MENINGKATKAN KEMAMPUAN BERPIKIR MATEMATIKA TINGKAT TINGGI DENGAN PENDEKATAN PENDIDIKAN MATEMATIKA REALISTIK INDONESIA MENGGUNAKAN MEDIA *E-LEARNING* PADA MATERI LIMIT DI KELAS XI SMA MUTIARA BANGSA 2

Aris Budiyanto

Abstrak

Kemampuan berpikir matematika tingkat tinggi merupakan tujuan utama dalam pembelajaran matematika. Selama ini praktik pembelajaran di sekolah yang dilakukan belum memfasilitasi siswa mengembangkan kemampuan tersebut. PMRI (Pendidikan Matematika Realistik Indonesia) merupakan salah satu pendekatan pembelajaran yang berorientasi kepada kemampuan siswa memahami dunia realistik yang dapat dibayangkan dan diintegrasikan dengan kemampu dengan kemampuan pemahaman konsep, penggunaan model matematika progresif, interaktivitas serta memanfaatkan hasil kontribusi siswa diharapkan dapat meningkatkan kemampuan siswa dalam pembelajaran matematika. Penelitian ini bertujuan untuk mengetahui implementasi penerapan PMRI dalam meningkatkan kemampuan berpikir matematika tingkat tinggi siswa kelas XI SMA Mutiara Bangsa 2 Tangerang pada materi Limit Fungsi melalui pembelajaran e-learning. Penelitian ini dikembangkan berdasarkan design research yang mencakup tiga tahap penelitian yaitu *preliminary design, experiment, retrospective analysis.* Subjek penelitian ini terdiri dari enam siswa yang dipilih berdasarkan nilai evaluasi dan keaktifan siswa selama pembelajaran. Penelitian ini dirancang dengan lima kali pertemuan menggunakan enam subjek penelitian. Instrument penelitian yang dianalisa adalah hasil tes *formative* dan *summative* yang berdasarkan pada kemampuan berpikir tingkat tinggi, catatan temuan, angket siswa, dan cross-learning hypothesis. hasil yang diperoleh dari retrospective analysis menunjukan bahwa penerapan PMRI dalam pembelajaran limit fungsi mampu mengembangkan kemampuan berpikir matematika tingkat tinggi siswa kelas XI SMA Mutiara Bangsa 2 Tangerang.

Key words: Design Reseach, High Order Thinking, PMRI, Limit Fungsi, e-learning

Improving High-Level Mathematical Thinking Ability with Indonesian Version of Realistic Mathematics Education Using E-Learning Media on Limit Materials in the Class XI SMA Mutiara Bangsa 2

Aris Budiyanto

Abstract

High-level mathematical thinking skills are the main goal in learning mathematics. So far, the practice of learning in schools has not facilitated students to develop these abilities. PMRI (the Indonesian version of realistic mathematics education) is a learning approach that is oriented towards the students` ability to understand the realistic situations that can be imagined and integrated with the ability to understand concepts, use progressive mathematical models, interactivity and take advantage of student contributions are expected to improve students' abilities in learning mathematics. This study aims to determine the implementation of PMRI approach in improving high-order thinking skills of mathematics in class XI SMA Mutiara Bangsa 2 Tangerang on limit function through e-learning. This research was developed based on a research design that includes three, those are preliminary design, experiment, and retrospective analysis. This study was designed with five meetings using six research subjects. The subjects of this study consisted of six students who were selected based on their evaluation test and their activeness during learning process. The research instruments analyzed were formative and summative test results based on higher-order thinking skills, findings note, student questionnaires, and the hypothetical learning trajectory (HLT). The results obtained from the retrospective analysis show that the implementation of PMRI in learning and instruction of limit function is able to develop higher-order thinking skills of class XI students of SMA Mutiara Bangsa 2 Tangerang.

Key Words: Design Research, High-Order Thinking, PMRI, Limit, E-Learning