

GEOMETRIC COMMUNICATION SKILLS PROFILE OF MTS STUDENTS IN CONTENT LINES AND ANGLES

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Abstract

Learning math is a social activity (social activity). As mathematics itself, inseparable from mathematics learning social activities. Unfortunately, traditional learning forget the social nature of learning in mathematics. Mathematical communication is an important component in learning mathematics, tool to exchange ideas, and to clarify the understanding of mathematics. The importance of communication skills in mathematics because mathematics is essentially a language filled with notations and terminology so that the concepts that form can be understood by students if it has mathematical communication skills, but the ability of mathematical communication is often overlooked. Communication is part of the geometric mathematical communication skills. Geometric communication plays an important role in improving the understanding not only related to the topic of geometry alone. This paper describe how geometric communication ability MTs students. The test results are given indicates 5% have excellent geometric communication skills, 18% good, 42% medium, 25% less and 10% are very less. From the answers given students' communication skills geometric limitations shown by the students answered questions tend to be brief, without the process of how to get it. For better results the authors suggest teachers should apply the model of student-centered learning, so that students can be actively involved in learning and provide opportunities for students to communicate his ideas.

1. Introduction

Mathematics learning is a social activity (social activity). As mathematics itself, inseparable from mathematics learning social activities. Unfortunately, traditional learning to forget the social nature of learning mathematics that interfere with students' mathematical development. Interaction between students, as well as teacher communication with students, is important as a way to maintain the potential of mathematics students. Thus, communication plays an important role in mathematics as the students' social activities in the community. Mathematical communication is an important component in learning mathematics, tool to exchange ideas, and to clarify the understanding

of mathematics. According Qohar (2011) mathematics is the language of symbols in which every person who studied mathematics requires the ability to communicate using the language of symbols. The importance of communication skills in mathematics because mathematics is essentially a language filled with notations and terminology so that the concepts that form can be understood by students if it has the ability mathematical communication. But unfortunately, communication ability is often overlooked.

In addition, according Asikin (Yonandi, 2010) the importance of ownership of communications capabilities mathematically that help sharpen the way students think, as a tool to assess student understanding, helped temper the students organize knowledge of mathematics them, helping students build their knowledge of math, enhance the problem solving mathematical, advancing pelearannya, building self capabilities, improve social skills, as well as useful in establishing the mathematical community.

Silverman and Thompson (Clarke, 2012) also suggests that students' participation in communication or conversations about their math activity (including reasoning, interpretation, interpret) is essential for developing mathematical understanding interconnected.

Activities including communication mathematically according Sumarmo (2006) are: declare a situation, drawings, diagrams or real objects into the language, symbols, ideas, or mathematical models, explain ideas, situations and relationships mathematics verbally and in writing, listening, discussing and writing about math, reading with understanding a mathematical representation, estimate conjecture, make the argument, a definition, and generalizations, and revisits a mathematical description in their own language.

According to the NCTM (1989) provides communication skills in math as:

1. The ability to interpret mathematical ideas through speech, writing, and is able to demonstrate and illustrate visually;

2. The ability to understand, interpret, and evaluate mathematical ideas through oral, written or other visual form;
3. Ability to use the term, mathematical notation, and its structures to present ideas, describe relationships, as well as models of the situation.

The phenomenon suggests that in the implementation of daily mathematics instruction, teachers are still rarely provide opportunities for students to communicate his ideas. The results of observation the author in some schools show that learning mathematics is generally less activity involves students optimally so that students are less actively involved in learning. Besides, most of the students looked closely following any explanation or information from teachers, students rarely ask questions so engrossed in his own teacher explains the material.

Geometry is a branch of mathematics that has been taught since elementary school level. Learning geometry helps students develop logical skills (Nur'aini, 2012). In addition, through learning geometry also help students to understand the other content of the math, help develop problem-solving abilities. There are many mathematical concepts and procedures that can be explained by geometric representations. Learning geometry tends to abstract one of the issues that makes the material more severe geometry. Geometric communication is one part of mathematical communication. Geometric communication skills is the ability of students to communicate the results of his thinking both orally and in writing on the topic of geometry. Indicators geometric communications capabilities in this study consisted of:

1. Using a mathematical language to express the concept of lines and angles through pictures or objects of the concept is clear.
2. Explaining ideas, situations, and relationships math orally or in writing about real objects or pictures associated lines and angles.
3. Listen, discuss, and write about the topic of lines and angles.

4. Read the presentation of mathematical writing and compiling the relevant questions.

5. Make a summary of the lines and corners with its own language.

In this paper we describe how geometric communication skills of MTs students in Palembang on material lines and angles.

2. Method

This study is a qualitative descriptive, aimed to describe how students' geometric communication skills of MTs Students in Palembang on the material lines and angles. Data obtained through tests and interviews, and observations during the learning process. Interviews with students performed to obtain clearer data so that researchers can find out how students' geometric communication skills.

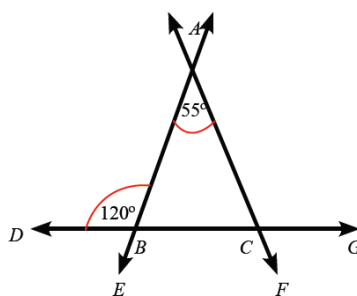
3. Result and Discussion

Of the indicators measured geometric communication skills by researchers, the test focused on the indicators 1 and 2 while the indicator 3.4 and 5 measured during the learning process takes place through observation.

Problems example

Indicators: Explaining ideas, situations, and mathematical relationships in writing about real objects or pictures associated lines and angles.

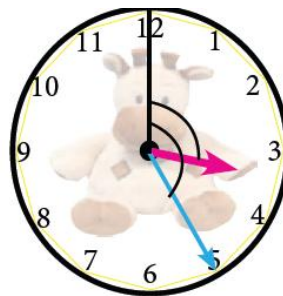
Consider the following picture



Give a reason why the sum of angles BAC and ACB equals with angle ABD.

Indicators: Using mathematical language to express the concept of lines and angles through pictures or objects of the concept is clearly

How to calculate the angle formed between the hour hand and the minute hand on a clock image below and how much?



From the test results and observations obtained 4 students have excellent communication skills geometric, 13 students categorized well, 30 students were categorized, 18 were categorized less and 7 were categorized very less. These results are summarized in the following table the results as

| Many students | Frequent (%) | Categorize |
|---------------|--------------|------------|
| 4 | 5 | Very good |
| 13 | 18 | Good |
| 30 | 42 | Medium |
| 18 | 25 | Less |
| 7 | 10 | Very less |

From the analysis of the authors of the test results, interviews and observations, geometric communication skills of students characterized by the lack of delivery of ideas in the form of concepts of self-esteem, so communication is going to be limited. Limitations of mathematical communication skills are also shown in the material geometry. Students didn't give reason or description in answering the questions, the students' answers tend to be brief, without the process how to get it, and in answer to oral questions, the answers tend to be what their students. Besides learning that takes place during this time gives less opportunity for students to express their ideas in solving the problem. According to the study authors should be done to accommodate the development of communication skills for students in mathematical communication implement reflection, discussion, and revision of math understanding. When students are challenged to think and reason about a mathematical idea, it will communicate the idea to others in writing or orally. In addition, other students will have an opportunity to build knowledge and motivated to think more sharply.

4. Conclusion and Discussion

From the research that has been conducted concluded that limited communication skills geometrical them are shown students to answer the questions tend to be brief, without the process of how to get it during the learning process of students tend to be silent almost no one ask the question, if given the questions with multiple strategies students tend to use the same way as exemplified by the teacher, with said judgments do not give new ideas. For better results the authors suggest teachers should apply the model of student-centered learning, so that students can be actively involved in learning and provide opportunities for students to communicate his ideas.

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