

ABSTRAK

Henrikus Farel Constan Adhi. 221414035. 2026. Analisis Kemampuan Numerasi Untuk Materi Fungsi Kuadrat Setelah Mengalami Pembelajaran dengan Pendekatan PMR Berbantuan Desmos. Skripsi. Program Studi Pendidikan Matematika. Universitas Sanata Dharma.

Penelitian ini diawali dengan penggalan masalah yang dihadapi oleh siswa untuk materi fungsi kuadrat, dan peneliti menemukan masalah sebagai berikut: (1) siswa kesulitan memodelkan masalah, (2) siswa belum memahami prosedur aljabar untuk menyelesaikan masalah, (3) siswa kesulitan menentukan titik ekstrem dan sumbu simetri fungsi kuadrat, (4) siswa belum mampu membedakan antara persamaan kuadrat dan fungsi kuadrat, (5) siswa salah dalam melakukan perhitungan matematika sederhana, dan (6) siswa belum dapat menganalisis hubungan antar variabel. Penelitian ini bertujuan untuk (1) mendeskripsikan bagaimana merencanakan dan mengimplementasikan proses pembelajaran dengan menggunakan pendekatan Pendidikan Matematika Realistik untuk membelajarkan materi fungsi kuadrat berbantuan Desmos bagi siswa kelas X, dan (2) mendeskripsikan bagaimana kemampuan numerasi siswa kelas X pada materi fungsi kuadrat setelah mengikuti proses pembelajaran dengan pendekatan Pendidikan Matematika Realistik berbantuan Desmos.

Penelitian ini adalah penelitian kualitatif dengan subjeknya adalah siswa kelas X E tahun ajaran 2025/2026 di SMA Stella Duce 2 Yogyakarta. Teknik pengumpulan data yang digunakan adalah catatan lapangan, tes tertulis, dan wawancara. Instrumen yang digunakan adalah lembar catatan lapangan, lembar tes, dan pedoman wawancara. Validasi instrumen dilakukan dengan metode validasi ahli, sedangkan validasi data dilakukan melalui triangulasi teknik. Proses analisa data yang dilakukan adalah mereduksi data, menyajikan data, dan menarik kesimpulan.

Berdasarkan hasil tes tertulis yang dilakukan untuk 27 siswa menunjukkan dapat disimpulkan bahwa kemampuan numerasi siswa yang masih perlu dikembangkan adalah kemampuan siswa dalam mengimplementasikan rencana penyelesaian masalah pada level menalar (*reasoning*). Berdasarkan hasil tes tertulis dan wawancara terhadap lima subjek, ditemukan bahwa kemampuan numerasi siswa yang masih perlu diperkuat adalah kemampuan siswa dalam menuliskan rencana untuk menyelesaikan masalah pada level menalar (*reasoning*).

Kata Kunci: Pendidikan Matematika Realistik, kemampuan numerasi, fungsi kuadrat, Desmos.

ABSTRACT

Henrikus Farel Constan Adhi. 221414035. 2026. *Analysis of Numeracy Skills for Quadratic Function After Experiencing Learning by Using PMR Approach Assisted by Desmos. Thesis. Mathematics Education Study Program. Sanata Dharma University.*

This study began with an exploration of the problems faced by students in learning quadratic functions, and the researcher identified the following issues: (1) students had difficulty modeling problems, (2) students did not understand the algebraic procedures for solving problems, (3) students had difficulty determining the extreme points and axis of symmetry of quadratic functions, (4) students were unable to distinguish between quadratic equations and quadratic functions, (5) students made mistakes in performing simple mathematical calculations, and (6) students were unable to analyze the relationship between variables. This study aims to (1) describe how to plan and implement a learning process using the Realistic Mathematics Education approach to teach quadratic functions using Desmos to 10th grade students, and (2) describe the numeracy skills of 10th grade students in quadratic functions after participating in the learning process using the Realistic Mathematics Education approach with Desmos.

This research is qualitative research with the subjects being 10th grade E students in the 2025/2026 academic year at Stella Duce 2 High School in Yogyakarta. The data collection techniques used were field notes, written tests, and interviews. The instruments used were field note sheets, test sheets, and interview guidelines. Instrument validation was carried out using the expert validation method, while data validation was carried out through triangulation techniques. The data analysis process carried out was data reduction, data presentation, and drawing conclusions.

Based on the results of the written tests conducted for 27 students, it can be concluded that the numeracy skills of students that still need to be developed are their ability to implement problem-solving plans at the reasoning level. Based on the results of written tests and interviews with five subjects, it was found that the numeracy skills of students that still need to be strengthened are their ability to write down plans to solve problems at the reasoning level.

Keywords: *Realistic Mathematics Education, numeracy skills, quadratic functions, Desmos.*