

ABSTRAK

PENGEMBANGAN MEDIA PEMBELAJARAN KONTROL PID MENGUNAKAN *LINE FOLLOWER ROBOT* PADA MATA KULIAH SISTEM KENDALI

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Media pembelajaran merupakan alat bantu untuk menyampaikan materi ajar dari pendidik kepada peserta didik agar tercapai suatu tujuan pembelajaran dalam proses belajar mengajar. Penelitian ini bertujuan untuk mengembangkan dan menguji kelayakan media pembelajaran kontrol PID yang berupa *trainer* pergerakan *line follower robot* berbasis PID dan buku ajar kontrol PID pada mata kuliah sistem kendali Program Studi Pendidikan Teknik Elektro Departemen Pendidikan Teknik Elektro FPTK UPI. Metode penelitian yang digunakan pada penelitian ini menggunakan metode penelitian kualitatif. Pengujian kelayakan media pembelajaran dilakukan dengan uji ahli (*expert judgment*) dan jajak pendapat. Uji ahli dilakukan kepada tiga ahli dengan kriteria ahli yang telah ditentukan dan jajak pendapat dilakukan kepada 25 mahasiswa yang telah lulus mata kuliah sistem kendali. Berdasarkan hasil penilaian terhadap *trainer* pergerakan *line follower robot* berbasis PID dalam aspek penyajian, kemudahan pengoperasian, kemanfaatan, serta ketepatan media, dan penilaian terhadap buku ajar kontrol PID dalam aspek tujuan pembelajaran, penyajian materi, kualitas materi serta kemanfaatan media, diketahui bahwa *trainer* pergerakan *line follower robot* berbasis PID dan buku ajar kontrol PID layak sebagai media pembelajaran sistem kendali dengan bahasan kontrol PID.

Kata kunci: Pengembangan, Media Pembelajaran, Kontrol PID, *Line Follower Robot*

ABSTRACT

THE DEVELOPMENT OF PID CONTROL LEARNING MEDIA USING LINE FOLLOWER ROBOT ON SYSTEM CONTROL SUBJECT

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Learning media is a tool to convey the learning material from the teacher to the pupils aimed at reaching a learning objective in the process of teaching and learning. This research is purposed to develop and examine the feasibility of trainer of PID Control learning media in the former of PID based line follower robot movement and text book of PID Control on the subject of control system, electrical engineering education program, department of electrical engineering education, faculty of engineering and vocational education, Indonesia University of education. This study used qualitative method. Specifically, this study used expert judgement and survey to examine the feasibility test of learning media. The expert judgement involved three experts using predefined criteria. Furthermore, the survey was conducted to 25 students who has passed the control system subject. The examination of PID based line follower robot movement trainer used the following aspects, i.e. presentation, ease of operation, benefit and the accuracy of media. Besides, the examination of the PID control text book rely on the following aspects, i.e. learning objective, material presentation, material quality, and media benefit. Based on the examinations, this study concluded the trainer of PID based line follower robot movement and the text book of PID control are feasible to be used as learning media in control system subject on the topic PID control.

Keyword: Development, Learning Media, PID Control, Line follower robot