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Comparative Study of the Use of Objective Tests and T essays D in Improving Achievement Learning Indonesian Language

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ABSTRACT

Educational institutions in Indonesia , so Indonesian is included as one of the fields of study that is taught from elementary school to university, so that the success of its teaching will determine its further development. To find out success can be done in various ways, including through assessment or evaluation activities, both orally and in writing. In general, what teachers do at school is a written test consisting of an objective test and an essay test. The population taken in this study were students of class s XI AK and class XI TKJ. The data collection technique used is the experimental method and the test method, because basically this research will compare two forms of objective tests and essay tests for class XI students of SMK Gita Kirtti I Jakarta. While other methods are helpful. The hypothesis in this research is that learning achievement in Indonesian using objective tests is better than those using essay tests for class XI students at SMK Gita Kirtti I Jakarta for the 2020/2021 academic year. Analysis of the data used is statistical processing techniques, using the t test formula. After the two data obtained are entered into the formula, it can be seen that to = 3.037 with a significance level of 5% t table = 2.093. Meanwhile, with a significance level of 1% t table = 2.861. This means that to is greater than t table, so the hypothesis can be accepted. Thus, it can be concluded that learning achievement in the field of Indonesian language studies by evaluating the form of an objective test is better than the evaluation of the form of an essay test for class XI students of SMK Gita Kirtti I Jakarta.

Keywords: Comparison; Objective Test; Essay Test; Evaluation

INTRODUCTION

The intelligence of life by forming a complete human person is the goal to be achieved in our education (Abdullah & ZA, 2018; Hasnidar et al., 2020; Mansir & Karim, 2020; Tao et al., 2019). In educating the nation's life, educational efforts are a way out that must be seriously considered which can affect the socio-cultural development of the nation. Therefore (Haberman, 2010; Kosciw et al., 2012), the government is determined to equalize opportunities and the quality of education as a major step in improving the standard of living of citizens and accelerating national development (Darling-Hammond, 2015).

To overcome these educational problems, one of the efforts must start from planning the learning system itself (Dhawan, 2020; Hirst, 2010; Mishra et al., 2020). System learning involve a lot component (Bordes et al., 2016; Butler et al., 2017; Jaber & Khan, 2010), one of the learning components that becomes a measuring tool to determine learning success is evaluation (Nain, 2020; Nain & Agustang, 2020).

The evaluation in question is a tool to determine student learning outcomes (Brinson, 2015; Butler et al., 2017; Vural, 2013). The way to assess student learning outcomes is done through two types of evaluation (Nikolic et al., 2020; Spronken-Smith et al., 2012; Yang et al., 2010), namely evaluation of the form of objective tests and essay tests. So evaluation is a process of obtaining information which is then used as the basis for making decisions (Brinson, 2015; Nikolic et al., 2020; Spronken-Smith et al., 2012; Yang et al., 2010). The decision can be in the form of whether a student passes the test or not, whether the student in question has mastered what has been explained or not, or whether the student needs special guidance to succeed and so on (Sutrisno et al., 2020).

According to evaluation is one of the activities in the teaching and learning process that can determine the accuracy of teaching and student success (Attri et al., 2017; Laurence & Bacharach, 2013; Rao et al., 2011). Many people think that learning evaluation is the last activity to think about and do. Evaluation as an integral part of the teaching and learning process must be planned and prepared since the activity has not yet started. To carry out this evaluation, there are many forms of tests that can be used by a teacher. Thus the teacher has the opportunity to determine and choose one form of test that he considers the most appropriate. The forms of tests or evaluations can be divided into two, namely objective tests and essay tests. The question that arises in connection with the form of the test is whether the teacher has developed or implemented these forms of tests in every time they carry out an evaluation. What is the difference between the learning outcomes carried out with objective tests and essay tests?

Based on these thoughts, it is necessary to conduct research to compare student achievement in the form of objective tests and essay tests.

METHOD

In a study there is a hypothetical formulation. The hypothesis is a conjecture or a temporary answer that still has to be tested for truth. To prove the truth of the proposed hypothesis, requires a research methodology.

Data Processing and Analysis Techniques

After the data is collected, the writer then presents it in tabular form to be processed as an effort to test the truth of the formulated hypothesis. As for the implementation of data processing, using statistical techniques. Based on statistical data, it can be used as a basis for drawing conclusions on the formulated hypothesis. The formulas used are:

a. Test validity

To find out the validity of the test, it can be correlated with the results of the previous test, namely the value of the report card for the field of Indonesian language studies in odd semester class XI with the PAT score. The correlation formula used is the Product Moment correlation technique, namely:

$$r\,xy = \frac{\sum xy}{\sqrt{(\sum X^2)(\sum Y^2)}}$$

Information :
^{r}xy = validity coefficient
X= Report score
Y= PAT value

b. Test Reliability

That is the level of accuracy of a test tool to measure something against a certain group.

$$r\,xy = \frac{\sum xy}{\sqrt{(\sum X^2)(\sum Y^2)}}$$

After using the above formula, then look for the correlation coefficient with the Sperman Brown halving technique formula, namely:

$$r\,xy = \frac{2(r\,gg)}{1+r\,gg}$$

Information :
^{r}xy = Coefficient of reliability
^{r}gg = Correlation coefficient between even and odd (which is calculated by the correlation formula earlier)
The formula to find the reliability of the test in the form of an essay or description test with the alpha formula, namely:

$$r\,11 = (\frac{n}{n-1})(1-\frac{\partial i^2}{\partial t^2})$$

Information :
n = Number of questions
^{r}11 = Reliability sought
i^2 = Total score variance of each item
t^2 = Total variance

Ratio

After completing the experiment in class XI SMK Gita Kirtti 1, then a final test or PAT test was held to determine whether there were differences and to test the tested hypotheses. The formula used is the t test formula, namely:

$$t = \frac{Mk - Me}{\sqrt{\frac{\sum b^2}{N(N-1)}}}$$

Information :
MK = Mean control group
Me = Mean experimental group
b^2 = Sum of the squared deviations from the mean difference
N = Number of individuals

RESULT AND DISCUSSION

After the end of the experiment, it can be reported about the description and results of the entire research process. The implementation of the research began in January 2021 until March 2021, taking the location at Gita Kirtti I Vocational School.

Test Validity

Table 1
Preparatory table to search r_{xy} Between Report Values (x) Field of Indonesian Studies for Class XI AK students

No. Massage	X	Y
1	7	7.5
2	8	6
3	6	5.5
4	7	7
5	7	7
6	7	8
7	7	7.5
8	7	7.5
9	7	6
10	7	7
11	8	8
12	7	6
13	8	8.5
14	8	8
15	6	7
16	7	8.5
17	7	7.5
18	8	8
19	7	7
20	7	6.5

Table 2
Work table to find r_{xy} Between odd semester report cards (x) and PAT scores Objective test (y) Field of Indonesian Language Studies Class XI AK

No	X	Y	x	y	x^2	y^2	xy
1	7	7.5	- 0.1	+ 0.2	+0.01	+0.041	-0.02
2	8	6	+0.9	+0.7	+0.81	+0.49	+0.63
3	6	5.5	- 1.1	-1.8	+1.21	+3.24	+1.98
4	6	7	-1, 1	-1.1	-0.21	+0.09	+0.33
5	7	7	-0.1	-0.3	+),01	+0.09	+0.03
6	7	8	-0.1	-0.1	+0.7	+0.49	-0.07
7	7	7.5	-0.1	+0.2	+0.1	+0.04	-0.02
8	7	7.5	-0.1	-0.1	+0.1	+0.04	-0.02
9	7	6	-0, 1	-1.3	+0.01	+1.69	+0.13
10	7	7	-0.1	-0.3	+0.01	+0.09	+0.03
11	8	8	+0.9	+0.7	+0.81	+0.49	+0.63
12	7	6	-0.1	-1.3	+81	+1.69	+0.13

No	X	Y	x	y	x^2	y^2	xy
13	8	8.5	+0.9	+0.2	+0.81	+0.44	+1.08
14	8	8	+0.9	+0.7	+0.81	+0.49	+0.63
15	6	7	-1.1	-0.3	+1.21	+0.09	+0.33
16	7	8.5	-0.1	+1,2	+0.01	+1.44	-0.12
17	7	7.5	-0.1	+0.2	+0.01	+0.04	-0.02
18	8	8	-0.1	+0.7	+0.81	+0.49	+0.63
19	7	7	-0.1	-0.3	+0.01	+0.09	+0.03
20	7	6.5	-0.1	-0.8	+0.01	+0.64	+0.08
	142	**146**	**0**	**0**	**+7,8**	**+13.2**	**+6.4**
	X	**Y _**	**x**	**y**	**x^2 _**	**y^2 _**	**xy**

From the table, the following figures are obtained:

$$M\,X = \frac{\sum X}{N} = \frac{142}{20} = 7{,}1$$

$$M\,Y = \frac{\sum Y}{N} = \frac{146}{20} = 7{,}3$$

$x^2 = 7.8$
$y^2 = 13.2$
$xy = 6.4$
Then entered into the formula;

$$rxy = \frac{XY}{\sqrt{(X^2)(Y^2)}}$$

$$= \frac{6.4}{\sqrt{(7.8)(13.2)}}$$

$$= \frac{6.4}{\sqrt{102.92}}$$

$$\frac{6.4}{10.14692}$$

= 0.6307332
=0.630

From these calculations obtained correlation (r 0) = 0.630. Thus, the test questions that are made are proven to be reliable in their validity.

Test Reliability

To find out the reliability of the objective test, the split-half technique is used, meaning that the value of the year-end assessment results (PAT) that has been done by class XI students is separated between the correct answers to the questions or odd-even items which are then searched for correlations.

Table 3
Correct answers to the results of the PAT objective test for the Indonesian Language Study Field for the 2020/2021 Academic Year

No	1	3	5	7	9	11	13	15	17	19	Amount
1	1	1	1	1	1	1	-	1	-	1	8
2	-	-	1	1	1	1	1	1	1	1	8
3	1	-	-	-	1	1	-	1	1	-	5

4	1	-	-	1	1	1	1	1	1	-	7
5	1	-	1	1	1	1	1	1	1	1	9
6	1	1	1	1	1	1	-	1	-	1	8
7	1	1	1	1	-	1	-	1	1	1	8
8	-	1	1	1	1	-	1	1	1	1	8
9	1	1	1	-	1	1	-	1	-	-	6
10	1	1	-	1	1	1	1	-	1	-	7
11	1	1	1	1	1	1	1	-	-	1	8
12	-	-	1	1	-	1	-	1	-	-	4
13	1	1	-	1	1	-	1	1	1	1	8
14	1	1	1	1	1	1	1	-	1	-	8
15	1	-	-	1	1	1	1	1	1	-	7
16	-	1	1	1	1	1	1	1	1	1	9
17	1	-	1	1	1	1	-	1	-	1	7
18	1	-	1	1	1	1	1	1	-	1	8
19	1	1	-	-	1	1	1	1	1	-	7
20	-	-	1	1	-	1	-	1	1	1	6

Table 4
Answers to the Question Correctly from the results of the PAT objective test for class XI in the field of Indonesian language studies for the 2020/2021 academic year

No	2	4	6	8	10	12	14	16	18	20	Amount
1	-	-	1	1	1	1	1	1	1	-	7
2	-	1	-	1	-	1	1	1	1	1	7
3	-	1	1	1	-	1	-	1	1	-	6
4	1	-	1	-	-	1	1	1	1	1	7
5	1	1	1	1	-	1	1	1	1	-	8
6	-	1	1	1	1	1	1	1	1	1	9
7	-	1	1	1	1	-	1	1	1	1	8
8	-	1	1	1	-	1	1	1	1	-	7
9	-	-	-	1	1	1	1	-	1	1	6
10	1	-	1	1	-	1	1	1	1	-	7
11	1	-	1	1	1	1	1	1	1	1	9
12	1	1	-	-	1	1	1	1	-	-	6
13	1	1	1	1	1	1	1	1	-	1	9
14	-	1	1	1	1	1	-	1	1	1	8
15	1	-	1	1	-	1	1	1	1	-	7
16	1	-	1	1	1	1	1	1	1	1	9
17	-	-	1	1	1	-	1	-	1	1	6
18	1	-	-	1	1	1	1	1	1	1	8
19	1	1	1	1	-	1	1	-	1	-	7
20	1	1	-	1	1	1	1	1	-	-	7

Table.11
To find ^{r} xy from the correct answer to the odd question (x) and the correct answer to the even question (y) Field of Indonesian Language Studies students of class XI

No	X	Y	x	y	x^2	y^2	xy
1	8	7	+0.7	-0.4	+0.49	+0.16	-0.28
2	8	7	+0.7	-0.4	+0.49	+0.16	-0.28

3	5	6	-2.3	-1.4	+5.29	+1.96	+3.22
4	7	7	-0.3	-0.4	+0.09	+0.16	+0.12
5	9	8	+1.7	+0.6	+2.89	+0.36	+1.02
6	8	9	+0.7	+1.6	+0.49	+2.56	+1.12
7	8	8	+0.7	+0.6	+0.49	+0.36	+0.42
8	8	7	+0.7	-0.4	+0.49	+0.16	-0.28
9	6	6	-1.3	-1.4	+1.69	+1.96	+1.82
10	7	7	-0.3	-0.4	+0.09	+0.16	+0.12
11	8	9	+0.7	+1.6	+0.49	+2.56	+1.12
12	4	6	-3.3	-1.4	+10.89	+1.96	+4.62
13	8	9	+3.7	+1.6	+0.49	+2.56	+1.12
14	8	8	+0.7	+0.6	+0.49	+0.36	+0.42
15	7	7	-0.3	+0.4	+0.09	+0.16	+0.12
16	9	9	+1.7	+1.6	+2.89	+2.56	+2.72
17	7	6	-0.3	-1.4	+0.09	+1.96	+0.42
18	8	8	+0.7	+0.6	+0.49	+0.36	+0.42
19	7	7	-0.3	+0.4	+0.09	+0.16	+0.12
20	6	7	-1.3	-0.4	+1.69	+0.16	+0.52
	$\sum X$	$\sum Y$	$\sum x$	$\sum y$	$\sum x^2$	$\sum y^2$	$\sum xy$
	146	**148**	**0**	**0**	**30.2**	**20.8**	**18.6**

Furthermore, to find the reliability coefficient by using the formula $^{r}xy = \dfrac{2xr\frac{1}{2}}{1+r\frac{1}{2}}$

From the processing obtained r0 = 0.851 and has exceeded the number 0.70. Thus, it means that the test questions are declared **reliable** , which can then be used to evaluate research subjects

Test Reliability

To find the reliability of the essay test, the alpha formula is used as follows:

$$^{r}11 = (\frac{n}{n-1})(1-\frac{\sum_{i-1}^{n} Si^2}{St^2})$$

Information :

$^{r}11$: reliability sought

Si^2 : is the variance of the score of the i question

St^2 : is the variance of the total score

Table.12

Looking for the reliability of the PAT essay test in the field of Indonesian Language Studies class XI

No	**ITEM NUMBER**										**Total Score**	**Total Score Square**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**		
1	6	6	7	7	6	8	10	5	8	7	**70**	**4900**

2	5	4	6	6	9	10	8	7	8	7	**70**	**4900**
3	6	6	6	5	6	6	7	5	5	3	**55**	**3025**
4	7	7	3	4	4	7	8	6	7	7	**60**	**3600**
5	7	6	5	7	7	9	7	6	8	8	**70**	**4900**
6	6	7	6	8	10	8	9	8	9	9	**80**	**6400**
7	8	6	9	5	8	9	9	8	9	9	**80**	**6400**
8	4	6	6	8	5	6	7	7	6	5	**60**	**3600**
9	6	6	4	5	7	7	6	9	8	7	**65**	**4225**
10	6	7	8	7	3	4	7	6	7	7	**60**	**3600**
11	9	8	7	7	8	8	9	8	7	9	**80**	**6400**
12	8	4	7	6	7	5	5	7	8	8	**65**	**4225**
13	8	8	7	5	6	10	9	8	10	9	**80**	**6400**
14	6	9	7	8	7	5	10	8	10	10	**80**	**6400**
15	8	4	4	5	6	4	7	7	8	7	**60**	**3600**
16	4	7	4	7	8	7	6	7	9	6	**65**	**4225**
17	9	4	9	7	6	5	8	8	10	9	**75**	**5625**
18	6	3	5	7	7	9	9	7	9	8	**70**	**4900**
19	4	6	3	7	9	10	7	7	7	5	**65**	**4225**
20	7	5	4	6	5	7	6	4	3	3	**50**	**2500**
J	**130**	**119**	**117**	**125**	**134**	**144**	**154**	**138**	**156**	**143**	**1360**	**94050**
J^2	**890**	**755**	**747**	**809**	**954**	**1110**	**1224**	**982**	**1274**	**1095**	**9840**	

Processing with the data listed in the table, is used to find the variance for each item which is then added up;
As for the limit of the reliability coefficient is

0.20 - 0.40 low correlation
0.40 - 0.70 moderate correlation
0.70 - 0.90 high correlation
0.90 - 1.90 very high correlation

So from the data processing test, it was obtained that r0 = 0.750, which means that the questions were declared reliable and could be used to evaluate research subjects. The results of these tests will be compared to prove the hypothesis which reads "Learning achievement in the field of Indonesian language studies using an objective test is better than using an essay test for class XI students of SMK Gita Kirtti I Jakarta".

CONCLUSION

After processing the data, it can be concluded that learning achievement in Indonesian using objective tests is better than those using essay tests. Because based on the results of data processing calculations, the following figures are obtained: With a significance level of 5%, the ratio to: tt = 3.037: 2.093 . is obtained. With a significance level of 1% obtained a comparison to: tt = 3.037: 2.861. Thus the value of to is greater than tt (to > tt), then the research hypothesis is accepted. So the hypothesis which reads: "Indonesian learning achievement using objective tests is better than using essay tests for class XI students of SMK Gita Kirtti I Jakarta for the 2020/2021 Academic Year, is accepted as true.

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