

Merry Dian Khoiroh, 2025. *Pengembangan Media Pembelajaran Berbasis Website Pada Mata Pelajaran Dasar-Dasar Teknik Jaringan Komputer dan Telekomunikasi Kelas X TKJ SMKN 1 Kwanyar*. Skripsi, Program Studi Pendidikan Informatika, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Trunojoyo Madura. Pembimbing: Evy Maya Stefany, S.Pd., M.Pd.

ABSTRAK

Revolusi Industri 4.0 menuntut dunia pendidikan untuk beradaptasi dengan teknologi guna meningkatkan efektivitas pembelajaran. Di SMKN 1 Kwanyar, pembelajaran pada mata pelajaran Dasar-Dasar Teknik Jaringan Komputer dan Telekomunikasi kelas X TKJ masih bersifat konvensional, menggunakan metode ceramah dan media terbatas, tanpa buku pegangan yang dapat diakses mandiri. Penelitian ini bertujuan mengembangkan media pembelajaran berbasis *website* yang layak digunakan dalam proses belajar. Penelitian menggunakan metode R&D dengan model 4D (*Define, Design, Development, Dissemination*) dan mengacu pada standar ISO 25010 untuk uji kelayakan. Media dikembangkan menggunakan PHP, HTML, JavaScript, dan *framework* CodeIgniter, dilengkapi fitur *login multi-user*, materi, tugas, jawaban tugas, dan forum diskusi. Hasil validasi menunjukkan media sangat layak digunakan dengan hasil pengujian aspek *functional suitability* $\geq 84\%$, *usability* $\geq 83\%$, *reliability* kurang dari 400 ms, dan *performance efficiency* dengan skor 90%, Yslow 84%, serta waktu muat 591 ms. Berdasarkan hasil tersebut, media dinyatakan layak digunakan dalam proses pembelajaran.

Kata kunci: *Website, Media Pembelajaran, 4D*

Merry Dian Khoiroh, 2025. *Development of Website-Based Learning Media in the Subject of Basic Computer Network Engineering and Telecommunications Class X TKJ SMKN 1 Kwanyar. Thesis, Informatics Education Study Program, Faculty of Teacher Training and Education, Trunojoyo University Madura. Advisor: Evy Maya Stefany, S.Pd., M.Pd.*

ABSTRAK

The Industrial Revolution 4.0 demands the education sector to adapt to technology in order to improve learning effectiveness. At SMKN 1 Kwanyar, learning in the subject of Basic Computer and Telecommunications Network Engineering for Grade X TKJ students still relies on conventional lecture methods and limited media, without accessible handbooks. This study aims to develop a web-based learning media that is suitable for classroom use. The research applies the R&D method using the 4D model (Define, Design, Development, Dissemination) and system feasibility testing based on ISO 25010 standards. The media was developed using PHP, HTML, JavaScript, and the CodeIgniter framework, with key features such as multi-user login, materials, assignments, assignment submissions, and a discussion forum. Validation results show the media is highly feasible, with functional suitability $\geq 84\%$, usability $\geq 83\%$, reliability under 400 ms, and performance efficiency scoring 90%, a Yslow score of 84%, and a load time of 591 ms. Based on these results, the media is declared suitable for learning use.

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