named it or the region where the flora or fauna grows (Aseptianova et al., 2012)

The use of scientific names or Latin names has an important role in naming living things. Especially considering the Latin language for plants and animals which is the most important thing. This is because Latin is always used to describe a species in living things (Kameswari, 2022). Therefore, it is necessary to add language so that students can recognize the species of animals or plants that are being studied. Such as local languages or regional languages, as well as several local languages in the Indonesian archipelago such as Javanese, Minangkabau, Bugis, Makassar and so on, as well as from foreign languages caused by historical contact and historical attachment with other languages from other regions (Noya van Delsen & Umkeketony, 2024).

Language reflects a cultural outlook that aims to document, maintain and transmit shared ideas, historical values, philosophies and aspects of the socio-cultural and ecological environment of a community. Language serves as a symbol of the environment in which it develops, providing an explanation of the characteristics of that environment (Malo, Indri, Mikaela & Priyastiti, 2024). Language is the key to cultural identity (Holmes, 2013).

Although in the scope of education, especially in the discipline of Biology, scientific names are often used, in reality many Biology students still feel unfamiliar and do not recognize the scientific names of various types of plants around them (Silalahi, 2016).

Terms in biology have special characteristics that are in accordance with the specialization of the field. Most terms in biology are based on Latin, Greek and English. These scientific terms can feel unfamiliar, making biology texts difficult to understand. The difficulty in understanding these terms increases if the translation fails to express the exact meaning of the biological term in the translated text (Khustina & Dewi, 2023).

The example in the use of local languages is in the Batak ethnicity, where the Batak ethnicity is one of the popular ethnicities on the island of Sumatra, which is specifically in North Sumatra (Silalahi et al., 2018). As said by previous research, that some plants in North Sumatra, especially the Batak language in avocado plants, with the local name of Pokkat (Persea Americana), cumin leaf plant, with the local name of Bangun-bangun (Coleus amboinicu), Celendri plant, with the local name of Sop leaf (Apium graveolens), ginger plant, with the local name Pege (Zingiber officinale), Kencur plant, with the local name Hasior (Kaempferia galangal), Ceplukan plant, with the local name Pultak-Pultak (Physalis angulate) and Galangal plant, with the local name Halas (Alpinia galangal) (Nainggolan et al., 2021). If in the Malay, Sundanese and Kalimantan tribes there is one flower plant, namely Bungur (Lagerstroemia speciosa), this plant is known in various regions as Bungur because the distribution of Bungur trees can be found in forests on arid land and fertile land (Rahmah et al., 2021).

With the existence of local languages that have become the daily language of the people of North Sumatra, especially the Batak Ethnicity, it can give directions to readers to be able to better recognize the plants that are being studied or observed. This research was conducted to provide additional information for readers, especially students who are studying in the field of biology.

MATERIALS AND METHODS

This research uses qualitative methods. The qualitative method itself is a method that contains an explanation or exposure of a research result found and is poured in the form of a description or narrative, so that the results obtained can be informed to the public through sentences arranged in simple language.

The data collection technique was carried out by distributing online questionnaires to students majoring in biology. After the data is collected, then analyze and describe the results obtained in the form of detailed explanatory sentences and compare the results of previous research that has been done.

The data that has been collected will be analyzed using a calculation method adopted from previous research, namely using the Guttman scale. This scale is based on clear answers such as “yes and no”, “true and false”, “ever and never”, or “positive and negative”. In previous studies, the Guttman scale was used in the form of a

checklist with an answer score of 1 as the highest value and 0 as the lowest value. The reason for choosing the Guttman Scale as a technique for analyzing student reactions is because this method is very systematic and easy to understand, especially for elementary school students (Sugiyono, 2020). The following is the formula for calculating the results of the student response questionnaire.

$$\mathbf{P} = \frac{F}{N} \mathbf{x\ 100\%}$$

Description :
P = percentage of student response
F = number of scores from data collection
N = maximum score
The percentage results obtained are then interpreted into the assessment criteria as follows (Riduwan, 2011).

Table 1. Percentage standard of the questionnaire results obtained

Percentage	Standard
0-20%	Not Interesting
21%-40%	Less Interesting
41%-60%	Fair
61%-80%	Interesting
81%-100%	Very Interesting

RESULTS AND DISCUSSION

Students

The following are the results of filling out a questionnaire conducted by students of the Biology Department at the State University of Medan on several question indicators. The results are listed in the Table 2.

Table 2. Results of the grades of the "Yes" and "No" answers on the Questionnaire Question Indicators

Question indicator	Answer "Yes"	Answer "No"	Grade
Have you ever used local language in biological scientific terms?	24	6	25
Do you think it is important to use local language in biological scientific terms?	24	6	24
Does using local language help you understand biology concepts better?	24	6	24
Do you feel proud of the use of local language in biological scientific terms?	25	5	25
Do you agree with the use of local language in biological scientific terms?	22	8	22
Can the use of local languages in biological scientific terms preserve local culture?	24	6	24
Do you feel that using local language biology terms increases your interest in learning?	24	6	22
Do you prefer biology lessons that use local language terms?	23	7	23
Do you feel more confident in explaining basic biology concepts when using local terms?	23	7	23
Can the use of local languages create a warmer atmosphere and increase familiarity in the classroom?	21	9	21
In your opinion, can the use of regional languages in lectures improve understanding of certain concepts?	13	17	13
Do you feel more comfortable explaining practical concepts using regional languages compared to Indonesian or scientific language?	11	19	11
In your opinion, is regional language actually a obstacle to understanding the material?	15	15	15

Have you ever had difficulty understanding biology terms when translated into your local language?	19	11	19
Do you agree that the use of local languages and terms needs to be balanced in biology learning?	23	7	23
	Amount		**314**

Based on the results of Table 2. obtained that 69.93% showed that most students have a positive view of the use of regional languages in biological scientific studies. Most respondents (24 out of 30) stated that they had used regional languages in biological scientific studies, and the same number considered that the use of regional languages was important and helped to understand biological concepts better. In addition, almost all students were proud of the use of regional languages in biological scientific studies.

The use of local language is also considered to preserve local culture and increase students' interest in understanding biological concepts. This can be seen from 24 students who agreed that local language can contribute to preserving culture and increase their learning motivation. In addition, most of the students (23 out of 30) felt more confident in explaining basic biology concepts when using local language terms and preferred learning that utilized these terms.

However, there are some aspects that show obstacles in the application of local language in biology learning. A total of 17 students felt that the use of local languages did not always improve the understanding of certain concepts, while 19 students had difficulty in understanding biological terms translated into local languages. In addition, 15 students felt that local language could be an obstacle in understanding the material, and 19 students were more comfortable explaining practical concepts using Indonesian or scientific language rather than local language. This may be because the local names of plants with various regional languages do not meet the universal, precise and stable requirements because the names are local and many of the same local names are given to two or more plants and animals (Kameswari, 2022). Thus, making it difficult for students to apply if the learning is taking place

Overall, the results of this study indicate that the use of local language in biological scientific terms has a positive impact on biology learning, especially in terms of increasing understanding, interest in learning, and a sense of pride in local culture. However, a balance is needed in its use so that it does not become an obstacle in understanding the material, especially in more complex concepts. Thus, the integration of local language in biology learning needs to be done wisely so that it still supports the effectiveness of learning.

CONCLUSION

Based on the data obtained on local language, most respondents (69.93%) have a positive view of the use of local language in biological scientific terms. The use of local language is considered to create a warmer and more familiar learning atmosphere. However, there are some students who feel they have obstacles to the use of local language in biological scientific terms for biology learning. The data that has been collected shows that the use of local language in biological scientific terms has a positive impact on learning biology, especially in increasing understanding, interest in learning, and a sense of pride in local culture while preserving culture. However, a balance between the use of scientific terms and local language is needed to ensure learning effectiveness, especially on concepts that are more abstract or difficult to understand.

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