Argumentasi Matematis Siswa SMA dalam Menyelesaikan Masalah Geometri Ruang Dimensi Tiga : Studi Fenomenologi Hermeneutik

SKRIPSI

Diajukan untuk memenuhi sebagian syarat memperoleh gelar
Sarjana Pendidikan Matematika

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ARGUMENTASI MATEMATIS SISWA SMA DALAM MENYELESAIKAN MASALAH GEOMETRI RUANG DIMENSI TIGA : STUDI FENOMENOLOGI HERMENEUTIK

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Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana Pendidikan Matematika pada Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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ABSTRAK

Ega Charisma (1605976). Argumentasi Matematis Siswa SMA dalam Menyelesaikan Masalah Geometri Ruang Dimensi Tiga: Studi Fenomenologi Hermeneutik.

Penelitian ini bertujuan untuk mendeskripsikan argumentasi matematis siswa dalam menyelesaikan masalah geometri ruang dimensi tiga. Penelitian ini menggunakan metode penelitian kualitatif dengan pendekatan fenomenologi hermeneutic yang melibatkan siswa SMA kelas XII sebanyak 12 orang. Argumentasi matematis siswa diidentifikasi melalui soal tes argumentasi matematis dan wawancara mendalam. Sementara materi geometri ruang dimensi tiga yang digunakan pada tes argumentasi matematis yaitu mengenai jarak dalam ruang (antar titik, titik ke garis dan titik ke bidang). Berdasarkan hasil temuan dan pembahasan dalam penelitian ini, terungkap bahwa siswa belum mampu membangun argumentasi matematisnya. Hal ini ditunjukkan dari jawaban tes argumentasi matematis siswa yang belum memuat setidaknya tiga komponen utama yaitu data, warrant dan claim secara eksplisit. Sebagian besar siswa kesulitan membangun argumentasi matematisnya terkait konsep jarak titik ke garis. Pemahaman konsep geometri yang lemah membuat siswa gagal dalam membangun argumentasi matematisnya. Selain itu, bentuk soal non rutin juga menjadi hambatan bagi siswa dalam berargumentasi matematis.

Kata kunci: argumentasi matematis, jarak dalam ruang, penalaran dan pembuktian, pemahaman matematis, siswa SMA.

ABSTRACT

Ega Charisma (1605976). *Senior High School Student's Mathematical Argumentation in Solving Three Dimensional Shape Problem : a hermeneutical phenomenology study.*

This study aim to describe student's mathematical argumentation solving three dimensional shape problem. This study used qualitative research with hermeneutical phenomenology approach involving on twelve 12th grade student in senior high school. Student's mathematical argumentation was identified through mathematical argumentation test and interview with selected participant. The mathematical argumentation focus on distance in three dimensional shape (the distance between two point, a point to a line, and a point to plane). Based on the results and discussion of the research, it was showed that most of the students lack on construct their mathematical argumentation. It was showed on their answer where student's answer do not contain at least three main component (data, warrant and claim). Most of students have trouble in construct their mathematical argumentation related to the concept of distance between a point to a line. Lack of understanding on geometry concept causes students failed to construct their mathematical argumentation. Furthermore, non routine problem also be an obstacle for student to construct a mathematical argumentation.

Keywords: distance in three dimensional shape, high school student, mathematical argumentation, mathematical understanding, reasoning and proof.

DAFTAR ISI

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