

ANALISIS KESIAPAN SMK JURUSAN TEKNIK MESIN DI KABUPATEN BULELENG DALAM MENGIMPLEMENTASIKAN KECERDASAN BUATAN PADA PEMBELAJARAN

Oleh

Kadek Ari Sastrawan, NIM. 2215071011

Program Studi Pendidikan Teknik Mesin

ABSTRAK

Penelitian ini bertujuan untuk menganalisis kesiapan Sekolah Menengah Kejuruan (SMK) di Kabupaten Buleleng dalam mengimplementasikan kecerdasan buatan (AI) pada pembelajaran Jurusan Teknik Mesin. Penelitian menggunakan pendekatan kualitatif dengan desain eksploratif. Populasi penelitian meliputi seluruh SMK yang memiliki Program Keahlian Teknik Mesin di Kabupaten Buleleng, sedangkan sampel ditentukan menggunakan teknik purposive sampling. Data dikumpulkan melalui wawancara mendalam, observasi, dan dokumentasi. Analisis data dilakukan menggunakan model Miles dan Huberman yang meliputi reduksi data, penyajian data, serta penarikan kesimpulan. Hasil penelitian menunjukkan bahwa kesiapan implementasi AI pada aspek infrastruktur, sumber daya manusia, dan budaya teknologi berada pada kategori *Established* (Mapan/Siap). Infrastruktur sekolah telah didukung oleh ketersediaan komputer, laboratorium, proyektor, dan jaringan internet yang memadai, meskipun masih diperlukan peningkatan spesifikasi perangkat dan kualitas konektivitas. Guru telah memiliki kompetensi dasar dalam memanfaatkan teknologi digital dan mulai mengintegrasikan AI dalam pembelajaran, namun pelatihan lanjutan masih diperlukan. Selain itu, budaya teknologi di sekolah menunjukkan sikap yang positif terhadap inovasi digital, meskipun belum didukung oleh kebijakan khusus mengenai implementasi AI. Secara keseluruhan, SMK di Kabupaten Buleleng dinilai siap mengimplementasikan AI pada pembelajaran Teknik Mesin dengan tetap memerlukan penguatan infrastruktur, kompetensi guru, dan regulasi pendukung.

Kata Kunci: Kecerdasan Buatan, Kesiapan SMK, Teknik Mesin, Pembelajaran.

ANALYSIS OF THE REDINESS OF VOCATIONAL HIGH SCHOOL WITH MECHANICAL ENGINEERING MAJORS IN BULELENG REGENCY TO IMPLEMENT ARTIFICIAL INTELLEGE IN INSTRUCTION

By

Kadek Ari Sastrawan, NIM. 2215071011

Mechanical Engineering Education Study Program

ABSTRACT

This study aims to analyze the *Readiness* of Vocational High Schools (SMK) in Buleleng Regency to implement *Artificial Intelligence* (AI) in the Mechanical Engineering Department. The study used a qualitative approach with an exploratory design. The study population included all SMKs with Mechanical Engineering Expertise Programs in Buleleng Regency, while the sample was determined using a purposive sampling technique. Data were collected through in-depth interviews, observation, and documentation. Data analysis was conducted using the Miles and Huberman model, which includes data reduction, data presentation, and conclusion drawing. The results showed that the *Readiness* for AI implementation in terms of infrastructure, human resources, and technological culture was in the *Established* category. School infrastructure has been supported by the availability of computers, laboratories, projectors, and adequate internet networks, although improvements in device specifications and connectivity quality are still needed. Teachers have basic competencies in utilizing digital technology and have begun to integrate AI into learning, but further training is still needed. In addition, the technological culture in schools shows a positive attitude towards digital innovation, although it is not yet supported by specific policies regarding AI implementation. Overall, vocational schools in Buleleng Regency are considered ready to implement AI in mechanical engineering learning, while still requiring strengthening infrastructure, teacher competency, and supporting regulations.

Keywords: *Artificial Intelligence*, Vocational School *Readiness*, Mechanical Engineering, Learning.