

ABSTRAK

Veronika Jaga Liko.2024. Pengembangan Modul Ajar Materi Lingkaran Untuk Memfasilitasi Kemampuan Representasi Matematis dan Pemecahan Masalah Siswa Kelas VIII di SMPN 6 Yogyakarta. Program Studi Pendidikan Matematika, Jurusan Pendidikan Matematika dan Ilmu Pengetahuan Alam Fakultas Keguruan dan Ilmu Pengetahuan, Universitas Sanata Dharma.

Penelitian ini bertujuan untuk (1) mendeskripsikan proses pengembangan modul ajar materi lingkaran untuk memfasilitasi kemampuan representasi matematis dan kemampuan pemecahan masalah siswa SMPN 6 Yogyakarta; (2) mengetahui kualitas modul ajar pada materi lingkaran untuk memfasilitasi kemampuan representasi matematis dan kemampuan pemecahan masalah siswa.

Penelitian ini merupakan penelitian pengembangan dengan menggunakan model ADDIE (*Analysis, Design, Development, and Evaluation*). Subjek penelitian adalah 32 siswa kelas VIII SMPN 6 Yogyakarta. Teknik pengumpulan data dalam penelitian ini menggunakan observasi pembelajaran, wawancara, tes sumatif, penyebaran angket dan validasi modul. Data yang sudah diperoleh kemudian dianalisis untuk menghitung kevalidan, kepraktisan dan keefektifan modul.

(1) Pada proses pengembangan modul ajar, tahap analisis peneliti memperoleh hasil observasi pembelajaran dan wawancara guru bahwa siswa masih mengalami kesulitan dan rendahnya kemampuan representasi dan pemecahan masalah. Selanjutnya, pada tahap desain peneliti merancang modul menggunakan bantuan aplikasi dan mendesain *cover*, isi modul ajar, LKPD dan bagian penutup. Modul ajar kemudian dikembangkan menjadi sebuah modul ajar yang siap untuk digunakan. Modul ajar disempurnakan dalam tahap pengembangan dan divalidasi oleh dua validator. Sesudah divalidasi, peneliti melanjutkan merevisi hasil validasi kemudian diimplementasikan di sekolah SMPN 6 Yogyakarta. Pada tahap evaluasi, peneliti melakukan analisis kelebihan dan kekurangan modul dan merevisi kembali modul ajar sehingga layak untuk digunakan. (2) Berdasarkan hasil validasi modul ajar mendapat hasil rata-rata dari validator sebesar 84,47% dengan kriteria sangat valid. Selanjutnya, hasil persentase kepraktisan modul ajar yang diperoleh sebesar 82,75% dan hasil persentase keefektifan modul ajar sebesar 89,14%. Pada kemampuan representasi matematis dan pemecahan masalah sebagian siswa sudah menerapkan setiap indikator pada permasalahan yang dikerjakan. Dengan demikian, modul ajar yang dikembangkan dapat dinyatakan efektif memfasilitasi siswa dalam belajar.

Kata kunci: modul ajar, representasi matematis, pemecahan masalah, lingkaran, kualitas pengembangan.

ABSTRACT

Veronika Jaga Liko.2024. Development of Teaching Modules on Circle Material to Facilitate Mathematical Representation Ability and Problem Solving of Class VIII Students at SMPN 6 Yogyakarta. Mathematics Education Study Program, Department of Mathematics and Natural Sciences Education, Faculty of Teacher Training and Science, Sanata Dharma University.

This research aims to (1) describe the process of developing a teaching module for circle material to facilitate the mathematical representation and problem solving abilities of students at SMPN 6 Yogyakarta; (2) knowing the quality of teaching modules on circle material to facilitate students' mathematical representation and problem solving abilities.

This research is development research using the ADDIE (Analysis, Design, Development, and Evaluation) model. The research subjects were 32 class VIII students at SMPN 6 Yogyakarta. Data collection techniques in this research used learning observations, interviews, summative tests, distributing questionnaires and module validation. The data that has been obtained is then analyzed to calculate the validity, practicality and effectiveness of the module.

(1) In the process of developing teaching modules, in the analysis stage, researchers obtained the results of learning observations and teacher interviews that students still experienced difficulties and had low representation and problem-solving abilities. Next, at the design stage the researcher designs the module using the help of the application and designs the cover, contents of the teaching module, LKPD and the closing section. The teaching module is then developed into a teaching module that is ready to be used. The teaching module is refined in the development stage and validated by two validators. After being validated, the researchers continued to revise the validation results and then implemented them at SMPN 6 Yogyakarta. At the evaluation stage, researchers analyzed the advantages and disadvantages of the module and revised the teaching module so that it was suitable for use. (2) Based on the results of the validation of the teaching module, the average result from the validator was 84.47% with very valid criteria. Furthermore, the percentage result of the practicality of the teaching module obtained was 82.75% and the percentage result of the effectiveness of the teaching module was 89.14%. Regarding mathematical representation and problem solving abilities, some students have applied each indicator to the problems they are working on. Thus, the teaching module developed can be declared effective in facilitating students in learning.

Keywords: *teaching module, mathematical representation, problem solving, circle, development quality.*