

Abstrak

Penelitian ini bertujuan untuk mengembangkan media pembelajaran digital berbasis web yang layak, praktis, dan mendukung proses pembelajaran mata pelajaran Pekerjaan Dasar Teknik Mesin (PDTM) untuk siswa kelas XI Program Keahlian Teknik Pemesinan di SMK Negeri 2 Medan. Metode yang digunakan dalam penelitian ini adalah model pengembangan ADDIE (Analysis, Design, Development, Implementation, Evaluation). Pada tahap analisis dilakukan identifikasi kebutuhan guru dan siswa terhadap media yang sesuai dengan karakteristik pembelajaran teknik, serta analisis kurikulum dan silabus PDTM. Media dikembangkan menggunakan platform Google Sites, dengan konten interaktif berupa teks, gambar teknik, video tutorial, evaluasi berbasis kuis, dan animasi proses kerja. Hasil validasi ahli materi menunjukkan tingkat kelayakan media sebesar 82,35% dengan kategori Layak, sedangkan validasi ahli media memperoleh skor 86,36% dengan kategori Sangat Layak. Uji kepraktisan kepada siswa menghasilkan skor rata-rata 81,37% dengan kategori Praktis, menunjukkan bahwa media mudah digunakan, menarik, dan membantu siswa memahami materi secara mandiri. Penelitian ini menunjukkan bahwa media pembelajaran digital berbasis web efektif mendukung pembelajaran teknik dasar yang bersifat prosedural, visual, dan praktis. Dengan demikian, media yang dikembangkan dapat digunakan sebagai sumber belajar mandiri, pelengkap kegiatan pembelajaran di kelas maupun di bengkel, serta sebagai alternatif pembelajaran digital berbasis Kurikulum Merdeka.

Kata Kunci: media pembelajaran, digital web, teknik pemesinan, Pekerjaan Dasar Teknik Mesin, SMK, ADDIE



ABSTRACT

This study aims to develop a web-based digital learning media that is feasible, practical, and supports the learning process of Basic Mechanical Engineering (PDTM) subjects for grade XI students of the Mechanical Engineering Expertise Program at SMK Negeri 2 Medan. The method used in this study is the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation). At the analysis stage, the identification of teacher and student needs for media that are in accordance with the characteristics of engineering learning, as well as analysis of the PDTM curriculum and syllabus. The media was developed using the Google Sites platform, with interactive content in the form of text, technical drawings, video tutorials, quiz-based evaluations, and work process animations. The results of the material expert validation showed a media feasibility level of 82.35% with the Feasible category, while the media expert validation obtained a score of 86.36% with the Very Feasible category. The practicality test for students produced an average score of 81.37% with the Practical category, indicating that the media is easy to use, interesting, and helps students understand the material independently. This study shows that web-based digital learning media effectively supports basic engineering learning that is procedural, visual, and practical. Thus, the media developed can be used as a source of independent learning, a complement to learning activities in class or in the workshop, and as an alternative to digital learning based on the Independent Curriculum.

Keywords: learning media, digital web, machining techniques, Basic Mechanical Engineering Work, SMK, ADDIE

