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Development of Electric Power Steering Devices to Improve Steering System Maintenance and Overhaul Abilities

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Abstract

Observations indicate that student learning processes still lack adequate teaching aids as learning reference sources. During the learning process, students' learning outcomes on electric power steering are still lacking, which can impact learning outcomes. This study aims to analyze the feasibility of the teaching aids, evaluate their effectiveness, and assess student improvement. This study uses the ADDIE (Analysis, Define, Design, Development, Implementation, and Evaluation) development model. The results of this study are teaching aids that are suitable for use. The feasibility of the teaching aids was determined by product trials with experts and potential users. The product's feasibility test by material experts was 3.88 (very feasible) and media experts was 3.86 (very feasible). The product was tested for practical use in the learning process, with user response results indicating that the teaching aid was practical. The study showed an increase in student competency after using the teaching aid, as indicated by an average score of 45.78 for learning outcomes in the electric power steering competency. Furthermore, the independent sample t-test showed a significant difference in competency in the post-test score, with t count = 8.874. The N-gain test also showed a gain of 0.73 (high improvement category).

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