

Esti Paramita Dewi. 2026. *Pengembangan Media Pembelajaran Berbasis Website Menggunakan Framework Django Pada Materi Media dan Jaringan Telekomunikasi Bagi Siswa SMK*. Skripsi, Program Studi Pendidikan Informatika, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Trunodjoyo Madura. Pembimbing: Luluk Mauli Diana, S.SI., M.Pd.

ABSTRAK

Proses pembelajaran pada materi media dan jaringan telekomunikasi kelas X TKJ di SMKN 3 Bangkalan masih menggunakan metode ceramah dan media pembelajaran yang terbatas. Kondisi tersebut menyebabkan pembelajaran kurang interaktif dan siswa mengalami kesulitan dalam memahami materi. Selain itu, sekolah belum memiliki media pembelajaran berbasis *website* sebagai media pembelajaran pendukung. Penelitian ini bertujuan untuk media pembelajaran berbasis *website* menggunakan *framework* django pada materi media dan jaringan telekomunikasi di SMKN 3 Bangkalan, guna mempermudah proses pembelajaran. Penelitian ini menggunakan metode pengembangan *Research and Development* (R&D) dengan model 4D dengan 4 tahapan yaitu *define* (pendefinisian), *design* (perancangan), *develop* (pengembangan), dan *disseminate* (penyebaran). Pengujian materi, media, dan sistem dilakukan berdasarkan standar ISO 25010. Pada pengujian materi hasilnya 89% kategori “sangat layak”, pengujian media hasilnya 94% kategori “sangat layak”, pengujian sistem aspek *functional suitability* hasilnya 100% kategori “dapat diterima”, aspek *portability* hasilnya 100% kategori “sangat baik”, aspek *performance efficiency* menggunakan GTMetrix memperoleh nilai *Grade A* dengan rata-rata waktu loading sebesar 1,53 detik, nilai *PageSpeed* sebesar 90,33%, dan skor YSlow sebesar 97%, yang menunjukkan bahwa *website* memiliki performa yang baik saat diakses, dan aspek *usability* di uji pada tiga kelompok yaitu perorangan, kelompok kecil dan besar dengan hasil 96,22% (perorangan), 92,44% (kelompok kecil) dan 95,79% (kelompok besar).

Kata Kunci: media pembelajaran, media dan jaringan telekomuniaksi, *website*, 4D

Esti Paramita Dewi. 2026. Development of Website -Based Learning Media Using the Django Framework on Media Material and Telecommunication Networks for Vocational School Students. Thesis, Informatics Education Study Program, Faculty of Teacher Training and Education, Trunodjoyo University Madura. Supervisor: Luluk Mauli Diana, S.SI., M.Pd.

ABSTRACT

The learning process in media material and telecommunications networks for class X TKJ at SMKN 3 Bangkalan still uses lecture methods and limited learning media. This condition causes learning to be less interactive and students have difficulty understanding the material. Apart from that, schools do not yet have website -based learning media as a supporting learning medium. This research aims to develop website -based learning media using the django framework on media materials and telecommunications networks at SMKN 3 Bangkalan, in order to simplify the learning process. This research uses the Research and Development (R&D) development method with a 4D model with 4 stages, namely define, design, develop and disseminate. Testing of materials, media and systems was carried out based on the ISO 25010 standard. In material testing the results were 89% in the "very feasible" category, in media testing the results were 94% in the "very feasible" category, in functional suitability aspect system testing the results were 100% in the "acceptable" category, in the portability aspect the results were 100% in the "very good" category, the performance efficiency aspect using GTMetrix obtained Grade A with an average loading time of 1.53 seconds, a PageSpeed value of 90.33%, and a score of YSlow was 97%, which shows that the website has good performance when accessed, and the usability aspect was tested on three groups, namely individuals, small and large groups with results of 96.22% (individuals), 92.44% (small groups) and 95.79% (large groups).

Keywords: *learning media, media and telecommunication networks, website, 4D*