

ABSTRAK

SASKIA REHANI BR TARIGAN. NIM. 5181131003. Pengembangan E-Modul Berbasis *Discovery Learning* Pada Mata Pelajaran Kontrol Refrigerasi Dan Tata Udara Kelas XI Teknik Pendingin Dan Tata Udara SMK Negeri 1 Percut Sei Tuan.

Penelitian ini bertujuan untuk: (1) Mengetahui cara mengembangkan E-Modul Berbasis Model Pembelajaran *Discovery Learning* Kontrol Refrigerasi dan Tata Udara untuk siswa SMK Negeri 1 Percut Sei Tuan. (2) Mengetahui tingkat kelayakan E-Modul Berbasis *Discovery Learning* yang dikembangkan untuk siswa SMK Negeri 1 Percut Sei Tuan. (3) Mengetahui respon siswa terhadap E-Modul Berbasis Model Pembelajaran *Discovery Learning* pada mata pelajaran Kontrol Refrigerasi dan Tata Udara Kelas XI di SMK Negeri 1 Percut Sei Tuan. Penelitian ini akan diuji coba dengan melibatkan siswa kelas XI Teknik Pendingin dan Tata udara SMK Negeri 1 Percut Sei Tuan semester ganjil tahun ajaran 2022/2023. Jenis penelitian ini adalah *Research and Development* (R & D) dengan model penelitian ADDIE. Model penelitian ADDIE meliputi 5 tahapan yaitu pertama *analysis* yang meliputi analisis kebutuhan produk, kedua *design* yaitu menyusun garis besar, *layout* dan materi E-Modul, ketiga *development* yaitu mengembangkan produk yang sudah didesain untuk dilakukan validasi agar mendapatkan masukan oleh ahli media dan ahli materi, keempat *implementation* yaitu menerapkan produk untuk mendapatkan respon dari pengguna (siswa) terhadap E-Modul yang telah dikembangkan, kelima *evaluation* yaitu mengevaluasi E-Modul berdasarkan beberapa masukan dari para ahli serta respon pengguna. Instrumen yang digunakan pada penelitian ini adalah angket validasi dan angket respon pengguna. Hasil Penelitian ini diketahui : (1) Penelitian pengembangan ini menghasilkan produk berupa E-Modul Berbasis Model Pembelajaran *Discovery Learning* Kontrol Refrigerasi dan Tata Udara. (2) Kelayakan E-Modul ini didapatkan dari hasil validasi ahli media dengan kategori “**Sangat Layak**” yang memperoleh nilai rata-rata sebesar 3,4. Dan hasil validasi berikutnya didapatkan dari ahli materi dengan kategori “**Sangat Layak**” yang memperoleh nilai rata-rata sebesar 3,4. (3) Hasil respon pengguna terhadap E-Modul ini dikategorikan “**Sangat Baik**” yang memperoleh nilai rata-rata sebesar 3,6 pada siswa dalam kelompok kecil, 3,7 pada siswa dalam kelompok besar. Rekomendasi pada penelitian ini adalah penggunaan E-Modul Berbasis Model Pembelajaran *Discovery Learning* dalam kegiatan pembelajaran harus lebih dikembangkan lagi pada mata pelajaran lainnya sehingga dapat meningkatkan motivasi dan semangat belajar siswa.

Kata Kunci : E-Modul Pembelajaran, *Discovery Learning*, Kontrol Refrigerasi dan Tata Udara

ABSTRACT

SASKIA REHANI BR TARIGAN. NIM 5181131003. Development Of Electronic Module Based On Discovery Learning in Basic Refrigeration Control And Air Conditioning Subjects Class XI Refrigeration And Air Conditioning Engineering of SMK Negeri 1 Percut Sei Tuan.

This research aims to: (1) Find out how to develop an Electronic Module Based on the Discovery Learning Learning Model of Refrigeration Control and Air Conditioning for students of SMK Negeri 1 Percut Sei Tuan. (2) Know the feasibility level of the Electronic Module Based on the Discovery Learning Model developed for students of SMK Negeri 1 Percut Sei Tuan. (3) Know students' responses to the E-Module Based on the Discovery Learning Model on the subject of Refrigeration Control and Air Conditioning Class XI at SMK Negeri 1 Percut Sei Tuan. This research will be tested by involving students of class XI Refrigeration and Air Conditioning Engineering at SMK Negeri 1 Percut Sei Tuan in the odd semester of the 2022/2023 academic year. The kind of research is Research and Development (R & D) with the ADDIE research model. The ADDIE research model includes 5 stages, namely the first analysis which includes product requirements analysis, the second design, namely compiling the outline, layout and material of the Electronic Module, the third development is developing a product that has been designed for validation in order to get input by media experts and material experts. the fourth implementation is to apply the product to get a response from users (students) to the Electronic Module that has been developed, the fifth evaluation is to evaluate the Electronic Module based on several inputs from experts and user responses. The instruments used in this study were a validation questionnaire and a user response questionnaire. The result of this research are know : (1) This development research resulted in a product in the form of an Electronic Module Based on the Discovery Learning Learning Model of Refrigeration Control and Air Conditioning. The feasibility of this Electronic Module was obtained from the validation results of media experts is the "Very Feasible" category which obtained an average score of 3,4. And the next validation results were obtained from material experts is the "Very Feasible" category who obtained an average score of 3,4. The results of the user's response to this E-Module are categorized as "Very Good" with an average score of 3,6 for students in small groups, 3,7 for students in large groups. The recommendation in this study is that the use of Electronic Module Based on the Discovery Learning Model in learning activities should be further developed in other subjects so that it can increase students' motivation and enthusiasm for learning.

Keywords : E-Learning Module, Discovery Learning, Refrigeration Control and Air Conditioning