

ABSTRAK

Mirayani, Putu. 2023. Pengembangan Multimedia Pembelajaran Interaktif Berbasis Masalah Materi Sistem Persamaan Linear Tiga Variabel Untuk Meningkatkan Kemampuan Pemecahan Masalah Siswa Kelas X. Tesis, Pendidikan Matematika, Program Pascasarjana, Universitas Pendidikan Ganesha.

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Kata-kata kunci: multimedia pembelajaran interaktif berbasis masalah, kemampuan pemecahan masalah, materi SPLTV

Pembelajaran matematika sangat penting dipelajari untuk meningkatkan kemampuan pemecahan masalah siswa, terutama dalam memecahkan permasalahan yang berkaitan dengan kehidupan sehari-hari siswa. Penelitian ini bertujuan untuk memperoleh karakteristik multimedia pembelajaran interaktif berbasis masalah materi SPLTV untuk meningkatkan kemampuan pemecahan masalah siswa kelas X yang valid, praktis, dan efektif. Pengembangan multimedia interaktif dengan model Plomp dengan tahapan-tahapan: (1) *Preliminary Research* (Studi Awal), (2) *Prototyping* (Prototipe), (3) *Assesment* (Penilaian). Instrumen penelitian menggunakan angket dan tes kemampuan pemecahan masalah siswa. Penelitian dilaksanakan di SMA Negeri 7 Denpasar. Validitas multimedia di validasi oleh 2 ahli materi dan 1 ahli media dengan rata-rata hasil validasi berturut-turut adalah 0,89% dan 0,86% memenuhi kriteria valid. Kepraktisan dievaluasi dengan memberikan angket respon siswa dan guru. Hasil uji kepraktisan multimedia menunjukkan rata-rata angket respon siswa dan angket respon guru berturut-turut sebesar 0,88 dan 0,86 berada pada kriteria sangat baik. Efektivitas dievaluasi dengan memberikan angket *Triple-E Framework* pada guru dan tes kemampuan pemecahan masalah pada siswa. Hasil angket *Triple-E Framework* menunjukkan terdapat pengaruh yang tinggi antara tujuan pembelajaran dan multimedia pembelajaran untuk meningkatkan kemampuan pemecahan masalah siswa pada materi SPLTV. Serta nilai rata-rata tes kemampuan pemecahan masalah siswa sebesar 84,03% dengan klasifikasi baik, secara garis besar siswa mampu menyelesaikan permasalahan yang diberikan sehingga mampu meningkatkan kemampuan pemecahan masalah siswa. Karakteristik pembelajaran multimedia materi SPLTV bersifat interaktif dan erat kaitannya dengan kehidupan sehari-hari siswa yang dapat meningkatkan kemampuan pemecahan masalah siswa. Dengan demikian, disimpulkan bahwa karakteristik multimedia pembelajaran interaktif berbasis masalah materi SPLTV untuk meningkatkan kemampuan pemecahan masalah siswa kelas X memenuhi aspek valid, praktis, dan efektif.

ABSTRACT

Mirayani, Putu. 2023. Development of Problem-Based Interactive Learning Multimedia Material of Three-Variable Linear Equation System to Improve Problem-Solving Ability of 10 Grade Students. Thesis, Mathematics Education, Magister Program, University of Ganesha Education.

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Key words: problem-based interactive learning multimedia material, students' problem-solving ability, SLETV material

Learning mathematics is very important to learn to improve students' problem solving abilities, especially in solving problems related to students' daily lives. This study aims to obtain the characteristics of interactive learning multimedia tools based on System of Linear Equations with Three Variables (SLETV) material problems to elevate the problem-solving skills of 10th grade students valid, practical, and effective aspects. The validity, practicality, and effectiveness of the interactive learning multimedia tools are based on the valuator's viewpoint, the teacher's questionnaires record, the student's questionnaires record, and SLETV problem-solving test proficiency. The development of interactive learning multimedia with the Plomp model was divided into (1) Preliminary Research (Initial Study), (2) Prototyping (Prototype), and (3) Assessment (Evaluation). The research was conducted on the 10th grade students of SMA Negeri 7 Denpasar. The research instrument uses a questionnaire and tests students' problem-solving abilities. The research was conducted at SMA Negeri 7 Denpasar. The validity of multimedia was validated by 2 material experts and 1 media expert with an average validation result of 0.89% and 0.86% respectively met the validity requirements. Practicality was evaluated by providing student and teacher responses. The results of the multimedia practicality test showed that the average student response questionnaire and teacher response questionnaire were 0.88 and 0.86 which fulfilled outstanding criteria. The results of the interactive learning multimedia practicality test were assessed by giving the teacher a Triple-E Framework rubric and conducting a problem-solving proficiency test on SLETV material. the results of the Triple-E Framework rubric showed that there was a significant correlation between learning objectives and learning multimedia to enhance students' problem-solving skills in SLETV material. The average score of the students' problem-solving proficiency tests was 84,03% with a good rate, in general, students were capable to unravel the problems given so that students problem-solving proficiency was enhanced. The characteristics of SLETV multimedia learning materials are interactive and closely related to students' daily lives which can improve students' problem-solving abilities. As a final observation, it was concluded that the characteristics of problem-based interactive learning multimedia tool for SLETV material enhance the problem-solving skills of 10th grade students accomplished valid, practical, and effective aspects.