EFFECT OF PERFORMANCE ASSESSMENT ON STUDENTS' THE ACHIEVEMENT IN PHYSICS HIGH SCHOOL

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Abstract

Performance Assessment is an assessment technique that requires students engage in an activity that can demonstrate certain abilities and psychomotor skills as a form of knowledge mastery level. The reality on the ground shows that the assessment of students psychomotor aspects have not done optimally. The problem is whether the performance appraisal techniques affect the learning outcomes of students in learning high school physics? The method used is an experimental method. Research subjects class X SMA Negeri 2 Tondano academic year 2013/2014. The collection of data through the test early and test the ability of student learning outcomes. Data were analyzed using techniques Anacova. The results showed that performance assessment in a high school physics learning significantly impact to the student learning outcomes.

Keywords*: performance assessment, physics learning, students' achievement.*

1. Introduction

Physics as one of the branches of Natural Science is still often considered difficult because a lot of studying natural phenomena are microscopic and abstract concepts and the application of the formulas that are difficult. Presumably one of the reasons is the lack of involvement and interest in students to learn physics so that student learning outcomes are low. It needs to be addressed in various ways in order to study Physics achievements can be improved. One way to implement a performance assessment in the learning process.

Assessment activities are not new to the teacher or practitioner education, but the reality on the ground shows that the planning and conducting the assessment is still a serious problem. The results of the study concluded that Sarwiji Suwandi teacher's ability to prepare and conduct an assessment is still lacking. (Suwandi, 2010: 2)

It is assessment that should receive serious attention by the teachers. Hayat (2008: I-6) suggested that the assessment should be an integral part of the learning process (a part of instruction) and must be understood as an activity to streamline the learning process. Mardapi (2008: 5) also suggests that efforts to improve the quality of education can be achieved through improving the quality of learning

and quality assessment system. Thus, assessment is an important aspect of improving the quality of education.

One technique which has the character assessment can support the learning process that uses a scientific approach is the performance assessment is more emphasis on the process or the work of learners. Stiggins (2004: 92) argues that Performance assessment is an assessment based on observation and judgment. Therefore, the performance assessment is suitable for assessing the competency skills that lead students demonstrate their performance. How this assessment is considered more authentic than the written test for what is considered more representative of the actual ability of learners. The issue is whether the learning performance assessment in physics empirically effect on student learning outcomes?

The purpose of this study was to determine the effect of the performance appraisal techniques to the learning outcomes of students in high school physics. To obtain significant results, the influence of prior knowledge students also need to be controlled. Prior knowledge by Mondolang (2013) suggests that contribute to student learning outcomes, and therefore these variables need to be controlled through statistical techniques.

2. Research Methods

This research was conducted in SMA 1 Tondano on odd semester 2012-2013 lessons for 3 months (August-October 2013) with the research subjects graders XD and XE, each totaling 28 students. This study uses an experimental research design with pretest-posttest control group (Sugiyono, 2012: 114)

Data was collected by giving the initial ability test and achievement test. Tests made in the form of a written test objective was previously performed tests and trials Panelists to calculate and determine the validity and reliability of the test.

Analysis of the data through the prerequisite test (normality, ho¬mo¬ge¬ni¬tas) and test hypotheses with ANACOVA analysis techniques (Kadir, 2010; Supardi, 2012).

3. Research Findings

3.1 Description of Data Results

Table 1. Statistics variables X and Y

Data Statistik	A_1		A_2	
	X	Y	X	Y
N	28	28	28	28
scores Min	40	48	40	44

Data Statistik	A_1		A_2	
	X	Y	X	Y
scores Max	84	92	84	88
STDV	12.19	11.35	10.502	10.502
Mean	60.43	71.00	61.29	65.29
Median	60	72	60	64
Modus	60	60,68,72	60	64
Range	44	44	44	44
Interval Clas	5	5	5	5
The length of grade	9	9	9	9

Explanation:

A1: The group of students who were given learning activities given performance assessment.

A2: The group of students who were given learning activities without any performance appraisal

N : number of samples in each group

X : The ability of students beginning

Y : The results of student learning

Data Capability Initial Student In Classroom Experiments presented are in Table 1 below:

Table 1. Frequency Distribution of Students with Scores Initial CapabilitiesPerformance Assessment (A1).

Interval Class	$\mathbf{X_i}$	f_i	$f_{kum.}$	$f_{rel.(\%)}$
40-48	44	5	5	17.86
49-57	53	6	11	21.43
58-66	62	8	19	28.57
67-75	81	5	24	17.86
76-84	80	4	28	14.29
Total		**28**		**100 %**

In the histogram can be shown in Figure 1 below:

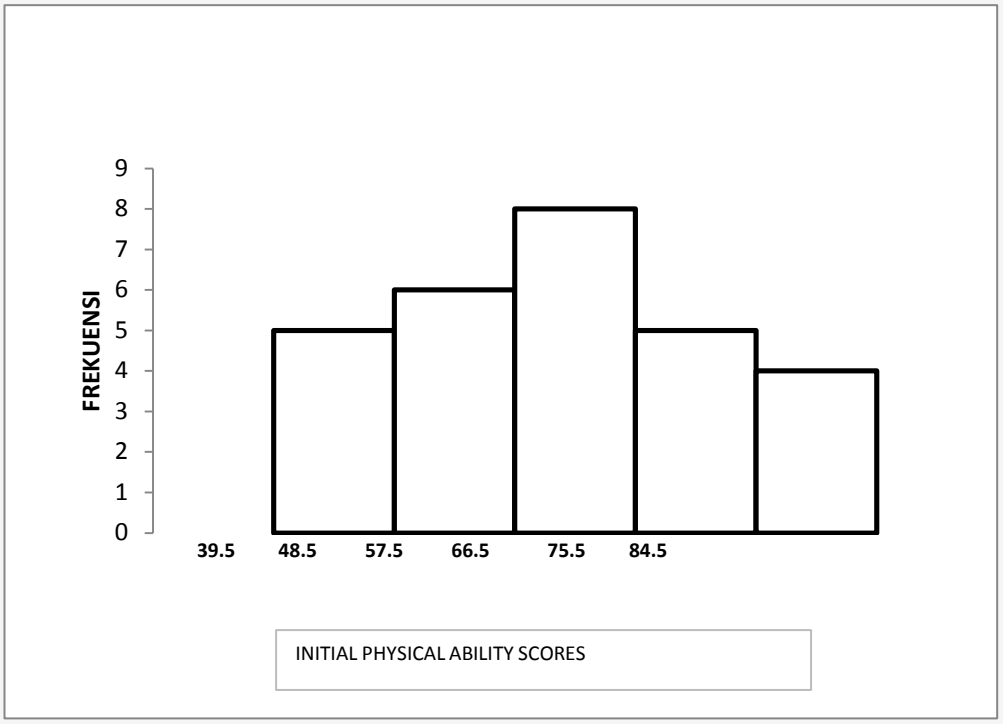

Figure 1. Histogram initial ability scores of students in the experimental class

3.2 Results of Initial Ability Students In Classroom control is presented in Table 2 below:

Table 2. Frequency Distribution of Ability Scores Early control class (A2)

Interval Class	X_i	f_i	$f_{kum.}$	$f_{rel.(\%)}$
40-48	44	4	4	17.86
49-57	53	6	10	21.43
58-66	62	9	19	28.57
67-75	81	6	25	17.86
76-84	80	3	28	14.29
Total		**28**		**100 %**

In the histogram can be shown in Figure 2 below:

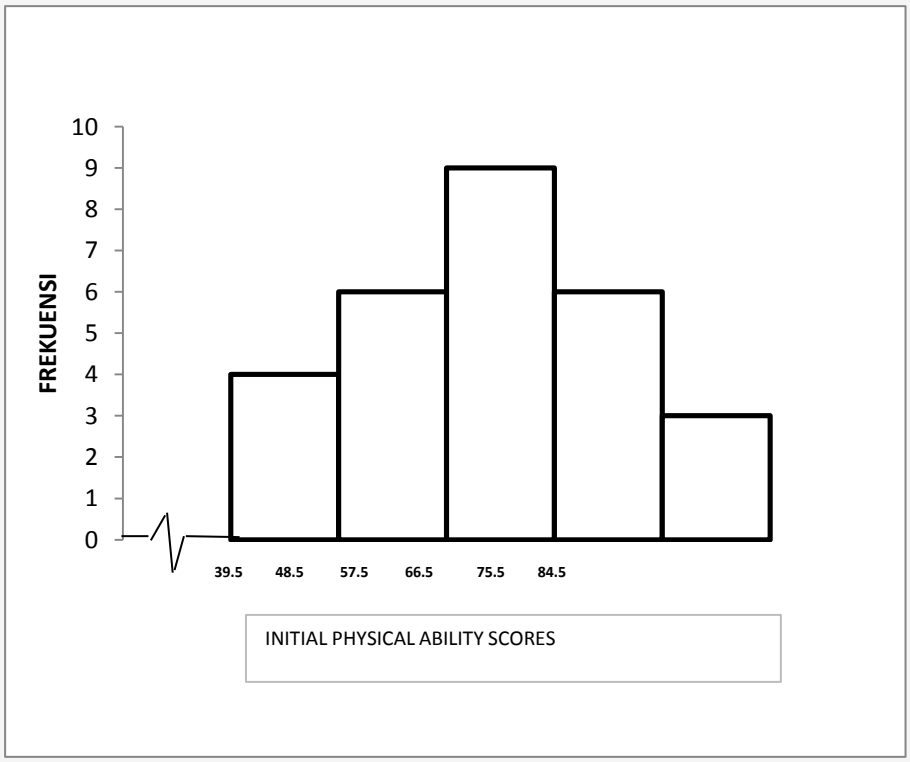

Figure 2. Histogram beginning physics students' scores on the ability of the control class

3.3 Student Results In Classroom experiments are presented in Table 3 below:

Table 3. Frequency Distribution of Student Learning Outcomes Marke Physics Group Performance Assessment (A1)

Interval Class	$\mathbf{X_i}$	f_i	$f_{kum.}$	$f_{rel.(\%)}$
48-56	52	3	3	10.71
57-65	61	6	9	21.43
66-74	70	8	17	28.57
75-83	79	7	24	25.00
84-92	88	4	28	14.29
Total		**28**		**100 %**

In the histogram can be shown in Figure 3 below:

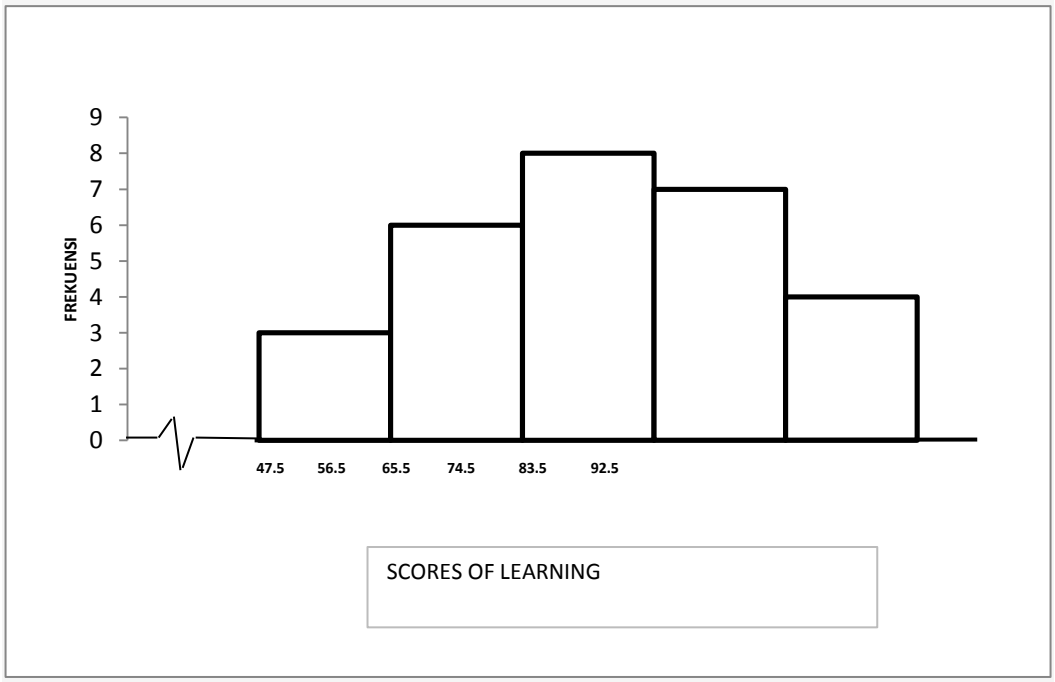

Figure 3. Histogram Score student learning outcomes in the experimental class

3.4 Student Results In Control Classes are presented in Table 4 below:

Table 4. Frequency Distribution of Student Results on the control class (A2)

Interval Class	X_i	f_i	$f_{kum.}$	$f_{rel.(\%)}$
44-52	48	4	4	14.29
53-61	57	5	9	17.86
62-70	66	9	18	32.14
71-79	75	7	25	25.00
80-88	84	3	28	10.71
Total		**28**		**100 %**

In the histogram can be shown in Figure 4 below:

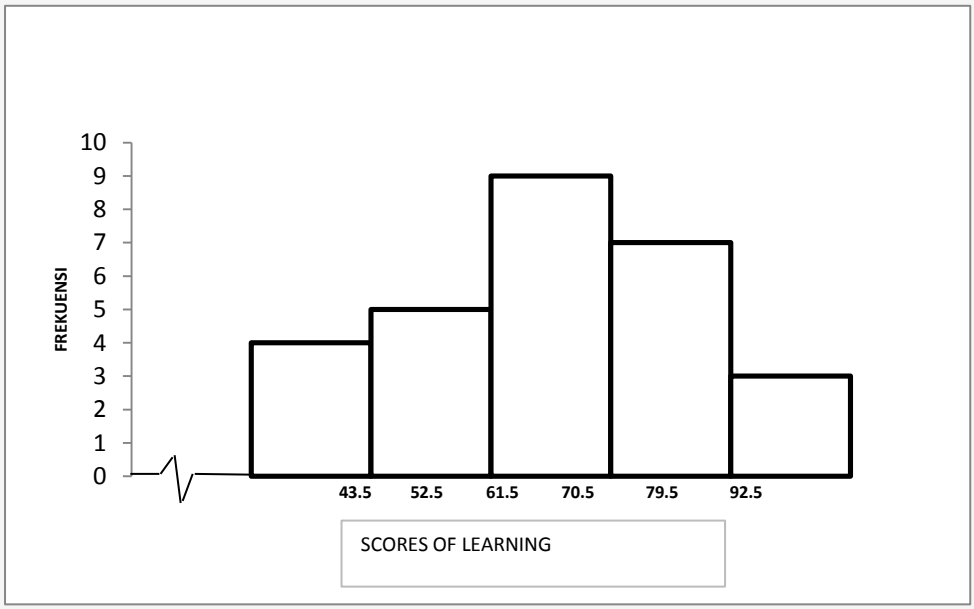

Figure 4. Histogram Score student learning outcomes in the experimental class

3.5 Testing requirements analysis includes data normality test, homogeneity test and linearity test. The test results are presented in Table-precondition the following table:

Table 5. Results of calculation for data normality test prior knowledge of students and student learning outcomes experimental class and control class.

Group/Class		**Values L_0**	**Value L_t**	**conclusion**
Ability Students Early	A1	0.0908	0.161	Normal
	A2	0.084	0.161	Normal
Student learning outcomes	A1	0.083	0.161	Normal
	A2	0.073	0.161	Normal

Table 6. Results of test calculations for data homogeneity prior knowledge of students and student learning outcomes in the experimental class and control class

Group / Class		Value F_0	Value F_t	Conclusion
Early Ability Students	A1	**1.310**	α (0.05) = 1.88	Homogen
	A2		α (0.01) = 2.47	
Students' the Achievement	A1	**1.138**	α (0.05) = 1.88	Homogen
	A2		α (0.01) = 2.47	

Table 7. Results of the calculation of linearity tests and significance in experimental classes and control classes.

Group/Class		Value F_0	Value F_t	Conclusion
Eksperiment	A1	1.00	2.49	Linear
Control	A2	0.25	2.49	Linear
Eksperiment	A1	621.32	4.22	Significant
Control	A2	1423.30	4.22	Significant

Based on the data in Table 5, Table 6 and Table 7 it is known that a prerequisite for the analysis of covariance (ANKOVA) are met.

Summary of the test results Ankova-F as follows: F count = 142.78. Ftable for α (0.01) = 4.02 and α (0.05) = 7.12. obtained Fhitung> Ftable then Ho is rejected, and it can be concluded that the assessment of learning physics effect on student learning outcomes. Because the results of the F test was significant ANKOVA or acceptance of the hypothesis showed significantly then tested further by statistical t-test to determine differences in learning outcomes between the experimental class (A1) with a control class (A2).

From the calculations, the price of t = 14.5 and t table for α (0:01: 53) = 2.660 and for α (0:05: 53) = 2,005. Because t count> t table then reject Ho. Thus concluded that the controlling influence significantly the ability of early learning outcomes of students who were given higher than the performance assessment of student learning outcomes without performance assessment.

4. Conclusion and Suggestions

Based on the results of research that has been presented above it can be concluded that the assessment of performance (performance assessment) in a high school physics learning significantly impact the student learning outcomes. This is because in learning physics requires a scientific approach would be more effective if supported by a performance assessment. Therefore recommended in high school physics learning will be more effective if the valuation technique used is the technique of performance appraisal.

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