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The Effect of Learning Style on the Pretest Results of Animal Histology and Embryology Practicum for Biology Education Students UAD Batch 2023

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ABSTRACT

In an effort to improve learning outcomes, it is important to understand the various factors that can affect student learning outcomes, one of which is learning style. Learning style is a way or method used by individuals to receive, process, and remember information. This study aims to examine the effect of learning style on the results of the pretest of animal histology and embryology practicum in Biology Education students at Ahmad Dahlan University, class of 2023. This study is included in quantitative research, which identifies the effect of variable X on variable Y. The research instruments used include a learning style questionnaire with a total of 10 questions. The data obtained were analyzed using descriptive statistical analysis in the form of a normality test and a T test. The results of the normality test showed that the significance value obtained was more than 0.05, which means that the data was normally distributed. The results of the T test showed a significance value of 0.00 less than 0.05. This shows that there is a significant influence between learning style and student pretest results. Based on the results, it can be concluded that there is a significant influence between learning style and student pretest results in the Animal Histology and Embryology practicum.



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Introduction

Education is the main foundation for preparing the younger generation to face future challenges. In the context of higher education, especially in the Biology Education study program, a deep understanding of various aspects of biology is very important. One of the important aspects taught is animal histology and embryology. In-depth understanding of this course requires not only strong theory, but also in-depth practicum. In an effort to improve learning outcomes, it is important to understand the various factors that can affect student learning outcomes, one of

which is learning style (Wahyudin & Rido, 2020).

Learning styles are the ways or methods used by individuals to receive, process and remember information. There are various learning styles, including visual, auditory, kinesthetic, and a combination of the three. The above definition can be concluded that everyone's learning style is different, according to the person's habits in absorbing, organizing and processing information (Suyono, 2018). Each student has a different learning style tendency, which can affect the effectiveness of their learning (Widharyanto & Binawan, 2020). In the practicum of animal histology and

embryology, understanding students' learning styles can provide valuable insights in developing more effective and personalized learning strategies. In previous studies, several studies have been conducted on the relationship between learning styles and learning outcomes. Such as research by Kadir et al., (2020) entitled The Effect of Student Learning Styles on Physics Learning Outcomes of PGRI Maros High School, with the results showing that there is a positive influence.

This study aims to examine the effect of learning style on the pretest results of animal histology and embryology practicum in Ahmad Dahlan University Biology Education students class of 2023. Through this analysis, it is expected to find a relationship between learning styles and learning outcomes that can be the basis for developing learning methods that are more adaptive and in accordance with student needs (Wahyudin & Rido, 2020). The results of this study are also expected to contribute

to improving the quality of education in the UAD Biology Education study program.

Method

This research is included in quantitative research, which identifies the effect of variable X on variable Y. The independent variable (X) in this study is the student's Learning Style. The dependent variable (Y) in this study is the pretest results of uad biology education students class of 2023 in the practicum of animal histology and embryology. The data collection method used in this study is a questionnaire (questionnaire) given to students to find out the various learning styles. The research instrument used includes a learning style questionnaire with a total of 10 statement items consisting of aspects of visual, auditory, kinesthetic learning styles and a combination of the three. The data obtained were analyzed using descriptive statistical analysis in the form of normality test and T test.

Results and Discussion

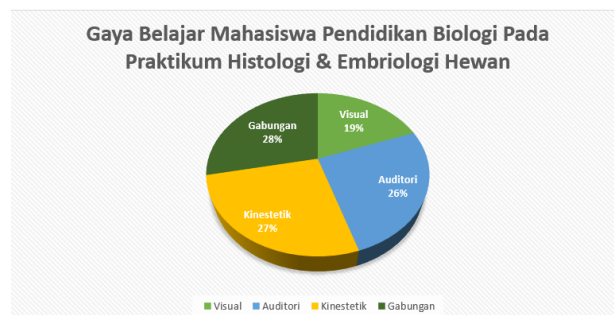


Figure 1. Diagram of learning styles of Biology Education students in HEH practicum

From the results above, it can be seen that the majority of students have a combined learning style tendency with a percentage of 28%. This combined learning style indicates that students tend to use more than one method to receive, process and remember information, such as a combination of visual, auditory and kinesthetic. This indicates that a holistic learning approach, which combines various methods, may be more effective for this group. Furthermore, kinesthetic learning style comes in second place with 27%. Students with kinesthetic learning styles tend to learn better through physical

activities and hands-on experiences. This suggests that practicum and hands-on activities are very important in supporting the learning process for these students.

The auditorial learning style occupies the third position with 26%. Students with this style prefer to receive information through listening, such as through lectures or discussions. The use of audio media and group discussions can help improve their understanding. Finally, visual learning style accounts for 19% of the total students. Students with this learning style prefer to use pictures, graphs and other visualizations to learn the material.

Providing learning materials in the form of diagrams, concept maps, and videos can be very helpful for them.

Table 1. Frequency Distribution of Average PreTest Score

No	Kelas Interval	Frekuensi	Presentasi
1.	86-90	4	20%
2.	81-85	6	30%
3.	75-80	7	35%
4.	71-75	0	0%
5.	66-70	1	5%
6.	60-65	2	10%
Jumlah		20	100%

Based on the table above, it can be seen that in the 86-90 score range there are 20% of students, in the 81-85 range there are 30% of students, in the 75-80% range there are 35% of students, in the 71-75 range

there are 0% of students, in the 66-70 range there are 5% of students and in the 60-65 range there are 10% of students. So that based on this table, it is obtained that the range 81-85 has the highest percentage.

Table 2. Normality Test Results

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Gaya Belajar	Auditori	.260	2	.			
	Kinestetik	.289	5	.200 [*]	.856	5	.213
	Gabungan	.163	12	.200 [*]	.925	12	.330

From table 2 above, it can be seen that the significant value for the three learning styles is greater than 0.05. So it can be

concluded that the data is normally distributed for all types of learning styles.

Table 3. T Test Results

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Gaya_Belajar	19.672	43	.000	1.500	1.35	1.65
Hasil_Pretest	73.152	43	.000	77.682	75.54	79.82

Based on the results of the T test, a significant value of $0.00 < 0.05$ is obtained, so there is a significant influence between learning styles and pretest results.

The questionnaire instrument consists of 10 items that include statements about visual, auditory, kinesthetic, and combined learning styles. This instrument was distributed to Ahmad Dahlan University Biology Education students class of 2023 to identify their learning style preferences. After the data was collected, the next step was to conduct a normality test to

determine whether the data distribution met the requirements for further analysis.

The normality test was conducted using SPSS software. The results of the normality test show that the significance value obtained is more than 0.05, which means that the data is normally distributed. Normal distribution of data is essential for the validity of research results as it allows the use of more robust statistical analysis. This step ensures that the data being analyzed has distribution characteristics that match the assumptions of the statistical

analysis that will be used next (Ghozali, 2016).

After the data was normally distributed, continued with the T test using SPSS to see the effect of learning style on student pretest results in Animal Histology and Embryology practicum. The results of the T test showed a significance value of 0.00 smaller than 0.05. This shows that there is a significant influence between learning styles and student pretest results. In other words, different learning styles have a real impact on students' academic results in Animal Histology and Embryology practicum. These results are important to consider variations in learning styles in the educational process in order to increase learning effectiveness (Sugiyono, 2017).

Conclusion

Based on the results of data analysis, it can be concluded that there is a significant influence between learning styles and student pretest results in Animal Histology and Embryology practicum. The questionnaire instrument used to identify learning style preferences shows that the data is normally distributed. The T-test results showed a very small significance value (0.00), indicating that different learning styles have a real impact on student academic results. Therefore, it is important for the educational process to consider variations in learning styles in an effort to improve learning effectiveness. It shows the need for a deeper approach to meet the learning needs of each student.

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