

PENGARUH PENERAPAN MODEL PEMBELAJARAN *PROJECT BASED LEARNING* BERBANTUAN GEOGEBRA TERHADAP KEMAMPUAN BERPIKIR MATEMATIKA TINGKAT TINGGI PADA MATERI FUNGSI EKSPONEN KELAS X SMA NEGERI 1 TABANAN

Oleh

Ni Komang Diva Treesyayanthi Wahada, NIM 1913011055

Program Studi S1 Pendidikan Matematika

ABSTRAK

Penelitian ini diawali dari rendahnya kemampuan berpikir matematika tingkat tinggi siswa ketika menyelesaikan sebuah masalah. Kurangnya kemampuan berpikir matematika tingkat tinggi siswa disebabkan karena belum mampunya menganalisis (C4) suatu masalah, mengevaluasi (C5) dan mengkreasi (C6) materi yang mereka pelajari khususnya materi fungsi eksponensial. Penelitian ini dilakukan guna mencari tahu serta mengamati pengaruh model pembelajaran *Project Based Learning* berbantuan *GeoGebra* terhadap kemampuan berpikir matematika tingkat tinggi siswa. Desain penelitian yang dipergunakan yakni *Post Test Only Control Group Design*. Populasi pada penelitian ini tersusun atas siswa kelas X di SMA Negeri 1 Tabanan sejumlah 190 orang, selanjutnya penetapan jumlah sampel mempergunakan *Cluster Random Sampling* sehingga didapat sampel sejumlah 76 orang siswa. Sesudah data berhasil dikumpulkan, dilaksanakan analisa mempergunakan Uji-T (*Independent t-test*) dengan taraf signifikansi 5%. Berlandaskan pada hasil analisis yang dilaksanakan diperoleh $t_{hitung} = 4,602 > t_{tabel} = 1,66571$. Hasil tersebut mengindikasikan bahwasanya kemampuan berpikir matematika tingkat tinggi siswa menggunakan model pembelajaran *Project Based Learning* berbantuan *GeoGebra* lebih baik dibanding kegiatan belajar konvensional. Maka dari itu model *project based learning* memberi dampak atau pengaruh secara positif terhadap kemampuan berpikir matematika tingkat tinggi siswa kelas X SMA.

Kata Kunci: Berpikir Tingkat Tinggi Siswa, Matematika, *Project Based Learning*

**THE EFFECT OF THE APPLICATION OF PROJECT-BASED LEARNING
MODEL ASSISTED BY GEOGEBRA ON THE ABILITY TO THINK HIGH-
LEVEL MATHEMATICS ON EXPONENT FUNCTION MATERIAL CLASS
X SMA NEGERI 1 TABANAN**

By

Ni Komang Diva Treesyayanthi Wahada, NIM 1913011055

Program Studi S1 Pendidikan Matematika

ABSTRACT

This research is based on the low ability of high school students to think mathematically at a Higher Order Thinking Skills (HOTS) when solving problems, particularly in exponential function topics. This is due to their inability to analyze (C4), evaluate (C5), and create (C6) solutions to problems. The purpose of this study is to determine the effect of Project Based Learning with GeoGebra on the high-level mathematical thinking ability of students. The research design used is Post Test Only Control Group Design. The population of this study consists of 190 students which is distributed into 5 classes in grade X at SMA Negeri 1 Tabanan, and the sample size is 76 students which is distributed into 2 classes is selected using Cluster Random Sampling technique. After collecting the data, an Independent t-test was conducted with a significance level of 5%. Based on the results of the analysis, the t-value obtained is 4.602, which is greater than the t-table value of 1.66571. This indicates that the high-level mathematical thinking ability of students who use Project Based Learning with GeoGebra is better than those who use conventional learning methods. Therefore, Project Based Learning has a positive impact on the high-level mathematical thinking ability of grade X students in Senior High School

Keywords: *Higher Order Thinking Skills, Mathematics, Project Based Learning, GeoGebra*