ABSTRAK

Singgih Utomo Aji. 171414083. 2017. Analisis Kemampuan Representasi Mateamtis Siswa Kelas XI Desain Pemodelan 3 SMKN 3 Yogyakarta Untuk Materi Persamaan Dan Fungsi Kuadrat Setelah Mengalami Proses Pembelajaran dengan Menggunakan Model Pembelajaran Berbasis Masalah.

Penelitian ini bertujuan untuk (1) mendeskripsikan langkah-langkah dalam merancang dan mengimplementasikan pembelajaran dengan model PBM pada materi Persamaan dan Fungsi Kuadrat (2) mendeskripsikan kemampuan representasi matematis siswa kelas XI Desain Pemodelan 3 SMKN 3 Yogyakarta dalam materi Persamaan dan Fungsi Kuadrat setelah mengalami proses pembelajaran dengan menggunakan model PBM. Subjek dari penelitian ini adalah 32 siswa kelas XI DP 3 SMKN 3 Yogyakarta. Jenis penelitian yang dipergunakan oleh peneliti adalah deskriptif kualitatif. Dalam penelitian ini, peneliti menggunakan tiga metode untuk mengumpulkan data yaitu tes, wawancara, dan membuat catatan lapangan. Indikator kemampuan representasi matematis yang digunakan dalam penelitian ini adalah indikator yang dirumuskan oleh Mudzakir (dalam Huda Ummul:2019).

Hasil penelitian yang diperoleh sebagai berikut: (1) langkah-langkah pembelajaran yang diterapkan adalah: (a) mengorientasikan siswa kepada masalah, (b) mengorganisasikan siswa untuk belajar, (c) membantu penyelidikan mandiri dan kelompok, (d) mengembangkan, dan mempresentasikan hasil karya serta pameran, (e) menganalisis dan mengevaluasi proses pemecahan masalah; (2) berikut ini adalah hasil kemampuan representasi matematis siswa berdasarkan tes dan wawancara **untuk soal pertama:** (a) dari hasil tes, 100% siswa dan dari hasil wawancara, 100% siswa yang memenuhi indikator ketiga, (b) dari hasil tes, 100% siswa, dan dari hasil wawancara 100% siswa yang memenuhi indikator keempat, (c) dari hasil tes 100% siswa, dan dari hasil wawancara, 20% siswa yang memenuhi indikator kelima, (d) dari hasil tes 100%, dan dari hasil wawancara 100% siswa yang memenuhi indikator kedua, (e) dari hasil tes 100% siswa, dan dari hasil wawancara 20% siswa yang memenuhi indikator keenam, (f) dari hasil tes 100% siswa, dan dari hasil wawancara, 40% siswa yang memenuhi indikator kedelapan.; (3) **untuk soal kedua:** (a) dari hasil tes 84,4% siswa, dan dari hasil wawancara 100% siswa yang memenuhi indikator kelima, (b) dari hasil tes 100% siswa, dan dari hasil wawancara 80% siswa yang memenuhi indikator keenam, (c) dari hasil tes, 100% siswa, dan dari hasil wawancara 40% siswa yang memenuhi indikator ketujuh, (d) baik dari hasil tes maupun wawancara, belum ada siswa yang memenuhi indikator kedelapan; (4) **untuk soal ketiga:** (a) dari hasil tes 100% siswa dan dari hasil wawancara 100% siswa yang mampu memenuhi indikator ketujuh, (b) dari hasil tes 100% siswa dan dari hasil wawancara 100% siswa yang mampu memenuhi indikator kelima, (c) dari hasil tes 100% siswa dan dari hasil wawancara 100% siswa yang mampu memenuhi indikator keenam; (5) **untuk soal keempat:** (a) dari hasil tes, sebanyak 87,5% siswa dan dari hasil wawancara 100% siswa yang memenuhi indikator kesepuluh, (b) dari hasil tes, sebanyak 100% siswa dan dari hasil

wawancara 100% siswa yang memenuhi indikator kesembilan, (c) dari hasil tes 6,2% siswa, dan dari hasil wawancara 40% siswa yang memenuhi indikator keenam, (d) dari hasil tes 100% siswa, dan dari hasil wawancara, 40% siswa yang memenuhi indikator ketujuh, (e) dari hasil tes. 12,5% siswa dan dari hasil wawancara 40% siswa yang memenuhi indikator pertama.

Kata kunci: kemampuan representasi matematis, Pembelajaran Berbasis Masalah, Penelitian Deskriptif Kualitatif, Persamaan dan Fungsi Kuadrat.

ABSTRACT

Singgih Utomo Aji. 171414083. 2017. Analysis of Mathematical Representation Ability Students of Grade XI Design Modelling 3 SMKN 3 Yogyakarta for Equations and Quadratic Functions After Experiencing the Learning Process Using Problem-Based Learning Models.

This research aims were to (1) described the steps in designing and implementing learning with the Problem-Based Learning (PBM) model on the material of Quadratic Equations and Functions (2) described the mathematical representation ability of students in grade XI Design Modelling 3 SMKN 3 Yogyakarta in the material of Quadratic Equations and Functions after experiencing the learning process using the PBM model. The subjects of this study were 32 students of class XI DP 3 of SMKN 3 Yogyakarta. The type of research used by the researcher was descriptive qualitative. In this research, a researcher used three methods to collect data namely a test, an interview, and making field notes. The indicator of mathematical representation ability used in this research was created by Mudzakir's indicator (Huda: 2019).

The results of the research were as follows: (1) the learning steps applied were: (a) orienting students to the problem, (b) organizing students to learn, (c) helping independent and group investigations,(d) developing, and presenting their works and exhibitions, (e) analyzing and evaluating the problem solving process; (2) the following were the results of students' mathematical representation abilities based on tests and interviews **for the first question**: (a) from the test results, 100% students, and from the interviews, 100% students were able to achieve third indicator, (b) from test results 100% students, and from the results of interviews, 100% students were able to achieve fourth indicator, (c) from the test results 100% students, and from the results of interviews 20% students were able to achieve fifth indicator, (d) from test results, 100% and from interviews 100% students were able to achieve second indicator, (e) from test results 100% students and from the results of interviews that 20% students were able to achieve sixth indicator, (f) from the test results, 100% students, and from the interviews, 40% students were able to achieve eighth indicator; (3) **for the second question:** (a) from the test results 84,4% students and from the results of the interviews 100% students were able to achieve fifth indicator, (b) from test results 100% students, and from interviews, 80% students were able to achieve sixth indicator, (c) from test results, 100% students, and from interviews, 40% students were able to achieve seventh indicator, (d) both from test results and interviews, no students have been able to achieve eighth indicator; (4) **for the third question:** (a) from the test results, 100% students and from the results of interviews 100% students were able to achieve seventh indicator, (b) from the test results 100% students and from the interviews, 100% students were able to achieve fifth indicator, (c) from the test results, 100% students, and from the interviews, 100% students were able to achieve sixth indicator; (5) **for the fourth question:** (a) from the test results, as many as 87,5% students and from the results of interviews, 100% students were able to achieve tenth indicator, (b) from the test results, as many as 100% students and from interviews, 100% students

were able to achieve ninth, (c) from test results 6,2% students, and from interviews, 40% students were able to achieve sixth indicator, (d) from the test results, 100% students, and from the results of interviews, 40% students were able to achieve seventh indicator, (e) from the test results 12,5% students and from the results of interviews 40% students were able to achieve first indicator.

Keywords: Mathematical representation ability, Problem-Based Learning, Qualitative Descriptive Research, Quadratic Equations and Functions.