



## Harmonizing PKL Program with Level II KKNI Through the Use of Electronic Journal

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| Article Info   | Abstract  |
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| <p>Article History :</p> <p>Received<br/>November 2021</p> <p>Accepted<br/>March 2022</p> <p>Published<br/>July 2022</p> <p>Keywords:<br/>e-journal, PKL, level 2<br/>KKNI</p> | <p>The implementation of Field Work Practice (PKL) has experienced several problems, one of the problems is that students experience confusion when filling out existing activity journals. To overcome these problems, electronic journals for PKL in accordance with the level 2 Indonesian National Qualification Framework (KKNI) are proposed. This study aims to develop electronic journals that are in accordance with level 2 KKNI. The research method used is the ADDIE, which consists of five stages, namely Analysis, Design, Development, Implementation, and Evaluation. Based on the feasibility test, effectiveness test of the developed PKL electronic journal, and the responses given by media experts and material experts, the criteria for the responses were very feasible. From the practicality test, the criteria were very practical. From the effectiveness test in the experimental class, the criteria were quite effective and significantly used by students to improve the competence of graduates of the light vehicle engineering study program. The conclusion of this study is that electronic journals are effective in improving the graduate competence. The novelty of this research is that it is electronic based and refers to the level 2 KKNI.</p> |

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## INTRODUCTION

Vocational high schools (SMK) are educational institutions that are oriented towards student competence in certain areas of expertise such as industry and technology. According to Law Number 20 of 2003 Article 15 concerning the National Education System, it is stated that "Vocational education is secondary education that prepares students to work in certain fields". The learning process carried out in SMK places more emphasis on practical activities.

Field Work Practice (PKL) in the 2013 Curriculum or also known as Industrial Work Practice (Prakerin) is a learning program for vocational students that is carried out specifically by taking a certain time allocation and involving other parties outside the school system. PKL is a form of dual system education which is one of the characteristics of vocational education, namely meeting the needs of students in learning activities in accordance with the realities of the business world and the industrial world. The place for implementing PKL is the business world or the industrial world (DU/DI) in the form of private companies or government agencies.

The existence of PKL is a form of dual system education which is one of the characteristics of vocational education. It meets the needs of students in learning activities that are in accordance with the realities of the business world and the industrial world (Prasetya, 2016:5). The objectives of implementing PKL are: (1) actualizing the dual system education model between vocational schools and the business and industrial world (DU/DI) which systematically combines educational programs in vocational schools and training programs for mastery of skills in the work field; (2) dividing learning topics from basic competencies that can be implemented in schools and those that can be implemented in DU/DI in accordance with the resources available to each party; (3) providing direct work experience to students in order to instill a positive work climate that is oriented towards the quality of work processes and results; (4) providing a high work ethic for students to enter the work field in facing the demands of the global job market (Hamalik, 2007).

Based on pre-research observations conducted at SMK Negeri 1 Semarang, in July-October 2021, there were several problems on the implementation of PKL. These problems include: (1) The achievement of basic competencies that have not been optimal. This is because the competencies that students do during practice are not in accordance with KKNI level 2, it is proven that the results of group C competencies are less than 75%; (2) Students have difficulty in filling out journals because the journals are presented in a blank form, so it is necessary to adjust the journals used by students when doing PKL. Students who carry out PKL require adjustments to the learning environment in the industry according to level 2 KKNI; (3) Student learning outcomes are not optimal.

The PKL journal used so far is in the form of a printed book, so there are several weaknesses. Weaknesses of PKL journals in the form of printed books that have been used are: (1) PKL journals in the form of printed books are impractical because they are prone to getting dirty, damaged and lost; (2) The printed book PKL journal contains blanks so that students feel confused in filling it out; (3) The printed book PKL journal is only in the form of activity titles and is not equipped with a report sheet so it cannot be used as a portfolio of student competency achievements during the competency test.

The results of research related to learning using electronic journal media written by Fidian (2021) reveal the fact that learning using e-journal media is in the high or very good category, while the quality of learning is in the sufficient category. In addition, it was found that learning using e-journal media has a positive and significant influence on the quality of learning.

Research on e-journal media for PKL students has not been widely carried out. Most research has only focused on certain subjects in class, and a significant impact has not been felt for teachers and students and is only related to the running of PKL, not yet reaching the competencies targeted at PKL. In terms of content, the e-journal media products that have been developed and researched so far tend to be less precise. Details of activities are less specific and do not support match in accordance with level 2 KKNI.

The background for choosing to develop a PKL electronic journal that is in accordance with the Level 2 KKNI of Light Vehicle Engineering (TKR) can significantly increase the competence of graduates between those who are tested using PKL electronic journal media that are in accordance with the level 2 Indonesian national qualification framework and those who do not use the media. PKL electronic journal that is in accordance with level 2 Indonesian national qualification framework for class XI TKR students at SMK Negeri 1 Semarang. The purpose of this study is to develop an electronic journal of PKL in accordance with level 2 Indonesian National Qualifications Framework Light Vehicle Engineering (TKR) to improve the competence of graduates.

BNSP (2017) Level II KKNI certification scheme on Light Vehicle Engineering Skills Competence (TKR) is a certification scheme compiled by the BNSP scheme committee together with the Directorate of Vocational Development. This certification scheme refers to the SKKNI Decree of the Minister of Manpower of the Republic of Indonesia Number: 116/MENA/II of 2004 concerning the Determination of Indonesian National Work Competency Standards (SKKNI) for the Automotive Sector, Light Vehicle Sub-Sector and the Light Vehicle Engineering curriculum for Vocational High Schools, especially for group C subjects including C1, C2 and C3. The Level II KKNI certification scheme is used to ensure the competence of vocational high school graduates and as a reference for LSPs and competency assessors in implementing the competency certification of light vehicle engineering skills.

## RESEARCH METHODS

The research model used in this study is the ADDIE model. The ADDIE development model is a model that uses simple and systematic steps. The ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation) is used because in the development of the model, there is an evaluation that aims to determine the competence of students before and after using the developed test material. ADDIE is an instructional design model that applies to all

types of education and despite the fact that ADDIE consists of components of all other design models, it is a relatively simple model (Dick.1990).

The steps applied include the following:

### 1. Analysis Stage

The activities carried out in the analysis phase include the stage of gathering information which is used as a reference for developing a product, some of the information collected consists of three stages, namely: (1) Needs analysis, (2) Needs analysis to PKL electronic journals with dates and standards. Level 2 KKNI, (3) Graduate Competence Analysis;

### 2. Design Stage

The steps in this design stage are the preparation of the PKL e-journal framework, the collection and selection of the latest and standardized level 2 KKNI references, the PKL e-journal design, and the preparation of a questionnaire instrument for products in the form of PKL e-journals. If the design has been approved, the next step is the realization of the approved application design;

### 3. Development Stage

Firstly, PKL electronic journal will be developed according to the level 2 KKNI of light vehicle engineering expertise program, this stage aims to see how far the feasibility of the PKL electronic journal that has been designed. The second, after the PKL electronic journal was developed according to level 2 KKNI, it was then submitted to the validator consisted of media experts, material experts, and user responses (students and teachers). The media expert validator consists of 1 senior teacher and 1 practitioner and material expert consisting of 2 light vehicle engineering teachers and 2 material experts from the business or industrial world; User responses in this case were 4 PKL supervisors of light vehicle engineering at SMK N 1 Semarang, and class XI students in light vehicle engineering at SMK N 1 Semarang. The third, after the electronic journal is tested for feasibility and practicality, the next step is to revise the electronic journal according to the notes from the validator. The next step is the development of the PKL electronic journal questionnaire instrument to test the feasibility and practicality of the PKL electronic journal according to level 2 KKNI;

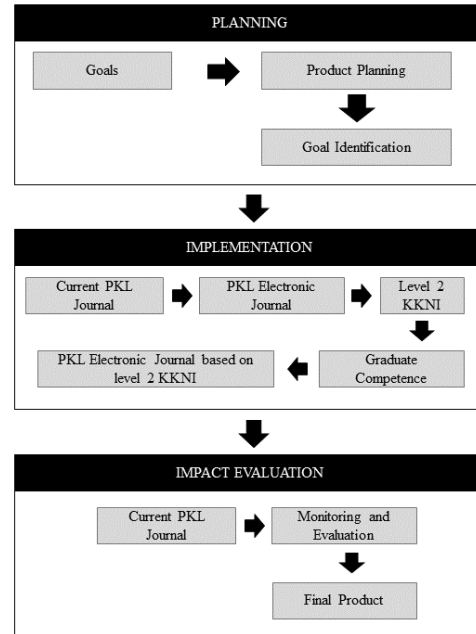
#### 4. Implementation Stage

The steps are taken if the results of the feasibility and practicality tests meet the good criteria. The implementation phase is a trial phase for the PKL electronic journal with the level 2 KKNI standard. It will be carried out in the light vehicle engineering expertise program at SMK N 1 Semarang and involves several teachers who will apply the PKL electronic journal that has been developed. The final product is an electronic journal of PKL with level 2 KKNI standard.

The activities carried out in this stage was giving pretest to the two respondents, Next, Treatment was given to the experimental class in the form of an electronic journal application for PKL with level II KKNI standards, while the control class was not given treatment. After that, the posttest was given as the final result of scoring respondents' responses. This stage included giving a pretest to the experimental class and control class, conditioning and giving a posttest to the experimental class and control class;

#### 5. Evaluation Stage

The stages evaluated in this stage are divided into 2 evaluations, namely formative evaluation and summative evaluation. Formative evaluation is related to media feasibility tests and summative evaluation is related to experimental design and media effectiveness testing. In the evaluation stage, the obtained data is analyzed to find out the deficiencies of the application media to be made, the evaluation results are in the form of suggestions and questionnaires. The following is a product development flowchart.



**Figure 1.** Product Development Flowchart

The unit of analysis of this research is the application of PKL electronic journal according to level 2 KKNI. The data sources for this research are senior teachers and practitioners (PTP Muda BPMPK), while material experts from academics (teachers) as well as representatives from industry, and students involved in the product effectiveness test, namely class XI Light Vehicle Engineering (TKR) SMK N 1 Semarang, in improving the competence of graduates.

The instruments used in this research are (a) an electronic journal assessment sheet of Field Work Practice (PKL) according to the Level 2 Indonesian National Qualifications Framework (KKNI); (b) a competency questionnaire for graduates using PKL electronic journal according to the Level 2 KKNI.

##### 1. Instrument Validity and Reliability Test

To find out the validity and reliability of the scale used in the present study, it is necessary to conduct a first test of the instrument items used.

##### a) Validity Test and Reliability of the Instruments Feasibility Assessment Sheet for Electronic Journal

Based on the results of data analysis conducted by Ahmad Fauzan, k score = 0.300, data analysis conducted by Muchammad Arif Mustofa k = 0.265, and data analysis conducted by Totok Sumaryanto k = 0.265. This shows that

the validation sheet used by media experts is reliable, with fair deal.

b) Test the Validity and Reliability of the Practicality Assessment Sheet Instrument for Electronic Journals

(1) Validity

Based on the results of data analysis conducted by Akbar Iskandar, rpbi score = 1, data analysis conducted by Adlia Alfi Riani rpbi = 0.99, and data analysis conducted by Ellbert Hutabri rpbi = 0.99, This shows that the module feasibility instrument sheet used is valid.

(2) Reliability

Reliability is used to show that a questionnaire can be trusted to be used as a data collection tool because the practicality of the questionnaire is good. Based on the results of data analysis conducted by Akbar Iskandar, the score of KR20 = 0.639, data analysis carried out by Adlia Alfi Riani KR20 = 0.726, and data analysis carried out by Ellbert Hutabri KR20 = 0.800. It shows that the media expert validation sheet used is reliable, with high criteria.

1) Journal Practicality Category

The data from the analysis of the practicality of the media are in the form of a questionnaire on the results of the student validator data. The score of the reproducibility coefficient (Kr) and the scalability coefficient (Ks) are calculated to determine whether each aspect is practical with the following formula:

$$K_r = 1 - \frac{e}{n}$$

Once Kr is known, the scalability coefficient (Ks) is calculated using the following formula:

$$K_s = 1 - \frac{e}{k}$$

Interpret qualitatively the average score of the questionnaire (%) practicality test of the whole media and each aspect using the following criteria.

2) Analysis of the Effectiveness of the Scheme Using N-Gain and N-Gain Average t-Test.

The data obtained are tested using the normality test, after knowing that the data is normally distributed, the next step is to test the homogeneity to determine the variance of the data. The next step is to determine the N-Gain of the data to determine the effectiveness of the journal. The last step is to test the N-Gain uses an independent t test to determine whether the

average N-Gain of the experimental class and control class is significant.

With the provision that if the score of t count > t table then there is a significant difference between the two data, in other words the journal increases the competence of graduates, and vice versa if t count < t table then there is no significant difference between the two data.

## RESULTS AND DISCUSSION

### Results

a) Feasibility test

To test the feasibility of using the journal eligibility assessment sheet instrument, the present study adopted the BSNP questionnaire which has been proven to be valid. Therefore, there is no need to test the response items again.

Based on the data above, the overall average is 4.28 with very appropriate criteria, thus the PKL electronic journal based on level 2 KKNI is declared to be valid and very feasible. Based on the results of this validation, it can be concluded that the PKL electronic journal based on level 2 KKNI is valid with revisions and does not require significant overhaul and is suitable for use as a PKL journal for Light Vehicle Engineering program.

b) Journal Practicality Test

This stage is carried out to determine the practicality of the developed journal. The practicality test of PKL electronic journals with level 2 KKNI standards is carried out by teachers and students to obtain evidence from the results of filling out the response questionnaire which shows that practical journals are used in research.

c) Journal Effectiveness Test

Based on the table above, the results of normality test of the graduate student competence have a significance score (Sig.) as shown in the table, which shows a score of Sig. > 0.05, it can be concluded that the data is normally distributed.

The results of the homogeneity test of the experimental class and the control class are in the following table

Based on the table above, the homogeneity test on the pretest based of mean shows 0.410 significant which means the data is more than 0.05. It can be concluded that the data is homogeneous. The score on the posttest based of

mean shows 0.253 significant which means the data is more than 0.05, so it can be concluded that the data is homogeneous.

Based on the results of the calculation of the N-Gain score test, it shows that the average N-Gain score for the experimental class is 71.38 or 71% with a minimum N-gain score of 46% and a maximum N-gain score of 92%. Meanwhile for the control class it is 35.56 or 36% with a minimum score of 9% and a maximum N-gain score of 64%.

The results of the pretest and posttest t-tests for the experimental and control classes are as follows:

**Table 1.** Results of T-Test on Pre-Test of Control and Experiment Class

| Data            | Levene Statistic | t test | Significance Level |
|-----------------|------------------|--------|--------------------|
| N- Gain Percent | 0.189            | 10.781 | 0.000              |

Based on the output table above, it is known that the significance score (Sig) on Levene's Test for Equality of Variances is 0.189 > 0.05, so it can be concluded that the variance of the N-Gain data (%) for the experimental class and control class is the same or homogeneous.

Based on the calculation results, it is obtained that the t value of N-gain Percent is 10,781 with the t table score at (df(n-k) = 32; a = 5%) is 1.69389. Because t count is greater than t table, so it can be opened before being given treatment using the Electronic Journal class XI TKR 1 and TKR 3 at SMK N 1 Semarang, there is no difference in the conditions of the two classes.

The results of the independent sample t test by including the average N-Gain score in the table, show that the N-Gain Percent data has a Sig (2-tailed) of 0.000 (smaller than a significance level of 0.05), meaning that the N-Gain Percent data in the study is distributed quite effectively and significantly.

## Discussion

Riza (2018) research results show that the developed e-learning product was declared to be feasible by media experts with a score of 84.17% and material experts with a score of 86.67%. The

results of the effectiveness test using the t test (paired sample t-test) obtained a significance value = 0.00, because a significance value of 0.00 < critical limit of 0.05 then H<sub>0</sub> is rejected or in other words there is a difference in the learning outcomes of PKL students between before and after using e-learning. The conclusion from this study is that e-learning can be used as a learning support. The e-learning product developed in this study is expected to be able to increase the effectiveness of the learning process for students who take part in PKL activities.

Srikandi, et al. (2020) the purpose of the research is to get the results of data analysis from the media expert validation questionnaire, which gets a percentage of 81.6%. Material expert validation gets a percentage of 75.3%. Educator validation gets a percentage of 80% and the results of student trials get a percentage of 86.4%. It shows that the electronic magazine is feasible to use. The results of the interest in learning test before using the media were 70.1% which was categorized as sufficient. After the use of learning media, the results of the students' interest in learning were 77.4% which were classified as good categories. This shows that students' interest in learning increases after using electronic magazines.

Ardiani, L. (2020) based on a descriptive analysis of product variables consisted of three indicators, the questionnaires are given to 116 students. Indicators of improvement in mastery of skill competencies obtained an average score of 3.51 from a maximum score of 5 with an achievement level of 78.8%.

Based on the three studies above, there are similarities, namely digital applications can increase the effectiveness and interest in learning of students during internships. Riza and Ardiani said that e-learning can increase the effectiveness of the learning process during PKL and Srikandi said that electronic magazines could increase students' interest in learning during PKL. From those three studies, no one studied about the use of electronic journals in the implementation of PKL.

Meanwhile, from the results of research on the development of PKL electronic journals that are in accordance with the level 2 KKNI, the results of the feasibility test from media and

material experts are 4.28 with very feasible criteria, thus this electronic journal is valid and very feasible to use. The results of the practicality test with teacher and student respondents as users get a result of 82% with very practical criteria. This is in line with research conducted by Al Fatih (2021). With the development of using the PWA method, it is easier for students to access and fill in journals during the internship. PWA allows users to access websites very easily because the appearance is responsive and user friendly. Based on the effectiveness test of electronic journals, it was found that the n-Gain score of the experimental class was 71%, while the control class was 36%. It means that the use of electronic journals was quite effective in increasing the competence of students in the Light Vehicle Engineering Skill Competence at SMK N 1 Semarang.

The development of this PKL electronic journal is very feasible and practical. It can be used to effectively increase student competence. This is because the development of this journal has a novelty from previous journals, which is electronic-based so that it is easy to carry and practically filled in anytime and anywhere. In addition, this journal is adapted to level 2 KKNI so that it is effective for increasing student competence.

## CONCLUSION

After a series of tests, it was concluded that the PKL Electronic Journal according to the Level 2 KKNI has become the final product. At the validation stage of media experts and material experts, it can be concluded that the use of electronic journals in the implementation of the PKL program by teachers and students support and guide the development of student experiences to understand the work culture. The use of electronic journals is a tool that functions to balance the skills needed by the industry with the competence of student expertise programs that are in accordance with the level 2 KKNI.

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