

ABSTRAK

RIDO HARLAN. NIM. 5181131015. Pengembangan Alat Peraga Sistem Gardu Portal Distribusi Jaringan Tegangan Rendah Pada Mata Pelajaran Proteksi Jaringan Distribusi tenaga Listrik Kelas XI TJTL SMK Negeri 1 Percut Sei Tuan

Tujuan Penelitian ini untuk: (1) Untuk mengetahui bagaimana respon siswa pada pengembangan *Alat Peraga* Sistem Gardu Portal Distribusi Jaringan Tegangan Rendah pada mata pelajaran Proteksi Jaringan Distribusi Tenaga Listrik kelas XI TJTL SMK Negeri 1 Percut Sei Tuan. (2) Untuk mengetahui hasil dari pengembangan *Alat Peraga* Sistem Gardu Portal Distribusi Jaringan Tegangan Rendah yang akan dibuat pada mata pelajaran Proteksi Jaringan Distribusi Tenaga Listrik kelas XI TJTL SMK Negeri 1 Percut Sei Tuan. (3) Untuk mengetahui bagaimana tingkat kelayakan pengembangan *Alat Peraga* Sistem Gardu Portal Distribusi Jaringan Tegangan Rendah tersebut pada mata pelajaran Proteksi Jaringan Distribusi Tenaga Listrik kelas XI TJTL SMK Negeri 1 Percut Sei Tuan. Jenis penelitian yang digunakan adalah *Research and Development* (R&D) dengan model penelitian ADDIE. Model penelitian ADDIE meliputi lima tahapan yaitu pertama *analysis*, *design*, *development*, *implementation* dan *evaluation*. Instrumen yang digunakan pada penelitian ini adalah angket uji kelayakan dan angket respon pengguna. Validitas yang digunakan berdasarkan pendapat dari dua Ahli Materi dan dua Ahli Media. Hasil penelitian ini dapat diketahui: (1) Penelitian pengembangan ini menghasilkan produk berupa media pembelajaran Pengembangan *Alat Peraga* Sistem Gardu Portal Distribusi Jaringan Tegangan Rendah pada mata pelajaran Proteksi Jaringan Distribusi Tenaga Listrik Kelas XI TJTL SMK Negeri 1 Percut Sei Tuan. (2) Kelayakan media pembelajaran media pembelajaran *Alat Peraga* Sistem Gardu Portal Distribusi Jaringan Tegangan Rendah ditinjau dari ahli materi mendapat skor 90% dari persentase maksimum sebesar 100% dan dikategorikan “**Sangat Layak**”. ditinjau dari ahli media mendapat skor 93,75% dari persentase maksimum sebesar 100% dan dikategorikan “**Sangat Layak**”. Hasil respon pengguna (siswa) dengan kategori “**Sangat Layak**” memperoleh rata-rata persentase skor 92,25%.

Kata Kunci : Pengembangan, Alat Peraga, ADDIE, Sistem Gardu Portal Distribusi Jaringan Tegangan Rendah

ABSTRACT

RIDO HARLAN. NIM. 5181131015. *Development of Low Voltage Network Distribution Portal Substation System Props in Electrical Power Distribution Network Protection in the Class XI TJTL subjects SMK Negeri 1 Percut Sei Tuan*

The purpose of this research is to: (1) To find out how students respond to the development of Low Voltage Network Distribution Portal Substation System Props in the subject of Electrical Power Distribution Network Protection class XI TJTL SMK Negeri 1 Percut Sei Tuan. (2) To find out the results of the development of the Low Voltage Network Distribution Portal Substation System Props to be made in the subject of Electrical Power Distribution Network Protection class XI TJTL SMK Negeri 1 Percut Sei Tuan. (3) To find out how the feasibility level of the development of the Low Voltage Network Distribution Portal Substation System Props in the subject of Electrical Power Distribution Network Protection class XI TJTL SMK Negeri 1 Percut Sei Tuan. The type of research used is Research and Development (R&D) with the ADDIE research model. The ADDIE research model includes five stages, namely first analysis, design, development, implementation and evaluation. The instruments used in this study were feasibility test questionnaires and user response questionnaires. The validity used is based on the opinions of two Material Experts and two Media Experts. The results of this study can be known: (1) This development research produces products in the form of learning media for the development of Low Voltage Network Distribution Portal System Props in the subject of Electrical Power Distribution Network Protection Class XI TJTL SMK Negeri 1 Percut Sei Tuan. (2) The feasibility of learning media for Low Voltage Network Distribution Portal System Props in terms of material experts scored 90% of the maximum percentage of 100% and categorized as **“Very Feasible”**. in terms of media experts scored 93.75% of the maximum percentage of 100% and categorized as **“Very Feasible”**. The results of user (student) responses in the **“Very Feasible”** category obtained an average percentage score of 92.25%.

Keywords: Development, Props, ADDIE, Low Voltage Network Distribution Portal Substation System