JVCE 7 (1) (2022) : 9-20

Journal of Vocational Career Education

https://journal.unnes.ac.id/nju/index.php/jvce

The Development of Online Integrated Competency Test Material to Improve Graduate Competency

Edy Setyawan[1]✉, Burhan Rubai[2] , Heri Yudiono[2]

[1]SMK N 1 Semarang, Indonesia
[2]Pascasarjana, Universitas Negeri Semarang, Indonesia

Article Info

Article History :
Received
October 2021
Accepted
December 2021
Published
July 2022

Keywords:
graduate competency, certification institution, competency certificate, certification scheme

Abstract

Vocational High School is an institution that prepares skilled workers. The National Education System Law states that competency certificates are given by education and training institutions to participants as an acknowledgment of their competence, administered by an accredited education unit or certification institution. The selection of this scheme can increase the graduate competency significantly. The present study aims at simplifying and improving graduate competency. The instrument used in the present study is an assessment sheet on the website media of the Level II Certification scheme from 7 clusters to 40 units; and a questionnaire to measure the graduate competence of grade XII TKR students at SMK Negeri 1 Semarang. The data analysis used in this research is categorical to determine the level of feasibility of the website media for the Level II Certification scheme from 7 clusters to 40 units; and N-Gain and the different N-Gain test using the t-test, to determine the effectiveness of the website media for the Level II Certification scheme from 7 clusters to 40 units on the graduate competency. Based on the feasibility test and the effectiveness test according to the responses given by the experts, the criteria for the responses were very feasible. From the effectiveness test in the experimental class, the module obtained quite effective and significant criteria used by students to improve the graduate competence.

✉ Correspondence :
Jl. Raya Cigugur No.28, Kuningan, Kec. Kuningan, Kabupaten Kuningan, Jawa Barat, Indonesia 45511
E-mail: edysetyawan.es@gmail.com

p-ISSN 2339-0344
e-ISSN 2503-2305

INTRODUCTION

A nation's competitiveness depends on it's human resources. Competitive and skilled workers can be produced from qualified vocational education that is relevant to the ever-changing job market. Vocational High School (SMK) is one of the vocational education institutions that prepares skilled workers to be ready to work. Industries demand that SMK graduates are professional candidates for standardized workforce according to industry needs. This is in line with Presidential Instruction No. 9 of 2016 concerning SMK Revitalization to certify SMK graduates (Republik Indonesia, 2016). The suitability of competency possessed by vocational students as prospective workers must be standardized and professional to enter the job market with its various diversity and demands. According to Wakid and Tafakur (2018) Good vocational education provides habits that will applicable in practical work.

Skill Competency at SMK in accordance with the Director General of Education and Culture No. 464/D. D5/KR/2018 concerning Core Competencies and Basic Competencies for Vocational Subjects, currently there are 146 skill competencies. SMK as a vocational education also prepares its students to create job market. Cognitive, affective, and psychomotor domain that are built and accumulated in a person to be able to compete in the job market need to be compatible. Competence that does not match causes it to be unable to be competitive, therefore it is needed to be familiarized by students from the beginning at school. Getting used to industrial culture at schools from the beginning can train students to understand the work culture in industry. Future visions need to be continuously honed in order to match the needs of future graduates and continue to establish themselves to be better prepared to face various changes. Whether we realize it or not, vocational students will face different demand from time to time. Rapid changes make human skills and abilities begin to be replaced by technology. Of course, students' readiness to compete is strongly supported by a conducive academic atmosphere to enable them to equip themselves with various competencies.

The government through the Directorate of Vocational High Schools has made Memorandum of Understanding with the National Professional Certification Agency (BNSP) since 2008 for the development of a certification system in SMK. As the follow-up, the Directorate of Vocational Development since 2013 has programmed the establishment of a First Party Professional Certification Institute (LSP-P1) in 1,650 SMKs that have the potential to be developed as a reference throughout Indonesia, starting with competency assessor training and training on the preparation of quality documents. As of May 28, 2019-10:49, a total of 1133 LSP P1 have obtained licenses from BNSP (BPS, 2019).

BPS data shows that 6.82 million peoples are unemployed in Indonesia and the unemployment percentage for SMK is 8.63%. One of the causes of high open unemployment is the low competency of current vocational school graduates. In order to respond to the data, public should be more aware that increasing the competence of graduates in vocational schools must be intensified so that many vocational graduates are absorbed in the industry, to reduce the current open unemployment rate. Vocational High Schools must improve the competence of graduates through good strategies, especially in the soft skills of their students, even during distance learning or commonly called online classroom. This is because the importance of soft skills in the world of work is very important. Indeed, hard skills are the industry's initial benchmark when recruiting workers, but more and more attention is paid to soft skills through various tests and interviews to measure them.

Schools conduct competency tests with a cluster scheme with the assumption that with a cluster scheme, it is only sufficient to conduct a competency test for several clusters contained in the KKNI Level II SMK scheme. An example of this is the KKNI Scheme for Level II Light Vehicle Engineering, which in the scheme, students must go through 7 clusters to reach Level II in the IQF. In other schemes, such as the KKNI Level II Scheme, Mechanical Engineering SMK only takes 3 clusters to get the KKNI Level II and several other fields with different number of clusters. Taking the competency test of the cluster scheme is considered to lighten the burden on

students and the school. Please note that the cluster schema is taken from work that is often done on one type of work. An example of this is the Periodic Maintenance Cluster which is a job that is often done in official workshops.

Taking the competency test of the cluster scheme allows you to only need to do a little competency test when compared to the competency test using unit packaging. The achievement target of KKNI Level II causes the competency quality of SMK students to not be standardized in each unit due to the cluster scheme. When ready to enter the world of work, Vocational High School students are required to master competencies in each unit and not clusters, therefore the world of work and the industrial world demand mastery of competencies on a unit basis. In the implementation of the competency test, there will also be differences in the budget if it is carried out in a cluster and as a competency unit in today's online learning.

The methods and equipment used by the National Professional Certification Agency (BNSP) refers to the test equipment used by Australia. The number of test kits used makes the implementation of the competency test difficult for the assessors in charge of collecting evidence. There are three activities carried out by the assessor, namely planning the activities and the assessment process, carrying out the assessment, and contributing to the validation of the assessment. (Indonesia, 2018) There are lots of documents to fill out and complete. The ability of assessors also varies, making it quite difficult for assessors who are not accustomed to conduct competency tests.

Based on a pre-research case study at SMK N 1 Semarang, it was found that the assumption of a level 2 certification scheme competency test consisting of 40 units is considered : (1) require a large amount of funds, (2) take a long time, (3) cover too many materials (4) the time of the certification test conducted in class XII often clashed with the preparation for school exams, (5) the certification that was achieved is considered not necessarily recognized by the industry, (6) the certification score sometimes do not fully represent the competency of students, and finally many SMKs only carry out level 1 certification, as a result, industry considers that the competence of graduates is low and has an impact on the high number of open unemployment for SMK graduates.

The objectives of this study are: (1) analyzing the feasibility of the Level II Certification scheme from 7 clusters to be 40 units that are integrated online in order to improve the competence of graduates at SMK N 1 Semarang, TKR study program; (2) Analyzing the effectiveness of the Level II Certification scheme from 7 clusters to be 40 integrated online units that are applied using a website-based learning model in order to improve the competence of graduates at SMK N 2 Semarang, TKR study program; (3) Develop a Level II Certification scheme from 7 clusters to be 40 units that are integrated online.

RESEARCH METHODS

The research model selected in this study uses the ADDIE model. The ADDIE development model is a model that uses simple and systematic steps in developing an integrated Level 2 SKKNI certification scheme in online learning in achieving competency according to Indonesian national work standards in the business/industrial world.

The ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation) is used because in the development model there is an evaluation that aims to determine the cognitive domain of students before and after using the developed online test material. ADDIE is an instructional design model that applies to all types of education. Even though ADDIE consists of components of all other design models, it is a relatively simple model (Dick. 1990).

The steps are as follows:

1. Analysis Stage

Activities carried out in the analysis stage include the stage to collect information that is used as a reference to develop a product, some of the information collected consists of three stages, namely: (1) Needs analysis, (2) Competency Test Scheme Analysis to be Simplified, (3) Graduate Competency Analysis;

2. Design Stage

This step consists of the preparation of the initial appearance of the application, adjustment of the menu on the application, application design, and preparation of application response instruments. The results of the design that have been made are consulted with the certification expert (assessor) if the design has been approved then the next step is the realization of the approved application design;

3. Development Stage

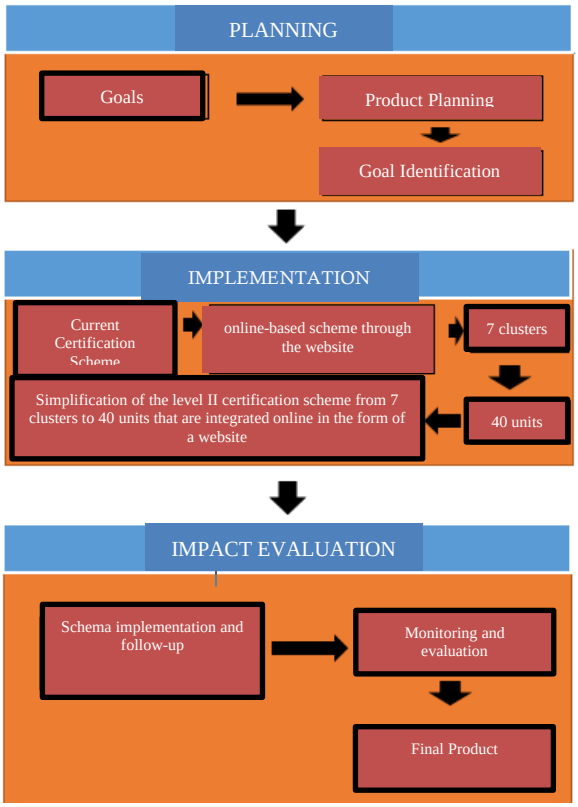
At this stage, the application of an integrated level II certification scheme will be developed in online learning in achieving competence according to the Indonesian National Work Standards (SKNI) at SMK Negeri 1 Semarang, this stage includes the development of a level II certification scheme from 7 clusters to 40 units, to improve the competence of graduates, validation of media experts and material experts, revision of certification scheme applications, development of response questionnaire instruments to test the effectiveness of certification scheme applications. It aims to see how far it can improve the competence of graduates from the media that has been designed; secondly, after the media was developed by simplifying the scheme from 7 clusters to 40 units, then it was submitted to validators consisting of media experts and material experts; the third, after the module is tested for feasibility, the next step is to revise the media according to the notes from the validator; The next step is the fourth step, namely the development of a response questionnaire instrument to test the effectiveness of the media that adopts several effectiveness questionnaires that have been proven to be valid;

4. Implementation Stage

The steps taken are the application of the Level II Certification scheme application from 7 clusters to 40 units. Respondents were class XI students of TKR 1 and TKR 3 study programs at SMK N 1 Semarang. TKR 1 was the experimental class, while TKR 3 was the control class. The steps taken were giving pre-test to the two respondents, then giving treatment to the experimental class in the form of the application of the Level II Certification scheme from 7 clusters to 40 units, while the control class was not given treatment, after that the post-test was given as the result of the test. scoring of respondents' responses. This stage includes giving pre-test to the experimental class and control class, conditioning and giving post-test to the experimental class and control class;

5. Evaluation Stage

The evaluation stage is divided into 2 evaluations, namely formative evaluation and summative evaluation. Formative evaluation is related to media feasibility tests and summative evaluations is related to experimental design and media effectiveness tests. In the evaluation stage, the data obtained were analyzed to determine the shortcomings of the application media to be made, the data from the evaluation were in the form of suggestions and questionnaires. The following is a product development flowchart, as follows:



Picture 1. Product Development Flowchart

The unit of analysis of the present study is the application of the Level II Certification scheme from 7 clusters to 40 units. The data sources of the present study were (a) assessors as media experts; (b) the teacher as a material expert; (c) students who are involved in testing the effectiveness of the product, namely class XII Light Vehicle Engineering (TKR) at SMK N 1 Semarang, in improving the competency of graduates.

The instruments used in this study were (a) the assessment sheet for the Level II Certification Scheme Website from 7 clusters to 40 units; (b) competency questionnaire for graduates using the Level II Certification Scheme Website from 7 clusters to 40 units.

Data collection techniques in this study are described as follows:

Table 1. Data Collection Techniques

Data Types	Methods	Data Sources
Feasibility test	Schematic Scoring Sheet	6 media experts and 5 materials experts
Effectiveness Instrument Trial	Questionnaire	Students of XII TKR SMK N 7 Semarang
Effectiveness Test	Questionnaire	Students of XII TKR 1 dan TKR 3 SMK N 1 Semarang

1. Instrument Validity and Reliability Test

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

a) Assessment Sheet Instruments on the Scheme Validity and Reliability Test

1) Validity

Validity with the type of answer in the form of a Likert scale scoring, the formula for calculating the CVR instrument of the schema feasibility assessment sheet is as follows:

$$CVR=(2ne/n)-1$$

Based on the results of data analysis conducted by Darmawan Napitupulu, the score k=0,300, data analysis conducted by Totok Sumaryanto k=0,265, and data analysis conducted by Joko Nur Fitriyanto k=0,250. This shows that the media expert validation sheet used is reliable, with fair deal.

b) Effectiveness Instruments on the Scheme Validity and Reliability Test

The results of the analysis of the validity of the instrument's effectiveness test of 55 items of responses obtained 47 valid items and 8 invalid items. For the calculation of the validity of the effectiveness test response items can be seen in the appendix section. The results of the recap of the analysis of the validity of the effectiveness test responses can be seen in table 3.6 as follows:

Table 3. Instrument Validity Test Recap

Criteria	Question Number	Number
Valid	1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 15, 16, 17, 19, 20, 21. 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35, 37, 38, 39, 40, 42, 43, 44, 45, 46, 48, 49, 50, 51, 54, 55	47
Invalid	9, 11, 13, 18, 36, 47, 52, 53	8

(1) Reliability

The criteria for reliability testing are after getting the r11 score, then the score of r11 is consulted with the score of r product moment in the table. If r11 > rtable then the items tested are reliable.

Table 4. Instrument Reliability Test Recap

Cronbach's Alpha	N of Items
,959	55

From the analysis of the response items of the effectiveness test instrument, the reliability of the response items was 0.959 > r table = 0.3338, it can be concluded that the response items were reliable with very high criteria. The calculation of the reliability of the effectiveness test response items can be seen in the appendix.

(2) Normality test using Chi-quarat ($\chi 2$) as follows:

(3) (2) Homogeneity test using Levene, the data that was tested was said to be homogeneous based on the significance score.

a) The significance score (p) ≥ 0.05 indicates that the data group comes from a population that has the same variance (homogeneous).

b) The significance score (p) < 0.05 indicates that each data group comes from a population with different variances (not homogeneous).

Data analysis in this study includes (1) the feasibility category of the scheme; and (2) the effectiveness of the scheme, as presented in the description below.

1. Categorical Feasibility Scheme

Table 5. Score Conversion Criteria into Five Scale

Score	Formula	Range	Classification
55	≥ X + 1.8 S	4.21 − 5.00	Very Feasible
44	X + 0.6 S ≤ < X + 1.8 S	3.41 − 4.20	Feasible
33	X – 0.6 S ≤ < X + 0.6 S	2.61 − 3.40	Less Feasible
32	X – 1.8 S ≤ < X – 0.6 S	1.81 − 2.60	Not Feasible
31	< X – 1.8 S	0 − 1.80	Very Inappropriate

2. Analysis of Schematic Effectiveness Using N-Gain and N-Gain Mean t-Test.

The obtained data were tested using the normality test, after knowing that the data was normally distributed, the next step was to test the homogeneity to determine the variance of the data, the next step was to determine the N-Gain of the data to determine the effectiveness of the scheme, and the last step was to test the N-Gain used an independent T test to determine whether the average N-Gain in the experimental class and the control class was significant.

The calculation of the normalized gain score (N-Gain) can be expressed in the following formula:

$$\text{N} - \text{Gain} = \frac{Post\ Test\ Score - Pre\ Test\ Score}{Ideal\ Score - Pre\ Test\ Score}$$

The N-Gain score grouping category can be determined based on the N-Gain score in the form (%) as follows:

Table 6. N-Gain Score Category

N-Gain Score	Category
g > 0.7	High

$0.3 \leq g \leq 0.7$	Medium
$g \leq 0.3$	Low

The category of N-Gain score (%) will be interpreted into several categories according to the following provisions:

Table 7. N-Gain Score Interpretation

Percentage (%)	Interpretation	Group
<40	Not Effective	1
40-55	Less Effective	2
56-75	Effective enough	3
>76	Effective	4

The independent T test is as follows:

$$t_{count} = \frac{X1 - X2}{\sqrt{\frac{(n1-1)si2+(n2-1)si2}{n1+n2-2}\left(\frac{1}{n1}+\frac{1}{n2}\right)}}$$

If the score of $t_{count} > t_{table,}$ there is a significant difference between the two data, in other words the scheme improves graduate competence, and vice versa if $t_{count} > t_{table}$, there is no significant difference between the two data.

RESULTS AND DISCUSSION

1. Implementation of Development with the ADDIE Model

a) Analysis

The analysis stage includes needs analysis, competency test scheme analysis that needs to be simplified, graduate competency analysis: (1) Needs Analysis, before analyzing the certification scheme used in the field, researchers conduct an analysis of students' problems in carrying out competency tests, student needs for certification schemes which will be simplified, students' needs for the media to be developed, determination of topics used in media content, and analysis of the expected level II IQF certification scheme; (2) Analysis of the Competency Test Scheme that needs to be simplified, after the needs analysis has been carried out, the next step is to analyze the competency test scheme that needs to be simplified. This analysis is a procedure that is carried out systematically to determine the development of an online-based KKNI Certification Scheme for Level 2 integrated in learning; (3) Graduate Competency Analysis

Based on the results of observations on graduate competencies, we can see several characteristics of students in mastering the Level II Certification scheme for light vehicle engineering competencies, including: (a) Students are less enthusiastic in mastering competencies, it can be seen from the activities of students when preparing for the certification test who only listen and not interested in the discussion; (b) The involvement of students in the practical process is still very low, so that the trainees tend to be passive and easily bored; (c) Students need a certification scheme that will be simplified and easily accessible from anywhere and anytime, a certification scheme that will be simplified, which is practical and can improve the competence of graduates.

b) Design

The design phase includes the criteria for compiling the initial appearance of the application, adjusting the menu on the application, designing the application, and compiling the application response instrument. (1) Preparation of the Initial Appearance of the Application, the preparation of the initial appearance of the application being developed is a cover consisting of 5 flow assessments and writing of the application title, namely: Online Competency Test Materials. A good initial application design is expected to attract users of the certification test and not look boring; (2) Adjustment of the Menu on the Application, the adjustment of the Menu on the Application developed is the selection of the menu used to support the certification activities in the future, which includes the Assessment, Assessor, and LSP Admin menu adjusted to the user's login. The menu design in the application that is tailored to the user is expected to be more organized and can more accurately display the needs according to the user's login; (3) Application Design, the preparation of this application design is in the form of adjusting the device that can be accessed, in this case the application can be accessed through any device, as long as it is connected to the internet, either through mobile phones or computers. This application is an online application, where after entering the application,

the user is required to have login access by inputting an account and password to facilitate and maintain the security of personal data accounts among users; (4) Preparation of Application Response Instruments, preparation of application response instruments, in the form of scoring training modules, namely a questionnaire validator of media experts and material experts. This instrument adopts a questionnaire from BSNP that has been proven to be valid, then adjusted to the discussion of the Level II Certification scheme application from 7 clusters to 40 units. The scoring method of this instrument is in the form of a questionnaire with Likert scale.

c) Development

The third stage of the ADDIE development model is the development stage. This stage aims to see the extent of the feasibility of the media that has been designed. As a follow-up to the design that has been carried out in the design stage, the following development steps are carried out: (1) Development of Level II Certification Scheme Applications From 7 Clusters to 40 Units to Improve Graduate Competence, the development of this media adopts a level 2 certification scheme model which will used in learning programs according to the format set by BNSP. This model is very emphasized related to increasing the mastery of competencies. It is hoped that the mastery of these competencies by looking at market opportunities that are still wide open can increase the competency of graduates to become competitive graduates and can reduce the high level of open unemployment due to the lack of absorption in the industry; (2) Validation of Media Experts and Material Experts, this stage is carried out to determine the feasibility of the developed media. The media feasibility test is carried out to get suggestions and criticism from the validator on the product being developed, as evidenced by the results of filling out the response questionnaire which shows that the media is suitable for use in research; (3) Revision of the Certification Scheme Application, the media that has been validated by the validators which include media experts and material experts, will be revised according to the notes of criticism and suggestions written in the supporting statement section, in this case, the one who can provide supporting statements are media experts and materials experts only, each of which consists of 5 media experts and 6 material experts; (4) Development of the Response Questionnaire Instrument for Testing the Effectiveness of the Certification Scheme Application, in the development of the scoring instrument it will be based on the points of requirements for a good application media device.

In addition, a questionnaire for participants' responses was also developed. The participant's response questionnaire will be adjusted to the requirements of good application media by adopting several effectiveness questionnaires that have been proven to be valid. The questionnaire instrument developed by the researcher in this case was tested on class XI students of SMK N 7 Semarang, and only used valid questions. This questionnaire changes its language structure into a communicative language and is adapted to the discussion of competency media for the Level II Certification scheme application from 7 clusters to 40 units, and is based on the aim of knowing the competency of graduates.

d) Implementation

The fourth stage of research and development of this ADDIE model is the implementation stage. This application stage can be carried out if the results of the media expert and material expert test (feasibility test) have met the appropriate criteria. The implementation stage is the stage of applying the Level II Certification scheme application media from 7 clusters to 40 units at SMK N 1 Semarang, with 34 students from class XI TKR 1 as the experimental class who were given treatment in the form of providing application media for the Level II Certification scheme from 40 units into 7 clusters to test the effectiveness of the media, while for class XI TKR 3, as many as 34 people were only as a control class and were not given treatment in the form of application media for the Level II Certification scheme from 40 units to 7 clusters. Responses from filling out the questionnaire by students can be considered to test the effectiveness of the media. (1) Pre-Test in the Experimental Class and Control Class, the first application stage is giving a pretest to the experimental class and control class which aims

to determine the initial state of the respondent before being given treatment in the form of providing the application media for the Level II Certification scheme from 7 clusters to 40 units. This pre-test was given once at the beginning of the study by the teacher of each study program which could be given directly with a questionnaire of 47 responses. The researcher considers that the processing of 1 response item can be completed within 1 minute, so the time required to administer the effectiveness test questionnaire is 47 minutes.

Questionnaires that are filled in by students will be directly entered as responses, and the results of the work cannot be copied or studied by students; (2) Conditioning, the conditioning stage in this study, which is meant the respondent's conditioning after being given a pre-test. The conditioning of these respondents was the provision of treatment in the form of using the Level II Certification scheme application media from 7 clusters to 40 units in class XI TKR 1 students as the experimental group, while class XI TKR 2 students as control groups were not given treatment; (3) Post Test in Experiment Class and Control Class, the last stage in testing the effectiveness of the Level II Certification scheme application media from 7 clusters to 40 units is to provide a post test. The post-test response questionnaire was given after the respondent was given a pre-test before. This posttest was given 1 time to the experimental class that had been given treatment, and the control class that was not given any treatment. The contents of the response items in the post test are the same as the questionnaires in the pretest items, the aim is to find out the result of comparing the experimental class given the Level II Certification scheme application media from 7 clusters to 40 units, with the control class not being given the Certification scheme application media. Level II from 7 clusters to 40 units.

e) Evaluation

The last stage in this research and development is the evaluation stage, at this stage improvements will be made for a better system by processing the data that has been obtained from the previous stages that have been run. This evaluation is carried out after the four previous stages in the ADDIE model have been completed. (1) Formative Evaluation, this formative evaluation stage aims to determine the feasibility of the media created and to determine the extent to which the designed application can take place, as well as identify obstacles. By knowing the obstacles and problems of the application, improvements can be done to support and fix it so that the objective of the research can be achieved. (Finlayson and Scriven 1967); (2) Summative Evaluation, this stage of summative evaluation aims to determine the effectiveness of using the Level II Certification scheme application media from 7 clusters to 40 units. The summative evaluation leads to a decision on the achievement of the media achievement statement for the Level II Certification scheme from 7 clusters to 40 units to improve the competence of graduates. Summative evaluation is also used to determine the continuation of research, stop, or continue research, adoption and so on.

2. Schematic Feasibility Assessment Sheet

The instrument of the feasibility assessment sheet for the scheme in this study was adopted from the BSNP questionnaire which has been proven to be valid so there is no need to test the response items again.

Table 8. Overall Scoring Data on Each Aspect from Validator

Criteria	Mean	Category
Usability	4.2	Very Feasible
Functionality	4.4	Feasible
Visual Communication	4.1	Very Feasible
Certification Design	4.5	Feasible
Material Content	4.3	Very Feasible
Language and Communication	4.2	Very Feasible
$\bar{x}$ Overall Expert Average	4.3	Very Feasible

Based on the data above, the overall average is 4.3 with very feasible criteria, thus the application of the Level II Certification scheme from 7 clusters to 40 units is declared to be valid and very feasible. Based on the validation results, it can be concluded that the application of the Level II Certification scheme from 7 clusters to 40 units is valid with revisions and does not require a significant revision and is suitable for use as a level II certification test material.

The results of the normality test of the pre-test and post-test data for the experimental class and control class are as follows:

Table 9. Normality Test of Schematic Effectiveness Questionnaire

Class		Sig. Kolmogorov-Smirnova	Sig. Shapiro-Wilk
Pre-Test	Experiment	0.200	0.980
	Control	0.200	0.454
Post-Test	Experiment	t0.200	0.520
	Control	0.141	0.469

Based on Table 9. the results of the competency normality test for graduate have significance score (Sig.) as shown in the table, it is shown 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 Table 10.

Table 10. Homogeneity Test of Module Effectiveness Questionnaire

Class		Levene Statistic	Sig.
Pre Test	Based on Mean	0.851	.360
	Based on Median	0.726	.397
	Based on Median and with adjusted df	0.726	.397
	Based on trimmed mean	0.842	.362
Post Test	Based on Mean	2.499	.119
	Based on Median	2.452	.122
	Based on Median and with adjusted df	2.452	.122
	Based on trimmed mean	2.499	.119

Based on Table 10, the homogeneity test based on the mean Pre-Test shows a significant 0.360 which means the data > 0.05, so it can be concluded that the data is homogeneous. The score based on the mean Post Test shows a significant 0.119 which means the data > 0.05, so it can be concluded that the data is homogeneous.

The results of the calculation of the N-Gain test with the help of the SPSS 23.0 score program in the form of a percentage (%) are contained in the attachment of the N-Gain Score Test Output Table. Based on the calculation results of the N-Gain score test, it shows that the average N-Gain score for the experimental class is 58.95 or 59% with a minimum N-gain score of 47% and a maximum N-gain score of 78%. Meanwhile, the control class is 15.65 or 16% with a minimum score of 2.69% and a maximum N-gain score of 29.12%.

The results of the Pre-Test and Post-Test of the experimental and control classes are as follows:

Table 12. Pre-Test Results of Control and Experiment Class

Data	Levene Statistic	T test	Significance Level
N- Gain_Percentage	0.081	23.065	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 0.081 > 0.05, 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, the calculated T value of N-Gain_Persentage = 23.065 with a T table score at (df = 55; a = 5%) is 2.03693. Because T count is greater than T table, it can be concluded that before being treated by using the Level II Certification scheme application from 7 clusters to 40 class XII units of Light Vehicle Engineering Study Program 1 and 3 at SMK N 1 Semarang, the condition of the two classes is just the same.

The results of the independent sample T test with the inclusion of the average N-Gain score in the table, show that the N-Gain_Persentage data has a Sig (2-tailed) 0.000 (smaller than the 0.05 significance level), meaning that the N-Gain_Persentage data are distributed quite effectively and significantly.

CONCLUSION

This study uses the development of the ADDIE model, through several stages, namely: (1) the analysis phase includes needs analysis (2) the design phase; (3) development phase (4) implementation phase (5) evaluation phase. The final product of this development research is a website media for level 2 certification schemes from 7 clusters to 40 units. the creation of a level 2 certification scheme from 7 clusters to 40 units is carried out in stages to produce a feasible scheme and after that a series of tests are carried out, including validation from media experts, material experts and effectiveness to users.

Based on the responses given by media experts (5 teacher assessor certification experts), responses from material experts (6 experts from LSP facilitators at the PSMK Directorate of the Ministry of Education), the scoring of the media effectiveness test by students of TKR 1 and TKR 3 study programs, after a series of testing, it was concluded that the media website certification scheme level 2 from 7 clusters to 40 units had become the final product, at the validation stage media experts and material experts concluded that it was very feasible to be used by students to improve graduate competence, and in the effectiveness test using the test The t test concluded that the media website certification scheme level 2 from 7 clusters to 40 units was quite effective and significantly used by students to improve the competency of graduates of TKR 1 and TKR 3 study programs at SMK N 1 Semarang.

REFERENCES

Akker, J. V. D. (1999). Principles and methods of development research. In Design approaches and tools in education and training (pp. 1-14). Springer, Dordrecht.

Arikunto Suharsimi, D. (2016). Penelitian Tindakan Kelas. Jakarta: Bumi Aksara

Azwar, M., Hussain, M. A., & Abdul-Wahab, A. K. (2014). The Effect of Internal Parameters on Biohydrogen Production in Batch Microbial Electrolysis Cell Reactor. In ICREGA'14-Renewable Energy: Generation and Applications (pp. 11-22). Springer, Cham.

BNSP. (2019). DATA BNSP APRIL 2019.

Dick, W. and Carey, L. (1990). The Systematic Design of Instruction. (Third ed.). United States of America : Harper Collins

Drost, K., Gerdes, A., Jeffries, T., Linnemann, U., & Storey, C. (2011). Provenance of Neoproterozoic and early Paleozoic siliciclastic rocks of the Teplá-Barrandian unit (Bohemian Massif): evidence from U-Pb detrital zircon ages. Gondwana Research, 19(1), 213-231.

Hendaryati, S. M. R. N. (2019). Keefektifan Model Cooperative Learning Tipe Student Facilitator And Explaining Pada Mata Pelajaran Akuntansi. EQUILIBRIUM: Jurnal Ilmiah Ekonomi dan Pembelajarannya, 7(1), 11-14.

Indonesia, K. T. K. R. (2018). Keputusan Menteri Ketenagakerjaan Republik Indonesia No. 185 Tahun 2018 (p. 93). Kementrian Tenaga Kerja. https://skkni-api.kemnaker.go.id/v1/public/documents/d7c654a9-95aa-48a9-8ac6-24bf40a17663/download

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. biometrics, 159-174.

RI, S. K. (2016). Salinan Inpres Nomer 9 Tahun 2016.pdf (pp. 1-10).

Tinggi, D. J. P. (2008). Departemen Pendidikan Nasional (Depdiknas).(2008). Hasil Evaluasi Sistem Penjaminan Mutu Internal Perguruan Tinggi Tahun 2008.

Tuherni, E., Nursa'adah, E., & Affifah, I. (2019). Content Validity Ratio And Confirmatory Factor Analysis Of Three Tier Test Instrument On Solution Balance Concepts. Jurnal Pengajaran MIPA, 24(1).