

ALAT UKUR WAKTU REAKSI *START* DALAM CABANG OLAHRAGA
RENANG BERBASIS *MICROCONTROLLER*

SKRIPSI

Diajukan untuk Memenuhi Sebagian Syarat Memperoleh Gelar Sarjana
Program Studi Ilmu Keolahragaan



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**Alat Ukur Waktu Reaksi *Start* Dalam Cabang Olahraga Renang Berbasis
*Microcontroller***

Oleh
Dea Kusuma Putra

Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana Olahraga pada Fakultas Pendidikan Olahraga dan Kesehatan

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RENANG BERBASIS *MICROCONTROLLER***

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ABSTRAK**ALAT UKUR WAKTU REAKSI *START* DALAM CABANG OLAHRAGA
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Waktu reaksi *start* merupakan salah satu komponen kondisi fisik yang menunjang dalam performa *atlet*. Kecepatan reaksi khususnya terjadi pada olahraga yang menggunakan kecepatan tinggi salah satunya cabang olahraga renang. Jika seorang *atlet* mempunyai waktu reaksi *start* yang cepat maka besar kemungkinan untuk meraih gelar juara. Maka dari itu dibutuhkan alat yang berfungsi untuk mengukur kecepatan waktu reaksi *start* yang spesifik di salah satu cabang olahraga. Di Indonesia alat ukur waktu reaksi *start* yaitu *Whole Body Reaction* dimana alat ukur tersebut hanya dapat mengukur waktu reaksi *start* secara umum atau general dan tidak spesifik ke salah satu cabang olahraga. Tujuan dari penelitian ini untuk menciptakan alat ukur waktu reaksi *start* yang spesifik pada cabang olahraga renang berbasis *microcontroller*. Sampel dalam penelitian ini yaitu mahasiswa Ilmu Keolahragaan yang telah lulus mata kuliah renang sebanyak 10 orang. Teknik pengambilan sampel menggunakan *purposive sampling*. Desain penelitian ini menggunakan R&D (*Research and Development*). Langkah uji coba alat dengan cara setiap sampel melakukan 10 kali percobaan pada *Whole Body Reaction* dan alat ukur waktu reaksi *start* cabang olahraga renang berbasis *microcontroller*. Analisis data menggunakan parametrik *correlate bivariate* dengan tujuan mengetahui tingkat hubungan dari 2 variabel dan *reliability analysis* untuk melihat tingkat reliabilitas pada alat ukur waktu reaksi *start* cabang olahraga renang berbasis *microcontroller*. Hasil data dari *correlate bivariate* menunjukkan *pearson korelasi* = 0,878, Sig (p) < 0.05 dan data *reliability analysis* mendapatkan *Cronbach's Alpha* sebesar 0,930. Jadi dapat disimpulkan bahwa terdapat hubungan sangat tinggi antara kedua variabel dan tingkat reliabilitas yang sangat tinggi pada alat ukur waktu reaksi *start* pada cabang olahraga renang berbasis *microcontroller*.

Kata Kunci: Waktu Reaksi *Start*, *Microcontroller*

ABSTRACT**MEASURING EQUIPMENT START REACTION TIME IN
MICROCONTROLLER-BASED SWIMMING SPORTS BRANCH****Dea Kusuma Putra****NIM : 1604279****Supervisor I : Agus Rusdiana, S.Pd., M.Sc., Ph.D.****Supervisor II : Dr. Sandey Tantra Paramitha, S.Si., M.Pd.**

Start reaction time is one of the components of physical condition supporting the performance of athletes. The reaction speed in particular occurs in sports that use high-speed sport of one of the swimming branches. If an athlete has a quick start reaction time then it is likely to earn a winning title. Therefore it takes a tool that serves to measure the time speed of a specific start reaction in one of the sports branches. In Indonesia start reaction time measuring Whole Body Reaction where the measuring instrument can only measure the time of start reaction in general or general and not specific to one of the sports branches. The purpose of this research is to create a specific start-reaction time measurement tool on a microcontroller-based swimming pool. The samples in this study were the students of the sports sciences who passed the swimming courses of 10 people. Sampling techniques using purposive sampling. The design of this research uses R&D (Research and Development). The testing step of the tool by means of each sample performs 10 attempts on the Whole Body Reaction and the start-up reaction time of the microcontroller-based swimming sport branch. Analysis of data using parametric correlate bivariate with the aim of knowing the level of relationship of 2 variables and reliability analysis to see the level of reliability in the start reaction time gauge of a microcontroller-based swimming sport. Results of data from correlate bivariate show pearson correlation = 0.878, Sig (P) < 0.05 and reliability analysis data get Cronbach's Alpha by 0.930. It can be concluded that there is a very high relationship between the two variables and a very high degree of reliability on the start reaction time gauge on the microcontroller-based swimming pool branch.

Keywords: Start Reaction Time, Microcontroller

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