

ABSTRAK

Muhammad Hari Akbar Lubis, 5193351024 : Pengembangan Media Pembelajaran Pemrograman Web Dilengkapi Chatbot Berbasis Android Pada Program Keahlian Rekayasa Perangkat Lunak Di Smk Swasta Jambi Medan. Skripsi. Fakultas Teknik, Universitas Negeri Medan. 2026.

Penelitian ini bertujuan untuk mengembangkan, mengetahui kelayakan, dan mengetahui efektivitas media pembelajaran pemrograman web dilengkapi chatbot berbasis Android pada Program Keahlian Rekayasa Perangkat Lunak di SMK Swasta Jambi Medan. Penelitian ini merupakan penelitian dan pengembangan dengan menggunakan model Hannafin and Peck yang terdiri dari tahap analisis kebutuhan, desain, serta pengembangan dan implementasi. Produk yang dikembangkan berupa aplikasi Android yang dilengkapi dengan fitur materi, kuis, profil, dan chatbot untuk membantu siswa memahami materi HTML, CSS, dan JavaScript. Subjek penelitian terdiri dari ahli materi, ahli media, serta siswa kelas XI Rekayasa Perangkat Lunak. Instrumen yang digunakan berupa angket validasi ahli materi, angket validasi ahli media, angket akseptansi siswa, serta instrumen tes hasil belajar berupa pretest dan posttest. Teknik analisis data yang digunakan adalah analisis deskriptif kuantitatif dan uji Independent Sample t-test.

Hasil penelitian menunjukkan bahwa validasi ahli materi memperoleh rata-rata sebesar 4,10 dengan persentase 82% dan berada pada kategori Layak. Validasi ahli media memperoleh rata-rata sebesar 4,35 dengan persentase 87% dan berada pada kategori Sangat Layak. Hasil akseptansi siswa memperoleh rata-rata sebesar 4,69 dengan persentase 93,80% dan berada pada kategori Sangat Layak. Secara keseluruhan, kelayakan produk memperoleh rata-rata sebesar 4,46 dengan persentase 89,15% dan berada pada kategori Sangat Layak. Hasil uji efektivitas menunjukkan bahwa rata-rata posttest kelas eksperimen sebesar 93,33, sedangkan kelas kontrol sebesar 75,42. Hasil uji Independent Sample t-test memperoleh nilai Sig. (2-tailed) < 0,001, sehingga terdapat perbedaan hasil belajar yang signifikan antara kelas eksperimen dan kelas kontrol. Dengan demikian, media pembelajaran pemrograman web dilengkapi chatbot berbasis Android dinyatakan sangat layak dan efektif digunakan dalam proses pembelajaran.

Kata Kunci: Media Pembelajaran, Chatbot, Android, Pemrograman Web, Hasil Belajar, Gemini, Hannafin and Peck.

ABSTRACT

Muhammad Hari Akbar Lubis, 5193351024 : The Development of Android-Based Web Programming Learning Media Equipped with a Chatbot in the Software Engineering Expertise Program at SMK Swasta Jambi Medan. Thesis. Faculty of Engineering, State University of Medan. 2026.

This study aims to develop, determine the feasibility, and determine the effectiveness of an Android-based web programming learning media equipped with a chatbot for the Software Engineering Expertise Program at SMK Swasta Jambi Medan. This study is a research and development study using the Hannafin and Peck model, which consists of needs assessment, design, and development and implementation stages. The product developed is an Android application equipped with learning materials, quizzes, profile, and chatbot features to help students understand HTML, CSS, and JavaScript materials. The research subjects consisted of material experts, media experts, and Grade XI Software Engineering students. The instruments used were material expert validation questionnaires, media expert validation questionnaires, student acceptance questionnaires, and learning outcome tests in the form of pretest and posttest. The data analysis techniques used were quantitative descriptive analysis and the Independent Sample t-test.

The results showed that the material expert validation obtained an average score of 4.10 with a percentage of 82%, categorized as Feasible. The media expert validation obtained an average score of 4.35 with a percentage of 87%, categorized as Highly Feasible. The student acceptance result obtained an average score of 4.69 with a percentage of 93.80%, categorized as Highly Feasible. Overall, the product feasibility obtained an average score of 4.46 with a percentage of 89.15%, categorized as Highly Feasible. The effectiveness test results showed that the posttest average score of the experimental class was 93.33, while the control class was 75.42. The Independent Sample t-test obtained a Sig. (2-tailed) value of < 0.001 , indicating a significant difference in learning outcomes between the experimental class and the control class. Therefore, the Android-based web programming learning media equipped with a chatbot is declared highly feasible and effective for use in the learning process.

Keywords: Learning Media, Chatbot, Android, Web Programming, Learning Outcomes, Gemini, Hannafin and Peck.