QUADRUPED ROBOT BERBASIS CM-510 SEBAGAI MEDIA PEMBELAJARAN MATA KULIAH PRAKTIK ROBOTIKA

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ABSTRAK

Penelitian ini bertujuan untuk: (1) mengembangkan *quadruped* robot berbasis CM-510 sebagai media pembelajaran mata kuliah praktik robotika, (2) mengetahui unjuk kerja dari *quadruped* robot berbasis CM-510 sebagai media pembelajaran mata kuliah praktik robotika, dan (3) mengetahui tingkat kelayakan *quadruped* robot berbasis CM-510 sebagai media pembelajaran mata kuliah praktik robotika.

Penelitian ini merupakan jenis penelitian dan pengembangan dengan menggunakan model ADDIE adaptasi menurut Robert Maribe Branch. Subjek penelitian ini adalah mahasiswa Program Studi Pendidikan Teknik Mekatronika Fakultas Teknik UNY. Pengumpulan data menggunakan angket dengan skala *likert* dengan 4 pilihan jawaban. Teknik analisis data menggunakan teknik analisis deskriptif.

Berdasarkan hasil penelitian diperoleh: (1) *quadruped* robot berbasis CM-510, serta dihasilkan panduan pengoperasian dan *labsheet*, (2) unjuk kerja media pembelajaran tergolong sangat baik ditunjukkan robot terhubung dengan *stick PS2* dengan jarak maksimal 6 meter, ketepatan gerak servo dengan nomor ID 2 pada kaki *quadruped* robot nomor 1 memiliki persentase kesalahan 1,11%, ketepatan gerak servo ID 5 pada kaki *quadruped* robot nomor 2 memiliki persentase kesalahan 3,11%, ketepatan gerak servo ID 8 pada kaki *quadruped* robot nomor 3 memiliki persentase kesalahan 3,11%, ketepatan gerak servo ID 12 pada kaki *quadruped* robot nomor 4 memiliki persentase kesalahan 1,46%, (3) Tingkat kelayakan media pembelajaran *quadruped* robot berbasis CM-510 masuk dalam kriteria sangat layak dari segi media dengan perolehan skor rerata total 82 dengan persentase 93,18%, dari segi materi masuk ke dalam kriteria sangat layak dengan perolehan skor 81,5 dengan persentase 92,61%, dan dari segi pengguna memperoleh skor 78,15 sehingga masuk dalam kriteria sangat layak dengan persentase 88,81%.

Kata kunci: quadruped robot, CM-510, media pembelajaran

QUADRUPED ROBOT BASED ON CM-510 AS ROBOTIC PRACTICE LEARNING MEDIA

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ABSTRACT

This research aims to: (1) develop a quadruped robot based on CM-510 as a learning media for robotics practice courses, (2) find out the performance of a quadruped robot based on CM-510 as a learning media for robotics practice courses, and (3) knowing the feasibility level of the quadruped robot based on CM-510 as a learning media for robotics practice courses.

This research is a type of research and development using the ADDIE adaptation model according to Robert Maribe Branch. The subject of this research was students of the Department of Electrical Engineering Education, Faculty of Engineering, YSU Data collection uses a questionnaire with a Likert scale with 4 answer choices. The data analysis technique uses descriptive analysis techniques.

Based on the results of the study, it was obtained: (1) a quadruped robot based on CM-510, as well as operating and labsheet guides, (2) the performance of learning media was classified as very well indicated that the robot connected to PS2 stick-control with a maximum distance of 6 meters, servo motion accuracy with ID number 2 on quadruped robot legs number 1 has a percentage error of 1.11%, servo motion accuracy with ID number 5 on quadruped robot legs number 2 has a percentage error of 3.11%, servo motion accuracy with ID number 8 on quadruped robot legs number 3 has a percentage error of 3.11%, servo motion accuracy with ID number 12 on quadruped robot legs number 4 has a percentage error of 1.46%, (3) The level of feasibility of learning media for quadruped robot based on CM-510 is included in the criteria that are very feasible in terms of media with an average score of 82 with a percentage of 93.18 %, in terms of the material entered into the criteria very feasible with the acquisition of a score of 81.5 with a percentage of 92.61%, and in terms of the user obtaining score of 78.15 so that the criteria are very feasible with a percentage of 88.81%.

Keywords: *quadruped robot, CM-510, learning media*