

PENGEMBANGAN MEDIA PEMBELAJARAN SENSOR INFRAMERAH SHARP GP2Y0A21YK, BEBAN *LOAD CELL*, DAN *HUMIDITY YL-69* UNTUK MATA KULIAH PRAKTIK SENSOR DAN TRANSDUSER

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ABSTRAK

Penelitian ini bertujuan untuk mengembangkan media pembelajaran sensor sensor inframerah sharp GP2Y0A21YK, beban *load cell*, dan *humidity yl-69*, mengetahui unjuk kerja media pembelajaran sensor inframerah sharp GP2Y0A21YK, beban *load cell*, dan *humidity yl-69* dan tingkat kelayakan media pembelajaran sensor sensor inframerah sharp GP2Y0A21YK, beban *load cell*, dan *humidity yl-69* pada mata kuliah praktik sensor dan transduser.

Metode yang digunakan dalam penelitian ini adalah metode penelitian dan pengembangan ADDIE (*Analyze, Design, Development, Implementation, Evaluation*) oleh Robert Maribe Branch. Subjek penelitian ini adalah mahasiswa Program Studi Pendidikan Teknik Mekatronika Fakultas Teknik Universitas Negeri Yogyakarta. Instrumen yang digunakan untuk penilaian kelayakan media dalam penelitian ini menggunakan kuisioner.

Hasil yang didapat dari penelitian ini meliputi: (1) Media Pembelajaran sensor inframerah sharp GP2Y0A21YK, beban *load cell*, dan *humidity yl-69* terdiri dari tiga komponen utama yaitu *input*, kontroler dan *output*. Pada bagian *input* terdiri dari sensor inframerah sharp GP2Y0A21YK, beban *load cell*, dan *humidity yl-69*. Bagian kontroler menggunakan Arduino UNO dan sebagai *output* terdiri dari LCD 16x2, voltmeter, dan LED indikator. (2) Unjuk kerja dari media pembelajaran sensor inframerah sharp GP2Y0A21YK, beban *load cell*, dan *humidity yl-69* menunjukkan kinerja yang baik. Pengujian sensor *load cell* menggunakan mikrokontroler menghasilkan rata-rata eror 3.175% dan pengujian analog sensor *load cell* menghasilkan rata-rata eror. Pengujian sensor inframerah dengan mikrokontroler menghasilkan rata-rata eror 0% dan pengujian secara analog menghasilkan rata-rata eror 6,18%. Pengujian sensor *humidity* dengan mikrokontroler menghasilkan rata-rata eror 8,65% dan pengujian secara analog menghasilkan rata-rata eror 14%. (3) Penilaian kelayakan media dilakukan oleh ahli media, ahli materi dan pengguna. Hasil rata-rata yang didapat dari segi media mendapatkan nilai presentase 78,98% dengan kategori “layak”, hasil rata-rata dari segi materi mendapatkan nilai presentase 83,52% dengan kategori “layak”, dan dari pengguna berjumlah 30 mahasiswa memperoleh rata-rata nilai presentase 83,26% dengan kategori “layak”. Penilaian tersebut menunjukkan media pembelajaran yang dikembangkan layak digunakan dalam kegiatan pembelajaran mahasiswa Program Studi Pendidikan Teknik Mekatronika Universitas Negeri Yogyakarta.

Kata Kunci: *media pembelajaran, sensor Load cell, sensor inframerah sharp GP2Y0A21YK, sensor Humidity YL-69.*

**DEVELOPMENT OF MEDIA LEARNING SENSOR INFRARED
SHARP GP2Y0A21YK, WEIGHT LOAD CELL AND HUMIDITY YL-69
FOR PRACTICE COURSE OF SENSOR AND TRANSDUSER**

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ABSTRACT

This research aims to develop sharp GP2Y0A21YK infrared sensor sensor learning media, load cell load, and humidity yl-69, knowing the sharp GP2Y0A21YK infrared sensor learning media performance, load cell load, and yl-69 humidity and the feasibility level of infrared sensor sensor learning media sharp GP2Y0A21YK, load cell load, and humidity yl-69 in censorship and transducer practice courses.

The method used in this study is the ADDIE research and development method (Analyze, Design, Development, Implementation, Evaluation) by Robert Maribe Branch. The subjects of this study were students of Mechatronics Education Study Program, Faculty of Engineering, Yogyakarta State University. The instrument used for the assessment of media feasibility in this study used a questionnaire.

The results obtained from this study include: (1) Media Learning sharp GP2Y0A21YK infrared sensor, load cell load, and humidity yl-69 consists of three main components, namely input, controller and output. In the input section consists of sharp GP2Y0A21YK infrared sensor, load cell load, and humidity yl-69. The controller part uses Arduino UNO and as an output consists of 16x2 LCD, voltmeter, and indicator LED. (2) Performance of Sharp GP2Y0A21YK infrared sensor learning media, load cell load, and humidity yl-69 showed good performance. Load cell sensor testing using a microcontroller produces an error rate of 3.175% and testing the analog sensor load cell produces an error average. Testing infrared sensors with microcontrollers produces an error average of 0% and analog testing produces an error average of 6.18%. Humidity sensor testing with a microcontroller produces an 8.65% error average and analog testing produces a 14% error average. (3) Media feasibility assessment is carried out by media experts, material experts and users. The average results obtained in terms of media get a percentage value of 78.98% with the category "feasible", the average results in terms of material get a percentage value of 83.52% with the category "feasible", and from users totaling 30 students get an average the average percentage value is 83.26% with the category "feasible". The assessment shows that the learning media developed are suitable for use in learning activities of students of the Mechatronics Education Study Program, Yogyakarta State University.

Keywords: learning media, Load cell sensor, sharp GP2Y0A21YK infrared sensor, YL-69 Humidity sensor.