

# **TRAINING KIT TRANSISTOR BERBASIS MIKROKONTROLER SEBAGAI PENDUKUNG MATA PELAJARAN DASAR LISTRIK DAN ELEKTRONIKA DI SMK NEGERI 3 WONOSARI**

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## **ABSTRAK**

Tujuan dari penelitian ini adalah merancang *training kit transistor* sebagai alat bantu praktikum, mengimplementasikan *training kit transistor* sebagai alat bantu praktikum, dan mengetahui tingkat kelayakan *training kit transistor* berbasis mikrokontroler. Sasaran *training kit transistor* berbasis mikrokontroler ini adalah siswa kelas X program keahlian Elektronika jurusan Audio Video SMK Negeri 3 Wonosari.

Penelitian ini menggunakan metode *Research and Development (R&D)* dengan 5 tahap pengembangan, yang meliputi : *Analysis, Design, Development, Implementation, dan Evaluate*. *Training kit transistor* ini melalui dua tahap uji coba, yaitu : pertama adalah uji coba untuk mengetahui unjuk kerja *training kit transistor*, kedua adalah uji coba untuk mengetahui tingkat kelayakan *training kit transistor*. Pada tahap implementasi dilakukan uji coba kepada 33 siswa Kelas X program keahlian Elektronika Audio Video di SMK Negeri 3 Wonosari. Teknik pengumpulan data meliputi wawancara, pengujian dan kuisioner atau angket, adapun teknis analisis data menggunakan deskriptif kuantitatif.

Hasil penelitian diketahui bahwa (1) *Training Kit Transistor* pada mata pelajaran praktik Dasar Listrik dan Elektronika pada program keahlian Elektronika Audio Video di SMK Negeri 3 Wonosari dapat dibuat dengan baik : (2) Unjuk kerja *Training Kit Transistor* telah berkerja dengan baik beserta dengan tester komponen dan catu daya variabel pada setiap bagian maupun secara keseluruhan, memiliki error pada catu daya variabel 5%, pada tester komponen 5%; (3) Tingkat kelayakan *training kit transistor* setelah dilakukan oleh para ahli yaitu ; 77,86% tingkat kelayakan ahli media, 83,33% tingkat kelayakan ahli materi. Hasil penilaian dari pengguna siswa kelas X kompetensi keahlian Elektronika Audio Video pada mata pelajaran Dasar Listrik dan Elektronika di SMK 3 Wonosari bahwa *training kit transistor* ini sebesar 80,3%. Diperoleh penilaian tersebut menunjukkan bahwa *training kit transistor* ini layak digunakan pada pelajaran Dasar Listrik dan Elektronika.

**Kata Kunci** : Transistor, *Training*, Elektronika

**TRAINING KIT TRANSISTOR BASED MICROCONTROLLER AS A  
SUPPORT OF ELECTRIC AND ELECTRONIC BASIC LESSONS IN SMK  
NEGERI 3 WONOSARI**

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**ABSTRACT**

*The purpose of this study is to design a transistor training kit as a practical tool, implement a transistor training kit as a practical tool, and determine the feasibility of a microcontroller-based transistor training kit. The target of this microcontroller-based transistor training kit is class X students of the Electronics expertise program majoring in Audio Video at SMK Negeri 3 Wonosari.*

*This research uses Reasearch and Development (R&D) method with 5 stages of development, which include: Analysis, Design, Development, Implementation, and Evaluate. This transistor training kit goes through two stages of testing, namely: first is a trial to find out the performance of the transistor training kit, second is a trial to determine the feasibility of the transistor training kit. During the implementation phase, 33 students of Class X of the Audio Video Electronics expertise program were tested on SMK Negeri 3 Wonosari. Data collection techniques include interviews, testing and questionnaires or questionnaires, while the technical analysis of data using quantitative descriptive.*

*The results of the research are known that (1) Transistor Training Kit in Basic Electrical and Electronics practice subjects in the Audio Video Electronics expertise program at SMK Negeri 3 Wonosari can be made well: (2) The Transistor Training Kit performance has worked well along with component tester and the variable power supply in each section or as a whole, has an error in the variable power supply 5%, in the component tester 5%; (3) The feasibility level of the transistor training kit after being done by experts, namely; 77.86% level of eligibility of media experts, 83.33% level of eligibility of material experts. Then the assessment trial by users class X students competence in Audio Video Electronics expertise in the Basic Electricity and Electronics subject at SMK 3 Wonosari shows that this training kit is 80.3%. The assessment shows that the transistor training kit is suitable for use in the Basic Electric and Electronics course.*

**Keywords:** *Transistors, Training, Electronics*