

The Effect of Media Web-Based Learning Tutorial Video And Learning Motivation to The Learning Outcomes on Techniques in Video Processing Subject At State Vocational Senior High School Ykpp Bontang

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Abstract: In this globalization era, many technologies can be applied as learning media for teaching. The use of information technology should be implemented at schools especially at vocational high schools. One of the media applied in this research was the web-based tutorial videos. The object of the study is students on video processing engineering program at SMK YKPP Bontang. The goals of this study are: (1) acquiring information about the difference learning outcome between students who were taught using web-based tutorial video and students who were taught using Powerpoint; (2) obtaining information about the difference between high motivated students and low motivated students; and (3) finding out information about the influence of interaction between the use of web-based tutorial video and student's learning motivation towards the learning outcome. This study is an experimental research with a quantitative approach, while the research design used factorial design. The students then were divided into two groups taught with different treatments, namely: (1) group of XII grade of the multimedia program used web-based tutorial video; and (2) group of XII grade of the multimedia program used Powerpoint. The results showed that: (1) The results study of students applying web-based tutorial video is significantly higher than those applying Powerpoint in the teaching, on video processing engineering program at SMK YKPP Bontang; (2) the high motivated students is also significantly higher than those having low motivated ones, on video processing engineering program at SMK YKPP Bontang; and (3) there is significant interaction between the use of Web-based tutorial video and learning motivation to result study for students on video processing engineering program at SMK YKPP Bontang.

Keywords: instructional media, learning outcome, *web*-based tutorial videos.

I. INTRODUCTION

1. Background of the Study

A great nation is not only a nation with a large population, but a great nation is if the elements of society are educated and able to advance the country [1]. From these statements are very important education is the foundation of the progress of a country especially in the global order, we are faced with various challenges, like it or not, like it or not, ready or not, we still have to face globalization. In the world of education has a variety of strategies and curriculum that have been developed by the government, with a good curriculum we hope this nation into a dignified nation, and its people have added value and sale value that can be offered to other people and other nations in the world, so we can compete, biting, and even compete with other nations in the global arena.

In this globalization era, a lot of technology that can be used as a medium of learning in the learning process in schools, learning resources such as computers and internet media adds to the learning experience for students to be actively involved in learning activities. The utilization of information technology such as computers and the Internet as a learning resource has been properly applied in schools, especially secondary vocational schools. We recommend that the learning process is no longer monopolized by the presence of the teacher, but the students can also learn anywhere, anytime, with anyone in accordance with the interests and learning styles of each [2]. To overcome these problems it is necessary to learn the proper strategy, attractive and can visualize in detail the mechanisms for creating web-based video tutorials.

At the time of initial observation in vocational YKPP Bontang, found problems such as learning media and computer based online less utilized, yet there are a video tutorial learning processing techniques existing videos now learning to use media PowerPoint, and Internet media have not used directly in teaching although video processing techniques lab infrastructure and internet networks are sufficient. The use of computers and internet media in the form of video tutorials are included in the web need to be applied to the subject of video processing techniques and needs further investigation since it can improve the quality of learning. Media such as a computer or laptop and the smartphone is quite popular as a learning resource that allows a person to get knowledge not just see the words but hear the voice or see an image in the form of video tutorials and learning can be done anywhere as long as there is an internet connection.

The use of multimedia-based learning tools, computers, software, e-learning and video tutorials that have been done by previous researchers have shown significant results in the learning success. Referring to the various relevant research results, it is necessary to do research on "The Effect of Media Learning Video Tutorial Web-Based Learning and Motivation to learn the results of engineering subjects in vocational YKPP Video Processing Bontang".

2. Formulation of the problem

In accordance with the background described above, the formulation of the problem in this research are as follows:

- a. Is there a difference between the learning outcomes of students who use instructional media web-based video tutorials with students who use PowerPoint instructional media on the subjects of video processing techniques in SMK YKPP Bontang?
- b. Is there a difference between the learning outcomes of students motivated to learn higher than low learning motivated students on the subjects of video processing techniques in SMK YKPP Bontang?
- c. Whether there were interactions between the use of instructional media and learning motivation on learning outcomes on the subjects of video processing techniques in SMK YKPP Bontang?

3. Research purposes

The purpose of this study was to: (1) obtain information difference between the learning outcomes of students taught using video media web-based tutorials and students taught using powerpoint media on the subjects of video processing techniques in SMK YKPP Bontang; (2) obtaining information on the differences in learning outcomes subjects of video processing techniques between students learning motivation high and low learning motivated students in vocational YKPP Bontang; and (3) obtaining information on the effect of the interaction between the use of instructional media and learning motivation on learning outcomes on the subjects of video processing techniques in SMK YKPP Bontang.

B. MINDSET RESEARCH

1. Differences between Student Learning Outcomes Learning with Web-Based Media Video Tutorial and Student Learning with Media Powerpoint

The use of video-based tutorials web has many advantages compared to the use of media Powerpoint, in addition to an attractive appearance, video-based tutorials web also has content that is more complete, both in terms of video, audio, animation and ability to deliver the guidance of learning in the form of referrals, assistance, guidance, and motivation so that students learn easily and independently. Web-based video tutorials can be used directly by each of the students both at school and at home, students can also repeat many times in accordance with the desired learning and is very suitable for use in the learning process in SMK, which emphasizes practice than theory.

While powerpoint media containing the points of learning materials, so that the teacher should explain gradually learning steps provided. Students are very difficult to repeat the study if the use of powerpoint file although the copy by each student. Media powerpoint are not suitable for use in learning the teaching material more practice, especially in learning video processing techniques.

From the above explanation can be known, that the web-based video tutorials have the advantages of higher than powerpoint media. Thus it can be suspected that the learning outcomes of students who use the web-based tutorial video media, higher than the students who use the media powerpoint.

2. Differences between Student Learning Outcomes Driven High Learning and Student Driven Learning Low

someone will succeed in learning, that in itself is no desire to learn, this is the first legal principles and in education and teaching. Desire or urge to learn is called motivation. Motivation plays an important role in learning, both process, and achievement of results. A student who has

a high motivation to learn are generally able to achieve success in their learning process and results.

To achieve better learning outcomes, each student must have a high motivation to learn. High motivation to learn is characterized by the following indicators: (1) persistence of students in learning to increase; (2) tenacity and problem-solving in the face of adversity, the better; (3) the student has an interest and a high attention in learning; (4) students perform better in learning; and (5) the students more independent learning.

In contrast to students who have low learning motivation will be individuals who are less active and tend to be slow to gather information, marked by the indicator: (1) persistence for students to learn less; (2) students are less resilient and slow in solving the problem in the face of adversity; (3) the interest and attention of students to learn less; (4) The underachievers in learning; and (5) students often ask for help / less independent in learning.

From the description above can be expected, that there are differences in learning outcomes between students who are highly motivated to learn the high and low learning motivation of students.

3. Interaction Effect of Using Learning Media (Video web-based tutorials and Powerpoint) and Motivation to Student Results

According to Donald (1982: 365) in relation to this study using a factorial design that gives the possibility for research to assess the interaction between the two independent variables, namely the different effects of other variables. If interaction exists, then the effect of treatment on learning outcomes for both the level of motivation will be different. If the interaction is not there, then the effect of the treatment will be the same for both levels of student motivation.

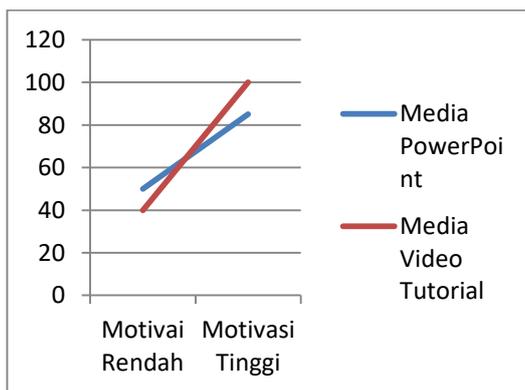
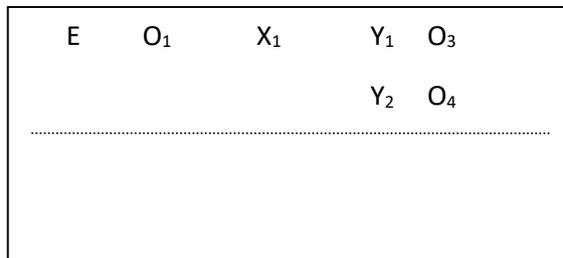


Fig 1. Overview Interaction Between Media Learning and Motivation.

A

From Figure 1. it can be seen that Method A (learning media with media video tutorial web based on the application of Learning Model Direct (MPL) is more effective than the method B (Media Learning with PowerPoint on the implementation of MPL) for the class of highly motivated, while Method B more effective for a highly motivated

grade low. Thus, a particular combination of the treatment and the level of motivation influence each other.



The use of instructional media (video and media web-based tutorial powerpoint) can not be separated from their students' motivation. Media teaching and learning motivation to have an interaction effect on learning outcomes, for students with high learning motivation, using either a web-based tutorial video media or using powerpoint media tend to be higher than the results of their study students with low learning motivation.

So the media learning and learning motivation towards learning outcomes describe the mutual interaction between the use of instructional media (video tutorial web-based media and powerpoint) and motivation to learn as each influential factor in the achievement of learning outcomes.

From the description above can be expected, that there is an interaction effect of the use of instructional media (web-based video tutorials and Powerpoint) and learning motivation on student learning outcomes.

C. RESEARCH HYPOTHESES

Based frameworks as described above, the hypothesis of this study are as follows:

1. The results of student learning using learning media web-based video tutorials, significantly higher, than using PowerPoint instructional media on the subjects of video processing techniques in SMK YKPP Bontang;
2. The results of students' learning motivation high, significantly higher than the low learning motivated students, on the subjects of video processing techniques in SMK YKPP Bontang; and
3. There is an interaction between the learning media use and learning motivation on learning outcomes on the subjects of video processing techniques in SMK YKPP Bontang.

II. METHOD

This type of research is an experimental research with a quantitative approach, which aims to determine differences in learning outcomes on the subjects of video processing techniques among students taught by using web-based video tutorials with students taught using powerpoint media.

In this study were used as the independent variable is the use of instructional media, in which one group was taught by using a web-based tutorial video media and the other group was taught by the media powerpoint.

In this study examined media that focuses on media use web-based learning video tutorial as up to date research and learning motivation on student learning outcomes. With direct instructional model step by step in the subjects of video processing techniques can be implemented effectively, the students will follow the learning by using video media web-based tutorial for class XII MM-1 and using the media powerpoint for class XII MM-2. This was done to compare and maximize teaching materials subjects that obtained video processing technique class XII student majoring in multimedia SMK YKPP Bontang.

Fig 2. 2 X 2 factorial design,
(Adapted from Tuckman) [3]

Keterangan:

- E = the experimental class taught by a web-based tutorial video media;
- K = is the control class taught by media powerpoint;
- O₁, O₂ = pre-test in the experimental class / control;
- O₃, O₄, O₅, O₆ = post-test in the experimental class / control;
- X₁, X₂ = good treatment in the experimental class / control;
- Y₁ = high motivation to learn in the classroom experiment / control; and
- Y₂ = low learning motivation in the classroom experimental / control.

The experimental research design used in this study was a factorial design with attention to the possible presence of moderator variables that affect treatment (independent variable) the outcome (the dependent variable).

In this design, making the subject is not done randomly. This design was chosen because during the experiment is not possible to change the existing class. The pre-test was used to equalize the initial knowledge of both groups while the post-test was used to measure student learning outcomes after being treated [4].

The design of this research is a 2X2 factorial analysis. Pemilahnya factor is the moderator variable students' motivation. Sorting is divided into two levels of learning motivation high and low learning motivation. Determination of learning motivation high and low by finding a score of middle ie the lowest scores were summed with the highest score divided by two, and then determined if it is greater than or equal to sector the middle, it can be categorized as having learning motivation high, while if it is smaller or under the Silverback middle then categorized has a low learning motivation.

Table 1. Design Research Analysis

| NO | Motivation to learn (M) | Media (Y) | |
|----|-----------------------------------|-------------------------------|-------------------------------|
| | | Web-based Video Tutorial (Y1) | PowerPoint (Y2) |
| 1 | Motivation High (M _t) | M _t Y ₁ | M _t Y ₂ |
| 2 | Motivation Low (M _r) | M _r Y ₁ | M _r Y ₂ |

Keterangan:

- M_t Y₁= student learning outcomes by using a web-based tutorial video media in students with high learning motivation;
- M_t Y₂= student learning outcomes using powerpoint media in students with high learning motivation;
- M_r Y₁= student learning outcomes by using a web-based tutorial video media on students with low learning motivation; and
- M_r Y₂= student learning outcomes using powerpoint media on students with low learning motivation.

this study, the population is vocational students Department of Multimedia which has the same curriculum in Indonesia, for the target population is students of SMK Department of Multimedia in Bontang, while the population affordable is a class XII student Department of Multimedia (MM) SMK YKPP Bontang, year lessons 2015/2016, with a population of 91 students.

The sample was a portion of the population is taken as a source of data and can represent the whole population. To determine the required samples to be used sampling techniques. The sampling technique used in this study is Non-Probability Sampling (Quota sampling).

In this study, the sample with quotas is desired class XII student of Multimedia (MM-1) amounted to 30 students taught using the medium of video tutorials web based (experimental group), and class XII Multimedia (MM-2) amount to 30 students taught using Powerpoint media (control group). Before conducting the research, the research instrument tested in a class test (class XII Multimedia / MM-3), which is 31 students.

In this research, data collection techniques performed through three stages, namely: (1) the first stage, performing preliminary observations to see and get the data directly from the observation point to be observed, so that in this

study will be obtained data fit the reality on the ground/space research ; (2) The second stage is to perform a literature study, by collecting supporting data that have been published previously, literature, relevant books and the results of previous studies in order to get a general picture to be able to plan a form of analysis that is suitable in order to solve the problems faced ; and (3) the third stage, by collecting primary data through: questionnaire, to measure students' motivation using a Likert scale and tests, to determine the results of cognitive learning and observation sheet to measure learning outcomes affective and psychomotor achieved by students on the subjects of video processing techniques.

III. RESULT AND DISCUSSIONS

The study found that learning outcomes (cognitive, affective, and psychomotor) students using instructional media video tutorial web-based row amounted to 82.300, 85.667, and 84.033, significantly higher than using instructional media powerpoint row amounted to 79.700, 84.133, and 82.367, on the subjects of video processing techniques in SMK YKPP Bontang. The results of this study are consistent with previous studies conducted by Zubas, et al [5] which found that online learning media tutorial on the subject class of diabetes have a positive impact on student learning outcomes.

The results of this study are also consistent with research conducted by Prasmono [6] which found that there was a significant effect of the use of multimedia computers and DVD media to achievement learn listening. The results of this study are also consistent with research conducted by Akbiyik [7] who found that both methods tutorials and demonstrations can be used with success in students, especially in computer skills instruction. Tutorial support can be used as a demonstration that the students not to forget or have trouble remembering during computer skills instruction.

This result is in line with research conducted by Dinata [8] which found that there are differences in which student

learning outcomes using instructional media video tutorials higher than student learning outcomes using conventional media. The results obtained are also in accordance with the theories of experts. Rohman & Amri [9] express purpose is to integrate computer-based learning model of learning by computer media learning resources to improve learning outcomes of cognitive, affective, and psychomotor.

According to Arsyad [10], the practical benefits of the use of instructional media in teaching and learning process as follows: (1) learning media can clarify the presentation of messages and information so as to facilitate and improve the process and learning outcomes; (2) learning media can improve and redirect the child's attention so that it can lead to motivation to learn, more direct interaction between the students and the environment, and the possibility of students to learn on their own according to their ability and interest; (3) learning media can overcome the limitations of the senses, space, and time; and (4) learning media can provide a common experience of the students about events in their environment, as well as enabling direct interaction with teachers, community, and environment.

The study found that learning outcomes (cognitive, affective, and psychomotor) students who are highly motivated high learning respectively amount to 88.967, 89.933, and 87.800, significantly higher than the students' motivation to learn a lower row amounted to 73.033, 79.867 and 78.600, on the subjects of video processing techniques in SMK YKPP Bontang.

The results of this study are consistent with previous studies conducted by Prasmono [6] which found that there was a significant effect of learning motivation towards learning achievement listening and magnitude averaging proved that students are motivated to learn higher the better performance of the students who have the motivation to learn low. This result is in line with research conducted by Pratiwi [11] who found that using the medium of video tutorials has the advantage that: can replace the teacher completely, students learn independently, creatively and skills of students will be more motivated because students can follow in detail step by step.

The results obtained are also in accordance with the theoretical basis of the experts. According to Nur [12], that motivation is an internal process that can enable, guide and sustain behavior over time. Motivation is a process that is able to evoke, direct, and maintain human behavior in order to focus on the goal. Meanwhile, according to Sadiman [13], that motivation can be divided into two forms, namely: (1) intrinsic motivations are the motives that become active or function they do not need to be stimulated from the outside, because inside every individual had no urge to do something; and (2) motivation is extrinsic motives are active and functioning for their stimulus from the outside. Motivation plays an important role in the learning process for both teachers and students. For teachers find the motivation to learn from the students was very necessary to maintain and improve the students' enthusiasm for learning. For students learning motivation can foster the spirit of learning so that students are motivated to do the act of learning. Students learning activities with pleasure because it is driven motivation.

The study found that there is a significant interaction between the use of instructional media and learning motivation on learning outcomes on the subjects of video processing techniques in SMK YKPP Bontang.

To further clarify the interaction of the use of instructional media (video tutorial web based and media Powerpoint) and motivation to learn the results of cognitive learning about the techniques of processing video in vocational YKPP Bontang can be seen in Figure 2, you'll see a line distribution of the results of cognitive learning taught by media video tutorials and web-based learning motivation, and student learning outcomes cognitive taught by media powerpoint and motivation to learn are misaligned or crossed, so to see Figure 2 illustrated the existence of a significant interaction between the use of instructional media (video tutorial web based and powerpoint) and motivation to learn the results of cognitive learning about video processing techniques in SMK YKPP Bontang.

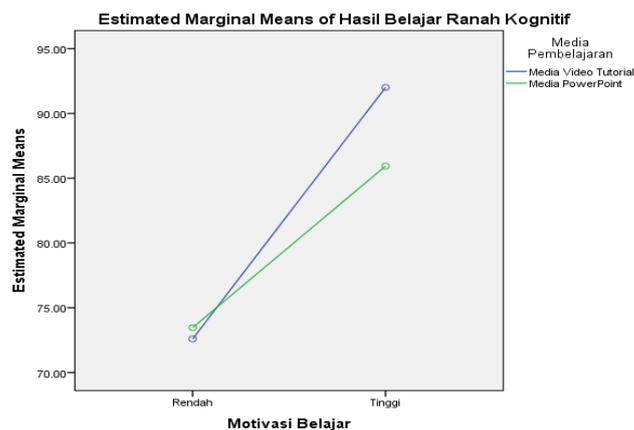


Fig 3. Graph Line Interaction Using Learning Media (Video Tutorial-Based Web and Powerpoint) and Motivation Against Domains Cognitive Learning Outcomes Video Processing Engineering at SMK YKPP Bontang

To further clarify the interaction patterns of use of instructional media (video tutorial web based and media powerpoint) and student motivation for learning outcomes affective domain of processing technique video in vocational YKPP Bontang can be seen in Figure 3, you will see a line distribution of learning outcomes affective domain is taught with media video tutorials and web-based learning motivation and learning outcomes affective domain taught by media powerpoint and motivation to learn are misaligned or crossed, so to see Figure 3 illustrated the existence of a significant interaction between the use of instructional media (video tutorial web based and powerpoint) and learning motivation towards learning outcomes affective domain of video processing techniques in SMK YKPP Bontang.

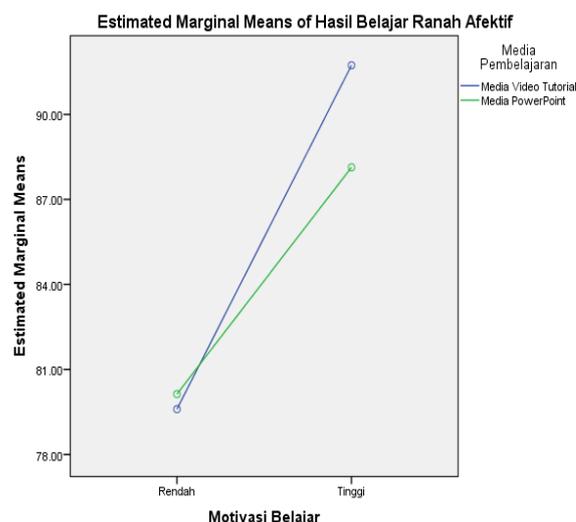


Fig 4. Graph Line Interaction Using Learning Media (Video Tutorial-Based Web and Powerpoint) and Motivation Against Domains Affective Learning Outcomes Video Processing Engineering at SMK YKPP Bontang

To further clarify the interaction patterns of use of instructional media (video tutorial web based and media powerpoint) and student motivation for learning outcomes psychomotor about techniques of processing video in vocational YKPP Bontang can be seen in Figure 4, you will see a line distribution of learning outcomes psychomotor taught with media video tutorials and web-based learning motivation and learning outcomes psychomotor taught by media Powerpoint and motivation to learn are misaligned or crossed, so to see Figure 4 illustrated the existence of a significant interaction between the use of instructional media (video tutorial web based and powerpoint) and learning motivation towards learning outcomes psychomotor about video processing techniques in SMK YKPP Bontang.

The results of this study are consistent with previous studies conducted by Prasmono [3] which found that there was a significant interaction effect between use of media with learning motivation on learning achievement listening. This result is in line with research conducted by Daniels [14] which found that: (1) the video medium is suitable for use in learning, especially if students want to repeat the previous lesson given at school/college because video can be watched at any time; (2) The video can be viewed, paused and resumed with a speed / willingness of the students themselves; and (3) video can provide convenience because besides writing/text, video can also be supplied in the narrative. The results obtained in accordance with the basic theory.

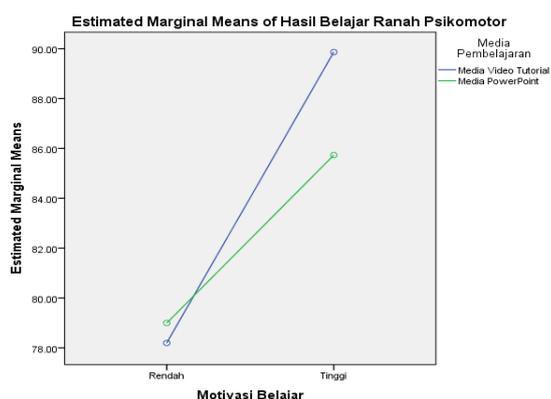


Fig 5. Graph Line Interaction Using Learning Media (Video Tutorial-Based Web and Powerpoint) and Motivation Against Domains Psychomotor Learning Outcomes Video Processing Engineering at SMK YKPP Bontang

This study used a factorial design that gives the possibility to study to assess the interaction between the two

independent variables, namely the different effects of other variables According to Donald [15], if the interaction exists, then the effect of treatment on learning outcomes for both the motivation level will be different, and if the interaction is not there, then the effect of the treatment will be the same for both levels of student motivation.

IV. CONCLUSIONS

Based on research result and discussion, it can be concluded as

- Student learning outcomes using instructional media web-based video tutorials, significantly higher than students who use PowerPoint instructional media on the subjects of video processing techniques in SMK YKPP Bontang;
- Learning outcomes of students motivated to learn high, significantly higher than the low learning motivated students, on the subjects of video processing techniques in SMK YKPP Bontang; and
- There was a significant interaction between the use of instructional media and learning motivation on learning outcomes on the subjects of video processing techniques in SMK YKPP Bontang.

V. SUGGESTIONS

Based on some of the above conclusions, then submitted the following recommendations:

- For schools: the development of information and communication technologies should be used to the maximum, especially if schools already have adequate facilities and infrastructure;
- For teachers: web-based tutorial video media, proved to be very well used on the subjects of video processing techniques. Teachers can also apply the same process in other subjects that have similar Characteristics, by considering and considering the level of student motivation;
- For students: learning media web-based video tutorials can be a source of fun learning both at school and at home because of the media can be accessed through the Internet address at <http://mediabelajar-muri.net>; and

4. For future research: as a recommendation in the implementation of similar research, we recommend using a sample of at least 120 students to get a better level of significance, and the measurement of learning motivation can also be done with observation during the learning process takes place.

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