PROCEEDINGS

4th International Conference on Technical and Vocational Education and Training (TVET)

Theme:
Technical and Vocational Education and Training for Sustainable Societies

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FOREWORD

Welcome for all respected scholars, researchers, post graduate studentsand especially Keynote Speakers to the 4 ICTVET. The theme of the conference focus on Technical and Vocational Education and Training for sustainable societies and consist of six subthemes. i.e Development of learning model on TVET, Workplace Learning and entrepreneurship, Innovationon applied engineering and information technology, Management and Leadership on TVET, Vocational and Technical Teaachers education, and Assessment and Evaluation on TVET.

Sustainable society shoul be followed by the improvement of various factors that have impacts to the quality of vocational and technical education and training, particularly to overcome the competitiveness of the world business. As we have already known the rapid change of technology as well as the change of demography, having a great effects to the life of peoples in this world, The competitiveness need a collaborativeness to survive the life of millions peoples who lost their jobs. Young peoples as aproductive generation have to be creative and innovative to face the competitiveness. So this prociding contents consist of various findings of research in the field of vocational and technical education as well as applied technology and mainly based on the subthemes of the conference.

Finally, we would like to thank a million for all participants of this conference and all parties who support the success of this conference. Hopefully the seminars and scientific work of this seminar can be a reference material for basic education and elementary school teacher education in Indonesia.

Padang, July 2, 2018

Tim Editor

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THE INFLUENCE OF USING ANIMATION MEDIA AND LEARNING MOTIVATION TOWARD LEARNING RESULTS OF AUTOMOTIVE STUDENTS IN SMK N 2 PAYAKUMBUH

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Abstract: This article was written to describe: (1) The difference result of students learning on TDO Subject between by Using Animation Media and not Using Animation Media, (2) The difference result of students learning on TDO Subject between the students who have high motivation and low motivation, (3) The interaction between learning Using Animation Media and learning motivation toward the Result of TDO Subject. The type of this research quasiexperimental design with total population is 4 classes by the number of student are124 students. Selectedsampleare 2 classes were composed of experimental class and control class.The results of hypothesis testing showed that: (1) there are differences in learning result TDO students who used on-media animation with media animation, which shows that the learning result of students who use higher animated media, (2) there are differences learning result between the students who have high motivation and low motivation, it shows the students who have high motivation better than the students who have low motivation (3) There is interaction of Using Animation Media and learning motivation toward TDO Subject on The first term in learning periode 2014/2015, with probability 0.014.

Keyword: Animation Media, Learning Motivation, Learning Result

1. INTRODUCTION

Learning is an activity that deliberately done to modify the various conditions directed to achieve a learning objective. Learning is a process of changing behavior both in terms of cognitive, affective and psychomotor aspects. The learning process is influenced by internal factors and external factors. Internal factors derived from the learners themselves include interest, desire and learning skills. While the external factors such as teachers and all the strategies. In teacher learning process is the main key, hence teachers are demanded always to do learning innovation covers discovery and utilization of media, classroom management and set learning strategy well.

Motivation learning that comes from internal and external learners is the basic capital to achieve learning outcomes. While the activities undertaken learners in learning is a process to achieve learning outcomes. In the learning process, learning outcomes can be regarded as the product of the learning process. Learning outcomes will be optimal if supported by a strong motivation. The more appropriate the given motivation, it will further support the increase in the activities of learners on the desired goals. Motivation and activities undertaken by learners will determine the intensity of effort achievement of learning outcomes.

Learning outcomes are the basis for determining the level of success in understanding a subject matter. The quality of learning can be seen from two aspects, namely in terms of results and learning process. In terms of learning outcomes, learning is said to succeed if learners have mastered the competencies learned at least reach the Minimum Criteria of Completeness (KKM) on each of these competencies. In terms of the learning process, learning is said to succeed if 85% of learners are actively involved (SMK N2 Payakumbuh Curriculum, 2013).

Basic Technology of Automotive (TDO) is one of the basic subjects of vocational in Automotive Engineering Program that must be completed, given in semesters 1 and 2 in class X students. Learning materials contained TDO subjects include: material about the basics of the machine, metal formation, and energy conversion machines. Low learning outcomes in TDO subjects will affect students' learning outcomes in other vocational competencies, sourced from TDO subjects.

Based on observations and information obtained from teachers who teach TDO subjects in SMK N 2 Payakumbuh, obtained data that part scores of student learning outcomes are still low. This means that the absorption or the level of mastery of learners against the TDO subjects is still far below the minimum mastery level. This is evidenced from the pure achievement of the average grade of semester test for students of class X Automotive Engineering in TDO subjects in the first semester of the academic year 2013/2014, there are still many learners who have not achieved

the learning achievement of Minimum Exhaustiveness Criterion (KKM).

When observed in the learning activities of students class X Automotive Engineering SMK N 2 Payakumbuh, generally illustrated the lack of competence in learning, impact on the achievement of learning results are not satisfactory. This can be observed from some of the learner's lack of presence, less responding to teacher questions, gathering tasks not on time, not following the lesson seriously, disturbing friends, leaving the classroom before the learning process ends. To know the condition of learning and data of characteristic of learners on Basic Subject of Basic Automotive Technology, then conducted an interview with the subject teacher. From the results of interviews can be concluded that: teachers are still teaching conventionally, the influence of friendship environment of friends that cause them do not want to go on time, the tendency of teachers to use the same method of presentation so that the lesson material becomes unattractive, learners feel less involved in learning, and the way the teacher conveys the less understood learners

There are three purposes in this research are: (1) reveal the influence of the use of animation media in improving learning outcomes in the subjects of TDO students SMK N2 Payakumbuh, (2) reveal the influence of learning motivation on the learning outcomes TDO subjects of students SMK N2 Payakumbuh, 3) reveal the interaction between learning media and learning motivation in influencing learners' learning outcomes on TDO subjects

2. RESEARCH METHODS

This research is a type of experimental research by implementing instructional media in the form of Macromedia flash animated animation (utilization media). The experiment used in this research is quasi-experiment (Quasi-experiment). The design/design of this research uses a factorial design

This study was conducted to determine the causal relationship of a treatment, namely to see the students' learning outcomes in the TDO subjects on basic competence explains the process of energy conversion machine after using the animation media

The instrument used in this study is a test question to determine the results of learning Basic Automotive Technology and questionnaire motivation learners. The difference of learning result of Basic Technology of Automotive learners between the experimental group and the control group was tested with independent t-test to determine the effect of using animation media on learning outcomes. To know motivation learners after learning using animation media, through the data score questionnaire provided by learners. The treatment in this research is an experiment in learning using animation media for experiment class and without using animation media for conventional class. Each treatment group made the same learning design, except on the media used. This research instrument is a tool that can collect data about TDO learning outcomes in the cognitive domain, covering aspects of knowledge, understanding, and application. The test is given in the form of writing form of multiple choice (PG) with the number of questions as many as 40 items.

The question items in this instrument were developed starting from composing the question grid that was consulted with the expert judgment for the validation of the learning result test. After validation, the next test is done. Tests conducted on 32 respondents, outside the object of research. The test result of learning is tried to know the validity of the item, the reliability of the item, the difficulty index of the problem, the different power and the function of the permit. Ambiyar (2012: 149) states that the analysis of the items on the test of learning outcomes can be done from three aspects, namely: (1) the difficulty of the problem points, (2) the differentiating points of the questions, and (3) the distractor functional aspects. Of the 40 questions, there are 35 items that are declared valid and 5 items are invalid (fall). Based on data processing experimental variable learning outcomes performed, the obtained reliability index of 0.879 this shows the reliability index test index is at a high level.

2.1 Data Analysis Technique

After getting an overview of the mean, standard deviation, highest score, lowest score and range of score. The result data were analyzed by (a) Normality test to see whether the data is normally distributed, (b) homogeneity test aims to see both samples having a homogeneous variance or not. For data of more than two groups of data then the homogeneous test can be used is Barlett test. The data in this study were analyzed to test the research hypothesis. Testing of the first and second hypothesis is done by t-test.

3. RESULTS AND DISCUSSION

The research data collected in this research comes from class X TPBO as an experimental class and class X TSM as a conventional class at SMK N 2 Payakumbuh. The questionnaire data of motivation scores and the learning result test obtained overall reveal information about the highest score, lowest score, average, standard deviation, and variance.

The result of this learning motivation questionnaire is distinguished from the experimental class that gets treated by using animation learning media and conventional class (without using animation learning media). The highest questionnaire value is 193, which shows that learners have a high learning motivation during the TDO learning process takes place. The result of questionnaire motivation learners learn good class experiment and conventional class can be described. For the highest score in the motivation, a questionnaire was found in the experimental class with the score 193 and the conventional class was at score 188. In the experimental class had a mean of 169,5 and the conventional class of 156. From the data collected for learning motivation of learners in the experimental class in the group high motivation has to mean with score 179,7 and for low motivation with score 148. For conventional class have meant in high motivation group with a mean of 168,9 and low motivation with a mean of 143,1.

3.1 Hypothesis Testing Results

3.1.1 First Hypothesis Test

The first hypothesis states the results of learning TDO learners who are taught with animation media learning is higher than the learning outcomes of learners who are taught conventionally. To test the hypothesis was analyzed by t-test, with results as shown in table 5.

Table 5. Results of the First Hypothesis Testing Calculation

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning outcomes TDO	Equal variances assumed	1.934	.170	2.458	58	.017	8.300	3.377	1.541	15.059
	Equal variances not assumed			2.458	55.539	.017	8.300	3.377	1.535	15.065

Based on table 4:15, it appears that t arithmetic for learning outcomes with Equal Variances not assumed is 2.458 with a probability of 0.017. For the two-tailed test, the probability becomes 0.017 / 2 = 0.0085. Because 0.0085 <0.025 then Hypothesis zero (H0) states that the results of learning TDO among learners who are taught by using animation media together with learners who conventionally taught (without using the media animation) are rejected. Alternative hypothesis (H1) accepted that states that there are differences in learning outcomes of learners who are taught using animation media with students who are taught conventionally (without using animation media).

This indicates that there are differences in learning outcomes of TDO learners taught by using animation media (A1) with students taught conventionally (A2) thus learning using better animation media and can improve TDO learning outcomes

3.1.2 Second Hypothesis Test

The second hypothesis states the learning outcomes of TDO learners who have higher motivation higher than learners who have low motivation. To test the hypothesis was analyzed by t-test, with results as shown in table 6.

Table 6. Second Hypothesis Test Results

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning outcomes TDO	Equal variances assumed	4.654	.045	6.496	18	.000	23.200	3.571	15.697	30.703

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning outcomes TDO	Equal variances assumed	4.654	.045	6.496	18	.000	23.200	3.571	15.697	30.703
	Equal variances not assumed			6.496	13.955	.000	23.200	3.571	15.538	30.862

Based on table 6, it appears that t arithmetic for learning outcomes with Equal Variances not assumed is 6.496 with a probability of 0.000. For a two-tailed test, the probability becomes 0,000 / 2 = 0,000. Because 0.000 <0.025 then Hypothesis zero (H0) states that the results of learning TDO among learners who have high motivation with low-motivated learning outcomes are rejected. The alternative hypothesis (H1) accepted states that the learning outcomes of learners who have high motivation higher than those with low motivation. This indicates that there are differences in learning outcomes of TDO learners who have the high motivation (B1) with students who have the low motivation (B2) thus learners who have higher motivation better and can improve the results of learning TDO

3.1.3 Third Hypothesis Test

The third hypothesis states that there is a learning interaction between learning media and learning motivation in influencing student learning outcomes on TDO subjects. To test the hypothesis was analyzed with ANOVA Two-Lane, the results as shown in table 7.

Table 7. Hypothesis Testing Results

Tests of Between-Subjects Effects

Dependent Variable: The Results Of The Study

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2403.533[a]	3	801.178	5.227	.003
Intercept	317699.267	1	317699.267	2072.789	.000
Media_Pembelajaran	1401.667	1	1401.667	9.145	.004
Motivasi_Belajar	9.600	1	9.600	.063	.803
Media_Pembelajaran * Motivasi_Belajar	992.267	1	992.267	6.474	.014
Error	8583.200	56	153.271		
Total	328686.000	60			
Corrected Total	10986.733	59			

a. R Squared = ,219 (Adjusted R Squared = ,177)

Based on table 7, it is seen that F arithmetic is 6.474 with probability 0.014. Because of the probability of 0.014 <0.05, the null hypothesis (H0) states that there is no learning interaction between learning outcomes taught by using animation media and learning motivation of learners on TDO subjects rejected. While alternative Hypothesis (H1) accepted that states that there is a learning interaction between learning outcomes taught by using animation media and learning motivation of learners on TDO subjects. The average score graph of the learning outcomes of the two treatment groups as shown in Figure 2.

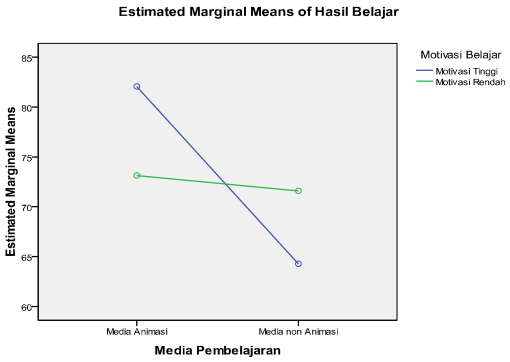

Figure 2. Graph of the average score of learning outcomes of both treatment groups In Figure 2. The graph shows the picture that the score of the result of the students' learning that is taught by the animation media is higher than the non-animated media (conventional). On the graph saw a disordinal interaction between learning using animation media with the level of learning motivation. This is explained by the intersection by the low motivation line on learning using animation media to cut the high motivation line on learning using non-animated media (conventional)

4. DISCUSSION

a. Learning outcomes of TDO learners are taught with animated learning media compared to the learning outcomes of students taught conventionally (without using animation media). The results of the first hypothesis testing, based on t-test analysis showed that overall learners who follow the learning by using the animation media showed higher TDO learning outcomes than the learning of learners without using animation media, which obtained data as shown in table 8

Table 8. Experiment Class and Conventional Classroom Data

No.	Data	Experiment Classroom Learning Results	Conventional Classroom Learning Outcomes
1.	Mean	77	69
2.	Median	75,50	56,00
3.	S^2	133,39	207,70
4.	S	11,55	14,41

From table 8 shows the value for the experimental class above the KKM school that is 75, the conventional class under the KKM is worth 69. While the standard deviation is obtained for the experimental class 11.55 and for the conventional class 14.41. This study is supported by the theory that the media animation can enhance the learner's activity. As Munir (2012: 61), with the animation media strengthen learners' understanding of learning materials so as to improve student learning outcomes.

According to Hamalik (2012: 238) learning by using media animation more communicative and interactive. Proven when the research appears the learners are more centralized and curiosity is higher to learn the material because they feel interested and motivated will be the presentation of media. Thus it can be concluded that to improve learning outcomes learners need to use animation media as a supporter of learning.

a. TDO learning outcomes of learners who have high motivation compared with the results of learners who have low motivation. The second hypothesis test result, based on t-test analysis shows that the TDO learning outcomes of high motivated learners is higher than the learning outcomes of learners who have low motivation. Learners should have high motivation to improve learning outcomes. Gellerman (1963) says that people who have high achievement motivation, would love to win a competition. He dared to bear all the risks as a consequence of his efforts to achieve the goal. Timpe (1993: 221) says that motivation is the desire of someone who encourages him to perform actions that can be seen from the sincerity and joy of the work and done with full responsibility. Things are not much different proposed by Moekijad (1990), and Nawawi (1993) who said that, motivation is a human impulse to do something to achieve goals. Based on the study of theory and the results of data analysis can be concluded that to improve learning outcomes of learners they must have high motivation

b. Interaction between learning media and learning motivation of learners on TDO subjects. Based on the results of the analysis with Anova Two Path, the test results prove there is an interaction between the learning media Animation with the level of motivation of learners in influencing the results of learning TDO. Interaction is a dependency relationship between a variable to some extent from other variables. Result of analysis of third hypothesis test, it can be concluded that there is interaction between animation media with motivation level of learners in influencing learners result of learners or hypothesis presented accepted. This means that this stage of learning results TDO learners who are taught by animation media can improve student learning outcomes. In graph 4.9 seen the interaction disordinal between learning using animation media with the level of learning motivation. This is explained by the intersection by the low motivation line on learning using animation media to cut the high motivation line on learning using non-animated media (conventional). According Kerlinger (2000: 351) states that the variety of interactions with crossed patterns called interaction disordinal. While the interaction with the inline pattern is the independent variable effective one level of other independent variables called ordinal interaction. Interaction is not always the result of a "true interaction" between experimental treatments. There are three possible causes: (1) the variant induced by the actual interaction between the two variables together affects the dependent variable, (2) the occurrence of an accidentally arising interaction, and (3) the effect or effect working on one experimental level, but not working at another level of experiment.

The presence of interaction between animation media with the level of motivation of learners in

influencing the learning result of TDO due to several things, among others: a. The animation media used in this study is an existing media group or media so (Media By Utilization) that is projected motion media, meaning that the show visualizes the workings of a tool accompanied by sound by displaying the program output containing learning materials with interesting pictures accompanied by sound. Learning by using multiple senses, ie the sense of view and hear will provide benefits for learners. The success in learning from what we hear is only 20%, what is heard and see 50%. (Yulaelawati, 2004: 121). This means believed by the media of learning animation will be more meaningfully obtained learners. b. In this animated media if the learners do not understand can play back the animation outside the lesson, meaning learning can be done repeatedly with ease and efficiency.

c. The animation media used can display things that are not visible (abstract). For example the visualization of the combustion process in the combustion chamber. It is believed that understanding of learning messages using animation media is more meaningful, starting from the diffrensiasi phase that learners initially observe, identify and analyze. Furthermore, in the conclusion phase of learners through visualization experience is believed to be able to create a new conceptualization of what they learned before. Evidently, the use of animation media can: 1) overcome the limitations of space, time and sense power, 2) appropriately and varied can overcome the students' facial attitude, so the media can cause excitement in learning (Sadiman, 2008: 17).

Thus it can be concluded that the animation media implemented in this study is the right media in improving the results of learning TDO students class X TPBO in SMK N 2 Payakumbuh

5. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of data analysis and discussion, it can be concluded that: (1) Learning outcomes using animation learning media better than conventional or without animation media learning. (2) Results TDO learners who have high motivation higher than the results of learning learners who have low motivation.(3) There is a significant interaction between the use of animation learning media with the learning motivation of learners in influencing student learning outcomes on TDO subjects. It is suggested to the Headmaster to encourage teachers to choose the animation media in delivering the lesson material effectively and pay attention to the availability of supporting facilities and infrastructure, including the availability of computers and in-focus in schools. For further researchers it is expected to use more complete instruments and design an integrated animation learning media on the learning objectives in the curriculum. In addition, for teachers who teach TDO subjects should diligently integrate several learning methods. In the activities of mentoring, development, and management of teacher learning activities certainly can facilitate learners so motivated in achieving learning objectives. It is expected that the appropriate and varied media use can overcome the passive attitude of learners

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