

ABSTRAK

Yohanes Agung Setiawan, 2023. Pengembangan Media Pembelajaran Berbasis *Desmos* Untuk Memfasilitasi Pemahaman Konsep Dan Keaktifan Belajar Peserta Didik dalam Materi Hubungan Antar Sudut Kelas VII SMP PEMUDA, Lampung. Program Studi Pendidikan Matematika, Jurusan Pendidikan Matematika dan Ilmu Pengetahuan Alam, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Sanata Dharma.

Tujuan dari dilakukannya penelitian ini adalah 1) mendeskripsikan proses pengembangan media pembelajaran berbasis *Desmos* yang dapat memfasilitasi pemahaman konsep dan keaktifan belajar peserta didik materi hubungan antar sudut kelas VII SMP PEMUDA Lampung dan 2) mendeskripsikan kualitas media yang dihasilkan.

Metode yang digunakan dalam penelitian ini adalah penelitian pengembangan dengan model ADDIE (*Analyze, Design, Development, Implementation, Evaluation*). Subjek penelitian ini adalah pendidik dan 23 peserta didik kelas VII SMP Pemuda, seorang guru matematika dan dua orang ahli media pembelajaran. Teknik pengumpulan data adalah wawancara, validasi media pembelajaran yang dikembangkan, penyebaran angket keaktifan belajar dan respon peserta didik, dan tes pemahaman konsep. Hasil pengambilan data wawancara dan komentar, kritik, saran pada pertanyaan terbuka validasi, angket keaktifan belajar, dan angket respon peserta didik dianalisis dengan reduksi data, penyajian data, dan verifikasi data. Pernyataan tertutup pada lembar validasi dan angket diukur dengan skala Likert dan dianalisis dengan persentase skor. Tes pemahaman konsep dianalisis dengan kriteria pedoman penilaian tes.

Terdapat dua hasil penelitian. Pertama, proses pengembangan media pembelajaran menggunakan model ADDIE, tahap analisis diperoleh masalah yang dihadapi peserta didik terkait pemahaman konsep khususnya materi hubungan antar sudut dan keaktifan belajar sehingga dibutuhkan media pembelajaran untuk mengatasinya, selain itu juga terdapat sarana seperti laboratorium komputer, wifi, dll yang dapat mendukung pembelajaran. Tahap desain, merancang media pembelajaran menjadi 3 pertemuan dan mendesain dengan fitur-fitur pada *desmos* meliputi fitur geometri, teks, pilihan ganda, dll. Tahap pengembangan, membuat media pembelajaran *Desmos Classroom Activities* dan melakukan validasi kepada ahli. Tahap implementasi, uji coba media pembelajaran kepada 23 peserta didik SMP PEMUDA. Tahap evaluasi, dari tes dan angket keaktifan belajar diperoleh media pembelajaran mampu memfasilitasi pemahaman konsep dan keaktifan belajar. Kedua, kualitas media pembelajaran yang telah memenuhi kriteria kevalidan, kepraktisan, dan keefektifan. Validasi oleh para ahli memperoleh rata-rata 3,56 dari 4 yang masuk kedalam kategori sangat baik. Kepraktisan media diperoleh dari angket repon yang mendapat rata-rata 3,18 dari 5 yang masuk kategori baik. Media pembelajaran juga dinilai efektif dapat memfasilitasi pemahaman konsep dan keaktifan belajar melalui angket dan tes pemahaman konsep yang memperoleh nilai rata-rata 80,9 yang masuk dalam kategori tinggi dan ada sebanyak 21 dari 23 peserta didik yang mampu lulus diatas KKM. Pada angket keaktifan belajar diperoleh hasil bahwa 18 peserta didik masuk dalam kategori keaktifan belajar sangat baik dan 5 peserta didik yang masuk dalam kategori baik. Hal ini menunjukkan bahwa media pembelajaran yang dikembangkan dapat memfasilitasi pemahaman konsep dan keaktifan belajar peserta didik pada pembelajaran matematika materi hubungan antar sudut.

Kata Kunci: media pembelajaran, pemahaman konsep, keaktifan belajar, penelitian dan pengembangan, *desmos*, hubungan antar sudut.

ABSTRACT

Yohanes Agung Setiawan, 2023. Development of Desmos-Based Learning Media to Facilitate Conceptual Understanding and Student Learning Activeness in Material Relations Between Angles of Class VII SMP PEMUDA, Lampung. Mathematics Education Study Program, Department of Mathematics and Natural Sciences Education, Faculty of Teacher Training and Education, Sanata Dharma University.

The purposes of this research were 1) to describe the process of developing Desmos-based learning media that could facilitate students' understanding of concepts and active learning about the relationship between grade VII SMP PEMUDA Lampung and 2) to describe the quality of the media produced.

The method used in this research is development research with the ADDIE model (Analyze, Design, Development, Implementation, Evaluation). The subjects of this study were educators and 23 students of class VII SMP Pemuda, a mathematics teacher and two learning media experts. Data collection techniques were interviews, validation of learning media developed, distribution of active learning questionnaires and student responses, and concept understanding tests. The results of collecting interview data and comments, criticisms, suggestions on validation open questions, learning activeness questionnaires, and student response questionnaires were analyzed by data reduction, data presentation, and data verification. Closed statements on validation sheets and questionnaires were measured using a Likert scale and analyzed using a percentage score. The concept understanding test was analyzed using the test assessment guideline criteria.

There are two research results. First, the process of developing learning media using the ADDIE model, the analysis stage obtained problems faced by students related to understanding concepts, especially material relations between angles and learning activities so that learning media was needed to overcome them, besides that there were also facilities such as computer laboratories, wifi, etc. that could support learning. Design stage, designing learning media into 3 meetings and designing with features on desmos including geometry, text, multiple choice features, etc. Development stage, creating Desmos Classroom Activities learning media and validating experts. The implementation phase, testing learning media on 23 Youth Middle School students. Evaluation stage, from tests and questionnaires learning activeness obtained learning media capable of facilitating understanding of concepts and learning activeness. Second, the quality of learning media that has met the criteria of validity, practicality, and effectiveness. Validation by experts obtained an average of 3.56 out of 4 which was included in the very good category. The practicality of the media was obtained from a response questionnaire which received an average of 3.18 out of 5 which was in the good category. Learning media is also considered effective in facilitating conceptual understanding and active learning through questionnaires and concept comprehension tests which obtain an average score of 80.9 which is in the high category and there are as many as 21 out of 23 students who are able to pass above the KKM. In the learning activeness questionnaire, it was found that 18 students were included in the very good active learning category and 5 students were included in the good category. This shows that the learning media developed can facilitate understanding of concepts and active learning of students in learning mathematics about the relationship between angles.

Keywords: *learning media, conceptual understanding, active learning, research and development, desmos, relationships between angles.*