

ABSTRAK

Penelitian ini bertujuan untuk menerapkan *Design Thinking* dan ADDIE dalam pengembangan media serta mengetahui bagaimana game edukasi dapat mengatasi kesulitan siswa pada materi Sistem Persamaan Linear Tiga Variabel (SPLTV). Jenis penelitian ini adalah penelitian pengembangan dengan model ADDIE yang diintegrasikan dengan *Design Thinking*. Subjek penelitian ini adalah 16 siswa kelas XI SMK jurusan TKR. Instrumen penelitian ini adalah lembar validasi wawancara, media, materi, dan soal, angket respon siswa, serta soal pre-test dan post-test.

Hasil penelitian ini yaitu (1) tahap *Analyze* yang bersesuaian dengan *Empathize* dan *define* diperoleh hasil wawancara bahwa siswa kesulitan menggunakan metode eliminasi dan substitusi, merasa materi kurang relevan, dan pembelajarannya monoton. (2) Tahap *Design* yang bersesuaian dengan *Ideate*, peneliti membuat rancangan media. (3) Tahap *Development* yang bersesuaian dengan *Prototype*, peneliti merealisasikan rancangan media. (4) Tahap *Implementation* yang bersesuaian dengan *Test*, peneliti melakukan uji media. (5) Tahap *Evaluation*, dilakukan evaluasi media. Hasil yang diperoleh setelah dilakukan uji coba media diperoleh skor N-Gain sebesar 0,77 menunjukkan tingkat efektivitas pada kategori "tinggi". Selain itu, persentase ketuntasan belajar siswa meningkat dari 31,25% pada *pretest* menjadi 87,5% pada *posttest*. Hasil penelitian diperoleh bahwa game edukasi *The Equation Bay* efektif dan praktis digunakan sebagai media pembelajaran untuk meningkatkan pemahaman konsep SPLTV secara kontekstual bagi siswa SMK jurusan TKR.

Kata Kunci: ADDIE, *Design Thinking*, Game Edukasi, SPLTV

ABSTRACT

This study aims to apply Design Thinking and the ADDIE model in media development and to examine how educational games can address students' difficulties in Three Variable Linear Equation Systems (SPLTV). This is a research and development (R&D) study using the ADDIE model integrated with Design Thinking. The subjects of this study were 16 eleventh-grade vocational high school students majoring in Light Vehicle Engineering (TKR). The research instruments included validation sheets for interviews, media, content, and test items, student response questionnaires, as well as pre-test and post-test questions.

The results of this study are: (1) the Analyze phase, which corresponds to Empathize and Define, revealed through interviews that students struggled with the elimination and substitution methods, felt the material was less relevant, and found the learning process monotonous; (2) the Design phase, corresponding to Ideate, involved designing the media framework; (3) the Development phase, corresponding to Prototype, realized the media design into a tangible product; (4) the Implementation phase, corresponding to Test, involved field testing the media; and (5) the Evaluation phase assessed the media's overall performance. Following the media trial, an N-Gain score of 0.77 was obtained, indicating a high level of effectiveness. Furthermore, the percentage of student learning mastery increased from 31.25% in the pre-test to 87.5% in the post-test. In conclusion, "The Equation Bay" educational game is effective and practical as a learning medium to enhance contextual understanding of SPLTV concepts for vocational high school students in Light Vehicle Engineering.

Keywords: ADDIE, Design Thinking, Educational Game, SPLTV