

Review OJS_Development of Electrical Machine Training Kits to Increase Competency in Practical Learning and Work Readiness in The Industry

The screenshot shows the submission review page for article #57884 on the Elinvo journal website. The page is titled "#57884 Review" and includes navigation tabs for "SUMMARY", "REVIEW", and "EDITING". The submission details are as follows:

- Submission:**
 - Authors: Pramudita Budiastruti, Eko Swi Damarwan, Adhy Kurnia Triatmaja, Barry Nur Setyanto
 - Title: Development of Electrical Machine Training Kits to Increase Competency in Practical Learning and Work Readiness in The Industry
 - Section: Articles
 - Editor: Jurnal Elinvo, Anggun Winuraito
- Peer Review:**
 - Round 1
 - Review Version: 57884-161372-2-RV.DOCX (2023-04-07)
 - Initiated: 2023-05-29
 - Last modified: 2023-06-12
 - Uploaded file: Reviewer A 57884-172425-1-RV.PDF (2023-05-31)
- Editor Decision:**
 - Decision: Accept Submission (2023-06-18)
 - Notify Editor: Editor/Author Email Record (2023-06-12)
 - Editor Version: 57884-167821-1-ED.DOCX (2023-04-07), 57884-167821-2-ED.DOCX (2023-06-18)
 - Author Version: 57884-174986-1-ED.DOCX (2023-06-14), 57884-174986-2-ED.DOCX (2023-06-15), 57884-174986-3-ED.DOCX (2023-06-18)
 - Upload Author Version: [Choose File] [No file chosen] [Upload]

On the right side, there are sections for "SPECIAL LINKS" (Editorial Team, Reviewers, Journal Subscription, Statistics, Focus and Scope, Publication Ethics, Author Guidelines, Peer Review Process, Reviewer Guidelines, History), "USER" (logged in as pramuditabudastuti, My Journals, My Profile, Log Out), "JOURNAL TEMPLATE" (Download Template), and "NOTIFICATIONS" (View 11 new, Manage).

The screenshot shows an email from Anggun Winuraito (anggunwinuraito@uny.ac.id) to Pramudita Budiastruti. The subject is "[ELINVO] Editor Decision". The email content is as follows:

Mrs. Pramudita Budiastruti:

We have reached a decision regarding your submission to Elinvo (Electronics, Informatics, and Vocational Education), "Development of Electrical Machine Training Kits to Improve Electrical Machine Competence".

Our decision is: Revisions Required

Please revise your paper according to the reviewer's comments below and also the comments in the soft-copy of your article (file attached), then highlight in yellow the revised part.

Revise your paper before:

If you have any questions, please let us know

Thank you very much

Best regards

Anggun Winuraito

mail.google.com/mail/u/0/#inbox/FMfcgzGsnBfQQWwZhbQCLTsPMRpvPlzm

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Anggun Winursito
(Scopus ID 57203099252) Universitas Negeri Yogyakarta, Indonesia
anggunwinursito@uny.ac.id

Reviewer A:

RELEVANCE

The topic is relevant. research results (priority) or scientific studies in the field of electronics and informatics both in terms of technological developments and development of teaching

Average

Written Comment:

CONTRIBUTION

Paper is considered to have originality, novelty, and innovation.

Below Average

Written Comment:

ORGANISING THE ARTICLE

The paper has clarity of presentation. It is well organised. clearlv

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ORGANISING THE ARTICLE

The paper has clarity of presentation. It is well organised, clearly written.

Good

Written Comment:

TITLE

The title is effective and accurately describe the content.

Poor

Written Comment:

'Development of Electrical Machine Training Kits to Improve Electrical Machine Competence'
I wonder why an Electrical Machine needs an improvement in its competence

ABSTRACT KEYWORDS

The abstract is clear and informative. It provides a clear statement of the problem, the proposed approach or solution, and point out major findings conclusions. The keywords are appropriately chosen.

Average

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conclusions. The keywords are appropriately chosen.

Average

Written Comment:

INTRODUCTION

The paper contains incisive and plain background of problem, the differences of previous research, and contribution.

Below Average

Written Comment:

Gap analysis was absent.

METHOD

The paper contains research design and procedure. The research methodology for the study is appropriate and applied properly

Poor

Written Comment:

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RESULTS

Result and analysis is incisively provided in the paper (Table and/or Figure is available to ease the reading).

Average

Written Comment:

CONCLUSION

The essence of research or experimental result is properly and plainly concluded.

Average

Written Comment:

REFERENCES

All references should be to the most pertinent and up-to-date sources. References provided are referred and corresponded to the paper and in accord with the given rules.

Average

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1 of 8

Development of Electrical Machine Training Kits to Improve Electrical Machine Competence

Commented [CB1]: I wonder why an Electrical Machine needs an improvement in its competence

ABSTRACT

This study aims to develop an Electrical Machine Training Kit for electrical machine practice media in vocational education. [This type of research is research and development with the ADDIE model. The stages of development carried out are Analyze, Design, Development, Implementation, and Evaluation.] The background of this research is the result of observations from the Central Statistics Agency which can be concluded that there is still intellectual unemployment. One of the education providers who have an intellectual vision, excellence, innovation, global insight, and a technopreneur spirit is the Electronic Engineering Vocational Education study program. One of the profiles of graduates of the Electronic Engineering Vocational Education study program is working in industry. Based on the National Work Competency Standards in the electrical panel industry in the technical production process, the competence of electrical machines is one of the main units of expertise from the National Work Competency Standards in the electrical panel industry in production process techniques. The results of the team-teaching lecturer's discussion on the Electrical Machinery practicum course found that there were inadequate practicum supporting equipment. Based on trials, the Electrical Machine Training Kit can work in good conditions. The results of the Electrical Machine Training Kit testing show that all components are running well, these components are MCB 1 phase, overload, push button OFF, push button ON, magnetic contactor, and motor 1 phase.

Keywords: competence, development, electrical machine, training kits

Commented [CB2]: Why such research should be carried out? a rationale background should be provided.

Commented [CB3]: A thoroughly English check is needed.

INTRODUCTION

Graduates who have quality are indicators of the success of the education implementation process. Graduates who have quality are one of the determinants of the existence of a study program in the long term. Study programs that have quality graduates have an impact on increasing demand from stakeholders.

have an age of 15-64 years and 6.2% have an age > 65 years. In the age range of 15-64 years is the population of productive age including students who are looking for work [2]. The productive age is expected to actualize discipline, cooperation, responsibility, and skill in work [3]. Profile of graduates from the Electronic Engineering Vocational Education study program is working in the industry. Based on the

Commented [CB4]: many expressions applied are not English expression. Too many colloquial words that may be unreadable for natives.

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2 of 8

sequences/relationships [6]. Research by Huzaini, Y. N, Yusro, A. C, and Purwandari (2019) with the title Development of a Contactor-Based Electric Motor Control Trainer KIT to Improve Student Learning Outcomes. The main focus of this research is the development of a contactor-based motor control trainer kit [7]. Research by Irwansyah and Mustafa, S (2020) with the title Design and Build of an AC Electric Machine Trainer. The research has a main focus, namely the development of an electric machine trainer to see the use of voltage, current, and rotational speed in a no-load motor state, as well as a loaded motor state. In addition, production process has not been achieved optimally.

METHODS

The design of the Electrical Machine Training Kit to improve the competence of electrical machines is classified as research and development research. The data collection instrument in this study used a questionnaire. The research analysis used quantitative descriptive analysis techniques. The purpose of this development research is to produce a product, determine the feasibility and user

Commented [CB5]: The entire research method does not add up. You mentioned so many techniques ranging from questionnaire, interview, observation. Which is inconsistent with the quantitative analysis suggested (in the very same paragraph). Could you please pay a closer attention to such claim?

Commented [CB6]: Reference?

Commented [CB7]: What were the content of the questionnaire? Where were they derived from?

Commented [CB8]: It is not a common expression for data analysis technique / approach. Need a reference.

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3 of 8

Figure 1. The implementation cycle of the ADDIE approach

The explanation of the steps taken is based on Figure 1, namely at the analysis stage, this stage is the stage of gathering information by conducting observations and interviews with users regarding the Electrical Machine Training Kit. After analyzing the next stage is the design process. At this stage the researcher makes a plan that will be carried out after getting the observation data. This design process is focused on making the Electrical Machine Training Kit which will be developed according to the problems found during the analysis stage. The design phase includes 2

Figure 2. Design of electrical machine training kit

Development is the process of creating or developing trainers and validating them. This stage is a real stage in working on the Electrical Machine Training Kit. The steps to develop in this research include, making trainers, making guidebooks, developing instruments, instrument feasibility tests, feasibility trials, product revisions to get product revision results. Products that have been revised by media and material experts are then declared feasible by experts so that the product is ready to be implemented [13]. At the implementation stage, it was carried out on students of the Electronic Engineering Vocational Education study program. The implementation was carried out to test the students' responses to the Electrical Machine Training Kit [14]. The evaluation stage aims to find out the shortcomings of the developed

Commented [CB9]: You mixed up between revised and review. I don't think an expert supposed to revise a product that being developed by the researchers.

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Figure 5. Media Expert Test

it can be concluded that the media aspect obtained a minimum value of 87.5% and a maximum value of 90%, this means that the Electrical Machine Training Kit in terms of the media aspect is in the "very feasible" category. The results of the material validity test include two things, namely the suitability of the material and the quality of learning. The results of the material validity test are shown in Figure 6:

Figure 6. Material Expert Test

It can be concluded that the material aspect obtained a value of 88.40% for the suitability of the material and a value of 90.2% for the quality of learning. Based on the results of the material validity test, it can be interpreted that the Electrical Machine Training Kit is included in the "very feasible" category. The results of

Figure 7. User Feasibility Test

It can be concluded that the user's feasibility test obtained a score of 89.80% in terms of motivation, 88.0% in terms of convenience, and 90.3% in terms of material. Based on the results of the feasibility test from the user, it can be interpreted that the Electrical Machine Training Kit is in the 'very feasible' category.

CONCLUSION

The results of the application of rare practical work and the results of testing the electrical machine circuit running for a moment can be concluded that the installation conditions and component performance of each Electrical Machine Training Kit module are good. The components of the Electrical Machine Training Kit module are 1 Phase MCB, overload, push button OFF, push button ON, magnetic contactor, and 1 phase motor.

The results of the media validity test include four things, namely usability, hardware, operation, and visual communication. The results of the media validity test can conclude that the media aspect obtains a minimum value of 87.5% and a maximum value of 90%, this means that the Electrical Machine Training Kit in terms of the media aspect is in the "very feasible" category. The results of the material validity test include two things, namely the suitability of the material and the quality of learning. The results of the material validity test can conclude that the material aspect gets a value of 88.40% for the suitability of the material and a value of 90.2% for the quality of learning. Based on the results of the material validity test.

Commented [CB10]: What are the implication to the finding?

Category	Value
Suitability of the material	88.40%
Quality of learning	90.2%

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Keywords: competence, development, electrical machine, training kits

INTRODUCTION

Graduates who have quality are indicators of the success of the education implementation process. Graduates who have quality are one of the determinants of the existence of a study program in the long term. Study programs that have quality graduates have an impact on increasing demand from stakeholders. Stakeholders will have high confidence in recruiting workers from a study program. The study program has the function of forming graduates who have quality so that stakeholders have high confidence in recruiting workers [1]. In reality, there is intellectual unemployment. Based on the Central Statistics Agency, the population of Indonesia in 2020 is estimated to reach 134.92 million women and 136.14 million men, 26.3% have an age of 0-14 years, 67.7%

have an age of 15-64 years and 6.2% have an age > 65 years. In the age range of 15-64 years is the population of productive age including students who are looking for work [2]. The productive age is expected to actualize discipline, cooperation, responsibility, and skill in work [3].

Profile of graduates from the Electronic Engineering Vocational Education study program is working in the industry. Based on the National Work Competency Standards in the electrical panel industry in the technical production process, electrical machine competence is one of the main units of expertise from the National Work Competency Standards in the electrical panel industry in the technical production process. The implementation of education related to electric machines in the Electronic Engineering Vocational Education study program is an electrical machine

Author

In the introductory section, it would be better if you could describe the current condition of the training kit. You can explain related to the shortcomings of the existing training kit, so that there is an urgency that requires development to be carried out. In addition, it has been described related to similar research that has been done before. Several researchers have developed training kits based on different focuses. The focus of the research on the development of the training kit by the author has already been explained, but it needs to be detailed again regarding what the current condition of the training kit is like, especially on the selected "assembling a series of electrical machines that run for a moment" focus. So that the novelty of the article will be clear.

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Trainer, the focus of this research is the development of an electric machine trainer to understand a circuit to run a 3-phase motor. Research has a main focus on mastery of competencies for star delta sequences/relationships [6]. Research by Huzaini, Y. N, Yusro, A. C, and Purwandani (2019) with the title Development of a Contactor-Based Electric Motor Control Trainer KIT to Improve Student Learning Outcomes. The main focus of this research is the development of a contactor-based motor control trainer kit [7]. Research by Irvawanyah and Mustafa, S (2020) with the title Design and Build of an AC Electric Machine Trainer. The research has a main focus, namely the development of an electric machine trainer to see the use of voltage, current, and rotational speed in a no-load motor state, as well as a loaded motor state. In addition,

field of electrical machinery in the electronic engineering education study program is not sufficient to that the main expertise of the National Work Competency Standards in the electrical panel industry in the technical production process has not been achieved optimally.

METHODS

The design of the Electrical Machine Training Kit to improve the competence of electrical machines is classified as research and development research. The data collection instrument in this study used a questionnaire. The research analysis used quantitative descriptive analysis techniques. The purpose of this development research is to produce a product, determine the feasibility and user

Author
The methodology section still needs a detailed explanation. Regarding the product revision stage, how many students and material supports are used? What's being tested? Regarding the implementation stage, how many students are asked for responses? How are they? Is it better if these data (subjects and objects) are presented in the methodology.

3 *EJEDVO (Electronics, Informatics, and Vocational Education), Month Year edition: 7(6)(6) page*

response of the Electrical Machine Training Kit trainer unit. The feasibility is reviewed from the based on the analysis that has been done [12]. The results of the Electrical Machine Training

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the Electrical Machine Training Kit product was developed [15].

RESULT AND DISCUSSION


In this study, the learning achievement subsection of the subject is assembling a series of electrical machines that run for a moment. The learning experience gained is drawing, assembling, and operating the control circuit and the power of the electric machine circuit running for a moment. The picture of the control circuit and the power of the electric engine running momentarily is shown in Figure 3 and Figure 4 below.

Machine Training Kit in the learning achievement subsection of assembling a series of electrical machines running for a moment. The first trial was carried out by identifying the practical work steps of the learning achievement subsection assembling a series of electrical machines running for a moment are shown in Table 1.

Table 1. Practical work steps for assembling a series of electric machines running for a moment

Practical Learning	Work method
	Power Circuit
Activity 1	Connect the phase to MCB
Activity 2	Connect the MCB output to the KMI input (Normally open L1/NO L1)
Activity 3	Connect the KMI output (Normally open L1/NO L1) with the phase (symbol P) on the 1 Phase motor module
Activity 4	Connect input KMI (Normally open L2/NO L2) with Z1 on 1 Phase motor module
Activity 5	Connect output KMI (Normally open L2/NO L2) with D2 on 1 Phase motor module

Author
It is advisable that the results and discussion include photos pictures of the hardware/software training that has been developed. The parts of the training kit also need to be described.



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electrical machine circuit running for a moment, it can be concluded that the installation conditions and component performance of each Electrical Machine Training Kit module are described in Table 3.

Table 3. Installation conditions and component performance of each module Electrical Machine Training Kit

Module	Installation Conditions and Component Performance	
	Good condition	Bad condition
MCB 1 Phase	✓	-
Overload	✓	-
Push Button OFF	✓	-
Push Button ON	✓	-
Magnetic Contactor	✓	-
Motor 1 Phase	✓	-

Based on the description of Table 3, the Electrical Machine Training Kit all components are running well, the components are MCB 1 Phase, Overload, Push Button OFF, Push Button ON, Magnetic Contactor, and Motor 1 Phase. After knowing the results of the performance test, the next step is the validity test which is

maximum value of 90%, user means that use Electrical Machine Training Kit in terms of the media aspect is in the "very feasible" category. The results of the material validity test include two things, namely the suitability of the material and the quality of learning. The results of the material validity test are shown in Figure 6:

Figure 6. Material Expert Test

Category	Value
Material Suitability	88.40%
Quality of Learning	90.2%

It can be concluded that the material aspect obtained a value of 88.40% for the suitability of the material and a value of 90.2% for the quality of learning. Based on the results of the material validity test, it can be interpreted that the Electrical Machine Training Kit is included in the "very feasible" category. The results of the user feasibility test include three things, namely

Author
Table 3 describes the installation conditions and component performance of each module. What is the procedure for obtaining the data?

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Figure 7. User Feasibility Test

It can be concluded that the user's feasibility test obtained a score of 89.80% in terms of motivation, 88.0% in terms of convenience, and 90.3% in terms of material. Based on the results of the feasibility test from the user, it can be interpreted that the Electrical Machine Training Kit is in the "very feasible" category.

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The results of the application of rare practical work and the results of testing the electrical machine circuit running for a moment can be concluded that the installation conditions and component performance of each Electrical Machine Training Kit module are good. The components of the Electrical Machine Training Kit module are 1 Phase MCB, overload, push button OFF, push button ON, magnetic contactor, and 1 phase motor.

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and 90.3% in terms of material. Based on the results of the feasibility test from the user, it can be interpreted that the Electrical Machine Training Kit is included in the "very feasible" category.

REFERENCES

- [1] Putri, A. Z., & Mukhaiyar, R. (2021). Perbandingan Lulusan Lunasan Pendidikan Teknik Elektro Dengan Non-Kependidikan. *Ramah Research: Journal of Multidisciplinary Research and Development*, 3(4), 39-46.
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- [3] Santosa, B., Budiasuti, P., Purmawan, P., & Sayuti, M. (2021). The Influence of Discipline, Responsibility, Cooperation, and Problem Awareness on Employability Skills. *Jurnal Pendidikan Teknologi dan Kejuruan*, 27(1), 81-90.
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- [5] Yakti, W. N. (2021). Penzeimbangan

Author
Make sure that the writing of references is in accordance with the applicable format.

Author
The results and conclusions section should be explained in more detail regarding the discussion of the results of this research objective (to put the title, namely - to Improve Electrical Machine Competence. Which part concludes that the training kit is able to Improve Electrical Machine Competence?

