

ABSTRACT

Andre Benedictus Sianturi NIM, 5172131002. Development of trainer handling stations using human machine interfaces in the subject of electropneatic control systems in the industrial automation engineering department 2020/2021.

This study aims to (1) develop a trainer in the learning process in the subject of electropneatic control systems at SMK N 13 Medan; (2) developing trainers and determining the suitability of trainer Handling Stations using the Human Machine Interface. This study uses the ADDIE Adaptation Research and Development method developed by Robert Maribe Branch, namely Analyze, Design, Development, Implementation, and Evaluation, but in this study researchers did not use the implementation and evaluation stages. Respondents in this study were educators and practicing trainers. The object of this research is a Handling Station trainer using a Human Machine Interface. The instrument used was in the form of a questionnaire with a four-likert scale which was used to obtain the eligibility data for the trainer station using the Human Machine Interface.

The result of this research and development is the development carried out on the Handling Station trainer using the Human Machine Interface control. The level of feasibility in terms of media expert I got a percentage of 88.6%, media expert II got a percentage of 96.5% and media expert III got a percentage of 92% with an average percentage of 92.2% in the "Very Appropriate" category. Meanwhile, material expert I got a percentage of 87.5%, material expert II got 98.4%, and material expert III got a percentage of 95.3% with an average percentage of 93.7% in the "Very Appropriate" category.

Keywords: research and development, ADDIE, Handling Station and Human Machine Interface trainers, Industrial Automation Engineering Department.

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ABSTRAK

Andre Benedictus Sianturi NIM, 5172131002. Pengembangan trainer handling stations menggunakan human machine interface pada mata pelajaran sistem kontrol elektropneumatik di jurusan teknik otomasi industri 2020/2021.

Penelitian ini bertujuan untuk (1) mengembangkan trainer dalam proses pembelajaran pada mata pelajaran sistem kontrol elektropneumatik di SMK N 13 Medan; (2) mengembangkan trainer dan menentukan kelayakan trainer *Handling Stations* menggunakan *Human Machine Interface*. 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. Responden dalam penelitian ini adalah tenaga pendidik dan praktisi trainer. Objek penelitian ini adalah berupa trainer Handling Station menggunakan Human Machine Interface. Instrument yang digunakan berupa kuisioner dengan skala likert empat yang digunakan untuk memperoleh data kelayakan trainer Station menggunakan Human Machine Interface.

Hasil dari penelitian dan pengembangan ini adalah pengembangan yang dilakukan pada trainer Handling Station dengan menggunakan kontrol Human Machine Interface. Tingkat kelayakan ditinjau dari ahli media I mendapatkan persentase 88,6%, ahli media II mendapatkan persentase 96,5% dan ahli media III mendapatkan persentase 92% dengan rata-rata persentase 92,2% kategori "**Sangat Layak**". Sedangkan untuk ahli materi I mendapatkan persentase 87,5%, ahli materi II mendapatkan 98,4%, dan ahli materi III mendapatkan persentase 95,3% dengan rata-rata persentase 93,7% kategori "**Sangat Layak**".

Kata kunci : penelitian dan pengembangan, *ADDIE*, trainer Handling Station dan Human Machine Interface, Jurusan Teknik Otomasi Industri.

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