

## ABSTRAK

### **Kevin Enrico Pratama Bangun NIM, 5171131007. Pengembangan Prototype Otomasi Penyortir Barang Berdasarkan Warna Pada Kompetensi Keahlian Teknik Otomasi Industri di SMK TA 2022/2023.**

Penelitian ini bertujuan untuk (1) terbentuknya prototipe otomasi penyortir barang berdasarkan warna sebagai media pembelajaran pada mata pelajaran piranti sensor aktuator dan sistem kontrol terprogram kompetensi keahlian teknik otomasi industri di SMK, (2) mengetahui kelayakan prototipe otomasi penyortir barang berdasarkan warna sebagai media pembelajaran pada mata pelajaran piranti sensor aktuator dan sistem kontrol terprogram kompetensi keahlian teknik otomasi industri di SMK, (3) untuk mengetahui unjuk kerja prototype. Penelitian ini menggunakan metode penelitian dan pengembangan (Research and Development) adaptasi ADDIE yang dikembangkan oleh Robert Maribe Branch, yaitu Analyze, Design, Development, Implementation, dan Evaluation, namun dalam penelitian ini peneliti tidak menggunakan tahap implementation dan evaluation dan menambahkan dengan unjuk kinerja dan uji kelayakan. Responden dalam penelitian ini adalah tenaga pendidik di SMK, Dosen jurusan Pendidikan Teknik Elektro, Staf Electrical PT. Toba Surimi Indonusantara dan Software Engineer Tokopedia. Objek penelitian ini adalah berupa Prototype penyortir barang berdasarkan warna yang disertai dengan jobsheet. Instrument yang digunakan berupa kuesioner dengan skala likert empat yang digunakan untuk memperoleh data kelayakan Prototype penyortir barang berdasarkan warna yang disertai dengan jobsheet. Hasil dari penelitian ini menunjukkan bahwa, pengembangan yang dilakukan pada Prototype penyortir barang berdasarkan warna yang disertai dengan jobsheet termasuk dalam kategori baik. Hasil dari unjuk kinerja Prototype penyortir barang berdasarkan warna yang disertai dengan jobsheet berfungsi dengan baik. Tingkat kelayakan ditinjau dari ahli media I mendapatkan persentase 95% untuk jobsheet dan 91% untuk prototype, ahli media II mendapatkan persentase 95% untuk jobsheet dan 94% untuk prototype, dengan rata-rata persentase 95% untuk jobsheet kategori "**Sangat Layak**" dan 93% untuk prototype dengan kategori "**Sangat Layak**". Sedangkan untuk ahli praktisi I mendapatkan persentase 98% dan ahli praktisi II mendapatkan persentase 98% dengan rata-rata persentase 98% kategori "**Sangat Layak**". Untuk ahli materi uji relevansi I mendapatkan persentase 98% dan ahli materi uji relevansi II mendapatkan persentase 96% dengan rata-rata persentase 97% kategori "**Sangat Layak**". Kesimpulan dari penelitian ini, antara lain : prototype penyortir barang berdasarkan warna yang disertai dengan jobsheet menunjukkan kinerja yang baik, prototype penyortir barang berdasarkan warna layak digunakan di industry dan sebagai media pembelajaran di jurusan teknik otomasi industri, jobsheet prototype penyortir barang berdasarkan warna layak digunakan sebagai media pembelajaran di jurusan teknik otomasi industri, prototype dan jobsheet sangat relevan dalam mencapai pembelajaran.

Kata kunci : penelitian dan pengembangan, *ADDIE*, prototype penyortir barang berdasarkan warna, Jurusan Teknik Otomasi Industri.

## ABSTRACT

**Kevin Enrico Pratama Bangun NIM, 5171131007. Development of Color-Based Item Sorting Automation Prototype in Industrial Automation Engineering Skills Competency at SMK TA 2022/2023.**

This research aims to (1) form a prototype of automated sorting goods based on color as a learning medium in the subjects of sensor actuator devices and programmed control systems, competence in industrial automation engineering skills at vocational schools, (2) determine the feasibility of an automated prototype of sorting goods based on color as a learning medium in Subjects of actuator sensor devices and programmed control systems, competency in industrial automation engineering skills at vocational schools, (3) to determine prototype performance. This research uses the research and development method (Research and Development) adaptation of ADDIE developed by Robert Maribe Branch, namely Analyze, Design, Development, Implementation and Evaluation, but in this research the researcher does not use the implementation and evaluation stages and adds performance and feasibility test. Respondents in this research were teaching staff at vocational schools, lecturers majoring in Electrical Engineering Education, Electrical Staff at PT. Toba Surimi Indonusantara and Software Engineer Tokopedia. The object of this research is a prototype of a sorter based on color accompanied by a job sheet. The instrument used was a questionnaire with a four Likert scale which was used to obtain data on the feasibility of a prototype sorter based on color accompanied by a job sheet. The results of this research show that the development carried out on the color-based product sorter prototype accompanied by a job sheet is included in the good category. The results of the performance demonstration of the product sorter prototype based on color accompanied by a job sheet function well. The feasibility level in terms of media expert I got a percentage of 95% for the job sheet and 91% for the prototype, media expert II got a percentage of 95% for the job sheet and 94% for the prototype, with an average percentage of 95% for the job sheet in the **"Very Feasible"** category and 93 % for prototypes in the **"Very Feasible"** category. Meanwhile, expert practitioner I got a percentage of 98% and expert practitioner II got a percentage of 98% with an average percentage of 98% in the **"Very Eligible"** category. Relevance test material experts I got a percentage of 98% and relevance test material experts II got a percentage of 96% with an average percentage of 97% in the **"Very Eligible"** category. The conclusions of this research include: the prototype of the goods sorter based on color accompanied by a job sheet shows good performance, the prototype of the goods sorter based on color is suitable for use in industry and as a learning medium in the industrial automation engineering department, the job sheet of the prototype of the goods sorter based on color is suitable for use as a learning media in the industrial automation engineering department, prototype and job sheet are very relevant in achieving learning.

Keywords: research and development, ADDIE, product sorter prototype based on color, Industrial Automation Engineering Department