THE INFLUENCE OF STUDENTS' SELF-REGULATION ON LEARNING OUTCOMES IN COMPLEX ANALYSIS COURSES

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ABSTRAK

Penelitian ini membahas mengenai pengaruh regulasi diri mahasiswa terhadap hasil belajar pada mata kuliah analisis kompleks. Mata kuliah analisis kompleks dianggap sebagai mata kuliah yang sulit bagi mahasiswa sehingga membuat kurang bersemangat ketika belajar. Regulasi diri ialah kemampuan seseorang untuk mempertahankan dirinya dari pengaruh-pengaruh negatif di sekitar. Penelitian ini bertujuan untuk mengetahui tingkat pengaruh dari regulasi diri mahasiswa terhadap hasil belajar pada mata kuliah analisis kompleks. Penelitian ini dilakukan menggunakan pendekatan kuantitatif dengan jenis korelasional. Pengumpulan data dilakukan dengan kuisioner dan dokumentasi kemudian data dianalisis menggunakan analisis regresi. Adapun untuk menguji instrument pengumpulan data menggunakan uji validitas dan uji reliabilitas. Subjek penelitian ini adalah mahasiswa Tadris Matematika UIN KH Abdurrahman Wahid Pekalongan Angkatan 2021 dengan jumlah sampel dihitung menggunakan rumus slovin. Hasil penelitian ini menunjukkan bahwa regulasi diri mahasiswa berpengauh pada hasil belajar mata kuliah analisis kompleks.

Kata kunci : (Regulasi diri, hasil belajar, analisis kompleks.)

ABSTRACT

This research discusses the influence of student self-regulation on learning outcomes in complex analysis courses. Complex analysis courses are considered difficult courses for students, making them less enthusiastic about studying. Self-regulation is a person's ability to defend himself from negative influences around him. This research aims to determine the level of influence of student self-regulation on learning outcomes in complex analysis courses. This research was conducted using a quantitative approach with an corelasional type. Data collection was carried out using questionnaires and documentation, then the data was analyzed using regression analysis. Meanwhile, to test the data collection instrument using validity tests and reliability tests. The subjects of this research were students of Tadris Mathematics UIN KH Abdurrahman Wahid Pekalongan Class of 2021 with the sample size calculated using the Slovin formula. The

results of this research show that student self-regulation has an influence on learning outcomes in complex analysis courses.

INTRODUCTION

Education in schools should ideally be able to develop students' abilities so that all educational functions can be achieved. If the functions of education can be achieved, the generation that is formed is those who are ready to face the continuous changes of the times (Purwaningsih & Herwin, 2020). Seeing the very important role of education for people's lives, today the government is always trying to improve the quality of education, including student abilities.

The increasing quality of education can be measured by the learning outcomes that students have achieved. According to Winkel in Friskilia & Winata (2018), learning outcomes are interpreted as evidence of learning success or students' ability to carry out their learning activities in accordance with the weight achieved. The weight referred to here is the student's grade which can take the form of a report card, study achievement index, graduation rate or success predicate.

The learning process carried out at school will produce a final grade or learning outcome to measure students' abilities in the material presented by the teacher. Student learning outcomes are student results which are a description of the success of student abilities (Novauli, 2015). In achieving learning outcomes, there are several factors that can influence it.

Suryabrata explains that there are several factors that affect student learning outcomes, which are divided into internal factors and external factors. Internal factors include physiological (physical) factors and psychological factors (intelligence, interest, talent, attention, motivation, maturity and readiness). External factors include social factors (family, school and community environment) and non-social factors (Suryabrata, 2014).

One of the internal factors that can affect a person's learning outcomes is the ability to self-regulate (Woolfolk, 2022). According to Brandstatter and Frank in Friskilia and Winata (2018) self-regulation is a conscious and active effort made to control one's thoughts, reactions, and behavior.

Based on the author's observations of the student of the UIN KH Abdurrahman Wahid Pekalongan Mathematical Tadris Study Program on the Complex Analysis course, there are some students whose income does not follow the complex analysis course well. Looks like some lacked attention when the lecturer delivered the material in the class. Sometimes there are students who don't come to class for unclear reasons. That could be an indication that students still don't have a good self-regulation.

Therefore, the author is interested in raising research topics on the influence of student self-regulation on learning outcomes on complex analysis courses. With the following hypothesis:

H_0 : There is no influence of self-regulation and the learning outcome of complex analysis courses on the students of Mathematical Tadris UIN KH Abdurrahman Wahid Force 2021.

H_a : There is an influence of self-regulation and the learning outcome of complex analysis courses on students of Tadris Mathematics UIN KH Abdurrahman Wahid Force 2021.

As far as this research is concerned, it uses a quantitative approach to the type of correlational research. The population in this study is the entire Student Tadris Mathematics UIN KH Abdurrahman Wahid Pekalongan Force 2021. In counting the number of samples, the researchers used Gay and Diehl's theory with the minimum number of samples for correlational research being 30 subjects (Salafudin & Nalim, 2014) and selected using *simple random sampling* techniques.

The collection tools used include questionnaires, observations, and documents. Then the collected data will be analyzed using descriptive and inferential statistical analysis techniques through regression analysis.

DISCUSSION

Results of Instrument Testing

1. Validity Test

The validity test is used to determine whether an instrument is valid or not from each variable that has been tested. To find out whether an instrument is valid or not, you can see from the value of r count and r table.

$r_{count} > r_{table}$ = instrument valid

$r_{count} < r_{table}$ = instrumen invalid

The validity test results can be seen in the following table:

Table 1. Validity test results

Indicator	r_{count}	r_{table}	Result
1	0,472	0,288	Valid
2	0,518	0,288	Valid
3	0,346	0,288	Valid
4	0,457	0,288	Valid
5	0,525	0,288	Valid
6	0,268	0,288	Invalid
7	0,373	0,288	Valid
8	0.343	0,288	Valid
9	-0,055	0,288	Invalid
10	0,252	0,288	Invalid
11	0,272	0,288	Invalid
12	0,707	0,288	Valid
13	0,337	0,288	Valid
14	0,575	0,288	Valid

15	0,434	0,288	Valid
16	0,608	0,288	Valid
17	0.527	0,288	Valid
18	0,290	0,288	Valid
19	0,563	0,288	Valid
20	0,110	0,288	Invalid
21	0,725	0,288	Valid
22	0,361	0,288	Valid
23	0,270	0,288	Invalid
24	0,499	0,288	Valid
25	0,441	0,288	Valid
26	0,096	0,288	Invalid

2. Reliability Test

A reliability test is used to measure the consistency behavior of an instrument in research. A lift is said to be reliable if it has a reliable value > *Cronbach Alpha* (0,6068).

As for the reliability test of the instrument, the results are as follows:

Picture 1. Reliability Test Result

The reliability test resulted in a *Cronbach Alpha* value of 0.7822. Then the estimate is reliable as 0.7822 > 0.6068.

Results of Descriptive Analysis of Self-Regulation Variables

Descriptive analysis aims to describe data in variables that include maximum, minimum, mean, and deviation standard values. As for the results of descriptive statistical analysis, they are as follows:

Table 2. Descriptive Analysis of Self-Regulation

N	30
Max	84
Min	45
Mean	65,03448
Std. Deviasi	9,12799

From the table above, it can be seen that the maximum value of the student's self-regulation variable is 84, while the minimum value is 45. The average is 65,03448 with a standard deviation of 9,12799. This indicates that the average value

is greater than the standard deviations, so the data deviation is low and the data spread is even.

Results of Analysis of Learning Outcome Variables

The results of the descriptive analysis of student learning results can be seen in the following table:

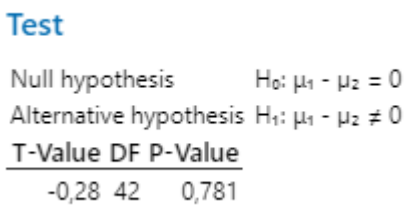
Table 3. Descriptive Analysis of Learning Results

N	30
Max	100
Min	30
Mean	66,03448
Std. Deviasi	16,97579

From the table above, it can be seen that the maximum value of the student's learning performance variable is 100, while the minimum value is 30. The average is 66,03448 with a standard deviation of 16,97579. This indicates that the average value is greater than the standard deviation, so the data deviation occurs low and the data distribution is even.

Hypothesis Testing Results

Hypothesis testing is carried out to determine which hypothesis to accept. The hypothesis test was carried out through the Minitab application. The results of the hypothesis test can be seen in the figure below:



Picture 3. Hypothesis Test Results

From the image can be seen that the P-value is greater than the value of a so that H_0 is rejected and H_a is accepted. Then there is the influence of self-regulation and the learning outcomes of complex analysis courses on the students of Tadris Mathematics UIN KH Abdurrahman Wahid Force 2021.

Regression Testing Results

The regression test aims to find out how much the influence between self-regulation and student learning outcomes is. Regression test results through the Minitab application are as follows:

Model Summary

S	R-sq	R-sq(adj)
11,3439	56,94%	55,35%

Picture 3. Regression Test Results

From the results of calculations using the Minitab application, it can be seen that the estimated error is 36.5663. The R-sq value of 56.94% means that self-regulation has an effect of 56.94% on learning outcomes and 45.06% is influenced by other factors. The R-sq (adj) value of 55.35% means that the correlation between self-regulation and learning outcomes is moderate.

CONCLUSSION

Self-regulation is the ability of a person to defend himself from the negative influences around him. The subject of this research is a student of Tadris Mathematika UIN KH Abdurrahman Wahid Pekalongan Army 2021 with the number of samples calculated using Slovenian formula. From the calculations using the Minitab application, it can be seen that the estimation of error is 36,5663. A R-sq value of 56.94% means that self-regulation is influenced by 56.94% of learning outcomes and 45,06% by other factors.

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