

The Influence of Learning Application Model and Assessment Techniques of Toward Basic Physics II Learning Achievement (An Experiment of Department Physics of Fmipa Unima)

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Abstract- Research purposes to determine the effect of learning activities, assessment techniques and the influence of interaction on learning achievement Basic Physics II,. The method used is an experimental method with a 2 x 2 factorial design. Implementation of learning activities and assessment techniques as the treatment variable, the results of learning Basic Physics II as the response variable. The sample in this study were students of Physics Department of class A and class B are determined by the number of respondents multistage sampling 76 students. Analytical techniques used to examine the effect ANCOVA main factors (main effect) and the influence of the interaction factor (interaction effect).The study concluded that implementation of lesson study and performance assessment techniques more effectively improve learning achievement Basic Physics II compared with conventional learning techniques with a written assessment test. Suggested in the course Basic Physics II and using lesson study as a form of performance assessment activities in the lecture course are seeded in the first year Physics with Mathematics and Science.

Index Terms- Learning Application Model, Techniques Assessment, Basic Physics II Learning Achievement.

I. INTRODUCTION

Learning activities and forms of assessment are two things commonly done by educators in the learning process in most all of the learning process. One of the social issues or hot topics in education recently discussed which is about appealing to lesson study, is emerging as one of the ways to overcome the problematic learning now is viewed less effective. Learning accounting practices of this kind are more likely to emphasize on how teachers teach (teacher-centered) than on how students learn (student-centered), and the overall results can be understood as it turns out not much contributes to quality improvement processes and learning outcomes. Forms of activities lesson study can be used as an alternative to encourage the occurrence of a change of the learning process in Indonesia towards a much more effective (Slamet, 2007:1). Education is currently facing three major challenges: (1) raise awareness about the importance of related pihat problem solving skills, (2) optimizing way of assessing problem solving skills, and (3) explore how to develop and maintain skills problem solving (Samuel Greiff, et al, 2001).

Lesson study is one form of strategic learning activity to create an academic atmosphere conducive to improvement of the quality of the lectures. Learning through lesson study senior lecturer got an excellent opportunity to provide coaching to young Professor, who had been less done (Istamar, and Ibrohim, 2008:10-11). Stages of activity lesson study which started from the plan, do and see very provides a very good lecturer for the team in optimizing the design of the lecture, the process of implementing and evaluating learning activities for students. Lesson study can be a good option in Basic Physics Lecture II activities. Stages in lesson study provide time and space for faculty and students to create and innovate in the learning process and other related parties to be able to develop the lesson study to further the interests of the quality improvement process and the results of student learning.

Performance appraisal is one form of assessment that is considered relatively precise measuring results learning student or students. Performance appraisal provides an opportunity to the student or students to demonstrate their learning as a whole works ranging from the process until at the end which can be rated by others, such as teachers or lecturers. Physics lessons that have characterized the science where the characteristics of the lesson require appraisal that requires behavior ability of knowledge, attitude and psychomotor. Performance assessment a good alternative assessment to be carried out in learning physics. As a science, physics requires reasoning that is high enough to be understood by him, the person who has a high intelligence affects the results of the study of physics. Intellegency as the ability of adapting to the environment or to learn from the experience. Where humans live and interact in a complex environment and therefore requires the ability to adapt to the environment (Dalyono, 2007:183).

The scope of the material base of Physics II includes 3 units of matter are: 1. Waves, 2.-Optical Power-Magnet and 3. Modern Physics. The scope of material for research experiments are restricted to three principal topics of optical wave-material-that is, the subject of the symptoms of Geombang, the nature of the Wave and optical geometry. The selection of the subject matter of discussion is based on the student's level of ease for conducting observations of physical phenomena which do not require complex laboratory equipment. On the learning process of the students can directly perform observations of physical phenomena and data capture learning environment around the campus and student residence.

This research aims to find out: 1. The difference in the results of the Basic Physics II students taught learning activities with lesson study and the results of the Basic Physics II students taught with the conventional learning activities, after controlling for student intelligence, 2. The difference in the results of the basic physics II students are given an assessment of the performance and results of Basic physics II students are given a written test assessment, after controlling for students' intelligence. 3. The influence of the interaction between the implementation of learning activities and assessment of the results of learning Basic Physics II after controlling intelligent students, 4. The difference in the results of the Basic Physics II students taught with lesson study was given a performance assessment, and the results of the Basic Physics II students taught with conventional and given a performance appraisal, after controlling for student intelligence, 5. The difference in the results of the Basic Physics II students taught with lesson study was given a written test, assessment and outcomes studied Basic Physics II students taught with conventional and given a written test assessment, after controlling for student intelligence, 6. The difference in the results of the Basic Physics II students taught with lesson study was given a performance assessment, and the results of the Basic Physics II students taught with lesson study and given the assessment of the written test, after controlling for student intelligence, and 7. The difference in the results of the Basic Physics II students taught with conventional given performance assessment, and the results of the Basic Physics II students taught with conventional and given a written test assessment, after controlling for students' intelligence.

Learning is a process that is characterized by the presence of changes in a person. Changes as a result of the learning process can be shown in various forms such as changing knowledge, understanding, attitudes and behavior, his skill, whose prowess and his ability, power reaction, power reception and other aspects of the individual. Therefore, learning is an active process, learning is a process of mereaksi of all the situations that exist around the individual. Learning is a process which is directed towards a goal, do the process through a variety of experiences. Learning is the process of seeing, observing, understand something. (Sudjana, N. 2002:28).

Learning is an activity that is working and is a very fundamental element in implementing each type and level of education. This means that the successful or failure of achievement of the objectives of education was very very depending on the learning process of the students experienced, either when he was at school or home surroundings or his own family. Therefore the correct understanding about the meaning of learning with all aspects, forms and manifestation is absolutely necessary by educators in particular teachers. Errors or incomplete perception of teachers towards learning and things related to learning will result in less quality learning outcomes achieved learners (Muhibbin Shah, 2010:87). Learning is a process, an activity and not an outcome or goal. Learn not only remember, but more broadly than that, i.e. experience. The results of learning rather than a mastery of the results of the exercise but rather a change in behaviour (Hamalik, 2011:27)

Learning process there are five kinds of abilities that can be observed on the student as a result of his studies as follows: (1) the intellectual Skills, or procedural knowledge that includes

learning the concepts, principles and problem-solving that is obtained through the presentation of the material in schools, (2) Cognitive Strategies, namely the ability to control and regulate the activities of thinking and learning on his own, (3) verbal Information, namely the ability to describe something with words with the set up information-relevant information (4) motor skills, i.e. the ability to implement and coordinate the movements associated with muscle, and (5) attitude, i.e. internal ability to choose one's department actions based on emotions, beliefs and intellectual factors (Aunnurahman, 2009:49).

The learning process can be distinguished into three phases or episodes, namely: (1) the information is in any information obtained, there are lessons that supplement the knowledge which has been owned, some are smooth and the task, there is also information that contradicts what has been known previously, (2) Transformation. This information should be analyzed, modified or ditrasformasi into the form of a more abstract or conceptual to be used for things that are more spacious. In this case the teacher aid is indispensable, and (3) the evaluation assessing up to know the knowledge acquired and transformed it can be used to understand the symptoms of others. In the process of learning the third episode above always occurs (Nasution, 2009:9-10).

Lesson Study as one of the models of the construction professions educators through the study of collaborative learning and sustainable based on the principles of mutual learning and kolegalitas to build a learning community (Slamet, 2007:4). The process of discussion in lesson study is submission of the results of observation of the observer, which focus on the activity of students. Suggestions and criticism of the process activities lesson study should depart from student behavior in the classroom, or in other words that all suggestions for refinement at the next stage should be based on data and facts that happened in class (Hendayana dkk, 2008:9).

Natural light covers symptoms associated with vision and optics to develop as a science that a little or a lot do not rely on this behavior. The sound associated with the hearing, acoustics developed as a science that deals with it. Heat related to the physical senses, and over the years the study of heat (thermodynamics) is a branch of physics other autonomous. Motion of course is the most common of symptoms observed nature directly, developing early mechanics from other branches of physics. (Alonzo, and Finn. 1999:4). The basic requirements for the solution is the observed symptoms. The Opinion Of Sears. and Zemansky (1987:1) to the effect that physics is the science that studies the natural events which allow research with experiment, the physical measurements of what is to come by, mathematically and rendering based on common rules.

According to Sears Physics is a science about measurement (measurement science). Understanding physics is also delivered by Tipler that physics is associated with matter and energy with the laws that regulate the movement of particles and waves, interactions between particles, sifat properties of molecules, atoms and nuclei, and with larger-scale systems such as gas, liquid and solid (Tipler, 1998:1). The main constituent of physics are physical quantities which are used to declare the laws of Physics for example: length, mass, time, force, speed, meetings (density), relativity, temperature, light intensity, and many more of the other (Resnick and Halliday, 1987:3).

Physics is the science that seeks to understand the rules of nature that is so beautiful and with the mess can be described mathematically. The math in this case serves as a communication language of science including physics. Science and human needs over the next four centuries this shows a very dramatic progress thanks to the success of humans in analyzing and describe nature mathematically. Mundilarto (2002:5) physical education should be able to be a strong impetus for the emergence of an attitude of curiosity and openness towards new ideas as well as quantitative analytical thinking habits. In physical education students should look in order for consciousness physics grown not only as an academic activity, but rather as a way to understand the world in which human life.

The assessment is part of an evaluation process or procedure undertaken to obtain information about the participants of the study, starting from the level of primary education until College. Assessment is defined as a formal effort to determine the position or status of the students associated with the education variable was specified. It can also be argued that the assessment is a procedure that can be used to obtain information about a person's achievements or performance. It can also be argued that the assessment is a procedure that can be used to obtain information about a person's achievements or performance (BSNP, 2007:3).

Assessment is an important component in education. Efforts to improve the quality of education can be reached through the enhancement of the quality of learning and the quality of his judgement. The two are intertwined, a good learning system will produce a good quality learning. The quality of this study can be seen from the judgment (Mardapi, 2007:5). Popham stated there are 4 purposes of assessment, namely: 1) diagnose the strengths and weaknesses of learners, 2) monitors the progress of learners, 3) gives value (grade) on learners, and 4) determine the effectiveness of learning done educators. Simplification of the opinions of Popham, formulating the assessment objective 3, i.e. for: 1) diagnose the knowledge and skills of learners, 2) monitors the progress of the students related to the learning objectives, and 3) provide data to provide value to the learners (Popham, 1995:141).

Performance assessment is a form of observation and assessment directly and systematic way from the performance of students with reference to a predetermined performance criteria (Soekrisno 2005:1) performance assessment often dipertukakan with authentic assessment. Understanding is essentially the assessment (assessment), which requires that students demonstrate the performance, not answered or select answer from a series of possible answers. For example, in the assessment of performance (Performance Assessment), students are asked to explain in detail in its own way about the completion of the application of Newton's laws by using a pulley. Through the way students are expected to demonstrate control of the physics problem solving and learning outcomes in a way that's true.

Performance appraisal, a person can be told to do a binary response to a question in accordance with a statute. This dual response constitutes the information needed to determine a person's performance in a particular field. Therefore, performance assessment dimensions measured are double, not single dimension such as the traditional test Mardapi, (2007:76). Performance assessment is the assessment of the data acquisition

process, the application of knowledge and skills, through the learning process that shows the ability of the students in the process as well as product (Zainul, 2005:4). Popham said that, performance assessment is an approach towards measuring the status of students based on the results of the work or complete a task in a set (Popham, 1995:45).

On the performance assessment of things that get attention are important in terms of score. When the performance assessment will be given the sekor to conclude the test-taker performance achievement level, then used two approaches, namely: holistic and analytic methods of metode. Holistic method is used when the score gives only one fruit score or value (single twig) based on the overall assessment of the results of the test-taker performance. Analytic method of the penskor (rater) gave judgment on a variety of different aspects related to performance is assessed (Setiadi, 2008:10).

To form a habit of students to always learn on a regular basis and foster student learning motivation then administering the test as often as possible and repeated in frekuensi will be easy to remember and there is the influence of time of administering tests against the results of learning physics (Munasco, 2013:39). Aiken suggests that a test is used as a tool to assess a person's behavior or performance tingka (Aiken, 1979:474). 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 (Djaali, and Muhammad). 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 systems (Saif, 2005:3). Djaali and Muldiono (2008:11) States a written test 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.

Ainun, and Ekaningrum (2008:2) stated a 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 kalaimat 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.

Intelligence is the ability of problem solving in all situations that are new or contain the problem. Problem solving in all circumstances this includes personal problems, problems of social, cultural, and academic problems, problems of economic family (Dalyono, 2009:185). Intelligence can be formulated with the maturity to do the activities and achieving the accomplishments which thinking plays a major role. From a person's behaviour, conversation, action, reaction, one can judge whether that person is intelligent, astute, clever or otherwise stupid, fool, slow. Although to get information more reliably through the intelligence tests psychological test by psychologists. Intelligence behaviour by a number of characteristics as follows: (1) conduct which is ready to do the changes that need to be against the new conditions, not rigid; (2) conduct that aim; (3) the behaviour of a fast, immediate reactions; (4) terorganisir behaviour, i.e. There is good coordination between the private

conditions in a solved issue; (5) conduct which is controlled by the powerful motivation; and (6) conduct which "success oriented" (Sagala, 2009:81).

The opinion that said, intelligence is a certain amount of psychological structures that exist on a specific level of development. According to Cites, and Super intelligence is the ability to adapt to the environment or to learn from the experience. According to Garrett, the intelligence was at least includes the necessary capabilities to problem-solving that requires understanding, and using symbol-symbol. According to Robert j. Sternberg intelligence is the capacity to learn from experience, and the ability to adapt to the surrounding environment. Or the intelligentsia is the proficiency to learn from the experience and the ability to berdaptasi with the environment (Djaali, 2011:63-65).

Conventional learning are often used when a teacher in the process of the lesson that more material presentation freeform from teachers. Serving greater emphasis to clarify something material that is not known or understood by students. Alternatively they tend to in methods of lecture and q & a varies or other methods which allow compliance with the characteristics of the subject matter and the existence of the mental process of the activity of the students to see the links contained in the subject matter (Suruddin, 2010, 95). Lecture method in learning there almost everywhere in school and in college. A lecture or lectures may (1) provide the motivation to generate interest with a topic related to the goals, (2) inform the student about the results of learning expected of students and (3) can attempt to guide in the lesson. Students may also do not have sufficient apersepsi materials to explore a college lecture, and therefore it would be boring. To be able to add to the effectiveness of College learning media can be used such as pictures, charts, demonstrations and other props. On the process of college students ' assessing rarely found, or no feedback and therefore not lecture presents good conditions for the learning process (Nasution, 2010:199-200).

II. RESEARCH METHODS

This research is generally aimed to know the influence of lesson study and the assessment of performance against the results of the study of basic Physics II, after controlling for students ' intelligence. This research was carried out in the Department of Science Physics UNIMA in Tondano lasted for three months with details of face to face twice a week. Basic Physics II course 4 credits, which runs on the even semester, is the month of the beginning of February until the end of 2012 April 2012 academic year 2011/2012. The methods used in this research is a method of experimentation with a 2 x 2 factorial design. Variables are bound is the result of Basic Physics II. Treat the factors are (1) learning activities lesson study and conventional, (2) the form of a performance assessment, and the assessment of the written test.

The population in this research is a first year student in the Department of Physics of Science together with UNIMA academic year 2011/2012. The student population consists of 6 Department of physics class that includes 4 classes education courses of physics and Physics Studies Program grade 2. Determination of the sample in this study done by multistage random sampling, namely with the following stages: First randomly drawn 4 classroom Educational Program, then the second stage determines the subject of treatment of learning through selected draw 2 class i.e. class A and class b. class A experiment with learning activities lesson study and class B class as a comparison with the conventional learning activities. The third stage determines the subject of treatment and learning activities lesson study and conventional treatment will receive a performance appraisal and assessment of the written test. Distribution of grouping members of the class as in Table 1.

Table 1. Research Samples For Each Treatment Group

Learning (A)		Learning Activities		Total
		Lesson Study (A ₁)	Conventional (A ₂)	
Assessment (B)		(Y)	(Y)	
B	Performance Assessment (B ₁)	Physics clas A 19 students	Physics clas B 19 students	38 Students.
	The Written Assessment (B ₂)	Physics clas A 19 students	Physics clas B 19 students	38 students.
Total		38 students	38 students	76 students.

Description: Y : Basic Physics II Study Results

Instrument collecting data in this study that is. Results of the data collection instrument Learning Basic Physics II student Instrument collecting data about the results of the study of physics students use basic test writing essay form. The development of test instruments results studied physics Basic II test results of Basic physics II students created in form, a test to measure students ' ability of description in the mastery of Basic

Physics II. To instrument the basic Physics II study results are compiled in accordance with the curriculum in Basic Physics II matakuliah sibabus used in the Department of Science Physics, UNIMA. Testing validity and Reliabiltas. The validation tests are conducted in two forms, namely the analysis of qualitative and quantitative analysis. Qualitative analysis done with the review panelists, and quantitative analysis performed with the

correlation score with a score of grain total yield trial tests. Review Panelists

Based on the results of the calculation of the reliability coefficients obtained judgments between panelists of 0.87. These results show that the consistency of the results between panelists belongs to high so to 12 grains of matter results Basic physics II with attention to suggestions from panelists is said to be adequate for testing instruments. 1. the validity of a Test item: the Validation performed on 12 grain test forms written essay to menggukur Basic Physics learning out comes II. From the results of a test question that tested retrieved 10 buir of valid matter.

Reliabilitas: test of 10 questions valid trial results, then continued with the reliability coefficient test results obtained using the formula coefficient of apha as follows:, those values have a good reliability as an instrument. Data collection includes: 1) the collection of data about the results of the study of Basic Physics II, the results of the tests carried out using Basic physics II which have been standardized, implemented at the end of the execution of the experiments. Test results of Basic physics II made in the form of essays, question 2). The collection of data about the level of intelligence of the students is done before execution of the experiments carried out. Technique of data

analysis includes descriptive analysis, requirements analysis and test analysis of inferensial. Prior to the analysis of inferensial for testing the hypothesis of research first conducted the analysis prerequisite test include: (1) test of normality, its homogeneity test (2), (3) testing linearity, (4) keberartian test kovariat influence against variables bound, and (5) of the regression line alignment test. Testing of its homogeneity of the treatment groups in the study done by test-F and test Bartllet that States there is no difference in variance between groups tested, thus the data on these groups come from populations which are homogeneous, whereas for the regression Line Alignment test also use test-F with the result that the regression lines on all the factors aligned cells.

III. THE RESULTS OF THE RESEARCH AND THE DISCUSSION

Based on the results of the analysis of univariate GLM procedure (Design A B A * B X) through SPSS version 17, will present the results of hypothesis testing as follows:

Table 2. Summary of the results of the test with ANKOVA F about the difference the average results of Basic Physics II (Y) After controlling for student Intelligence (X)

Source	Type II Sum of Squares	df	Mean Square	F	Sig.
Intercept	1.021	1	1.021	.043	.836
X	15671.488	1	15671.488	664.227	.000
A	1033.117	1	1033.117	43.788	.000
B	1452.631	1	1452.631	61.569	.000
B * A	100.017	1	100.017	4.239	.043
Error	1675.143	71	23.594		
Total	804581.000	76			
Corrected Total	19375.408	75			

a. R Squared = .914 (Adjusted R Squared = .909)

Based on the results of the analysis are presented in table 8 it can be described as follows.

1. The difference in the results of the Basic Physics II Learning between students who were given a Lesson Study learning activities and who were given Conventional learning activities

Statistical hypothesis 1 as follows:

$$H_0: \mu A_1 \leq \mu A_2$$

$$H_1: \mu A_1 > \mu A_2$$

The results of the analysis of hypothesis testing 1 indicates that H_0 is rejected based on Test-F, row A value of $F_{count} = 43.78$ greater than 3.98. Thus it can be concluded that there is a difference in Basic Physics II study results between a group of students who were given a lesson study learning activities with a group of students who were given conventional learning activities after controlling intelligence students. The results of the calculations of the mean field data $XA_1 XA_2 = 106,395$ while the average = 97,447 means it can be concluded that the results of

the study of Basic Physics II between a group of students who were given a lesson study learning activities is higher compared to the Group of students who were given conventional learning activities.

2. The difference in the results of the Study of Basic Physics II between the students who were given a performance appraisal and students who were given a written Test Assessment

$$H_0: \mu B_1 \leq \mu B_2$$

$$H_1: \mu B_1 > \mu B_2$$

The results of the analysis of hypothesis testing: 2 shows that H_0 is rejected based on the test F, line B with a value of $F_{count} = 61,57$. The value of F_{count} is greater than $F_{table} (0.05; 1.75) = 3.98$. Thus it can be concluded that there is a difference in Basic Physics II study results between groups of students are given a performance appraisal and a group of students who were given a written test assessment, after easily controlling intelligence students. The results of a calculation of data in front

of average X_{B_1} X_{B_2} 105,816 whereas average = = 98,026 meaning can be summed up the results of the study of Basic Physics II between a group of students was given a higher performance rating compared with a group of students who were given a written test assessment

3. The influence of the interaction between learning activities and assessment of the results of the Study of Basic Physics II student.

3 statistical hypothesis as follows.

$$H_0: \text{Int. } A \times B = 0$$

$$H_1: \text{Int. } A \times B \neq 0$$

The results of the analysis of hypothesis testing 3 indicates that H_0 is rejected based on statistical Test, factor $F_{A * B}$ to the value of $F = 4,24$ count greater than $F_{\text{tabel}} (0.05; 1.75) = 3.98$. Thus it can be concluded that there is an influence of the interaction between learning activities and assessment of the results of learning Basic Physics II

4. Difference of Basic Physics II Study Results between students who were given a Lesson Study learning activities and performance assessment with students who were given Conventional learning activities and given a performance appraisal.

Table 3. Hypothesis Test Of Influence of All Factors With Each Factor B

Source	Type II Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	17700.265 ^a	4	4425.066	187.554	.000
Intercept	1.021	1	1.021	.043	.836
X	15671.488	1	15671.488	664.227	.000
B	1450.984	1	1450.984	61.499	.000
B * A	1133.133	2	566.567	24.014	.000
Error	1675.143	71	23.594		
Total	804581.000	76			
Corrected Total	19375.408	75			

Table 4. The Parameter Estimates Average Y All Factor A For Each Factor B

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	-9.984	4.203	-2.375	.020	-18.365	-1.602
X	1.018	.040	25.773	.000	.940	1.097
[B=1.00]	6.454	1.576	4.094	.000	3.311	9.598
[B=2.00]	0 ^a	.	.	.	.	.
[B=1.00] [A=1.00]	*9.679	1.579	6.129	.000	6.530	12.828
[B=1.00] [A=2.00]	*0 ^a	.	.	.	.	.
[B=2.00] [A=1.00]	*5.078	1.577	3.220	.002	1.934	8.223
[B=2.00] [A=2.00]	*0 ^a	.	.	.	.	.

4 statistical hypothesis as follows.

$$H_0: \mu_{A_1 B_1} \leq \mu_{A_2 B_1}$$

$$H_1: \mu_{A_1 B_1} > \mu_{A_2 B_1}$$

The results of the analysis show that 4 hypothesis testing: H_0 is rejected on the basis of the test statistic t, a value $t_{\text{count}} = 6,13$ the value greater than $t_{\text{table}} (0.05; 75) = 1.67$. Thus the conclusion to be drawn that for students who were given a lesson study learning activities and assessment of performance, there is a difference in Basic Physics II study results with students who are taught and given a conventional assessment of performance

after controlling intelligence students. The results of the calculation of the data field in front of the average $X_{A_1 B_1} = 111,210$ while $X_{A_2 B_1} = 100,421$ meaning can be summed up the results of the study of Basic Physics II taught learning activities with lesson study was given a higher performance rating compared with students who were taught with the conventional learning activities and performance assessment.

5. The difference in the results of the Basic Physics II Learning between students who were given a Lesson Study learning activities and given a written Test Assessment with students who were given Conventional learning activities and given a written Test Assessment

5 statistical hypothesis as follows.

$$H_0: \mu_{A_1B_2} \geq \mu_{A_2B_2}$$

$$H_1: \mu_{A_1B_2} < \mu_{A_2B_2}$$

The results of the analysis of hypothesis testing 5 indicates that H_0 is accepted based on the test statistic Value $t_{count} = 3,22$ that value greater than $t_{table} (0.05; 75) = 1.67$. Thus the results of the learning of students who are taught learning activities with lesson study and given the assessment of the written Test, there is a significant difference between students who were taught with

the conventional learning activities and assessment of the written test was given after controlling intelligence students. The results of the calculation of the data field in front of the average $XA_1B_2 = 101,578$ while $XA_2B_2 = 94,473$ means it can be concluded that students who were taught with lesson study was given a written test, assessment of the results of Basic Physics II students learn higher compared to conventional learning activities fed and given the assessment of the written test.

6. The difference in the results of the Basic Physics II Learning between students who were given a Lesson Study learning activities and performance assessment with students who were given a Lesson study learning activities and given a written Test Assessment

Statistical hypotheses 6 as follows.

$$H_0: \mu_{A_1B_1} \leq \mu_{A_1B_2}$$

$$H_1: \mu_{A_1B_1} > \mu_{A_1B_2}$$

Table 5. Test Hypotheses About All The B Factor Each Factor A

Source	Type II Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	17700.265 ^a	4	4425.066	187.554	.000
Intercept	1.021	1	1.021	.043	.836
X	15671.488	1	15671.488	664.227	.000
A	1031.470	1	1031.470	43.718	.000
B * A	1552.648	2	776.324	32.904	.000
Error	1675.143	71	23.594		
Total	804581.000	76			
Corrected Total	19375.408	75			

a. R Squared = .914 (Adjusted R Squared = .909)

Table 6. The Parameter Estimates Average Y All Factors B For Each Factor A

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	-9.984	4.203	-2.375	.020	-18.365	-1.602
X	1.018	.040	25.773	.000	.940	1.097
[A=1.00]	5.078	1.577	3.220	.002	1.934	8.223
[A=2.00]	0 ^a	.	.	.	.	.
[B=1.00] [A=1.00]	*11.055	1.580	6.995	.000	7.904	14.206
[B=1.00] [A=2.00]	*6.454	1.576	4.094	.000	3.311	9.598
[B=2.00] [A=1.00]	*0 ^a	.	.	.	.	.
[B=2.00] [A=2.00]	*0 ^a	.	.	.	.	.

The results of the analysis of hypothesis testing 6 indicates that H_0 is rejected on the basis of the test statistic Value t . $t_{count} = 6.99$ that value greater than $t_{table} (0.05; 75) = 1.67$. Thus the results of the learning of students who are taught learning activities with lesson study and given a performance appraisal, there is a significant difference between students who were taught learning activities with lesson study and given the assessment of the written test after controlling intelligence students. The results of the calculation of the data field in front of the average $XA_1B_1 = 111,210$ while $XA_1B_2 = 101,578$ rate means it can be concluded that for the Group of students who were taught learning activities with lesson study, the results of the study of basic Physics II students are given a higher performance rating compared with a group of students who were given a written test assessment.

7. The difference in the results of the basic Physics II Learning between students who were given Conventional learning activities and performance assessment with students who were given Conventional learning activities and given a written Test Assessment

7 Statistical hypothesis as follows.

$$H_0: \mu A_2B_1 \geq \mu A_2B_2$$

$$H_1: \mu A_2B_1 < \mu A_2B_2$$

The results of the analysis of hypothesis testing 7 indicates that H_0 is accepted based on the test statistic Value t . $t_{count} = 4.10$ the value greater than $t_{table} (0.05; 75) = 1.67$. Thus for the Group of students who are taught with the conventional learning activities there is a difference in the results of the Basic Physics II between a group of students who were given a performance appraisal with a group of students who were given a written test assessment after controlling intelligence students. The results of the calculation of the data field in front of the average $XA_2B_1 = 100,421$ while average $XA_2B_2 = 94,473$ means it can be concluded that for the Group of students who were taught learning activities with lesson study, the results of the study of Basic Physics II students are given a higher performance rating compared with a group of students who were given a written test assessment.

IV. DISCUSSION OF RESEARCH RESULTS

The results showed that the variables of learning activities and assessment form have significant influence towards the results of the Basic Physics II student learning (Y) after controlling for student intelligence (X). The discussion will then be discussed on the basis of research findings and the results of hypothesis testing as follows.

1. Basic Physics II Study Results of Students Given Learning Activity Lesson Study Was Higher Than The Basic Physics II Study Results of Students Who Were Given Conventional Learning Activities.

The results of hypothesis testing indicate that there is a difference of Basic Physics II learning outcomes among students who were given the learning activity lesson study and conventional. Therefore it is in the process of Basic Physics Lecture II to achieve better results, then it can use learning activities lesson study. At the lecture using lesson study many

things which may be exercised both by lecturers and students. Lesson study learning activities implemented through the stages of the plan, do and see. Plan is planning activities the activities of the course are held together by a team of Basic Physics lecturer II. Activities plan becomes very important in lecture Moreover, the lecture is held on a relatively new students on campus. Stages of the activities of the lesson study since the beginning of the lecture is already inviting the team to formulate the lecturer shared planning process lecture.

At this stage these are process IE do lectures, where on stage do present Lecturer team to carry out observations on the implementation of perkuliahanan. The lecture led by a lecturer of the model and the process of lectures presented is the result of a shared formula when plan. Meanwhile a team of lecturers were present to observe the process and record all activity lecture lectures were held. Observations made of early learning activities to complete. At the time of reflection Professor model can provide an explanation of some of the things could have changed from the initial planning together. On reflection the explanation it is urgently needed by the participants of the reflection.

Based on the steps and learning activities lesson study above, the results of this research show that there was a very positive influence on learning activities between lesson study with the results of the Basic Physics II students majoring in physics.

2. Basic Physics II Study Results of Students With Higher Performance Assessment Activities From Basic Physics II Study Results of Students Given The Assessment of The Written Test.

The process always lecture will be followed by assessment activities, and assessments has a very important role in determining the success of a lecture. Good judgment will produce a proper follow-up also comes down to evaluation and the final result in the form of proper decision-making. Assessment that is able to reveal all the potential good of students academic knowledge, skills and attitudes is a better assessment than if the assessment on just one aspect only. (Supardi, 2011:101-125). Explain the increase in the quality of education is done through process improvement efforts of learning using a variety of learning methods and assessment.

Performance assessment is a form of assessment that allows students can show all the academic potential to gain maximum value. For example, the ability of the students on the basic physics of materials II staple material waves not only assessed the ability of the student to answer the question or answer the question at the time of the exam of the semester through writing, but how the student is able to demonstrate physical phenomena from the concept of the wave, and is able to analyze and provide a description of the observed phenomenon both through practice in the laboratory as well as a natural phenomenon in the context of the surrounding environment. Assessment of ability of thoroughly like this can not be done only through a written test, but it can be done through penillaian performance. Aspects that cannot be judged with the written test can be assessed from observation.

Highly effective performance assessment is carried out to find out all the academic potential especially with regard to the potential of the academic field of science. Physics as a science lesson is absolutely right to do assessments through the process

of science, where it concluded a process of performance must be demonstrated, observed, analyzed and reported the results of the analysis of the physical phenomenon are studied.

Based on the results of this research are then retrieved an outcome that, Basic Physics Lecture II by implementing performance assessment form shows a higher yield compared to the results of a study of Basic Physics II apply assessment test writing.

3. There Is The Influence of The Interaction Between Learning Activities And Assessment of The Results of Learning Basic Physics II.

Based on the results of the analysis through hypothesis testing showed that the presence of influence between factors of learning activities with the form of assessment after controlling intelligence students. This state indicates that the difference in the results of the study of Basic Physics II after controlling intelligence ditentan by student learning activities and assessment forms provided. This means that the influence of the interaction will give meaning if done on the effects of each level are given treat.

The level of treatment in question is: (1) a special group that was given a learning activity lesson study, the results of the study of Basic Physics II in a group performance rating higher than Basic Physics II study results in a written test assessment group, (2) a special group who were given conventional learning activities, Basic Physics II study results in a group performance rating higher than Basic Physics I studied physics results in a written test assessment group, (3) a special group that was given a learning activity lesson study, the results of the study of Basic Physics II in a group performance rating higher than Basic Physics II study results were given conventional learning activities in a group performance assessment, and (4) a special group who were given conventional learning activities, Basic Physics II study results in a group performance rating higher than Basic Physics II study results in a written test assessment group.

4. For Students That Are Learning Activities Lesson Study And Given The Higher Performance Assessment of University Students Who Were Given Conventional Learning Activities Were Given Performance Assessment.

Lesson study learning activities contribute an excellent start of planning (plan), the implementation of a learning activity (do) to the reflection (see). The involvement of a team of lecturers gave a lot of enter to make a lecture went well, lecturers-professors contribute to the implementation of the lecture. Different is the case with conventional perkuliahan, engagement between professors is very small, sehingga a little insert that can be retrieved or almost no involvement of other teams in the lecturer lectures applying conventional activities.

In the process of applying and learning activities with lectures and lesson study and assessment of pkinerja is very encouraging for students to pay attention to all the steps of learning activities lesson study of the course. Mehmet Erkol, Mustafa Kisoglu, and Erdogan Buyukkasap (2010) *Procedia Sosial and Behavioral Sciences 2 (2010) 2310-2314*

A good learning conditions provide opportunities for students to learn the existence of. Student learning entitlement needs to be formed while attending. Through the observations of individual students in a lecture, will be retrieved information on

whether students are learning or not. Observation learning and learning outcomes assessment form will give you a good influence against the learning outcomes of students.

Based on the results of the research results that are obtained through learning activities lesson study by applying the results of performance assessment of student learning in Basic Physics Lecture II higher than Basic Physics Lecture I with the assessment of the written test.

5. For Students That Are Learning Activities Lesson Study And Given A Written Test Assessment Higher Than Students Who Were Given Conventional Learning Activities Given The Assessment of The Written Test.

Lecture by applying the learning activity lesson study gives a good insight for the mutual exchange of information knowledge, experience in particular in the learning activities. Coaching more junior professors are encouraged to implement the activities of the lesson study. Lesson study provides enough room to do the academic communication between fellow professors, lecturers and students as well as college students and college students. Study lesson learning activity tends to give emphasis on the akativitas aspects of the student during the learning process, so that it can proceed with doing the measurement results of the study. How that can be done to measure the success of the study is to provide an assessment of the written test results showed that if classes are implemented with lesson study continued with a written appraisal.

A good learning activities can be very giving influence on student learning outcomes. Same thing if the assessment process that performed well will affect the process of the preparation of student learning in the face of exams or tests. The written assessment is how to measure student learning success. Therefore a study lesson learning activity then continued with the implementation of a written evaluation showed the success of student learning. The results obtained that the activity of lesson study and given a written assessment is lower if the lecture was carried out with conventional and given a written test.

6. For Students That Are Learning Activities Lesson Study And Given The Higher Performance Assessment of University Students Who Were Given The Learning Activity Lesson Study Was Given A Written Test Assessment.

Learning activities lesson study is one form of learning activities ranging from the design of early learning activities, implementation up to the end of the learning activity i.e. Reflection learning always involves a team of associate professors. Learning activities lesson study work patterns form a team of lecturers together that allows adding insight between professors to build better learning performance. Excellence always happens on learning activities lesson study is how the initiators attempted to observe student learning activities. On the activities of the lesson study of the students observed the activity of learning changes the time of lectures, so hopefully there isn't a student who does not note their learning activities during the lecture. Recording or recording learning activities students become accurate data when doing a reflection after completion of the learning activity. The advantage of learning activities lesson study is always the end of learning activities undertaken reflection learning activities completed are followed. Reflections always produce how the following lectures better than today.

The process includes many lecture lecturer teams certainly more profits is going. The assessment will be done more maximum when compared to if the assessment is only done on its own. Basic Physics II as one of the lessons of science urgently needs scientific activity, which in its activities require students to demonstrate the process of physical science. The physical process to do, observed, analyzed and reported. The process of science activities in the Basic Physics is absolutely right if his judgement is done with the performance appraisal, so that the measurement of the results of the study mahasiswa can be more than the maximum, if only performed with an assessment based on the results of the written test. Performance assessment requires that students demonstrate physical phenomena of the concept to be learned. This situation much better if studied physics just by relying on the written test assessment. The assessment of the written test is hard pressed to reveal the science skills that should be possessed by students majoring in physics. The assessment of the written test can also give the impression of a speculative students in answering the question. Based on the results of hypothesis testing demonstrates to students that are learning activities lesson study and given the higher performance assessment results of Basic Physics II learning from students that are learning activities lesson study was given a written test assessment.

7. For Students Who Were Given The Conventional Learning Activities And Higher Performance Assessment of University Students Who Were Given Conventional Learning Activities Given The Assessment of The Written Test.

Classes implementing the beajar activities of the conventional lecture is commonly used in lectures at this time. Basically each lecturer always apply a conventional lecture only if done on its own. Conventional lecture intended lecture was held by a start of the process of planning, implementation to the evaluation process. On the conventional learning activities in the process of implementation also apply various approaches, and learning strategies and learning activities as well as lesson study. Perbedaannya more on lesson study always involves togetherness lecturer from planning till the end, whereas in more conventional peransendiri lecturer, very few team roles Professor. To be optimal the conventional lecture if diikuiti with good judgment, which allows students to learn thoroughly without learning in speculation. To reduce the speculation on how to learn student lecturers should be able to develop a form of assessment that can effectively measure the academic potential of all students.

Performance assessment can be effective for students ' learning results megukur because in the performance assessment of University students are required to know the process of beginning an activity until the end. Therefore the results of research show that the results of the study of Basic Physics II students by implementing performance assessment using conventional lower compared to the results of a study of Basic Physics I apply conventional assessment tests are given in writing.

V. CONCLUSIONS

Based on the above discussion it was concluded as follows:

1. The results of the study of Basic Physics II Group of students being taught learning activities with lesson study was higher than the results of the study of Basic Physics II Group of students taught with the conventional learning activities.
2. The results of the study of Basic Physics II student groups who were given performance rating higher than Basic Physics II study results student groups that were given the assessment of the written test.
3. There is Interaction and learning activities with the activities of the assessment of the results of learning Basic Physics II.
4. The results of the study of Basic Physics II Group of students taught with Lesson study and given the higher performance assessment of the results of Basic Physics II study group of students taught with the conventional learning activities and performance assessment.
5. The results of the study of Basic Physics II. Group of students taught with lesson study and given a written assessment of the results of the study of Basic Physics II Group of students taught with conventional and given a written assessment.
6. The results of the study of Basic Physics II Group of students taught with Lesson study and given the higher performance assessment of the results of Basic Physics II study group of students taught with lesson study and given a written assessment, and
7. The results of the study of Basic Physics II student groups who were given conventional learning activities with the peniaian of performance lower than the results of a study of Basic Physics II student groups who were given conventional learning activities with a written appraisal.

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