

Efi Wulandari
12422001

Dosen Pembimbing:

- I. Fatimatul Khikmiyah, S.Pd., M.Sc
- II. Nur Fauziyah, M.Pd

**REPRESENTASI MATEMATIS SISWA DALAM MENYELESAIKAN
MASALAH MATERI LINGKARAN DITINJAU DARI TINGKAT
KEMAMPUAN MATEMATIKA SISWA KELAS VIII SMP
MUHAMMADIYAH 7 CERME**

ABSTRAK

Representasi termasuk dalam salah satu dari lima kemampuan standar yang ditetapkan oleh NCTM (2000) yaitu : kemampuan pemecahan masalah, kemampuan penalaran, kemampuan berkomunikasi, kemampuan membuat koneksi, dan kemampuan representasi. Representasi adalah bentuk interpretasi pemikiran siswa terhadap suatu masalah, yang digunakan sebagai alat bantu untuk menemukan solusi dari masalah tersebut. Sedangkan kemampuan matematika adalah kemampuan yang dibutuhkan untuk melakukan berbagai aktifitas mental, berpikir, menelaah, memecahkan masalah siswa dalam menyelesaikan soal-soal matematika. Kemampuan matematis siswa berbeda-beda, ada siswa yang memiliki kemampuan matematika tinggi, sedang dan rendah. Beberapa penelitian terdahulu menyebutkan bahwa ada keterkaitan antara representasi matematis dengan kemampuan matematika siswa.

Penelitian ini adalah penelitian deskriptif kuantitatif yang bertujuan untuk mendeskripsikan representasi matematis siswa berkemampuan matematika tinggi, sedang, dan rendah dalam menyelesaikan masalah matematika materi lingkaran kelas VIII SMP Muhammadiyah 7 Cerme. Subjek penelitian ini adalah siswa SMP Muhammadiyah 7 Cerme kelas VIIIC tahun ajaran 2015-2016. Subjek dipilih dengan memberikan tes kemampuan matematika. Dari tes tersebut diperoleh siswa berkemampuan matematika tinggi dengan kriteria nilai $75 \leq \text{skor} < 100$, siswa berkemampuan matematika sedang dengan kriteria nilai $65 \leq \text{skor} < 75$, dan siswa berkemampuan matematika rendah dengan kriteria nilai $0 \leq \text{skor} < 65$. Setelah itu subjek diberi soal tes representasi. Metode pengumpulan data yang digunakan adalah berupa tes tulis. Sedangkan instrumen yang digunakan adalah tes kemampuan matematika dan tes representasi matematis.

Hasil-hasil penelitian yang diperoleh adalah: (1) Dalam penyelesaian masalah matematika materi lingkaran, kelompok siswa berkemampuan matematika tinggi rata-rata representasi verbalnya tergolong *sedang*, representasi visualnya tergolong *sedang*, dan representasi simboliknya tergolong *tinggi*; (2) Dalam menyelesaikan masalah matematika materi lingkaran, kelompok siswa berkemampuan matematika sedang rata-rata representasi verbalnya tergolong *sedang*, representasi visualnya tergolong *rendah*, dan representasi simboliknya tergolong *sedang*; (3) Dalam menyelesaikan masalah matematika materi lingkaran representasi verbalnya *sangat rendah*, representasi visualnya tergolong *sangat rendah*, dan representasi simboliknya tergolong *rendah*.

Kata kunci : representasi , pemecahan masalah, kemampuan matematika

Efi Wulandari

12422001

Advisor:

I. Fatimatul Khikmiyah, S.Pd., M.Sc.

II. Nur Fauziyah, M. Pd.

THE REPRESENTATION MATHEMATICAL OF STUDENT FOR SOLVING THE PROBLEM OF MATERIAL CIRCLE THAT IS SEEN BY THE ABILITY OF MATHEMATICS STUDENT LEVEL CLASS VIII SMP MUHAMMADIYAH 7 CERME

ABSTRACT

Representation is one of standart ability tat has been decided by NCTM (2000), there are: problem solving, reasoning, communication, connection, and representation. Representation is a from interpretation student's idea about a problem. It used to help to find a solution of the matter. Kind of students interpretatioan can be words, verbal, writing, picture list, graph, object concrete, and the symbol of mathematics, etc. Every student has different ways to interpretation their problem. Actually the ability of mathematics is the ability that is needed to do some activities mentality, think, analyze, solving the problem to finish the questions of mathematics. To finish the problem of mathematics is needed an ability, the meaning is the ability of mathematics every student is different, there are students who have the ability of mathematics such as high, medium, and low. Some researches before their mation that their was connection between representation of mathematics with the ability of student.

This research is the research of quantitative descriptive which aims to describe representation mathematics of students who have a high ability, medium, low to finish the of mathematics material circle class VIII SMP Muhammadiyah 7 cerme. The subject of this research is student of SMP Muhammadiyah 7 Cerme class 8 academic year 2015-2015. Subject is chosen by giving a test the ability of mathematics. The test gets the student who has a high ability of mathematics that is 75 □ □ □ □ and who has a medium ability of mathematics that is

□ □ □ □ , and who has a low ability of mathematics that is □ □ □ □ After that the subject will be given the questions of representation test. In this research the method of collecting that been using is written test. The instruments that is used: test of mathematics ability and mathematics representation test.

The result of research are: (1) In solving the problem of material circle, the group of students who have high ability the average their representation verb is medium, the representation of visual is medium, and their symbolic representation is high. (2) In solving the problem mathematics material circle group of stdents who have a medium ability the average their rpresentation of verb is medium, the representation of visual is low, and representation of symbolic is low. (3) In solving the problem mathematics material circle in rpresentation of verb is lower, the representation of visual is lower, the representation of symbolic is low.

Keyword: representation, solving the problem, mathematics ability

