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The Effect of Implementing the Model Eliciting Activities Learning Model on Improving Mathematics Learning Outcomes of Grade VIII-B Students at SMP Bajiminasa

Pengaruh Penerapan Model Pembelajaran *Eliciting Activities* untuk Meningkatkan Hasi Belajar Matematika Siswa Kelas VIII-B SMP Bajiminasa

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ABSTRACT

This study is classroom action research, which addresses actual problems encountered by teachers in the field. The purpose of this research is to identify and analyze the implementation of th Eliciting Activities learning model among Grade VIII-B students of SMP Bajiminasa. The subjects of this study were 17 students from Class VIII-B of SMP Bajiminasa in the 2023/2024 academic year. The research data were obtained from learning outcome tests and observations conducted during Cycle I and Cycle II. The results showed that: 1) Students' mathematics learning outcomes in Cycle I were in the medium category, with an average score of 64.44, a standard deviation of 11.108, and a median of 64, which did not yet meet the minimum mastery criterion (KKM) of 75; 2) In Cycle II, students' mathematics learning outcomes were in the high category, with an average score of 80.65, a standard deviation of 10.974, and a median of 82, which had met the minimum mastery criterion, with 85% of students scoring above 70 out of an ideal score of 100. The implementation of the Eliciting Activities learning model can improve the mathematics learning outcomes of Grade VIII-B students at SMP Bajiminasa.

Keywords: *Learning outcomes; Eliciting activities learning model; Mathematical Logic; Classroom Action Research; Mathematics Education.*

ABSTRAK

Penelitian ini adalah penelitian tindakan kelas yang merupakan suatu penelitian yang mengangkat masalah actual terhadap oleh guru dilapangan. Penelitian ini bertujuan untuk mengetahui dan menganalisis penerapan model pembelajaran Eliciting Activities pada siswa kelas VIII-B SMP Bajiminasa. Subjek dalam penelitan ini adalah siswa kelas VIII-B SMP Bajiminasa pada tahun ajaran 2021/2022 dengn jumlah siswa sebanyak 17. Data penelitian ini diperoleh melalui hasil tes hasil belajar dan observasi setiap siklus I dan siklus II. Hasil menunjukan bahwa: 1) hasil belajar matematika siswa pada siklus 1 berada pada kategori sedang dengan skor rata-rata 64,44 dengan standar deviasa 11,108 dan median 64 dan belum mencapai kriteria ketuntasan minimal yaitu 75. 2) hasil belajar matematika siklus II berada pada kategori tinggi dengan skor rata-rata 80,65 dengan standar deviasi 109,74 dan median 82 dan sudah mencapai kriteria ketuntasan minimal yaitu secara klasikal 85% yang nilainya >70 dari skor ideal 100. Penerapan model pembelajaran *eliciting activities* dapat meningkatkan hasil belajar matematika siswa kelas VIII-B SMP Bajiminasa.

Kata Kunci: hasil belajar; model pembelajaran Eliciting Activites; logika matematika; Penelitian Tindakan Kelas; Pendidikan Matematika.

INTRODUCTION

Education is a conscious and planned effort to create a learning environment and learning process in which students actively develop their potential to possess spiritual strength, religious values, self-control, personality, intelligence, noble character, and the skills needed for themselves and society. The word "education" is derived from the root word "educate," referring to the process of changing the attitudes and behavior of individuals or groups in an effort to mature human beings through teaching and training

(Elfachmi, 2016:14).

Mathematics is a structured discipline, meaning that to master a particular concept, one must first understand other foundational concepts, commonly referred to as mathematical abilities. In mathematics learning, students' prior mathematical ability plays an important role in mastering new concepts. Therefore, this study also examines the relationship between prior mathematical ability and the improvement of students' mathematical representation skills. Students' prior mathematical ability is categorized into three levels: high, medium, and low. This classification is used to examine in greater detail the effect of learning on the improvement of students' mathematical representation skills within each category (Hanifia, 2015:193).

According to Johnson and Rising (in Isrok'atun et al., 2020:3), mathematics is a pattern of thinking and a way of organizing logical proof. At its core, mathematics is a language that uses carefully defined, clear, and precise terms, represented symbolically, and is more concerned with symbolic representation of ideas than with sound. Model Eliciting Activities (MEA) is a learning approach in which students connect mathematical ideas to real-life situations and then express them in the form of mathematical models. In constructing mathematical models, the developed model does not necessarily have to be a new mathematical concept; rather, it is the result of students' own thinking, which may be new to them. MEA is a learning process aimed at understanding, explaining, and communicating the concepts contained in problem situations through mathematical modeling.

Research conducted by Menita Yasinta Jemimat (2020), titled "Improving Mathematics Learning Outcomes through the Model Eliciting Activities Approach in Grade VIII Students of SD-SMP Negeri Satu Atap Manges," concluded that the implementation of the MEA approach improved mathematics learning outcomes. The results showed that the average mathematics learning outcome in Cycle I was 65.86% with a mastery level of 38.09%. In Cycle II, the average increased to 82.00% with a mastery level of 85.71%. It can therefore be concluded that the application of the MEA approach improves students' mathematics learning outcomes.

Akhamad (2014) concluded that the improvement in students' creative thinking skills using the Model Eliciting Activities (MEA) approach was better than that of students using the scientific approach. The material used in that study was the comparison of two variables. Learning using the MEA approach requires relatively more time in the instructional process. Therefore, this study aims to improve the mathematics learning outcomes of Grade VIII-B students at SMP Bajiminasa by implementing the Model Eliciting Activities learning model.

METHODS

This study employed a Classroom Action Research (CAR) design. The data source in this research was the students of SMP Bajiminasa. The type of data used in this study was qualitative in nature. The data collection procedures were divided into four types: (a) students' learning outcomes data at the end of each cycle; (b) data collected from student observation sheets; (c) data collected from teacher observation sheets; and (d) student response data regarding the implementation of the Model Eliciting Activities approach.

The collected learning outcome data were analyzed both qualitatively and quantitatively. Qualitative data were obtained from observations of student activities and teacher activities during the implementation of each cycle. Quantitative data were analyzed using descriptive statistics, including mean, median, mode, standard deviation, variance, maximum score, and minimum score achieved by students.

Data from teacher activity observations, student activity observations, and student learning outcomes were processed using percentage (%) techniques, namely by dividing the frequency of each activity by the total number of activities and multiplying by 100. The

categories of student learning activity adapted from Supriyanto (2013:120) are as follows:

Table 1. Interpretation of Learning Activities

Percentage of Learning Activities (%)	Category
85-100	Very Good
70-84	Good
55-69	Fair
50-54	Poor
0-49	Very Poor

The indicator of success in this study was determined classically, where at least 85% of Grade VIII-B students achieved a score ≥ 75 from the ideal score, meeting the Minimum Mastery Criteria (KKM) set by SMP Bajiminasa.

RESULTS AND DISCUSSION

1. Learning Outcomes of Cycle I

The mathematics learning outcome data in Cycle I were obtained through an end-of-cycle test in the form of essay questions after the material had been delivered over three meetings (teaching and learning activities). The descriptive analysis of the mathematics learning outcomes of Class VIII-B SMP Bajiminasa in Cycle I after implementing the Model Eliciting Activities approach is presented as follows.

Table 2. Students' Learning Outcome Scores in Cycle I

Statistic	Statistical Value
Subject	17
Ideal Score	100
Mean	64.47
Median	68.00
Mode	68
Std.Deviation	11.108
Variance	123.390
Range	39
Minimum	49
Maximum	88
Sum	1096

Based on Table 2 above, the average mathematics learning score of Class VIII-B SMP Bajiminasa after the implementation of the Model Eliciting Activities in Cycle I shows that 17 students took the test. The maximum score obtained was 88, while the minimum score was 49. The mean score was 64.47 with a standard deviation of 11.108, indicating a considerable deviation from the average. This occurred because more students obtained lower scores than higher scores, resulting in a relatively large gap between individual scores and the mean. The median was 68, meaning that 50% of students scored below 70 and 50% scored above 70. The variance was 123.390, indicating the spread of the data, and the mode was 68, which was the most frequently obtained score.

Table 3. Frequency Distribution and Percentage of Students' Scores in Cycle I

Score Interval	Category	Frequency	Percentage
85-100	Sangat tinggi	1	5,88%
75-84	Tinggi	4	23,52%
55-69	Sedang	8	47,05%

Score Interval	Category	Frequency	Percentage
50-54	Rendah	3	17,64%
00-49	Sangat Rendah	1	5,88%
Jumlah		17	100%

Source: Processed data

Based on the Directorate of Senior High School Development, Directorate General of Primary and Secondary Education (2017:11), Table 3 shows that the mathematics learning outcomes of Class VIII-B SMP Bajiminasa after the implementation of the Model Eliciting Activities in Cycle I were generally in the moderate category.

Table 4. Description of Learning Mastery in Cycle I

Score	Category	Frequency	Percentage (%)
<70	Not Mastered	12	70,58%
75-100	Mastered	5	29,41%
Total		17	100%

Source: Processed data

Based on the mastery percentage, it can be concluded that in Cycle I, the implementation of the Model Eliciting Activities had not yet been successful because it had not reached the predetermined mastery standard of 75% in Class VIII-B SMP Bajiminasa.

2. Students' Learning Outcomes in Cycle II

The mathematics learning outcome data in Cycle II were obtained through an end-of-cycle essay test after the material had been delivered over three meetings. The descriptive analysis of the mathematics learning outcomes of Class VIII-B SMP Bajiminasa after implementing the Model Eliciting Activities in Cycle II is as follows:

Table 5. Statistical Scores of Students' Learning Outcomes in the Final Test of Cycle II

Statistic	Statistical Value
Subject	17
Ideal Score	100
Mean	80,65
Median	82
Std.Deviation	10,746
Variance	109,74
Range	37
Minimum	60
Maximum	97
Sum	1371

Source: Processed data

Based on Table 5, all 17 students participated in the final test of Cycle II. The maximum score obtained was 97, while the minimum score was 60. The score range was 37. The mean score was 80.65 with a standard deviation of 10.746, indicating data variation due to differences between high and low scores. The median was 82, indicating that many students scored above 82. The variance was 109.74, and the mode was 75.

Table 6. Frequency Distribution and Percentage of Students' Scores in Cycle II

Score Interval	Category	Frequency	Percentage
85-100	Very High	8	47,05%

Score Interval	Category	Frequency	Percentage
70-84	High	6	35,29%
55-69	Moderate	3	17,64%
50-54	Low	0	0%
00-49	Very Low	0	0%

Source: Processed data

Table 6 shows that after the implementation of the Model Eliciting Activities in Cycle II, most students achieved high and very high learning outcomes.

Table 7. Frequency Distribution Analysis of Learning Mastery in Cycle II

Score	Criteria	Frequency	Percentage(%)
<70	Mastered	3	17,64%
75-100	Not Mastered	14	82,35%

Based on Table 7, 82.35% (14 students) achieved mastery, while 17.64% (3 students) did not achieve mastery. Therefore, in Cycle II, the implementation of the Model Eliciting Activities can be considered successful because it exceeded the classical mastery criterion of 75%.

a. Cycle I

In Cycle I, 12 out of 17 students were categorized as not achieving mastery (<75), while 5 students achieved mastery (75–100). The average score was 68.47. However, the classical mastery criterion of 85% had not yet been achieved. Students showed low motivation, limited questioning behavior, and minimal collaboration during learning activities, which became a reflection point for improvement in Cycle II.

b. Cycle II

In Cycle II, only 3 students did not achieve mastery (<70), while 14 students achieved mastery (85–100). The average score increased to 80.65 and was categorized as very high (82.35%). Mastery of the topic of Systems of Linear Equations in Two Variables (SPLDV) reached 82.35%, exceeding the KKM requirement.

The improvement in average scores from Cycle I to Cycle II, along with positive changes in student attitudes and participation, indicates that the implementation of the Model Eliciting Activities successfully enhanced students' mathematics learning outcomes. Students became more motivated, active in asking questions, and better prepared during mathematics lessons.

Thus, the implementation of the Model Eliciting Activities improved mathematics learning outcomes in the topic of mathematical logic for Class VIII-B students of SMP Bajiminasa, accompanied by positive changes in the learning process and student engagement.

CONCLUSION

Based on the results of this classroom action research, it can be concluded that improving mathematics learning outcomes through the implementation of the Model Eliciting Activities learning model was able to enhance the mathematics achievement of Class VIII-B students at SMP Bajiminasa on the topic of mathematical logic. This is indicated by the results in Cycle I, where the average mathematics learning score was 64.47 with a standard deviation of 11.108 and a median of 64, showing that 50% of students scored above 64.47 and 50% scored below 64. In Cycle II, the average mathematics learning score increased to 80.65 with a median of 82, indicating that 50% of students scored above 82 and 50% scored below 82.

Based on the findings obtained in this study, the following suggestions are proposed:

(1) Mathematics teachers are encouraged to implement the Model Eliciting Activities learning model in order to further improve students' mathematics learning outcomes; (2) Future researchers are encouraged to further develop this research so that students can more easily follow the learning process, better understand the material being taught, and become more active in asking questions, thereby achieving even greater improvement in learning outcomes.

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