

PENGEMBANGAN GAME EDUKASI UNTUK MENINGKATKAN MINAT BELAJAR SISWA PADA MATERI TRANSFORMASI GEOMETRI SMP

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ABSTRAK

Rendahnya minat belajar siswa pada materi transformasi geometri menjadi salah satu permasalahan dalam pembelajaran matematika, yang dipengaruhi oleh keterbatasan media pembelajaran interaktif yang kurang mampu membantu siswa memahami konsep transformasi secara visual. Tujuan dari penelitian ini yaitu untuk mengembangkan game edukasi pada materi transformasi geometri SMP yang valid, praktis, dan efektif dalam meningkatkan minat belajar siswa. Penelitian ini menggunakan metode *Research and Development (R&D)* dengan model pengembangan Plomp yang meliputi tahap *preliminary investigation, design, realization/construction, test, evaluation, and revision*, serta *implementation*. Media pembelajaran yang dikembangkan dalam penelitian ini diberi nama GeoDetektif dan dirancang sebagai game edukasi yang memadukan unsur cerita investigasi, aktivitas permainan edukatif, visualisasi menarik, serta umpan balik. Materi transformasi geometri disajikan melalui alur cerita, tantangan, dialog, serta simulasi visual yang memungkinkan siswa terlibat secara aktif dalam proses pembelajaran. Subjek penelitian terdiri atas siswa kelas VIII Anggrek SMP Negeri 4 Singaraja, kelas IX F SMP Negeri 2 Sawan, dan kelas IX C SMP Negeri 5 Singaraja. Instrumen angket minat belajar telah melalui uji validitas dan reliabilitas. Data penelitian diperoleh melalui observasi, angket, wawancara, dan implementasi produk. Hasil uji validitas menunjukkan rerata skor validitas materi sebesar 4,80 dan media sebesar 4,83 dengan kategori sangat tinggi. Kepraktisan ditunjukkan oleh rerata persentase skor angket respon guru 94% dan siswa 88% dengan kategori sangat praktis. Uji efektivitas dengan uji *paired sample t-test* dan uji *Wilcoxon signed-rank test* memperoleh nilai $\text{Sig.} < 0,001$ yang menunjukkan adanya perbedaan minat belajar sebelum dan sesudah penggunaan game, sehingga game edukasi efektif dalam meningkatkan minat belajar matematika. Nilai rerata *N-Gain* sebesar 0,51 menunjukkan peningkatan minat belajar matematika berada pada kategori sedang.

Kata kunci : Game Edukasi, Transformasi Geometri, Minat Belajar Siswa

**DEVELOPMENT OF AN EDUCATIONAL GAME TO ENHANCE
STUDENTS' LEARNING INTEREST IN JUNIOR HIGH SCHOOL
GEOMETRY TRANSFORMATIONS**

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ABSTRACT

Low students' learning interest in geometry transformations is one of the challenges in mathematics education, which is influenced by the limited availability of interactive learning media that are less capable of helping students understand transformation concepts visually. This study aimed to develop an educational game on geometry transformations for junior high school students that is valid, practical, and effective in enhancing students' learning interest. The study employed the Research and Development (R&D) method using the Plomp development model, which consists of the preliminary investigation, design, realization/construction, test, evaluation, and revision, and implementation phases. The learning media developed in this study, named *GeoDetektif*, was designed as an educational game integrating an investigative storyline, educational gameplay, engaging visualizations, and feedback. Geometry transformation materials were presented through storylines, challenges, dialogues, and visual simulations that actively engaged students in the learning process. The research participants consisted of students from Class VIII Anggrek of SMP Negeri 4 Singaraja, Class IX F of SMP Negeri 2 Sawan, and Class IX C of SMP Negeri 5 Singaraja. The learning interest questionnaire was tested for validity and reliability before use. Data were collected through observations, questionnaires, interviews, and product implementation. The validity test results showed average material and media validity scores of 4.80 and 4.83, respectively, both categorized as very high. Practicality was indicated by the average response questionnaire scores of 94% from teachers and 88% from students, both categorized as very practical. The effectiveness test, using the paired-samples *t*-test and the Wilcoxon signed-rank test, yielded a significance value of $p < 0.001$, indicating a significant difference in students' learning interest before and after using the game. Therefore, the educational game was effective in enhancing students' interest in learning mathematics. Furthermore, the average normalized gain (N-Gain) score of 0.51 indicated a moderate improvement in students' mathematics learning interest.

Keywords : Educational Game, Geometry Transformations, Students' Learning Interest