Relationship between Biology Education Students' Learning Period and Grade Point Average (GPA)

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Abstract

The grade point average (GPA) is the value obtained by students cumulatively from the beginning to the end of the semester. To get a high GPA, students must study hard. Learning period is not a guarantee of getting a high GPA. The problem that is now happening is how students use learning time effectively so that their learning results are maximized. This research aimed to know the relationship between the learning period and GPA. The type of research used is quantitative correlational research to know the relationship between the learning period and GPA. The subjects in this study were 33 students at the fifth semester in the Department of Biology Education at a public university in Indonesia. The research implementation phase included data collection, data analysis, and conclusion. The results of the simple correlation test analysis of Spearmann Correlation & Kendall's tau-b show that r count < r table ($0.139 < 0.442$) on the Kendall's tau-b test, r count < r table ($0.168 < 0.442$) on the Spearmann rho test, and the R-value is 19.1 which states that the relationship between the learning period and GPA results is low. This study concludes that there is no relationship between the learning period and the grade point average (GPA) of the biology education students. The absence of this relationship can be influenced by several factors, such as school factors, family factors, the inability to determine the priority scale of planned activities, as well as factors of interest and motivation to learn.

Keywords: Learning Period, GPA, Undergraduate Biology Education Students

INTRODUCTION

Education is a form of human interaction implemented in the form of learning. Education allows humans to develop self-ability through learning (Fitri, 2021). The learning process is a psychological or mental activity that occurs in active interaction with the environment and causes various changes in knowledge and understanding, skills, and attitudes. There is a relationship between students and the learning environment in the learning process, whose goal is to form learning activities (Hazmi, 2019). In addition, some factors can affect learning achievement (Karlina et al., 2021).

Learning achievement can be interpreted as the results achieved during the teaching and learning process within a certain period. Learning achievement is the level of success of students or students because they have achieved the goals set in the teaching program. In another sense, learning achievement results from a learning activity, and the changes a person achieves are then expressed in numbers, symbols, letters, or sentences as a measure of success (Rosyid et al., 2019).

At the tertiary level, learning achievement in a semester is called the grade point index (IP). While the overall results obtained by students in several periods that have been effective are called the grade point average (GPA). The GPA contains reports on learning outcomes that are used to determine the success rate of students in participating in all learning programs in college (Rahmawati el al., 2018). The GPA is a benchmark for students to be successful or not in their achievements during lectures (Hasanah et al., 2018).

The cumulative grade point index (GPA) measures a student's ability up to a certain period and is calculated based on the number of credits taken. One factor that influences GPA is the length of student learning (Sihite & Pratiwi, 2018). The learning period is defined as how long students often practice and do repetition activities in learning. Repetition activities in the learning process can increase the skills and knowledge possessed by students (Hakim et al., 2015).

Similar research on the relationship between study habits and learning achievement has been researched by Lase (2018), who examined the relationship between motivation and study habits on mathematics learning achievement in junior high school students. Study habits, including effective and efficient study time, can be associated with maximum learning achievement. Furthermore, the research results by Titis & Sari (2019) show a significant effect of learning duration on students' mathematics learning outcomes. A long duration of learning will have a positive impact on students in terms of learning outcomes. This can be seen from the learning outcomes of students ranked 1-5 who have a longer learning duration than those with a short learning duration.

Based on the description above, the researcher is interested in uncovering the problem of each student's learning period and whether or not it is related to learning achievement. Because each student has different priorities and conditions they have different learning period. This study aimed to determine the relationship between the learning period and GPA of undergraduate biology education students.

METHOD

The type of research used is quantitative correlational research to know the relationship between the learning period and GPA of biology education students at a public university in Banten, Indonesia. The subjects of this study were 33 students at the Department of Biology Education in the fifth semester. The data collection method in this study was a questionnaire by filling out data on a Google Form. The research stages include data collection, data analysis, concluding, and preparing the final report. After distributing the questionnaire via Google

Forms, the researchers analyzed the relationship between students' learning period and GPA using Microsoft Excel and SPSS to test the hypothesis.

This study analyzed data using simple correlation analysis techniques and quantitative descriptive analysis. Simple correlation analysis in this study was used to determine the magnitude of the correlation coefficient (R-value) between the learning period and GPA. The activities in analyzing the data include the normality test, homogeneity test, and Spearmann Correlation.

According to Ginting & Sitilonga (2019), the normality test aims to test whether data from variables can have a normal distribution. Kolmogorov-Smirnov could be used to detect whether the data in this study were normally distributed. Suppose the Kolmogorov-Smirnov test results show a p-value greater than 0.05 (p-value > 0.05). In that case, the research data is normally distributed, and vice versa, if the p-value is less than 0.05 (p-value < 0 .05), then the research data is not normally distributed.

The homogeneity test in research is used to determine whether some variants of the research data population are homogeneous. If the significance value is greater than 0.05 (P > 0.05), the variance of two or more groups is homogeneous. Conversely, if the significance value is less than 0.05 (P < 0.05), then the variance of two or more groups is not homogeneous (Amaliah, 2016).

According to Yanti & Akhri (2022), Spearmann Correlation in research is used to assess the relationship between two variables without making assumptions about the frequency distribution of the studied variable. While Kendall's tau-b in research is used to measure the strength of the relationship between two variables, the research data is the ordinal scale and does not have to be normally distributed. If the value of the r count is greater than the r table (r count > r table), then there is a relationship between the two variables. Conversely, if the r count is smaller than the r table (r count < r table), then there is no relationship between the two variables.

RESULTS AND DISCUSSION

Based on Sihite & Pratiwi (2018), the grade point index (GPA) measures a student's ability to obtain a certain period based on the calculation of the number of credits that have been achieved. One of the many factors that influence student GPA is the learning period. This study tested the relationship between GPA and learning period of the undergraduate biology education students in the fifth semester. Based on the acquisition of GPA data and learning period, the relationship between the two (GPA and learning period) was calculated using the

normality test, homogeneity test, and bivariate correlation analysis with Spearmann correlation & Kendall's tau-b analysis.

The normality test is used to determine whether the distribution is normal. The normality test is carried out through two data, namely data on learning period and GPA. We calculated normality using the Kolmogorov-Smirnov test. The SPSS program analysis has a sig level of α = 0.05, namely > α, so the data is said to be normal. However, if the value of data analysis < α, then the data is considered abnormal (Ali & Wajdi, 2022). Look at the table below as a normality test for the learning period and GPA.

Table 1. Normality Test for Learning Period and GPA

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Learning Period	.149	33	.059	.900	33	.005
GPA	.105	33	.200[*]	.975	33	.640

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Normality test results in Table 1 shows the learning period gets a Sig. = 0.059 (P > 0.05). This means that H_0 is accepted (H_1 is rejected), so it can be concluded that the learning period data is normally distributed/there is no difference. Meanwhile, the GPA normality test obtained a Sig. = 0.2 (P > 0.05). This means that H_0 is accepted (H_1 is rejected), so it can be concluded that the GPA data is normally distributed/there is no difference.

The homogeneity test is carried out after the data has passed the normality test. The homogeneity test is used to determine whether or not the learning period and GPA are uniform (homogeneous) (Kurniahtunnisa et al., 2016). The one way to find out whether the data is homogeneous is using the One Way Annova test. The SPSS program analysis has a sig level of α = 0.05, namely > α so that the data is said to be homogeneous, while < α so that the data is said to be inhomogeneous (Ejin, 2016). We can see the homogeneity test data in Table 2.

Table 2. Homogeneity Test for Learning Period and GPA

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
	Based on Mean	60.183	1	64	<.001
Learning Period	Based on Median	52.889	1	64	<.001
	Based on Median and with adjusted df	52.889	1	32.728	<.001
	Based on trimmed mean	60.980	1	64	<.001

Based on Table 2, it is known that the value of Sig. = 0.001 (P < 0.05). This means that H_0 is rejected (H_1 is accepted), so it can be concluded that the homogeneity of the learning period data and GPA scores are not homogeneous. Because the normality test results are normal and the homogeneity test results are not homogeneous from the learning period and GPA data, a non-parametric test is used to determine the relationship using Spearmann Correlation & Kendall's tau-b analysis.

In this study, we wanted to know the relationship between students' learning period and grade point average (GPA) learning outcomes to obtain the results in Table 3.

Table 3. Bivariate Correlation Analysis (Spearmann Correlation & Kendall's tau-b)

		Correlations		
			Lama_Belajar	IPK
Kendall's tau_b	Learning Period	Correlation Coefficient	1.000	.139
		Sig. (2-tailed)	.	.294
		N	33	33
	GPA	Correlation Coefficient	.139	1.000
		Sig. (2-tailed)	.294	.
		N	33	33
Spearman's rho	Learning Period	Correlation Coefficient	1.000	.168
		Sig. (2-tailed)	.	.349
		N	33	33
	GPA	Correlation Coefficient	.168	1.000
		Sig. (2-tailed)	.349	.
		N	33	33

Based on Table 3, in Kendall's tau-b test, it is known that the Correlation Coefficient = 0.139 (r count). When compared with r table (can be seen in table 4) (N = 33, then r table = 0.442), then r count < r table (0.139 < 0.442). So it can be concluded that there is no relationship between the learning period of biology education students in the fifth semester and GPA. The Spearmann rho test shows the Correlation Coefficient = 0.168 (r count). When compared with r table (can be seen in table 4) (N = 33, then r table = 0.442), then r count < r table (0.168 < 0.442). So, it can be concluded that there is no relationship between the learning period of biology education students and GPA.

The above statement is reinforced by the r-value. If the r-value is close to 100, then the relationship is strong; if it is close to zero, the relationship is low. In Table 4, the r-value is 19.1

(0.191 x 100 = 19.1), so the relationship between the length of study of 5C class Biology Education students and learning achievement (GPA) is low.

Table 4. Model Summary Value of R-Square

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.191[a]	.036	.005	.15084	1.883

a. Predictors: (Constant), Learning Period
b. Dependent Variable: GPA

The results of the analysis from Table 3 and Table 4 show that there is no relationship between the learning period and the grade point average of biology education students, namely r count < r table (0.139 < 0.442) on Kendall's tau-b test, r count < r table (0.168 <0.442) on the Spearmann rho test, and an R-value of 19.1 which states that the relationship between the learning period and GPA results is low.

According to Hazrah et al. (2022), there is no relationship between the learning period and the grade point average (GPA) of biology education students, due to internal and external factors. The internal factors, namely factors that come from oneself, include intelligence, interest, motivation, and learning methods. In contrast, external factors come from outside the individual, including family, school, time, and community factors. In addition, the absence of a relationship between the learning period and GPA is influenced by poor time management due to the inability to determine the priority scale of planned activities, so the learning period carried out by students is not related to their learning outcomes in the form of a GPA (Lestari, 2015).

In line with the opinion of Hakim (2015), one of the factors that can affect learning achievement is the learning period. However, according to Karlina et al. (2021), learning period will only be well-spent if it is balanced with learning motivation because a person does business with enthusiasm because there is motivation as a driving force to achieve targets. In addition, if it is not balanced with interest in learning, students cannot study independently (Rusmiati, 2017). Students with low interest and motivation usually when learning is often sleepy, lazy, and not focused, or their attention is divided everywhere (Heriyati, 2017), so the opportunity for study time given will not increase learning achievement, especially in improving the grade point index (GPA).

CONCLUSION

Based on the results of the research that has been done, it can be concluded that there is no relationship between the learning period and the grade point average (GPA) of the biology education students with a value of r count < r table (0.139 < 0.442) on Kendall's tau-b test, the value of r count < r table (0.168 < 0.442) on the Spearmann rho test, and an R-value of 19.1 which states that the relationship between the learning period and GPA results is low. The absence of this relationship can be influenced by several factors, such as school factors, family factors, the inability to determine the priority scale of planned activities, as well as factors of interest and motivation to learn.

SUGGESTIONS

Based on the research results, we recommend that more students become research subjects to make the test results more significant. Besides that, variable independence can be increased to become student learning motivation through distributing questionnaires.

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