



Development of E-Modules Building Drawings with Autocad for Construction and Property Business Department Students of SMK N 1 Blora

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Abstract

Vocational High School (SMK) is one part of the national education system with a strategic role to educate the nation's life. Students are an essential pillar of the nation's next generation, so they must increase their creativity in the learning process to hone their abilities and produce outputs or graduates ready to face challenges in the 21st Century. Choosing the right learning media can improve learning outcomes significantly between those given treatments to students of class XI BKP 3 and those who are not given treatment to students of class XI BKP 1 in SMK Negeri 1 Blora school year 2020/2021. This research aims to develop an E-module for Building Drawing Materials with AutoCAD Applications based on files Electronic Publication (EPUB) to improve student learning outcomes. This study uses research and development methods or R & D. The design chosen is ADDIE, which includes five stages: Analysis, Design, Development, Implementation, and Evaluation. The research uses various instruments, namely (1) a feasibility assessment sheet for e-modules; (2) an e-module practicality questionnaire; and (3) a questionnaire on the effectiveness of the e-module to measure student learning outcomes in class XI BKP 3 and XI BKP 1 at SMK Negeri 1 Blora. The data analysis used is (1) definite to determine the feasibility level of the e-module; (2) Guttman's categorization to determine the level of practicality of e-modules, using the coefficients Kr and Ks; and (3) N-Gain and different N-Gain tests using t-test, to determine the effectiveness of the e-module on student learning outcomes. Based on the feasibility test of the Building Drawing e-module with AutoCAD file-based Electronic Publication (EPUB) developed, according to the responses of media experts and material experts obtained, the e-module response criteria is very feasible. Responses from teachers and students as user responses to the practicality test of the e-module got very applicable assessment criteria. And from the effectiveness test in the experimental class, the e-module received influential and significant standards for improving student learning outcomes in the cognitive and psychomotor aspects. In contrast, in learning outcomes in the affective part, the e-module was not adequate for enhancing student learning outcomes in class XI BKP in SMK N1 Blora.

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INTRODUCTION

Vocational High School (SMK) is one part of the national education system with a strategic role to educate the nation's life. Students are an essential pillar as the future generation, to be able to improve their creativity in the learning process, to hone his abilities, and produce outputs or graduates who are ready to face the challenges of the 21st Century. According to Susilo (2011: 8) *Partnership for 21st Century Skills* summarizing skills 21st Century into three general skills, namely (1) skills related to information and communication; (2) thinking and problem-solving skills; and (3) interpersonal skills and self-regulation skills. Based on this, the application in Learning must also teach 21st-century skills to students.

In early 2020, the entire world and Indonesia were affected by the pandemic spreading the disease outbreak from Wuhan, China, caused by the coronavirus (Covid-19). The world of education has also been affected by the outbreak of the Covid-19 virus. The Covid-19 pandemic has been the worst shock to the education system in a century, with more than 1.6 billion children and youth out of school for months and many still not back in school (UNESCO, 2021). The Indonesian government has taken various steps to ensure the continuity of education during the Covid-19 period, such as SPADA Learning Houses, Sharing Teachers, learning programs through TV broadcasts, and distance learning programs. The Indonesian government plans to make distance learning a permanent feature of the Indonesian education curriculum (Kemdikbud, 2020). Therefore, the Government of Indonesia also plans to increase training for teachers to implement distance learning

and encourage all students to use digital technology more widely.

Thus, seeing the Development of increasingly widespread technology, teachers must also be able to use it to attract students' interest to participate in the learning process and learn these lessons, especially in the conditions of the Covid-19 pandemic. Therefore, distance learning in the future requires Development using electronic media and the internet that is in line with the 21st-century learning model. So, researchers hope to be able to apply distance learning by developing textbooks or learning materials that are more practical and friendly so that students easy and interested in participating in the learning process.

Students majoring in Construction and Property Business must master one of SMKN 1 Blora, namely Construction and Property Business Planning. These subjects equip students with knowledge and skills. In particular, this research only takes the basic competence of knowledge about applying the stages of making drawings for tender documents and essential competencies of skills about making drawings for tender documents. DUDI requires vocational school graduates skilled in making delicate document drawings in this competency. Especially in this material, graduates of the Construction and Property Business Vocational School can draw using technology in AutoCAD applications. Based on this, researchers hope that the students of SMKN 1 Blora majoring in Construction and Property Business can add insight related to the field of Construction and Property Business Planning in the competence of knowledge and skills about making drawings of tender documents.

The results of field observations in April 2020, researchers interviewed one of the teachers majoring

in Construction and Property Business. Demonstrate that students majoring in Construction and Property Class and Class XI are now applying distance learning in the conditions of the Covid-19 pandemic, which is still not optimal. Currently, schools do distance learning using the Whatsapp application. Namely, teachers provide teaching and enrichment materials in chat applications. The teaching materials or *e-modules* provided are still in pdf and PowerPoint files. Teaching materials are not yet practical because the contents themselves are still in text and images only. The response from students in doing Learning is still lacking. Due to the internet network of students and teachers, some are bad. As shown in the data, the percentage of internet use by students in urban areas (68.23%) is higher than students in rural areas (47.76%) (BPS, 2020: 68). So this shows that there are still many obstacles in distance learning, so teachers have not been able to convey teaching materials or materials optimally, lack of knowledge of students majoring in Construction and Property Business through distance learning during this pandemic.

From the results of field observations above, to deal with these problems, it is necessary to develop appropriate teaching materials or learning media so that students can make references in Learning from Home and can be accessed anywhere, exciting, and easy to understand. Teaching materials that support video and audio make it easy for students to understand the contents of teaching materials. At the same time, students can use other sources as enrichment. The teaching materials suitable for all of these are *electronic publications* (epub). Epub-based teaching materials researchers hope to improve student learning outcomes. So according to the research of Mohammad Aji (2015), who found that

after using epub-based digital book learning media, student learning outcomes in terms of understanding and maintaining the ability of the starter system for automotive electrical repair subjects increased. *E-modules with epub files* that later use a distance learning model. *Researchers* expect to foster students' independence in learning from home to quickly understand the topic, although it is useful even in the current conditions of the Covid-19 pandemic.

This study aims to: (1) determine the current application of learning in Construction and Property Business Planning at the Construction and Property Business Department at SMKN 1 Blora (existing). (2) Testing the validity of the Tender Document Drawing e-module in the Construction and Property Business Planning lesson. (3) Analyzing the practicality of the module for Making Drawings of Tender Documents in Construction and Property Business Planning lessons. (4) Analyzing the effectiveness of the Tender Document Drawing e-module in Construction and Property Business Planning lessons.

METHODS

This research procedure uses the ADDIE development model from Dick and Carry (1996) in Endang Mulyatiningsih (2014: 200–202). The research and Development chosen by this research are to develop learning media in *e-modules* based on epub files in construction and property business planning subjects. The research development model consists of 5 stages which include the analysis (*analysis*), design (*design*), Development (*Development*), implementation (*implementation*), as well as evaluation (*evaluation*). The stages of research *Research and Development* that are applied include:

- a. Analysis of needs *e-module*

The analysis phase is carried out to analyze media needs, learning components, the environmental analysis needed in developing a learning model for batik courses. Needs analysis aims to build e-modules for distance learning, and e-modules adapt to the construction and property business planning syllabus.

b. The design of *the e-module* (Design)

In the design *e-module*, there are several steps, including the preparation of frame, *three-module*, and aggregation of reference, design, *e-module*, and practice of a response instrument. *e-module* In the *e-module*, learning activities contain learning objectives, IPK, material descriptions, video tutorials, independent assignments, and evaluations in the form of practice questions. In designing this *e-module*, researchers expect students to practice drawing skills using the AutoCAD application.

c. Development of *e-modules* (Development)

The development phase of the researcher realizes the conceptual design produced in the previous stage. At this stage, the researcher develops an *e-module*, then asks the supervisor for advice and makes revisions. Next, the experts perform validation to determine the feasibility of *the e-module*. The proof results measure the feasibility of the product and suggestions from the validator. *The e-module* is then revised based on recommendations and input from the validator.

d. Implementation of *e-modules* (Implementation)

The *e-modules* developed are implemented at the implementation stage in the 2020/2021 odd semester learning process. *This e-module* is applied to building drawing materials using the AutoCAD application for class XI BKP students of the Construction and Property Business study program at SMK N 1 Blora.

Researchers assessed student learning outcomes from tests to determine the effectiveness of the products developed. The subjects research were the experimental class with 30 BKP 3 students and the control class with 30 BKP 1 students.

e. Evaluation of the *e-module* (Evaluation)

After going through the implementation stage, the researcher conducts an evaluation related to product development. This stage aims to revise the product by the assessment results and unmet needs. Researchers conduct a formative assessment in the development stage, which seeks to develop *e-modules*, validation, and revision. Formative assessment aims to ensure objectives are achieved and revise the *e-modules*. The summative evaluation seeks to determine the effectiveness of *e-modules*.

RESULTS AND DISCUSSION

Development of *e-module*

a. Analysis

The analysis phase is a data collection session used for manufacturing materials or product development. The product of this research is an *e-module* based on epub. The analysis consists of (1) Analysis of media needs, and data shows that the subject of Construction and Property Business Planning is currently online in the learning process. Thus requiring learning media that can facilitate and help students learn; (2) The analysis of the learning components obtained: (a) the learning strategies used today are *project-based Learning* in online Learning, (b) learning media in the form of Word, PDF, PPT files attached to *Google Classroom* and *Moodle*, (c) book references used by the Construction and Property Business Planning Module from the Ministry of Education and Culture; (3) Environmental analysis

found that some students who have laptops and teachers have not been able to maximize the existing learning media.

b. This Design

This session aims to make it easier for researchers to design the creation or Development of

e-modules. The preparation of the framework is *e-module* based on the Practical Guide to Preparation *E-module* compiled by the Directorate of High School Development, Directorate General of Primary and Secondary Education in 2017. The following is a table of the framework *e-module* structured:

Table 1. Framework *E-Module*.

HEADING 1	HEADING 2	HEADING 3
COVER	Title of e-module Name of Subject Topic/Learning Material Class Writer	-
TABLE OF CONTENTS	-	-
GLOSSARY	-	-
I. INTRODUCTION	KD and IPK Brief description of the material, rationalization, and relevance (Motivation) Prerequisites (if any) Instructions for the Use of e-module	-
II. LEARNING	Learning Activities 1 Learning Activities 2 and so on, following the number of lessons designed	Purpose Material Description Task Exercise Self-Assessment
III. EVALUATION	Answer Key and scoring guidelines	-
REFERENCES	-	-

c. The Development

The development stage aims to see how feasible the results of e-module designing are for drawing buildings with AutoCAD. The development stage consists of (1) development *e-module* in this research, namely adding learning materials in the Tender Document Drawing competency. However, "the construction and property business planning" learning module from the Ministry of Education and Culture has not included these competencies. E-modules come with image features, video tutorials, assignments, and self-assessment. *The Development of e-modules* in this research is an *Electronic Publication*

(*Epub*) based learning media. Any student can use and read via an Android phone and use a laptop or computer offline. Researchers expect this e-module to make it easier for students to understand the material. And it makes it easy for students to practice building drawing using the AutoCAD app independently during pandemics. As well as a manifestation of the Development of 21st Century Learning; (2) Experts perform validation to determine if these *e-modules* are feasible and practical to implement. The validation results show that the learning model *online* for batik courses is possible; (3) product revision, after the

validation process, is *e-module* then revised based on criticism and suggestions.

d. Implementation

The implementation stage is after the feasibility and practicality tests have met the feasible and practical criteria. The implementation of this *e-module* includes 30 experimental class students and 30 control class students. The stages of implementing the *e-module* include: (1) Pre-Test in the experimental class and control class which aims to identify the respondent's early condition before being given treatment in the form of giving an *e-module* to draw buildings with AutoCAD; (2) The next stage is the provision of treatment in the form of the Use of *e-modules* to draw buildings with AutoCAD to students of class XI BKP 3 as an experimental group, while students of class XI BKP 1 as a controlling group there is no treatment whatsoever; (3) The last stage is to distribute the Post Test to practical classes and control classes, this stage has the aim of identifying the effectiveness of the *e-module* through the impact of student learning.

e. Evaluation

After going through the previous four stages, get the assessment results and the effects of the absorption of material by students. At this stage, the final product development evaluation aims to improve the *e-module*. At the development stage, formative assessment aims to develop *e-module* building drawing with AutoCAD, validation, and revision. Formative evaluation ensures that the researcher expects to achieve and revises the *e-module*. The summative assessment aims to identify the effectiveness of using *e-module* building drawing with AutoCAD.

Feasibility Test *E-module*.

This stage has the objective of determining the feasibility of the *e-module*. The feasibility test instruments in the study adopted valid BSNP questionnaires, so there was no need to test the devices again. The following are the results of due diligence by media experts and material experts.

Table 2. Overall scoring data on every aspect of the Expert Media

No	Aspect	Validator		Average	Category
		Media Expert 1	Media Expert 2		
1	Eligibility of graphics				
	Characteristics of E-module	4.5	4.17	4.33	Very Eligible
	Component of E-module	4.86	4.14	4.5	Very Eligible
\bar{x}	Overall Expert Average			4.42	Very Eligible

Source: Calculation Results (2021)

Based on table 2, the overall average score of the feasibility tests of the two media experts is 4.42, with a very decent category. Thus the *e-module* for drawing buildings with AutoCAD for construction business planning and competency property subjects

Skills in the Construction and Property Business (BKP) of Vocational High Schools (SMK) are declared valid and feasible from the aspect of graphic feasibility.

Table 3. Overall scoring data on Every Aspect of Expert Matter

No	Aspect	Validator		Average	Category
		Materials Expert 1	Materials Expert 2		
1	Content Feasibility	4.50	4.50	4.50	Very Eligible
2	Presentation Feasibility	4.85	4.69	4.77	Very Eligible
3	Linguistic Feasibility	4.00	4.73	4.36	Very Eligible
4	Contextual Assessment	4.43	4.00	4.21	Very Eligible
\bar{x} Overall Expert Average				4.46	Very Eligible

Source: Calculation Results (2021)

Based on table 3, the overall average score of the feasibility tests of the two material experts is 4.46, with a very decent category. Thus, the *e-module* for drawing buildings with AutoCAD in construction business planning and property competency skills in the Construction and Property Business (BKP) Vocational High School (SMK) is declared valid and very feasible from the aspect of content, presentation, linguistic, and contextual feasibility.

So the results of the feasibility test by media experts and material experts can be concluded that the *e-module* building drawing using AutoCAD is valid

with revisions and does not require a significant overhaul. It is suitable for teaching material for construction and property business planning subjects.

Practicality Test *E-module*

This stage has the aim of identifying the practicalities of the e-module. Teachers and students are users who take e-module practicality tests drawing buildings with AutoCAD to obtain evidence of the results of filling out a response questionnaire, which shows that *e-modules* are practical in their Use. The practicality test in this study got results such as table 4 below:

Table 4. Data Analysis of Practicality Test by Teachers and Students

No.	Response Indicator	Validator Average		Average	Category
		Teacher	Student		
1	Interest	100%	90%	95%	Very Practical
2	Content	80%	87%	84%	Very Practical
3	Language	87%	93%	90%	Very Practical
4	Competence	100%	92%	96%	Very Practical
Overall Average User				91%	Very Practical

Source: Calculation Results (2021)

Based on table 4, the average user overall score is 91%, with efficient criteria because it meets the practical requirements, the practicality value of all users is between 75%-100%. So that the image of *e-module* building drawing using AutoCAD gets an efficient category as one of the teaching materials in

the subjects of construction and property business planning.

Test the Effectiveness of the *E-module*

Normality Test Results of the Pre Test and Post Test data for the experimental class and the control class as follows:

a) Normality Test for Cognitive Assessment

Table 5. Normality Test for Cognitive Assessment Questionnaire Effectiveness of E-module Drawing Buildings with AutoCAD.

Class		Sig. Kolmogorov-Smirnova	Sig. Shapiro-Wilk
Pre Test	Experiment	0.161	0.097
	Control	0.168	0.065
Post Test	Experiment	0.161	0.097
	Control	0.161	0.097

Source: Calculation Results (2021)

Based on Table 5, the normality test results on cognitive assessment have a significance score (Sig.) as shown in the table, which shows the Sig score. > 0.05, the conclusion is that the data is standard.

b) Normality Test for Affective Assessment

Table 6. Normality Test for Affective Assessment Questionnaire Effectiveness of Building Drawing E-module with AutoCAD

Class		Sig. Kolmogorov-Smirnova	Sig. Shapiro-Wilk
Pre Test	Experiment	0.130	0.370
	Control	0.200	0.180

Table 8. Homogeneity Test of Cognitive Assessment Questionnaire Effectiveness of E-module Building Drawing with AutoCAD

Class		Levene Statistic	Sig.
Pre Test	Based on Mean	0.101	0.751
	Based on Median	0.097	0.756
	Based on Median and with adjusted df	0.097	0.756
	Based on trimmed mean	0.101	0.752
Post Test	Based on Mean	2.781	0.101
	Based on Median	2.865	0.096
	Based on Median and with adjusted df	2.865	0.096
	Based on trimmed mean	2.845	0.097

Source: Calculation Results (2021)

Based on Table 8, the homogeneity test of cognitive assessment based on the mean Pre Test

Post Test	Experiment	0.200	0.191
	Control	0.156	0.278

Source: Calculation Results (2021)

Based on Table 6, the normality test results on cognitive assessment have a significance score (Sig.) as shown in the table, which shows the Sig score. > 0.05, the conclusion is that the data is standard.

c) Normality Test for Psychomotor Assessment

Table 7. Psychomotor Assessment Normality Test Questionnaire Effectiveness of drawing E-module Building with AutoCAD

Class		Sig. Kolmogorov-Smirnova	Sig. Shapiro-Wilk
Pre Test	Experiment	0.183	0.401
	Control	0.074	0.153
Post Test	Experiment	0.200	0.226
	Control	0.200	0.146

Source: Calculation Results (2021)

Based on Table 7, the normality test results on cognitive assessment have a significance score (Sig.) as shown in the table, which offers a Sig score. > 0.05, the conclusion is that the data is standard.

The results of the experimental class homogeneity test and the control class are as follows:

a) Test of Homogeneity of Cognitive Assessment

proved significant 0.751 which means data > 0.05. The conclusion is that the information is

homogeneous. Otherwise, the score based on The mean Post Test proves sig. 0.101, which means the

data is > 0.05. The conclusion is that the information is homogeneous.

b) Affective Assessment Homogeneity Test

Table 9. Affective Assessment Homogeneity Test Effectiveness Questionnaire E-Module Drawing Building with AutoCAD

Class		Levene Statistic	Sig.
Pre Test	Based on Mean	0.385	0.538
	Based on Median	0.562	0.456
	Based on Median and with adjusted df	0.562	0.456
	Based on trimmed mean	0.395	0.532
Post Test	Based on Mean	0.696	0.408
	Based on Median	0.794	0.377
	Based on Median and with adjusted df	0.794	0.377
	Based on trimmed mean	0.684	0.412

Source: Calculation Results (2021)

Based on Table 9, the homogeneity test of affective assessment based on the mean Pre Test proved significant 0.538 which means data > 0.05. The conclusion is that the information is homogeneous. Otherwise, the score based on The

mean Post Test proves sig. 0.408, which means data > 0.05. The conclusion is that the information is homogeneous.

c) Test of Homogeneity of Psychomotor Assessment

Table 10. Test of Homogeneity of Psychomotor Assessment of Effectiveness of E-module Drawing Building with AutoCAD

Class		Levene Statistic	Sig.
Pre Test	Based on Mean	0.077	0.783
	Based on Median	0.038	0.847
	Based on Median and with adjusted df	0.038	0.847
	Based on trimmed mean	0.049	0.825
Post Test	Based on Mean	3.058	0.086
	Based on Median	2.644	0.109
	Based on Median and with adjusted df	2.644	0.110
	Based on trimmed mean	3.019	0.088

Source: Calculation Results (2021)

Based on Table 10, the homogeneity test of psychomotor assessment based on the mean Pre Test proved significant 0.783 which means data > 0.05. The conclusion is that the information is homogeneous. Otherwise, the score based on The mean Post Test proves sig. 0.086, which means data > 0.05. The conclusion is that the information is homogeneous data.

Researchers calculated N-Gain in this study using the help of the SPSS 26.0 program and the score in percentage (%). The following are the results of *N-Gain* cognitive, affective, and psychomotor assessments, summarized in table 11, table 12, and table 13.

Table 11. N-Gain Score Test of Cognitive Assessment Questionnaire Effectiveness of E-module Drawing Building with AutoCAD

No	Experiment Class N-Gain Score (%)	No	Control Class N-Gain Score (%)
Average	79.3485	Average	39.6891
Minimum	61.64	Minimum	25.05
Maximum	100.00	Maximum	54.65

Source: Calculation Results (2021)

Based on Table 11, the calculation results of the N-Gain score for the cognitive evaluation show that the average N-Gain score for the experimental class is 79.3485, rounded up to 79% with a minimum score of 62% and an optimal score of 100%. At the same time, the average N-Gain score for the control class is 39.6891, rounded to 40% with a minimum score of 25% and an optimal score of 54.65%.

Based on the interpretation of the type of power score N-Gain. The experimental class N-Gain score is 79%, and the control class N-Gain score is 40%. So the conclusion is that the Use of E-Module Image Building with AutoCAD effectively improves students' cognitive learning outcomes.

Table 12. Test N-Gain Score Affective Assessment Questionnaire Effectiveness of E-module Drawing Building with AutoCAD

No	Experiment Class N-Gain Score (%)	No	Control Class N-Gain Score (%)
Average	15.0507	Average	9.5982
Minimum	0,00	Minimum	0.00
Maximum	33.33	Maximum	25.00

Source: Calculation Results (2021)

Based on Table 12, the results of the N-Gain test calculation of affective evaluation scores show if the average N-Gain score of the experimental class is 15,0507 rounded up to 15% with a minimum score of 0% and an optimal score of 33%. At the same time, the average N-Gain score for the control class is 9,5982, rounded to 10% with a minimum score of 0% and an optimal score of 25%.

Based on the interpretation of the type of power score N-Gain. The experimental class N-Gain score is 15%, and the control class N-Gain score is 10%. So the conclusion is that the Use of E-Module Image Building with AutoCAD is not effective in improving students' attitude learning outcomes.

Table 13. Test of N-Gain Score Psychomotor Assessment Questionnaire Effectiveness of Building Drawing E-module with AutoCAD

No	Experiment Class N-Gain Score (%)	No	Control Class N-Gain Score (%)
Average	77.9901	Rata-rata	10.7663
Minimum	64.00	Minimum	3.33
Maximum	89.29	Maximum	28.13

Source: Calculation Results (2021)

Based on Table 13, the results of the calculation of the N-Gain test score for psychomotor evaluation show that the average N-Gain score of the experimental class is 77,9901 rounded up to 78% with a minimum score of 64% and an optimal score of 89%. At the same time, the average N-Gain score for the control class is 10,7663, rounded to 11% with a minimum score of 3% and an optimal score of 28%.

Based on the interpretation of the type of power score N-Gain. The experimental class N-Gain score is 78%, and the control class N-Gain score is 11%. So the conclusion is that the Use of E-Module Image Building with AutoCAD effectively improves students' psychomotor learning outcomes.

The results of the Independent T-Test Pre Test and Post Test for the experimental class and the control class for cognitive, affective, and psychomotor assessments are as follows:

Table 14. T-Test Results for Cognitive Assessment for the Control and Experimental Class

Data	Levene Statistic	T test	Significance Level
N-Gain_Persen	0.102	16.002	0.000

Source: Calculation Results (2021)

Based on Table 14, the significance score (Sig) on Levene Statistics is $0.102 > 0.05$, so the conclusion is that the variance of the N-Gain data

(%) for the experimental class and the control class in cognitive assessment is the same or homogeneous. The calculated T value of N-Gain_Persen = 16.002 with a T table score at (df = 30; a = 5%) is 2.042. Because the T count is greater than the T table, the conclusion is that there is no difference between the two classes before being treated using e-modules, experimental class, and control class in cognitive assessment. And the N-Gain_Persen data has a Sig (2-tailed) $0.000 < 0.05$, which means that there is a significant difference in effectiveness between the experimental class and the control class in cognitive assessment.

Table 15. Results of T-test Affective Assessment of Control and Experimental Class

Data	Levene Statistic	T test	Significance Level
N-Gain_Persen	0.893	2.404	0.019

Source: Calculation Results (2021)

Based on Table 15, the significance score (Sig) on Levene Statistics is $0.893 > 0.05$, so the conclusion is that the variance of the N-Gain data (%) for the experimental class and the control class in affective assessment is the same or homogeneous. The calculated T value of N-Gain_Persen = 2.404 with a T table score at (df = 30; a = 5%) is 2.042. Because the T count is greater than the T table, the

conclusion is that there is no difference between the two classes before being treated using e-modules, experimental class, and control class in affective assessment. And the N-Gain_Persen data has a Sig (2-tailed) $0.019 < 0.05$, which means that there is a significant difference in effectiveness between the experimental class and the control class in affective assessment.

Table 16. Results of T-Test Psychomotor Assessment of Control and Experimental Class

Data	Levene Statistic	T test	Significance Level
N-Gain_Persen	0.731	37.954	0.000

Source: Calculation Results (2021)

Based on Table 16, the significance score (Sig) on Levene Statistics is $0.731 > 0.05$, so the conclusion is that the variance of the N-Gain data (%) for the experimental class and the control class in psychomotor assessment is the same or homogeneous. The calculated T value of N-Gain_Persen = 37.954 with a T table score at (df = 30; $\alpha = 5\%$) is 2.042. Because the T count is greater than the T table, the conclusion is that there is no difference between the two classes before being treated using e-modules, experimental class, and control class in psychomotor assessment. And the N-Gain_Persen data has a Sig (2-tailed) $0.000 < 0.05$, which means that there is a significant difference in effectiveness between the experimental class and the control class in psychomotor assessment.

CONCLUSION

According to the analysis results above, the conclusion is that the *e-module for Making*

Drawings of Tender Documents in the Construction and Property Business Planning lesson entitled *E module for Drawing Buildings* with AutoCAD is very feasible very practical to use. Students can use E-modules to improve learning outcomes in cognitive and psychomotor aspects, with this e-module category being influential and significant. However, it is ineffective in improving student learning outcomes in the affective part. Although it is not practical for enhancing student learning outcomes in the affective aspect, there are still significant differences between the experimental and control classes.

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