

APPLICATION OF GUIDED-NOTE TAKING METHOD WITH HANDOUT IN MATHEMATICS LEARNING FOR GRADE X (TEN) OF SENIOR HIGH SCHOOLSTUDENTS IN SMAN 1 HILIRAN GUMANTI SOLOK

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Abstract: This study aims to see how the application of guided note-taking method with hand out might improve the student's mathematics learning outcome in SMAN 1 Hiliran Gumanti Solok which are under minimum completeness criteria (KKM). This is due to the limited resources of student learning such as books and the internet because SMAN I Hiliran Gumanti was currently established with limited library book collection and located far away from the internet connection could reach. One way that teachers can do to solve this dilemma and increase the positive learning process for the students is by applying a guided note-taking method accompanied by handout. This research is a quasi-experimental research with a randomized control group only design for its research design. The population for this research is all grade ten students in SMAN I Hiliran Gumanti who are divided into three class namely class X.1, X.2, and X.3. The sampling technique is random sampling after applying the normality and the homogeneity test for the three classes and then randomly select two classes as the sample class by drawing numbers. The drawing selects X.3 as the experimental class and X.1 as the control class. The data obtained from the final test of the two classes are processed and then interpreted. The result shows that the average final test score from the experimental class is higher than the control one, which is 69.7 and 60.5 respectively. The student activities during the learning process also observed and then processed with percentage techniques. The conclusion attained is positive activities during the learning process in the experimental class are increased whereas the negative activities decreased. Lastly, the final test data processing obtained by using a t-test. The result is $t\text{-value} > t\text{-table}$ ($1.794 > 1.654$), it shows that the proposed hypothesis is accepted. This means that the application of guided note-taking with handout is successfully rising-up the student's mathematics score in SMAN I Hiliran Gumanti.

Keywords: Mathematic Learning, Guided Note-Taking, Handout.

A. Introduction

The teaching and learning process is the major activity at school to determines the quality of student's output. Therefore, efforts to improve the quality of learning become a significant need. Formal education from elementary to tertiary level is inseparable from mathematics. This shows that mathematics as subjects plays an important role in efforts to improve the quality of human resources as well as human's everyday lives.

In that note, the Indonesian government has endeavored to improve the quality of teaching and learning mathematics at school. These efforts include the development of national curriculum, improvement of teacher competence through training, procurement of books and learning tools, as well as the improvement of facilities and infrastructure. However, the distribution of these facilities and goods in Indonesia is not yet equal. These happened because of Indonesian geographical conditions causing limited access through one place and another. Therefore, the education quality gap

between Indonesian school in the city and the county are quite large, especially in mathematics learning. That is how I interested in researching the mathematics learning condition in Senior High School 1 (SMAN 1) Hiliran Gumanti Solok.

As a newly established school that only running for 5 years (kemdikbud:2012), it has very limited learning means without a good library book collection or internet connection. Consequently, the teacher is the only source of information. From the initial observation, however, the students are unlikely fond to take note no matter how much the teacher encourages them. The students have various reasons such as; the notebook runs out, is left behind or is borrowed by a friend. Although the teacher has tried various methods that stimulate student interest in learning, it is still less effective because students' motivation to learn mathematics is very low. Without books, internet connection, and notes, the students have no way to revisit their study and resulting low mathematics scores on the exam.

One way to answer those mention problems above is the application of a guided note-taking method accompanied by handout. According to Silberman (2006) guided note-taking method can helps the student to listen actively to the teacher's explanation in the class. Furthermore, Silberman divided these methods application into 4 procedures, which are 1) Prepare a note that summarizes the main points in the presentation of the subject matter to be taught. 2) Instead of providing the complete text, leave the blanks inside, and then fill in by the students. 3) Some ways to do this includes; provide several terms and definitions, leave the term or definition blank, clear one or more points and empty keywords in short paragraphs. 4) Distribute worksheets to students. Explain that the teacher's has intentionally left out a few sentence lines to help them listen actively to what the teacher is teaching.

With these four procedures, the students are required to be more active by reading and pairing the subject matter studied and fill in the blanks of the handout. Students can also complete the practice questions contained in it. If the student does not pay attention to the teacher's explanation, they will be constrained in filling out the handout, thereby reducing the point when the hand out is collected at the end of the lesson before returned to them after being assessed by the teacher. Handouts that have been designed for each meeting encouraged the student's critical thinking. Thus, students are expected to be more easily understand the subject matter and ultimately be able to improve their learning outcomes.

B. Research Methods

This research is a quasi-experimental research with a randomized control group only design for its research design. The population for this research is all grade ten students in SMAN I Hiliran Gumanti (93 students) who are divided into three class namely class X.1, X.2, and X.3. The sampling technique is random sampling after applying the normality and the homogeneity test for the three classes and then randomly select two classes as the sample class by drawing numbers. The drawing selects X.3 as the experiment class and X.1 as the control class. Data collection conducted in February 2012.

C. Research Result and Discussion

In this study, learning activities were carried out using the guided note-taking method accompanied by hand out. The method of delivering the material is the same as the expository method, the only difference between the experimental and control class is the use of handouts at the beginning of each lesson. The use of hand out is what

ultimately gives a big influence on the way of learning, understanding of concepts and systematic thinking of students. With some emptied parts of the handout, the student must pay more attention to the teacher's explanation hence, no information could be missed. In doing so, the students' attention is completely focused on the teacher explanation therefore helps the teacher to master the class easily. It was inline with Silberman's statement (2006): "the guided note-taking method can help students to actively listen to the teacher's information in class". The use of handouts in learning can also make the teaching and learning process more structured and systematic because students and teachers are guided by the same learning resources.

Students' ability to understanding the concept of the next lesson can be seen from their efforts in filling out handouts for the next meeting. For students who have books or worksheets from their seniors, or even those who can analyse the contents of the handout themselves can fill out the handout section that is left blank at home. This encourages the student's critical thinking and allows them to develop their analytical power.

Based on research that has been carried out on January 9 to February 2, academic year 2011/2012 in both sample classes, the data obtained from students' mathematics learning outcomes are shown on the table below:

Table 1. Final Test Data Calculation Result

Class	N	\bar{x}	x_{max}	x_{min}	S	S^2	Number of students with score ≥ 60	%
Experimental	27	69.7	100	37	17.56	308.307	17	62.96
Control	28	60.5	98	24	20.15	406.037	14	50

From table 1, it can be seen that the average mathematics learning outcomes of the experimental class students are higher than the control class. The average learning outcomes of the experimental class is 69.7, while the average control class is 60.5. The maximum value in the experimental class is 100 while in the control class only could reach 98. This means that the score obtained in the experimental class is higher than the control class one.

Based on the minimum completeness criteria (KKM) set at SMAN 1 Hikiran Gumanti Solok which is 60 for grade ten in the academic year 2011/2012, we could find the number of students who passed the target. There are 17 students who passed the KKM in the experimental class while only 14 students in the control class, so the percentage of completeness of each class (experiment and control) were 62.96% and 50%, respectively. This means that the mathematics learning outcomes of the experimental class students are better than the control class.

Meanwhile, data on student learning activities are obtained through observation at each meeting. Student activities were recorded by the mathematics teacher at SMAN 1 Hikiran Gumanti Solok. Based on the calculation of the percentage of student activities during 6 meetings are demonstrate as follows:

Table 2. Percentage of Students Activities

Meeting	1	2	3	4	5	6
Number of Students	27	26	26	25	27	27
Students Activity	NoS/ %	NoS/ %	NoS/ %	NoS/ %	NoS/ %	NoS/ %
A1	15/	18/	20/	24/	25/	26/

	55.5	69.2	76.3	96	92.6	96.3
A2	13/ 48.1	17/ 65.4	23/ 88.5	22/ 88	24/ 88.9	20/ 74.1
A3	16/ 59.3	23/ 88.5	18/ 69.2	22/ 81.5	23/ 85.2	23/ 85.2
A4	18/ 66.7	20/ 74.1	19/ 73.1	20/ 80	23/ 85.2	24/ 88.9
A5	4/ 14.8	3/ 11.5	2/ 7.7	1/ 4	1/ 3.7	1/ 3,7
A6	3/ 11.1	2/ 7.63	1/ 3.9	3/ 12	2/ 7.4	1/ 3.7

Description of student activities:

A1: Pay attention to the teacher presenting the material.

A2: Answering questions raised by the teacher.

A3: Respond to other people's answers during the study.

A4: Students engagement while filling the handout and carrying out the assignments.

A5: Students walk or disturb their friends during the study.

A6: Students are silent while studying.

Table. 3 Success Rate Range Percentage Criteria

Criteria	Success Rate	Range Percentage
Very Little	Failed	1-25
Little	Less Successful	26-50
Many	Successful	51-75
Very Many	Very Successful	76-100

According to tables 3 and 4, we can conclude that the positive activities of students during the studying process are gradually increased for every meeting. The first activity, students paying attention to the teacher presenting material (A1), are in the 'successful' category at the first and the second meetings but for the third meeting until the sixth meeting it went up to the 'very successful' category. The students also grow their confidence to answer the teacher's question (A2), which are very few of them did it in the first meeting but then significantly rose in the next meeting forward. Discussion in the classroom was encouraged by the students who respond to their classmate's opinions (A4) through their engagement of using the handout (A5).

Inversely related to positive activities, negative activities of students during the study have decreased. As can be seen in table 2, the student who is taking a walk or disturbing their peers during the learning process (A4) and the students who remain silent for the entire class (A5) are in the 'very few' criteria until the sixth meeting. This means that the application of the guided note-taking method with handout succeeded in stimulating student interest in mathematics learning seen by increasing positive student activity during learning at each meeting while negative activity has decreased.

D. Conclusion

During the learning process, the students carry out various activities. According to Sardiman(2006), the activities that students can do during learning are as follows: 1) Visual activities, for example, reading, paying attention to pictures, giving advice, demonstrations, and experiments. 2) Oral activities such as: stating, formulating, asking or giving advice, issuing opinions, conducting interviews, discussions, and interruptions. 3) Listening activities such as listening to descriptions, conversations, discussions, and speeches. 4) Writing activities such as: writing stories, making

reports, questionnaires and copying. 5) Drawing activities such as drawing pictures, making graphics, maps and diagrams. 6) Motor activities such as: conducting experiments, making construction, and models. 7) Mental activities such as: responding, remembering, solving problems, analysing, seeing relationships and making decisions. 8) Emotional activities such as: putting interest, feeling bored, excited, excited, brave, calm and nervous. Activities are undertaken by the students while studying takes place significantly determine the success or failure of the learning process. The more positive student activities during the study the better the learning process conducted. Based on the observations during the study, the learning process that uses the guided note-taking method accompanied by hand out succeeded in increasing positive student activity, although during answering exercise questions the students became noisy yet it can also indicates the students' enthusiasm attitude in learning mathematics. Increased student enthusiasm in learning is the result of the grades that have given to the students at the end of the study for completing their handout. Giving reinforcement to the handout motivates students to continue to maintain their performance in order to get good grades. The observations also showed, in general, the percentage of positive activities of experimental class students during the learning process always increased at each meeting, at the end of the meeting the level of success of student activities fulfilled the category of success with the criteria of students having a lot of positive activities, while negative activities decreased. These good results however, did not obtain at the first meeting, the students feel surprised because the learning they encounter is not as usual. But after being given an explanation and understanding of the guided note-taking method and the use of the handout the student gradually shows some interest. At the next meeting, the students begin to show a good attitude towards the study because they have given instance benefit from the handout. The handout that they filled can be used as a substitute for their notes and help them to study at home and easily understood the material concepts that all been summarized in the handout. The design of the handout become the most crucial part of this method to obtain the desired learning outcome. Eventually, this method could be used as an alternative to teach mathematics at school especially the school that has limited study sources as well as motivate the students critical and analytical thinking.

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