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Implementation of electronic dictionary based on medicinal plants of the Sabu community increases learning motivation of XII students at Mehara

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Abstract
Learning outcomes are an important part of achieving the learning process. Classroom learning must achieve learning objectives. To realize these objectives and learning outcomes, teachers need to plan and design learning as well as possible so that indicators of success can be realized. One thing that supports this is the use of learning media. Learning media is a medium that can convey learning messages and can be accepted and understood by students. In relation to this research, the researcher aims to conduct research by implementing a dictionary based on local plants in the Sabu area. The research method used is descriptive qualitative with a one-group pretest-posttest design. The number of students in the experimental class was 32. Based on the results of the study, a 2-tailed sig value (0.001) <0.05 was obtained, which means there was a significant difference in student learning motivation before and after the experimental treatment. Student learning motivation after the experiment was higher than student motivation before the experiment. Therefore, it can be said that the application of the illustrated dictionary has a significant effect on student learning motivation.

Keywords: Medicine; dictionary, motivation, learning outcome, plants

1. Introduction

Learning media is one of the determining factors for learning success. In classroom learning, the teacher's ability to use media as a means of conveying information is key to achieving learning objectives or student learning outcomes. Generally, learning outcomes are also influenced by the

use of learning media. According to Afifah (2019), learning media is a device that can channel messages in a planned manner from sources to other parties, thereby creating a conducive, efficient and effective learning environment. Classroom activities need to be supported by appropriate media so that students can understand the content or knowledge messages presented by the teacher, as media serves as an indicator for determining learning outcomes (Meha et al., 2023). On the other hand, according to Suhari et al (2020), Student comfort in learning, as well as their power and enthusiasm in class from the beginning to the end of the lesson, are greatly influenced by the media. Teachers must be able to adapt learning media to student characteristics. Media can also be interpreted as a tool to stimulate students' thoughts, feelings, attention and interests optimally (Salema et al., 2024).

In the digital era, adapting technology as a medium in the learning process will create an optimal learning environment. This condition will certainly influence the interaction patterns between students and teachers in the classroom. According to Windiyani & Novita (2018), Learning by utilizing technology as a medium in today's era is very appropriate because it is certainly in accordance with the development of learning in the world of education which is increasingly advanced. Apart from that, learning media that utilizes technology is able to create a fun learning atmosphere, students do not tend to get bored or lazy (Prasetia, 2016).

This research was conducted on the island of Sabu, precisely at Sabu Mehara 1 High School. Topographically, Sabu Island is located far from access to urban facilities. Sabu Island is a small, separate island located about 300 km from the provincial capital of East Nusa Tenggara (NTT). Access to the island is greatly influenced by the weather. So everything is available in limited quantities on the island. Based on observations of class XII Sabu Mehara students, it was found that generally the printed books available as learning media have not been updated properly. Another thing that was found was that generally motivation and learning outcomes were not in accordance with the KCC (minimum completeness criteria) which refers to graduate competency standards. Apart from that, students with different social backgrounds and different cognitive abilities need breakthroughs to create optimal enthusiasm and motivation for learning. Teachers as facilitators need to utilize digital media such as cellphones to create a maximum student learning atmosphere. It should also be noted that all students have an Android cellphone which can be used as a learning medium. Also in this research, the aspect that is a gap is the dictionary designed based on local knowledge, especially traditional medicinal plants used by the Sabu Raijua community. The plant names are also written in the local Sabu language. And if applied as a learning medium, this certainly has a very positive and meaningful value.

Learning related to plant diversity in Biology subjects is one of the dense topics of discussion. Therefore, a strategy is needed to package the material so that students are more motivated, and do not cause learning boredom. In this research there is also one unique thing, namely the media used is an e-dictionary with the consideration of having an attractive appearance and the contents of the dictionary material relating to medicinal plants found in the area. Thus, this can increase students'

knowledge and learning motivation. According to Ratnaningsih & Hasititi (2018), learning using picture books can increase students' learning motivation by an average of 15.09%. According to Sujana (2019), motivation is classified into the desire to succeed, encouragement to learn, future aspirations, appreciation, fun learning and a conducive learning environment. Research conducted by Muhtarom et al (2021), related to the use of audio-visual media on student learning motivation tcount > ᵗtable with a value of 4,118 > 2,056, which means there is an influence. Another research related to the impact of the learning media on student learning motivation by Alwi et al (2023), namely if the tcount > ᵗtable, H0 is rejected and Ha is accepted. The data explains the value of tcount 6.168 > ᵗtable 2.042. Thus it can be said that there is influence. Bestari's research (2024) shows that 67% of students are satisfied and motivated to learn using Android applications. Starting from the explanation above, it is important to carry out research with the title Implementation of electronic dictionary based on medicinal plants of the Sabu community increases learning motivation of XII students at Mehara.

2. Method

2.1 Place and time

The research took place on class XII students of high school Sabu Mehara, Sabu Raijua district, East Nusa Tenggara Province. The research implementation time is April 1 to 2 2024. The determination of the experimental class was based on discussions with the biology teacher who explained that generally the learning outcomes of class XII B students did not consistently meet the minimum completion criteria.

2.2 Research methods

The research methodology in this research is descriptive quantitative. In this study, the researcher used only one class as the research group. From this group or class, the researcher conducted pretests and posttests. The purpose of the pretest was to determine the conditions before the treatment. The purpose of the posttest was to determine changes after the treatment.

2.3 Research instrument

The research instruments used were questionnaire guidelines/learning motivation questionnaires, as well as observation sheets (Risdayanti, 2023). The motivation questionnaire used was adjusted to the dependent variable in this research. The number of instrument items in this study was 20. The instrument was designed with five statement categories: 1 (strongly disagree), 2 (disagree), 3 (not sure), 4 (agree), and 5 (strongly agree). Determination of learning motivation is based on a learning motivation scale that ranges from very low (20-35), low (36-51), medium (52-67), high (68-83), and very high (84-100). Interpretation of pretest and posttest scores is based on a motivation scale of 20-100.

2.4 Types of research

The type of research used by researchers in this study is quasi-experimental (quasi-experimental design).

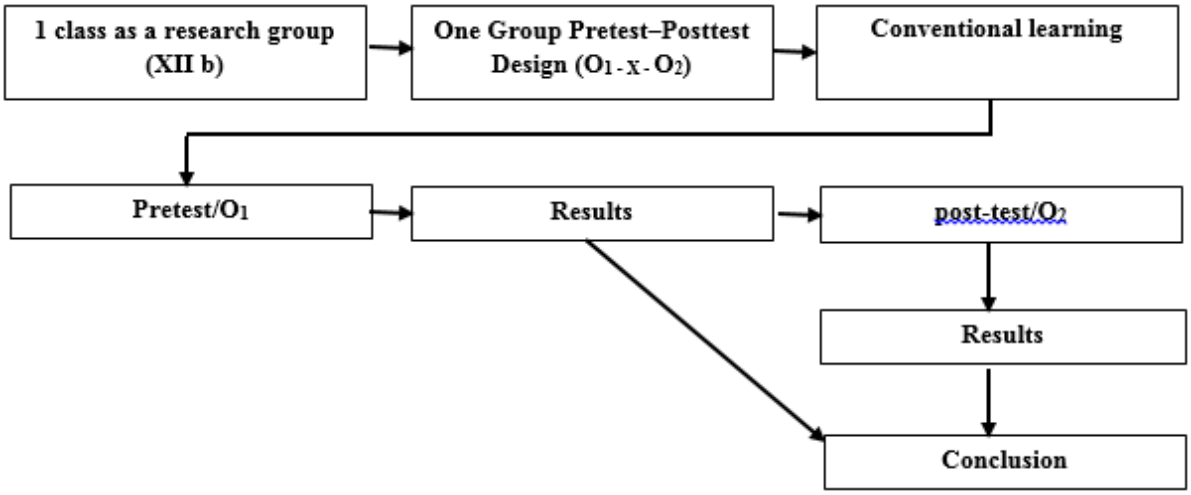
2.5 Population and sample

The population in this study was all 12th grade students. The class used as the sample for this study was 12th grade. The total number of students in this study was 32. The experimental class was determined based on purposive sampling. The class selected in this study automatically became the experimental class, because there was no comparison class. In other words, the treatment was only given to one group.

2.6 Research design

The design used in this research is one group pretest-posttest design. one group pretest-posttest design is a pre-experimental design that has a pre-test (test before treatment) and post-test (test after treatment) in one group. This research employed a One Group Pretest–Posttest Design. This means that only one group or class was used as the experimental class. Motivation measurements were taken in this class before treatment (pretest/O_1) and after treatment (posttest/O_2).

Figure 1.
Research Flow



2.7 Research procedure

This stage begins with researchers and teachers preparing the class. After ensuring that all students were ready to learn, the researcher then explained about the research. Students are asked to fill out the pre-test questionnaire that has been prepared. After filling in the questionnaire, the researcher continued to the implementation stage where the learning process began using an e-dictionary of medicinal plants from the Sabu area. Dictionary of medicinal plants written by Ledo et al (2024), After the learning process, students are again asked to fill out the post-test questionnaire that has been prepared. The results of the pre-test and post-test questionnaires obtained are then collected and ready to be analyzed.

2.8 Data collection technique

Data collection in this study by the researcher used several stages such as observation (Researchers can act as observers to observe initial research data and data while the research is in progress). Questionnaire/questionnaire (The questionnaire acts as an instrument to obtain information from respondents about the influence of e-dictionaries on student learning motivation). The questionnaire was distributed using a Likert scale, which is generally used to determine or assess students' motivation levels. Activity data was collected through observation, interpreted into student activity score criteria, and then analyzed.

2.9 Data analysis technique

After all the collected data has been prepared, the next step is to analyze it using a t-test in SPSS Statistics V22. This process aims to examine the effect of implementing an electronic dictionary based on medicinal plants in the Sabu community on learning motivation. The research data will then be discussed with reference to relevant literature.

3. Result and Discussion

The results obtained in this research were obtained through several stages. These steps begin with creating an e-dictionary, through to the process of planning, implementing and processing research data. The research process and results can be seen in the following description: electronic dictionary is a digitally designed dictionary that can be accessed online. It contains information on the types of medicinal plants used by the Hawu Raijua community, images of the medicinal plants and their Latin names.

Figure 2.
Explanation regarding filling out the questionnaire

Figure 3.
e-dictionary cover display

Figure 4.
Display of the contents of the e-dictionary

Table 1.
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Exp.	68.2800	25	11.23061	2.24612
	After Exp.	78.8400	25	9.33042	1.86608

(Result)

Table 1 above explains descriptive statistics from pre-test and post-test data related to learning using medicinal plant-based e-dictionaries (Abdan et al., 2018).

Table 2.
Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Before Exp. & After Exp.	25	.059	.781

Table 2 explains whether there is or is not a relationship between pre-test and post-test data. Please note that if the significance is less than 0.05 then there is a relationship. However, because the sig value of table 3 0.7881 is more than 0.05, it can be said that there is no relationship between the pre-test and post-test (Abdan et al., 2018).

Table 3.
Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before Exp. After Exp.	-1.05600E1	14.17474	2.83495	-16.41105	-4.70895	-3.725	24	.001

The data in table 3 above explains the relationship between the application of a medicinal plant-based e-dictionary to student learning motivation. The determination can be seen based on the sig value listed in table 3. The paired sample T test is a test used to compare the difference between two means of two paired samples with the assumption that the data is normally distributed. Paired samples come from the same object. Each variable is taken in different situations and circumstances. The decision-making guidelines for a paired sample t-test are based on the t-value or the Sig. (2-tailed) probability value. The error rate used is 5% or 0.05. If the Sig. (2-tailed) value is less than 0.05, it can be concluded that there is a significant effect on the differences in treatment given to each variable. However, if the Sig. (2-tailed) value is greater than 0.05, this indicates that there is no significant effect on the differences in treatment given to each variable (Abdan et al., 2018).

The hypothesis in this study uses a paired sample t-test with the help of SPSS V22. The t-test aims to determine whether there is a difference in the average pre-test and post-test motivation of students at SMA N 1 Sabu Mehara. The research results showed that there was an increase in learning motivation after the implementation of the e-dictionary based on medicinal plants. This finding aligns with Sugiharto (2018), who stated that learning using e-dictionary media can increase motivation in students, such as the desire to succeed, the need to learn, aspirations, appreciation in learning, enjoyable learning, and a conducive learning environment. Similarly, as written by Nada & Ruly (2020), the use of learning media can enhance students' skills aspects, such as stimulating thoughts, feelings, attention, and interest optimally, which fundamentally relates to students' learning motivation.

Student learning success is correlated with one aspect, namely motivation (Tarumasely, 2020). Student learning motivation is the drive or enthusiasm to learn and achieve. Many factors influence students' learning motivation in the classroom. According to Laksono (2014), the urge or drive to

continue learning is determined by the teacher's skills in the classroom, including the use of learning media. Learning using conventional media makes students quickly bored and inattentive in following the lessons seriously and focused. Learning with high creativity, such as utilizing technology in developing learning media in the digital age, can encourage students to study more diligently (Hadijah, 2020).

The development of science and technology is inseparable from human life. This fundamentally has a positive impact on all aspects of society. According to Sugiharto (2018), the rapid development of science has made information access very open. This also affects the field of education, where learning media as sources or tools in the classroom become varied and innovative. Biology education, which is always contextual and related to independent information seeking and systematic understanding, becomes a central problem in high school biology education.

Referring to the data collected from student questionnaires, it was found that the development of smartphone technology (gadgets) plays an important role in creating enjoyable and easily understandable learning activities. This is supported by the fact that the majority of high school students in Sabu Mehara already own smartphones and have internet access. This aligns with Abdan et al (2018), who stated that learning about heredity using e-dictionaries can build good understanding and provide clear explanations of the material. This is also consistent with the t-test data before and after the implementation of the e-dictionary based on medicinal plants in this study.

Based on observations during the implementation of the learning process, several comments, questions, and notes were made regarding the use of media, such as the procedure for using the media, unstable internet connections, ways to summarize the material, and how to create an e-dictionary. This situation is considered normal because the application of the e-dictionary media is relatively new and digital-based. Students need to access the application as frequently as possible to become accustomed to using the e-dictionary. The e-dictionary, which has been designed for use on laptops or smartphones, allows learning to take place anywhere and can be carried easily by students. This condition is very flexible for students, enabling them to learn anywhere without the hassle of carrying printed books. This is one of the advantages of digital-based learning media.

As knowledge progresses, students and teachers are required to adapt to the development of digital technology. Referring to the post-test questionnaire data on the use of the e-dictionary, most students chose an index of 3-5, with the highest score being 90 and the lowest being 61. This indicates that the use of the e-dictionary based on medicinal plants has had a positive impact on classroom learning. According to research by Muhazaroh (2023), learning media is one of the determining factors for student motivation in learning. Learning media supports the teaching and learning process and helps teachers deliver teaching materials, making it easier for students to understand and preventing boredom in the classroom. Students are more focused when they learn by experiencing and directly seeing interesting designs that stimulate their curiosity.

Using engaging media in learning can address various educational issues such as culture, physiological factors, student behavior, and the student environment. Conventional, monotonous teaching methods quickly bore students and make them feel indifferent, meaning they are not challenged in their learning. Research by Safira et al (2016), on the use of electronic-based learning media shows a positive correlation with students' motivation to learn about the digestive system. Learning media can be considered one of the extrinsic factors that stimulate learning motivation (Fadhilah et al., 2018).

The e-dictionary used in this study is a model containing medicinal plants from Sabu Raijua Regency. This dictionary is designed with pictures of local plants and explanations of their benefits. The content is written in the Sabu language as well as Latin, which adds a unique appeal and increases students' motivation to learn. According to research by Muhazaroh (2023), learning media that include images are effective communication tools for conveying messages to students, and they also psychologically boost students' enthusiasm for learning. With the help or touch of smartphone technology in this study, it is evident that students' motivation increases. Fundamentally, every human being possesses cognitive, affective, and psychomotor abilities to learn better. Cognitively, humans have the ability to receive and absorb learning information provided by teachers through media directly experienced by the students themselves. This is very important because it involves the work of the senses. Affective aspects relate to students' interest or attitude in receiving learning. Psychomotor aspects are related to students' skills in processing learning information (Hasanah et al., 2023).

Based on the data in Table 4, it can be seen that students' motivation scores after the treatment (learning using the medicinal plant dictionary) were higher than before the treatment. This is evident from the sig value (0.001) < 0.05, indicating a significant difference. These data also indicate that the hypothesis in this study is rejected and H1 is accepted (Windiyani & Novita (2018). This means that the applied learning media has a significant impact on students' learning motivation. This increase in learning motivation is supported by a large t-value (-3.725).

In implementing the electronic dictionary as a learning medium to increase learning motivation, the researcher took several steps: preparing the class. After the class was prepared, a pre-test was conducted, and the test results were recorded. Following the pre-test, the researcher conducted the treatment phase, which included observation, introduction, core activities, evaluation, and feedback. The researcher then processed the pre-test and post-test data. In the experimental phase, students were very enthusiastic about learning by looking at the pictures of plants they encounter every day included in the dictionary. The dictionary also includes the local names of plants (their names in the Sawu Raijua language).

4. Conclusion

Based on the research results in the paired sample test table, it shows a 2-tailed sig value (0.01) < 0.05, which means there is a significant difference between the pre-test and post-test. Thus, it can be explained that the application of an e-dictionary based on medicinal plants in the conditions before and after had a real effect on the learning motivation of class XII high school students in Sabu Mehara.

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