

ABSTRAK

ALDI PURNAMA, NIM. 5213321021. “HUBUNGAN PENGETAHUAN PENGELASAN DASAR SMAW DAN KEMAMPUAN SYSTEMATIC PROBLEM SOLVING TERHADAP HASIL BELAJAR MANUFAKTUR DI KELAS XI SMK NEGERI 2 MEDAN”. Prodi Pendidikan Teknik Mesin. Fakultas Teknik. Unimed. 2026.

Penelitian ini bertujuan untuk mengetahui hubungan antara pengetahuan pengelasan dasar Shielded Metal Arc Welding (SMAW) dan kemampuan systematic problem solving terhadap hasil belajar manufaktur siswa kelas XI Kompetensi Keahlian Pengelasan di SMK Negeri 2 Medan. Penelitian ini dilatarbelakangi oleh masih rendahnya hasil belajar manufaktur serta kurang optimalnya kemampuan siswa dalam memahami dasar pengelasan dan menyelesaikan permasalahan teknis saat praktik pengelasan. Metode penelitian yang digunakan adalah penelitian kuantitatif dengan pendekatan korelasional. Populasi penelitian adalah seluruh siswa kelas XI Kompetensi Keahlian Pengelasan SMK Negeri 2 Medan, dengan sampel yang ditentukan menggunakan teknik sampling tertentu. Instrumen penelitian berupa tes pengetahuan pengelasan dasar SMAW, angket kemampuan systematic problem solving, dan nilai hasil belajar manufaktur. Data dianalisis menggunakan analisis statistik deskriptif dan inferensial, meliputi uji normalitas, uji linearitas, uji multikolinearitas, serta pengujian hipotesis menggunakan korelasi dan regresi. Hasil penelitian menunjukkan bahwa terdapat hubungan yang signifikan antara pengetahuan pengelasan dasar SMAW dengan hasil belajar manufaktur, terdapat hubungan yang signifikan antara kemampuan systematic problem solving dengan hasil belajar manufaktur, serta terdapat hubungan yang signifikan secara bersama-sama antara pengetahuan pengelasan dasar SMAW dan kemampuan systematic problem solving terhadap hasil belajar manufaktur. Dengan demikian, peningkatan pengetahuan pengelasan dasar SMAW dan kemampuan systematic problem solving dapat berkontribusi positif dalam meningkatkan hasil belajar manufaktur siswa.

Kata kunci: Pengetahuan Pengelasan SMAW, Systematic Problem Solving, Hasil Belajar Manufaktur.

ABSTRACT

ALDI PURNAMA, NIM. 5213321021. “The Relationship Between Basic SMAW Welding Knowledge and Systematic Problem-Solving Skills on Manufacturing Learning Outcomes of Grade XI Students at SMK Negeri 2 Medan.”*Department of Mechanical Engineering Education, Faculty of Engineering, Universitas Negeri Medan, 2026.*

This study aims to determine the relationship between basic knowledge of Shielded Metal Arc Welding (SMAW) and systematic problem-solving skills on manufacturing learning outcomes of Grade XI students in the Welding Expertise Competency at SMK Negeri 2 Medan. This research is motivated by the low manufacturing learning outcomes and the suboptimal ability of students to understand basic welding concepts and solve technical problems during welding practice. The research method used is quantitative research with a correlational approach. The population of this study consisted of all Grade XI students of the Welding Expertise Competency at SMK Negeri 2 Medan, with the sample determined using a specific sampling technique. Research instruments included a basic SMAW welding knowledge test, a systematic problem-solving skills questionnaire, and manufacturing learning outcome scores. Data were analyzed using descriptive and inferential statistical analysis, including normality tests, linearity tests, multicollinearity tests, and hypothesis testing using correlation and regression analysis. The results indicate that there is a significant relationship between basic SMAW welding knowledge and manufacturing learning outcomes, a significant relationship between systematic problem-solving skills and manufacturing learning outcomes, and a significant simultaneous relationship between basic SMAW welding knowledge and systematic problem-solving skills on manufacturing learning outcomes. Therefore, improving basic SMAW welding knowledge and systematic problem-solving skills can positively contribute to enhancing students' manufacturing learning outcomes.

Keywords: *Basic SMAW Welding Knowledge, Systematic Problem Solving, Manufacturing Learning Outcomes.*