

The Influence of the Application of Mathematics Learning Performance Assessment and Portfolio Assessment toward Senior Highschool Students' Mathematics Achievement

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Abstract:- This research aims to know the influence of the application of the performance appraisal and valuation of the portfolio toward the results of the study of math in HIGH SCHOOL. This research was carried out in SMA Negeri Airmadidi Class X with the entire population of students of the semester I force 2017 and the sample was grade A (performance assessment), class B (Portfolio Assessment), and class C (written Test Assessment); with each class consists of 27 students. Hypothesis testing using the ANOVA Bonferroni test and test. The first hypothesis test results obtained $F_{\text{count}} (48,368) > F_{\text{table}} (3,114)$ at $\alpha = 0.05$; that means there is a significant influence on Mathematics Assessment performance assessment, Portfolio Assessment, and an assessment of performance against the results of the study of math in HIGH SCHOOL. Hypothesis testing-2nd retrieved $\text{Sig} (0.001) < \alpha (0.05)$; that means there is a significant difference in the average Mathematics study results of HIGH SCHOOL students who were taught with the use of performance assessment on assessment of Mathematics and taught with the use of an assessment portfolio. The third hypothesis testing shows $\text{Sig} (0.000) < \alpha (0.05)$, which means there is a significant difference in the average Mathematics study results of HIGH SCHOOL students who were taught with the use of performance appraisal on Mathematics Assessment and student group taught by using a written test assessment. The fourth hypothesis testing retrieved $\text{Sig} (0.000) < \alpha (0.05)$; that means there is a significant difference in the average Mathematics study results of HIGH SCHOOL students who are taught using an assessment portfolio and a group of students who are taught by using a written Test Assessment. This research is expected to be input for HIGH SCHOOL Math Teacher team to develop and utilise variations of performance assessment and portfolio assessment of mathematics in high school.

Keywords:- Performance Assessment, Portfolio Assessment, The Results of Learning Mathematics.

I. INTRODUCTION

Student learning achievements in all classes X SMA Negeri Airmadidi on Mathematical subjects, HIGH SCHOOL is not a maximum where there are still many students who earn less than the value of the KKM, this gives an indication that students in all grades X SMA Negeri Airmadidi experienced slaves Tan in the Math Learning high school. Improvements to the process of learning and assessment of the continued attempted in order to student learning achievements can be improved, the evaluation system continue to be addressed in order to obtain a good judgment.

Increase in the ability of the student's mastery on HIGH SCHOOL Math subjects can be done among others through the assessment process which goes well. Authentic Assessment approach assessment can be one of the options to be applied in the assessment of HIGH SCHOOL Mathematics builds advanced scientific concepts and implementation in various fields of science.

On other conditions besides the assessment approach through changes in valuation models can be applied to the assessment process also need to be developed in accordance with the assessment mechanism of change. Through proper assessment can give good feedback to the students themselves also for teachers. The learning process that worked well must also be accompanied by a good assessment process, in order to really be able to measure the achievement of student learning. The assessment process will demonstrate its competitive zeal for students to succeed, but rather the assessment process which is less good character can damage student learning to succeed.

The characteristics and cultural study in Indonesia, where students always observe the process of transformation of the teaching given in this group, the tendency of teachers discussing the matter, writing during the transformation process the assessment runs, ask and commented when lessons take place. Other properties that stand out in the learning behavior is likely to be serious students learn if would have done the appraisal. Therefore to assess the success of student learning not only observed but need to do tests. The test results will be used as one of the main basis for

referring the process or action. If the assessment process less able to assess the results of a study that can actually cause the maximum not the next activities. Therefore the assessment becomes essential in a learning process including Assessment in schools. The implementation of this research intended to find out about:

- Influence the application of performance assessment, portfolio assessment, and assessment of Tests written against the results of the study of math in HIGH SCHOOL.
- Difference results studied mathematics HIGH SCHOOL groups of students taught with the use of performance assessment and a group of students who are taught using an assessment portfolio.
- Difference results studied mathematics HIGH SCHOOL groups of students taught with the use of performance assessment and a group of students who are taught using a written Test method.
- to avoid an achievement studied mathematics HIGH SCHOOL students taught by using the assessment portfolio and a group of students who are taught by using a written test assessment.

According to Slameto (2010:82) method is a way or path that must be traversed to reach the learning objectives that have been set. Study aims to gain the knowledge, attitudes, skills, and skills, the methods used will become a habit.

Performance assessment is a set of components that have been optimally dikombinasikan for quality assessment (Trianto, 2007:32). According to Uno (2008:2) performance assessment is defined as the way a teacher, in the exercise of their functions is a great tool to download \rightarrow accomplish the purpose of the assessment. Performance appraisal more procedural in nature, i.e. contains certain stages. According to Smaldiono (2010:42) in personal performance appraisal is a process or procedure used by the teacher or instructor to achieve objectives or competencies. According to Taufik (2010:13), performance appraisal can be defined as a method that is used to implement the plans already drawn up in the form of real and practical activities to achieve the purpose of the assessment. So, the performance assessment is the whole planning or procedures to be used in carrying out the activities of teacher Assessment to achieve an objective Assessment.

Experiments can be carried out at a laboratory or outside the laboratory. While the experimental method in the Assessment is a way of presentation materials that allow students to experiment to prove itself a question or hypothesis that is studied. In the assessment process with experimental methods students are given the opportunity to experience yourself or do it yourself, following the process, observing an object, analyze, draw conclusions and prove myself about an object, the State or specific process. The role

of teachers in the method of experimentation is giving guidance so that the experiment was done carefully so it does not happen confusion or error.

There are several ways to overcome the weakness of the experimental method, namely: 1) the teacher should explain in palpable results to be achieved with the experiment; 2) teacher should explain the procedure of experiments, experimental materials required, necessary equipment usage, variables that need to be controlled, and it should be noted that during the experiment; 3) oversee the execution of experiments and provide assistance if students are having difficulty; 4) ask each student to report the process and results of his experiments, membanding-bandingkannya, and discuss it to know the shortcomings and errors that may occur; and 5) for more details regarding this assessment will be given the steps-steps what needs to be done in implementing performance assessment in learning mathematics.

Thus, the method to the study of mathematics is a method where in his assessment of students directly involved in either physically, mentally, and emotionally, because this method is in the form of an experiment performed in the lab nor outside laboratory.

According to Sudrajat (2010) computer is a type of media that can provide virtually immediate response against the results of a study conducted by the students. More than that, the computer has the capability of storing and manipulating information according to your needs. The rapid development of technology currently has allowed computer load and serve the diverse forms of media in it.

Audio visual technology how to produce or deliver the material with the use of mechanical machinery and electronics to present audio visual messages. Teaching through audio-visual clearly characterized by the use of the hardware during the assessment process, such as machine movie projector, tape recorder, and a wide visual projector. So, teaching through audio visual is the production and use of material absorption through sight and hearing as well as not entirely depends on the understanding of a word or symbol symbols are similar. The main features of the audio visual media technologies are as follows (Azhar A, 2015):

The study delves into the three types of Computer supported cooperative learning strategies (STAD, Jigsaw II, and TAI) as a way to overcome a poor performance in mathematics at the secondary school level in Nigeria. All three strategies assessment of computer supported cooperative has positive effects on student attitudes towards Mathematics than individually because the computer instruction (ICI). However, Jigsaw II is a computer supported them. Cooperative strategies to have a positive effect on student learning performance compared to the ICI. In addition, cooperative learning strategies do not improve

retention compared to ICI. (Gambari Isiaka Aмоса, and Joseph Olalere Mudasiru, 2017:16)

According to Priyanto (2009) the use of portfolio assessment in the assessment have the benefits, among other things: 1) learners/students can work independently according to their ability level or in a small group, 2) is more effective for explaining new material interactive simulation that is both so that learners get an interesting learning experience, 3) existing assessments can provide rapid feedback on the student to know his ability on a certain matter or issue so that can be used as a summative assessment, and 4) with the techniques of solving a problem, students will have its own way to solve the problem with the same material with his friend.

Cole, d. j., Ryan, c. w., & Kick, f. (1995). "... the assessment portfolio has been predominantly used in educational settings to document the progress and achievements it has the potential to be a valuable tool for program assessment as well. Portfolio assessment has become widely used in educational settings ". The portfolio is an instrument to collect data or information from different sources, the data can be identified and can provide extensive information. Salvia and Ysseldyke (Cole at.al. 1997) suggests that "The goals and objectives of the portfolio also must be identified. For writing portfolio such goals might include "to write more complex " sentences. Goals and objectives are critical to the development of a portfolio to keep it from becoming an unfocused collection of odds and ends ". Through portfolio assessment, can be found close to the program's goals and objectives of the institution. The portfolio can encapsulate all the program so that it becomes a potential evaluation tool a program well. In philosophy and concept, the portfolio was applied to evaluate the community. As disclosed Meg Sewell, Mary Marczak, & Melanie Horn (2013), the ". However, the concepts and philosophy behind portfolios can apply to community evaluation, where portfolios can provide windows into community practices, procedures, and achievements, perhaps better than more traditional measures ". Meg Sewell, Mary Marczak, & Melanie Horn (2013) describes:

- Allowing individuals and programs in the community (those being evaluated) to be involved in their own change and decisions to change.
- Providing information that gives meaningful insight into behavior and related change. Because portfolio assessment emphasizes the process of change or growth, at multiple points in time, it may be easier to see patterns.
- Providing a tool that can ensure communication and accountability to a range of audiences. Participants, their families, funders, and members of the community at large who may not have much sophistication in interpreting statistical data can often appreciate more visual or experiential "evidence " of success.

- Allowing for the possibility of assessing some of the more complex and important aspects of many constructs (rather than just the ones that are easiest to measure).
- Evaluating programs that have very concrete, uniform goals or purposes. Allowing you to rank participants or programs in a quantitative component or way (although the evaluators or program staff may be able to make subjective judgements of relative merit).
- Comparing participants or programs to component norms. While portfolios can (and often do) include some component test scores along with other kinds of "evidence ", this is not the main purpose of the portfolio.

Assessment using the portfolio defines program based on standards determined, critiquing, accountability, knowing the outer (achievements) and so the program was more focused on the vision of the institution, the progress of the program. Based on documents belonging to the program's achievements can be known, the impact of the program and the persuasion needs to be done. Since the year 2004, the Government through the Ministry of education and culture implemented the accreditation as a system to evaluate the internal and external evaluation for primary school (elementary school) to College (PT), through institutions that National Accrediting Agency called the (BAN). Accreditation is conducted to find out the level of quality of education and what needs to be done to build a better education. Mahmoud Umar

Mahmoud Umar Ahmed Eid, (2013) stated that "Many studies that have highlighted the importance of the quality of introducing accreditation in education as a springboard to improve education at all levels and in all the developed and developing countries". Accreditation as a process to evaluate the performance of the school based on the rules and point out what worked on the school to the public. This advanced Guzem Verda Furuzan (2012). "Accreditation means declaring a process used by the public and private school to evaluate the educational performance in accordance with the regulation. Accreditation is the declaration that a school is what is said to be and to do. " Accreditation aims to validate the quality of schools and student achievement is done on an ongoing basis as school development efforts. Accreditation as a process to find out the strengths and weaknesses of education in order to build quality and integrity so that waking up public confidence. As a comparison, the 2003 Basso and Verda, 2012 declared "Accreditation serves as an indicator of quality school, the primary goals of the accreditation process is continuous improvement. Accreditation is the means of self-regulation and peer review adopted by the educational community. The accreditation process is intended to strengthen and sustain the quality and integrity of education. Its make the worthy of public confidence and the scope of the external minimizes our control. "

One of the scoring model that is still in effect and is very widely used by teachers is a written Test assessment model. According to Djamarah (1996:51), a written Test performance assessment is the assessment of the performance of traditional or referred to by the method of lecture, since historically this method has been used as a means of oral communication between teachers with students in the process of learning and assessment. In a review of the history of the written Test method marked with lectures accompanied by explanations, as well as the Division of tasks and exercises.

Aiken suggests that a test is used as a tool to assess a person's behavior or performance tingka. The test is a procedure popular consultations were made in the form of standardized tasks and given to individuals or groups to be worked on, is answered or responded to complaints, whether in oral or written form, deed. Azwar suggests that a test is a procedure that is systematic way, that is done based on the goals and procedures are clear. Tests do observations on the behaviour of a person and describes the behavior with the help of the scale numbers or classification system. The written test is also known as the pencil and paper test, that test where the test is executing in asking the details of the question was done in writing and test-taker give an answer in writing.

Another revelation related to the written test such as the following opinion:

The written test is a test where the question and answer in the form of writing material. In answering the question of students do not always have to respond in the form of writing answers but may also be in the form of coloring, signaled, describing graphs, charts and more. Evaluator a written test is a commonly used measurement techniques and included in the verbal test group.

Based on the above description it can be concluded that the test can be done a variety of types, specifically on the research made a written essay form test to measure student learning achievements. The written test is a test where a matter that is given to students in the form of writing. In answering a question of learners do not always respond in the form of writing the answer but can also in other forms such as flags, coloring, drawing and so on.

From the various assessment tools, test of written benar-salah answers, choosing a short field, and the betrothed is a tool that simply assess thinking ability is low, i.e. the ability of the given (knowledge). Multiple choice tests can be used to assess the ability of remembering and understanding. Multiple choice has drawbacks, namely the learners do not develop their own answers but tend to only choose the correct answer and if the students do not know the correct answer, then students will guess. This has led to the tendency of the students not learning to understand the lessons but memorize the question and the answer. This assessment tool

is less recommended its use in the classroom because it does not describe valuations ability learners.

The written form of the test description of assessment tools is demanding learners to remember, understand, and organize ideas or things that have already been learned, by the way puts forward the idea of expressing or in the form of exposé written by using his own words. This tool can assess different kinds of ability, for example, suggested, logical thinking, and conclude. The weakness of this tool include coverage of material that is asked is limited and cannot provide an overview of the capabilities of skills such as science skills in science lessons, and also the written assessment is not able to see the process of measurement and retrieval of data is often done in IPA.

According to Sudjana (2006:22), learning and teaching as a process contains three elements can be distinguished, namely the purpose of teaching (instructional), teaching-learning experiences (the process), and the results of the study. Assessment activities i.e. an act or activity to see the extent of instructional objectives have been achieved or can be mastered by students in the form of the results of the study are shown after they drove their learning experience (teaching-learning process).

Sudjana (2006:22) Horward Kingsley divided the three kinds of learning achievements, namely (a) skills and habits, (b) knowledge and understanding, (c) attitudes and ideals. Each type of learning achievements may be filled with material that has been implemented in the curriculum. While Gagne mem \neg for five categories of learning achievements, namely (a) verbal information, (b) intellectual skills, cognitive strategies (c), (d) attitudes, and (e) motoris skills.

From the explanation above about the results of the study it can be concluded that a student in the following learning activities will receive the results of their learning which is the changes obtained after making the learning process that endured at school.

The hypothesis in this study that can be presented as follows:

- There is the influence of performance assessment, portfolio assessment, and assessment of Tests written against the results of the study of math in HIGH SCHOOL.
- There may be differences in average achievements studied mathematics HIGH SCHOOL groups of students taught with the use of performance assessment and a group of students who are taught using an assessment portfolio.
- There may be differences in average achievements studied mathematics HIGH SCHOOL groups of students taught with the use of performance assessment and a

group of students who are taught by using a written test assessment.

- There may be differences in average achievements studied mathematics HIGH SCHOOL students taught by using the assessment portfolio and to \rightarrow lompok students who are taught by using a written test assessment.

II. RESEARCH METHODS

The research was carried out in SMA Negeri Airmadidi Class X that are located in the administrative subdistricts of North Minahasa Regency Sarongsong. Implementation time research on the odd semester academic year 2016/2017. Research method used is the method experiments. Where the results of the study which is the data from the studies were grouped into three, namely

- Results of study class taught by using performance assessment in Learning Mathematics,
- Results of study on classes that are taught by using Portfolio assessment, learning achievements and
- On classes that are taught by using performance assessment Test writing. Design research is the Posttest-Only Control Design.

➤ *Conceptual Definition*

- Experimental Method, teachers can develop the involvement of physical and mental, emotional as well as students. Students had the opportunity to train their skills in order to obtain the results of the learning process that is the maximum. The experience can be directly embedded in his memory. The involvement of physical and mental and emotional students required it can be introduced in a way or the Assessment conditions can foster a sense of confidence and also innovative and creative behavior.
- Cereal portfolio assessment in the development of technologies that optimize the role of computers as a means to display and reverse text, graphics, and sound in an integrated display. With display can combine various elements of information and delivery of messages, the computer can be designed and used as an effective technology to learn and teach the relevant valuation material such as draft graphics and animation.
- The written Test Assessment) is a traditional valuation or referred to by the method of pencil tests, since historically this method has been used as a tool of public writings and oral tests between teachers with students in the learning process and assessment.
- Learning Achievement) is an achievement that has been achieved by the students after doing a learning activity especially on the material of the cell, environment, and reproductive systems of animals and plants.

➤ *Variable Treatment*

- Treatments I: performance appraisal on Mathematics study or experimentation is often also called the experiment, is a way of presenting the lesson, in which

students conduct experiments with experienced something that is learned. In the process of teaching and learning, with the method of experiment, students were given the opportunity to do it yourself, wheezing accordance a process, observing an object, process or state something.

- Treatment II: Cereal portfolio assessment can be defined as technology that optimize the role of computers as a means to display and reverse text, graphics, and sound in an integrated display. assessment portfolio, can be found close to the program's goals and objectives of the institution. The portfolio can encapsulate all the program so that it becomes a potential evaluation tool a program well. In philosophy and concept, the portfolio was applied to evaluate the community.
- Treatment III: assessment of the written Test is the traditional Assessment, because this method has been used since long ago as a communication tool in the learning process and the assessment of the written Test to see that the assessment process more dominated by teachers or teacher as "pen-transfer", while science students more passive as the "recipient" of science. Assessment using the method that is commonly done by teachers or teacher that is giving the material through lectures, exercises a matter then the giving task. The lecture is one of the ways of delivery of information by oral from someone to a number of listeners in a room. Activities centered on direct communication and a lecturer from the reader to the listener. In general the characteristics of written Test assessment among others are: student or student is recipient information passively, where students receive knowledge from a teacher and diasumsinya knowledge as a body of information and skills that are owned in accordance with the standards, also often known to learn individually, as well as the assessment is very abstract and theoretical, built up habits.

➤ *Learning Achievement Variables*

The results of the study are the score shown by students after being given treatment with Applied Mathematics learning methods and assessment portfolio; then given questions that illustrate the capabilities of students including, understanding, knowledge, and analysis on subjects of HIGH SCHOOL Mathematics curriculum SMA Negeri Airmadidi Class X listed in objective assessment of activity especially on the material and the material kinematics, dynamics.

➤ *Population*

The population in this study are students of the semester I SMA Negeri Airmadidi Class X 2016 host.

➤ *Sample*

Sampling in this study conducted in random sampling techniques are divided into three classes; where a class as a class method in the treatment of Learning of mathematics, one class as a class treatment using an assessment portfolio,

and one where control class is the class as Valuation using Valuation Tests written.

➤ *Data Collection Techniques*

HIGH SCHOOL Mathematics Learning result Data obtained by giving the test.

Before carrying out the test, the test question tested (valid and reliability). Test the validity of the instrument using the correlation coefficient learning results biserial because score grain problem dis-continuum (score rounds reserved 0 or 1). The formula used to calculate the coefficient of biserial correlation between the score grain problem with score total test reliability Test instruments are: the results of a study using the formula of the KR-20, Engineering Data Analysis: Data obtained further processed and analyzed by the following measures: a test of normality: a test of normality aims to find out whether the data that is retrieved is a normal distribution or not. Test of normality in this research

is done through the Liliefors test. Test of its homogeneity. Its homogeneity of variance test used to know two or more groups of data samples come from populations that have the same variance or not. Its homogeneity of variance test data is analyzed in this study posttest by using SPSS 17.0 software help. The test statistic is based on the average data (Based on the Mean).

➤ *Test the Hypothesis*

For testing this hypothesis using analysis of variance (ANOVA), analysis of variance of one way (One way Analysis of Variance) with the help of software SPSS 17.0. Level of significance used was 95% or with $\alpha = 0.05$. If the $F_{count} > F_{table}$ at significant levels which H_0 is rejected and the H_a are received. So there is a difference between the average parameters of the groups tested, preferably to $F_{count} \leq F_{table}$, mean H_0 accepted or not there is a difference the average parameters of the groups tested or mean the same.

III. RESULTS OF THE RESEARCH AND THE DISCUSSION

A. Research Results

The data in this study were obtained from three sampling classes, namely class A, class B, and class C the first SMA Negeri Airmadidi Class X the Data analyzed in this research is data from third class posttest results samples.

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Performance achievement	27	70,7407	12,68734	2,44168	65,7218	75,7597	50,00	90,00
, Portfolio and	27	56,8519	13,45564	2,58954	51,5290	62,1747	35,00	85,00
Written test	27	28,7037	12,97872	2,49776	23,5695	33,8379	5,00	50,00
Total	81	52,0988	21,80688	2,42299	47,2769	56,9207	5,00	90,00

Table 1:- Learning Achievement Descriptive Date

Based on table 1. The results of the study are obtained from third class, the next sample frequency distribution table is created.

Table 2 distribution of the form used is the frequency distribution of the group.

Class Number	Class Interval	Median	Frequency	Frequency Cummulative	Relative Frequency
1	50-56	53	3	3	$(3/27) \times 100 = 11,11$
2	57-63	60	5	8	$(5/27) \times 100 = 18,52$
3	64-70	67	8	16	$(8/27) \times 100 = 29,63$
4	71-77	74	2	18	$(2/27) \times 100 = 7,41$
5	78-84	81	3	21	$(3/27) \times 100 = 11,11$
6	85-91	88	6	27	$(6/27) \times 100 = 22,22$
Σ			27		100%

Table 2:- Frequency distribution Table of High school student Mathematics learning achievement by performance assessment.

Table 2. Indicates that the score for the class that was taught by using performance assessment of 29.63% of students obtained average value; where students acquire 29.63% below median – median and 40.73% iswa scored above average.

Class Number	Class Interval	Median	Frequency	Frequency Cummulative	Relative Frequency
1	35-42	38,5	4	4	$(3/27) \times 100 = 14,81$
2	43-50	46,5	7	11	$(6/27) \times 100 = 25,93$
3	51-58	54,5	3	14	$(3/27) \times 100 = 11,11$
4	59-66	62,5	5	19	$(8/27) \times 100 = 18,52$
5	67-74	70,5	6	25	$(3/27) \times 100 = 22,22$
6	75-92	83,5	2	27	$(4/27) \times 100 = 7,41$
Σ			27		100%

Table 3:- Frequency Distribution Table of High School Student Mathematics Learning Achievement By Portfolio Assesment.

Table 3. Indicates that the score for the class that was taught by using portfolio assessment of 11.11% of students obtained average value; where students acquire 40.74% below median – median and 47.95% of students scored above average.

Class Number	Class Interval	Median	Frequency	Frequency Cummulative	Relative Frequency
1	5-12	8,5	3	3	$(3/27) \times 100 = 11,11$
2	13-20	16,5	6	9	$(6/27) \times 100 = 22,22$
3	21-28	24,5	3	12	$(3/27) \times 100 = 11,11$
4	29-36	32,5	8	20	$(8/27) \times 100 = 29,63$
5	37-44	40,5	3	23	$(3/27) \times 100 = 11,11$
6	45-52	48,5	4	27	$(4/27) \times 100 = 14,82$
Σ			27		100%

Table 4:- Frequency distribution Table of High school student Mathematics learning achievement by written test assessment.

Table 4. Indicates that the score for the class that was taught by using performance assessment Test written 11.11% of students obtained average value; where is 33.33% of students scored below the median – median and 55.58% of students scored above average.

Test the validity of the instrument validity Test results: learn to use the coefficient of biserial correlation between the score grain problem with score total tests. From a 25-round reserved retrieved 20-valid question ($r_{table} > r_{bis}$) and 5 grain problem invalid ($r_{bis} < r_{table}$).

All questions are considered valid is used to measure the results of the study.

Reliability test: Next rounds reserved valid calculated using the formula reliabilitasnya coefficient KR-20. Based on the calculation of the reliability coefficient is obtained (r_{ii}) = 0.905. This means that reliability is very high. Data normality test results of HIGH SCHOOL Math learning using Liliefors Test with the help of Microsoft Excel. Liliefors techniques using individual data inspection approaches in whole (Group).

Class	n	L_o	L_t	Conclusion
Experiment 1	27	0,122	0,173	Normal
Experiment 2	27	0,149	0,173	Normal
control	27	0,207	0,173	Normal

Table 5:- Summary of normalite test

Based on Table 5 L_{table} price Liliefors views that each class at a significant level (α) = 0.05 is greater than the value of L_0 in each class. So this shows that experimental class 1, class 2, and class experiment a control derived from the Gaussian populations.

Its homogeneity test: testing of its homogeneity of variance data is HIGH SCHOOL Math learning results are analyzed using SPSS 17.0 software help. The results obtained bahwat score statistics Based on the Mean obtained Sig. = 0,844. Because the Sig (0,844) > α (0.05). With this research data is the more homogeneous or H_0 and H_a was rejected. Based on the results of the prerequisite test, that test results of its homogeneity and normality, then parametric analysis can be done.

Hypothesis testing: testing the first hypothesis test using analysis of variance (ANOVA), analysis of variance in one direction (One way Analysis of Variance) with the help of software SPSS 17.0. One-way ANOVA test results has been done pointing that the values test F significant at this group test, indicated by the F_{count} value of 72.789 is greater than F_{table} (0.05; 2; 78) of 3.114 ($F_{count} > F_{table}$), reinforced with significance testing (Sig.) = 0.000 smaller than $\alpha = 0.05$; then the zero hypothesis was rejected.

The magnitude of the influence of free variables against variable is calculated using the coefficient of determination $R^2 = (JK(A))/(JK(T))$. Calculation based on retrieved $R^2 = 0.651$. This means the assessment factors can explain that 65.1% influenced by variations in learning Mathematics of HIGH SCHOOL

For hypothesis testing second, third, and fourth is done further tests (Post Hoc Tests). Advanced test (Post Hoc Tests) used is the Bonferroni test. Based on the results of the uji Post Hoc Tests which showed a difference of average results learning is among the methods on the Learning Mathematics with assessment portfolios, the method on the Learning Mathematics Test method and Assessment portfolios with performance assessment Test writing. Among the methods on portfolio assessment of Mathematics with Learning shows the value of the Sig (0.001) < α (0.05); that means H_0 denied and

H_a is received. Among the methods on the Learning Mathematics written Test method shows the value of the Sig (0.000) < α (0.05); that means H_0 denied and H_a is received. Similarly, the methods on the Learning Mathematics Test method with the written data results showed the value of Sig (0.000) < α (0.05); that means H_0 denied and H_a received .

B. Discussion of Research Results

HIGH SCHOOL Mathematics Learning outcomes data tested the validity and reliability first. From as many as 25 grains of matter, retrieved 20-reserved 5 round a valid and an invalid question. As many as 20 rounds reserved this becomes a valid question posttest were used to measure the results of learning Mathematics high school. Next do a test reliability, reliability test instrument based on the results of the study have very high reliability, i.e. (r_{ii}) = 0.905.

Its homogeneity and normality testing done before the hypothesis testing, because this is a test of statistical assumptions analysis requirements. The data used in this test is the third grade at posttest score samples with the material heat volunteered. Based on tests showing that third-grade samples come from a population of Gaussian and has variance homogeneity.

The first hypothesis testing in this study using a test analysis of variance (ANOVA), analysis of variance in one direction (One way Analysis of Variance), then proceed with the Bonferroni test. A one-way analysis of variance testing aims to see the influence of performance assessment, Portfolio Assessment, performance assessment and the written Test results of HIGH SCHOOL students learn math semester. Based on one-way ANOVA test was done indicates that the value of $F_{count} = 72.789$ is greater than F_{table} (0.05; 2; 78) = 3.114. Because $F_{count} > F_{table}$, then the zero hypothesis is rejected and the alternative hypothesis is accepted which means there is a significant influence on the learning of mathematics performance assessment, portfolio assessment, performance assessment and the written Test results Learn math HIGH SCHOOL as in table 6. Decision making is also reinforced with significance testing (Sig.) = 0.000 smaller than $\alpha = 0.05$.

	<i>Sum of Squares</i>	df	<i>Mean Square</i>	F	Sig.
<i>Between Groups</i>	24770,988	2	12385,494	72,789	,000
<i>Within Groups</i>	13272,222	78	170,157		
<i>Total</i>	38043,210	80			

Table 6:- ANOVA

Furthermore the magnitude of the third influence this performance assessment against the HIGH SCHOOL Math learning results calculated using the coefficient of determination, with the formula $R^2 = (JK(A))/(JK(T))$. Based on the calculation of the coefficient of determination

$R^2 = 0.651$ obtained. This means the assessment factors can explain that 65.1% influenced by variations in learning Mathematics of HIGH SCHOOL, and the rest is 34.9% certainly is influenced by other factors not examined in this study.

Based on the results of the ANOVA test showed H_a tabulations received (no influence), then further testing (Post Hoc Tests) done. This test function to see which group is different. Based on tabulated test of homogeneity of variances showed that the variance of the third group of the same data, then further testing (Post Hoc Tests) used is the Bonferroni test.

Method on learning math with the portfolio assessment showed the value of $\text{Sig} (0.001) < \alpha (0.05)$; H_0 denied and H_a is received. This indicates that there is a significant difference in the average Mathematics study results of HIGH SCHOOL students who were taught with the use of performance assessment in learning mathematics and groups of students taught by using the assessment portfolio. This is reasonable because one of the advantages of the method to the study of Mathematics according to Sumantri and also (1999:158) is the result of good students with controlled learning and lasting memories, because students are directly involved in a HIGH-SCHOOL Math Assessment in this learning; compared to the valuation of portfolios which students have only seen and heard a presentation of the material without engaging directly in the course of a study.

Performance assessment in learning mathematics with the assessment of the written Test has value $\text{Sig} (0.000) < \alpha (0.05)$. This means there is a significant difference in the average HIGH SCHOOL Math to learning outcomes group students who are taught with the use of performance assessment and a group of students who are taught by using a written Test assessment. The third hypothesis testing, H_0 and H_a rejected accepted. Portfolio assessment with the assessment of the written Test performance has value $\text{Sig} (0.000) < \alpha (0.05)$. This means there is a significant difference in the average Mathematics study results of HIGH SCHOOL students who are taught using an assessment portfolio and a group of students who are taught by using a written Test assessment. The fourth hypothesis testing, H_0 and H_a rejected accepted. In line with the opinions expressed by Priyanto (2009), namely that the portfolio assessment in the assessment gave the new shades to make the assessment becomes more interactive, effective, efficient, and attractive; the course will have a direct impact on the results of the students learning to be more optimal.

IV. CONCLUSION

Based on the results of the analysis and discussion of it can be summed up as follows:

➤ There is a significant influence on the performance assessment, portfolio assessment, and assessment of the performance of the tests written against the results of the study of math in high school, with $F_{\text{count}} (72,789) > F_{\text{table}} (3.114)$. The results of learning math students 65.1% influenced by variations in learning Mathematics high school students.

- There is a significant difference in the average Mathematics study results of HIGH SCHOOL students who were taught with the use of performance assessment and a group of students who are taught using an assessment portfolio, with value of $\text{Sig} (0.001) (0.05) \alpha <$.
- There is a significant difference in the average HIGH SCHOOL Math to learning outcomes group students who are taught with the use of performance assessment and a group of students who are taught by using a written test, with the assessment of the value of the $\text{Sig} (0.000) < \alpha (0.05)$.
- There is a significant difference in the average HIGH SCHOOL Math to learning outcomes group students who are taught using an assessment portfolio and a group of students who are taught by either using a written test, with the assessment of the value of the $\text{Sig} (0.000) < \alpha (0.05)$.

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