

ABSTRAK

Ajeng Zanna Tirahna: Pengembangan Multimedia Interaktif Berbasis *Problem Based Learning* Menggunakan Web Pada Materi Algoritma dan Pemograman Kelas X SMKN 6 Mukomuko. Tesis. Program Pascasarjana, Program Studi Teknologi Pendidikan, Universitas Negeri Medan. 2024

Penelitian dan pengembangan ini bertujuan untuk mengetahui kelayakan, kepraktisan dan keefektifan Multimedia Interaktif berbasis *Problem Based Learning* menggunakan web pada materi algoritma dan pemograman kelas X SMKN 6 Mukomuko. Jenis penelitian ini adalah penelitian pengembangan yang menggunakan model pengembangan ADDIE. Adapun tahapan-tahapannya adalah sebagai berikut: (1) Tahapan *Analysis untuk* melakukan studi pendahuluan, (2) Tahapan *Design* untuk merancang multimedia interaktif, (3) Tahapan *Develop* untuk pembuatan produk dan uji kelayakan oleh ahli, (4) Tahapan *Implementation* untuk uji coba produk, dan (5) Tahapan *Evaluation* untuk uji kepraktisan dan uji efektivitas produk. Hasil penelitian menunjukkan: (1) Uji validasi ahli materi bahwa materi dalam multimedia yang dikembangkan masuk dalam kategori sangat layak dengan perolehan skor rata-rata 88,14%. (2) Uji validasi Ahli Desain Instruksional masuk dalam kriteria sangat layak dengan perolehan skor rata-rata 95,56%. (3) Uji validasi Ahli Media masuk dalam kategori sangat layak dengan perolehan skor rata-rata 91,46%. (4) Uji coba perorangan masuk dalam kriteria sangat baik dengan skor rata-rata 87,55%. (5) Uji coba kelompok kecil masuk dalam kriteria sangat baik dengan skor rata-rata 89,65%. Dan, (6) Uji coba lapangan masuk dalam kriteria sangat baik dengan skor rata-rata 89,15%. Uji kepraktisan oleh guru mendapatkan hasil sangat baik dengan skor rata-rata 96,67%, sedangkan hasil uji kepraktisan pada peserta didik mendapatkan skor rata-rata 95,59% yang masuk pada kategori sangat baik. Hasil percobaan penggunaan Multimedia Interaktif berbasis *Problem Based Learning* pada kelas eksperimen mendapatkan rata-rata hasil belajar 84, sedangkan siswa yang diajarkan tanpa menggunakan Multimedia Interaktif berbasis *Problem Based Learning* mendapatkan nilai rata-rata 60,9. Pengujian hipotesis menggunakan *Independent t-test* mendapatkan hasil sig. (2-tailed) sebesar 0,000 yang mana hasil tersebut $< 0,05$ sehingga dapat disimpulkan bahwa terdapat perbedaan yang signifikan antara kelas yang dibelajarkan menggunakan Multimedia Interaktif berbasis *Problem Based Learning* dengan kelas yang dibelajarkan tanpa menggunakan Multimedia Interaktif berbasis *Problem Based Learning*. Oleh karena itu, dapat disimpulkan bahwa penggunaan Multimedia Interaktif berbasis *Problem Based Learning* dalam pembelajaran efektif untuk meningkatkan hasil belajar peserta didik.

Kata Kunci : Multimedia Interaktif, *Problem Based Learning*, Web, Algoritma dan Pemograman

ABSTRACT

Ajeng Zanna Tirahna: The Development of Multimedia Interactive based on Problem-Based Learning Using The Web On Algorithm and Programming Material of 10th Grade Students at SMKN 6 Mukomuko. Thesis. Graduate Program, Educational Technology Study Program, Universitas Negeri Medan. 2024.

This research and development aims to determine the feasibility, practicality and effectiveness of Interactive Multimedia based on Problem Based Learning using the web in class X algorithm and programming material at SMKN 6 Mukomuko. This type of research is development research using the ADDIE development model. The stages are as follows: (1) Analysis Stage for conducting preliminary studies, (2) Design Stage for designing interactive multimedia, (3) Develop Stage for product creation and feasibility testing by experts, (4) Implementation Stage for trial product, and (5) Evaluation stages for practicality testing and product effectiveness testing. The research results show: (1) Material expert validation test that the multimedia material developed is in the very feasible category with an average score of 88.14%. (2) The Instructional Design Expert validation test is included in the very appropriate criteria with an average score of 95.56%. (3) The Media Expert validation test is in the very feasible category with an average score of 91.46%. (4) Individual trials fall into very good criteria with an average score of 87.55%. (5) Small group trials fall into very good criteria with an average score of 89.65%. And, (6) Field trials fall into very good criteria with an average score of 89.15%. The practicality test by the teacher got very good results with an average score of 96,67%, while the practicality test results for students got an average score of 95.59% which was in the very good category. The results of the experiment using Interactive Multimedia based on Problem Based Learning in the experimental class got an average learning outcome of 84, while students who were taught without using Interactive Multimedia based on Problem Based Learning got an average score of 60.9. Hypothesis testing using the Independent t-test gets sig results. (2-tailed) of 0.000, where the result is <0.05 , so it can be concluded that there is a significant difference between classes taught using Interactive Multimedia based on Problem Based Learning and classes taught without using Interactive Multimedia based on Problem Based Learning. Therefore, it can be concluded that the use of Interactive Multimedia based on Problem Based Learning in learning is effective in improving student learning outcomes

Keywords : Interactive Multimedia, Problem Based Learning, Web, Algorithms and Programming