



Application of Mathematics Learning Methods to Students of SMP N 11 Bengkulu

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Abstract

Mathematics is a clear and precise language, quantitative in character, and a method of logical thinking. It significantly impacts the advancement of all branches of science. This study aims to ascertain the instructional strategies used by teachers of Public Junior Hgh School (SMP N) 11 Bengkulu. A descriptive case study was chosen as the research methodology. The participants in this study were three math teachers from SMPN 11 Bengkulu who taught various classes using various teaching resources. Analysis of data using qualitative or non-statistical methods. The lecture and question-and-answer formats were employed to introduce the lesson in light of the findings of the field observations. During the core activities, the question-and-answer, the assignment, the lecture, the discussion, and the demonstration approach are all used. At the end of the lesson, the math teacher employs the lecture technique, question-and-answer method, and assignment method. The assignment and question-and-answer methods are the techniques the teacher uses while evaluating student learning. The technique used in the class results in an average mark that satisfies the academic completeness criteria.

Keywords: Mathematics, Learning method, SMPN 11 Bengkulu

1. Introduction

The teaching goals for mathematics, studied in junior high schools and MTs, are referred to as mathematics curricular goals. The goal of studying mathematics in Junior High School (SMP) and MTs is to understand how to use it to understand natural phenomena, how to use it to inform decisions, how important it is as a science to the development of national culture, how to use it in the workplace, and how to use it to communicate ideas accurately, precisely, and clearly to others (Turner et al., 2011; Abdillah et al., 2022). The capacity of teachers and students is the most important factor affecting the acquisition of student learning outcomes. The main cause of poor student learning outcomes is frequently student-related (Lerman, 1989). Furthermore, it is believed that poor student learning outcomes linked to poor student performance are typical, although instructor characteristics also have a significant impact on the standard of students' learning processes and outcomes. The quality of the procedure and the student's learning outcomes can be greatly improved. This demonstrates that the teacher can have an impact on the effectiveness of student learning outcomes; in other words, the best learning outcomes will be obtained if the instructor has the necessary teaching skills. So that the learning process is not boring, it is essential to have actual activity from a teacher, both the way of teaching that is demonstrated by the existence of numerous approaches.

The teaching strategy is how the instructor builds rapport with pupils while imparting knowledge. In contrast, the approach, in the opinion of Saito et al. (2007) is an extrinsic motivation that serves as an external stimulation that might stimulate learning. The learning technique is a method or strategy used by a teacher so that the learning process occurs in pupils in order to attain goals, according to the concept of the learning method presented above.

According to Permendiknas Number 41 of 2007 concerning Process Standards, it is noted that teachers employ various teaching strategies to foster a learning environment and learning process whereby students can acquire fundamental skills or a set of preset indicators. The choice of learning strategies is tailored to the circumstances and needs of the students as well as the features of each indication and the competency required for each subject.

According to the Madrasah Tsanawiyah curriculum from 2004, the general goals of teaching mathematics in SMP and MTs are as follows (Trigwell & Prosser, 1991; Hamalik, 2014):

- 1) Exercising several methods of reasoning and thinking when obtaining conclusions, such as through study, discovery, and experimentation, showing parallels and differences, consistency, and inconsistency.
- 2) Foster diverse, original thinking, and curiosity creating predictions and conjectures, and testing in order to develop creative activities that require creativity, intuition, and discovery.
- 3) Improve your ability to solve problems
- 4) Gaining the capacity to explain concepts or convey information through spoken communication, written notes, graphs, maps, and diagrams.

Students' ability to employ their skills in mathematical activities is the specific goal of mathematics instruction in SMP and MTs. As a prerequisite for secondary education, in order to have mathematical abilities that go beyond those learned in elementary school and may be applied in daily life. Along with having a clear perspective, and a rational, critical, meticulous, creative, and diligent mindset, it's also a plus to like math-related activities. The importance of mastering mathematics can therefore not be overstated.

Given the justification and information provided, the author is curious to understand how junior high school teachers apply their teaching strategies. In this instance, the author wants to expose the teaching strategies used by math instructors at SMPN 11 Bengkulu.

2. Materials and Methods

2.1. Materials

This study used a descriptive research methodology. A case study was the type of research used in this study. Three math instructors from SMPN 11 Bengkulu who taught various classes using specific instructional materials served as the study's subjects. Teacher I (code AR) teaches in class VII A; Teacher II (code WN) teaches in class VIII B; and Teacher III (code FN) teaches in class IX A. These are the facts pertaining to the subject of this study. The goal of this study is to apply mathematical learning strategies to the instruction of particular instructional materials.

2.2. Methods

In this study, there are two different types of data collection methods, specifically direct observation methods. Field observations are used to carry out direct observation procedures. The processes used in this study were divided into three stages: 1) preparation, 2) implementation and 3) data analysis and reporting (Kuhlthau et al., 2015).

2.2.1. Preparation phase

The preparatory stage involved the following steps: (1) conducting pre-research in the form of interviews to gather information on the math teachers at SMPN 11 Bengkulu; (2) creating research instruments in the form of research method observation sheets; (3) validating the research instruments through lecturers and teachers themselves; and (4) revising research instruments based on validation results.

2.2.2. Implementation stage

Giving observation sheets to observers in a class is one of the actions conducted during the implementation stage. The mathematics instructor use teaching techniques in front of the class.

2.2.3. Data Analysis and Reporting Stage

The following steps were taken during the data analysis and reporting stages: (1) gathering data via an observation sheet filled out by the observer; (2) gathering all student scores obtained during learning; (3) analyzing the results of the observation sheet; (4) analyzing student scores; and (5) compiling a research report.

3. Results and Discussion

This study focused on three teachers at SMPN 11 Bengkulu. The use of mathematics learning methodologies in the instruction of specific teaching materials was observed through direct observation techniques. The findings of a study on three math teachers who educate have led to the collection of data in the form of learning techniques utilizing observation sheets with a list of 15 indications of teacher activity when instructing students.

Table 1: Results of observations regarding the application of mathematics learning techniques

No	Indicator	Method	Description
Opening Learning Activities			
1	Describe the learning goals or fundamental skills that need to be acquired.	Explanation	All teachers apply
2	Delivering the material's scope and providing an explanation of each activity's description in accordance with the syllabus.	Explanation Question and answer	All teachers apply
Core Learning Activities			
3	Include students in search of comprehensive and in-depth knowledge about the subjects or themes of the course material.	Question and answer Assignment	Teacher I apply
4	Utilizing a range of media, learning materials, and teaching methods	There isn't any	Teacher II apply
5	Assisting students by assigning them tasks, leading debates, and other activities both verbally and in writing	Assignment	All teachers apply
6	Allows one to act fearlessly and think, analyze, and solve problems.	Question and answer	All teachers apply
7	Encouraging children to learn cooperatively and collaboratively	Discussion	Teacher I, and III apply
8	Encouraging healthy competition among pupils to boost academic performance	Question and answer Discussion	All teachers apply
9	Enabling students to participate in competitions, festivals, and exhibitions and to display their works	There isn't any	All teachers apply
10	Give students success-related praise and encouragement in the form of verbal, written, physical, and monetary rewards.	Discussion Explanation	Teacher I and Teacher II apply
11	Assisting students in their reflection on their learning experience	Discussion Explanation Question and answer	Teacher II apply
12	Assisting students in acquiring fundamental skills and relevant experience	There isn't any	All teachers apply
Closing Learning Activities			
13	Make summary judgments with pupils or by yourself.	Question and answer	All teachers apply
14	Performing evaluations or comments on consistently carried out and planned	There isn't any	All teachers apply

	actions	Explanation	
15	At the following meeting, provide feedback and make follow-up plans.		All teachers apply

According to Table 1, teacher I's data contained three indications, teacher II's data had three indicators, and teacher III's data contained one indicator. Then use 10 indicators across all teachers. The techniques employed are clarification, dialogue, and question-and-answer sessions. These findings also conclude that explanation and question-and-answer exchanges are the most often used techniques. Then, students took a number of tests, and several of them resulted in very high grades for the participants. Therefore, it can be concluded that the teaching strategy adopted with SMPN 11 Bengkulu pupils is effective.

4. Conclusion

The mathematics teacher at SMPN 11 Bengkulu utilized the lecture technique and the question-and-answer method to introduce the lesson, according to the findings of field observations on the application of learning methods she carried out while delivering learning material. The mathematics teacher uses the question-and-answer approach, the assignment method, the lecture method, and the discussion method while starting the fundamental activities. At the end of the lesson, the math teacher uses a combination of lecture, question-and-answer sessions, and homework assignments. The assignment technique and the question-and-answer method are the ways the teacher uses to assess learning during the classroom learning process. According to the outcomes of the class average value in the evaluation that passed the SKBM, the method used in the class creates an average class value that satisfies the completeness criteria.

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