

## Comparative Study to Video Tutorial and Peer Tutor on Student's Learning Outcomes on 2 Dimensional Animation Techniques

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### Abstract:

When teachers deliver teaching materials using conventional methods, students tend to feel bored because students are just listening. This resulted in students seeking their own busyness during the learning process took place. Therefore the replacement of learning methods is needed to reduce students saturation in the learning process. This research purpose is (1) to know the difference of learning outcomes from the utilization of video tutorials and peer tutors (2) to find out the effectiveness between the utilization of video tutorials and peer tutors towards students's learning outcomes on 2 dimensional Animation Technique subject at second grade. Research method used in this research is quantitative method of quasi experimental with pre-test and post-test type. Data collection techniques in this reasearch with (1) observation (2) t test by using a pre-test and post-test (3) and documentation.

The results obtained from this research are (1) there are differences of learning outcomes of students between utilization of video tutorial and peer tutors with the calculated of post-test value of each class using the t test independet amounted to 0,032. (2) the utilization of peer tutors in this research is more effective than the utilization of video tutorials, this calculation outcomes obtained from a test of gain in each class. On video tutorial class gets the calculation outcomes of 0.32, while on peer tutor class gets the calculation outcomes of 0.58. With the use of peer tutors can improve student learning outcomes.

Keywords: video tutorials, peer tutor, 2 dimensional animation, learning outcomes

## Introduction

Education at this time requires students to take an active role in teaching and learning activities. Students not only sit listening to the material presented by the teacher, but the students also have to play an active role in learning. While many teachers are still using conventional learning method that is traditional learning method or also called lecturing method, because since this method has been used as a tool of oral communication between educators and learners in learning and learning process, Djamarah (1996). With this method students only listen to what is delivered by teachers, it is not uncommon to make students become easily saturated and less motivated in teaching and learning activities.

To overcome the above problems then required the right method of learning so that students can achieve learning objectives well. With this teacher can take advantage of various kinds of learning media that are available. In this study using video tutorial and peer tutor in teaching and learning activities. Tutorial videos and peer tutors can be utilized to improve students' independence in learning, not only students get knowledge from what is conveyed by teachers only.

According to Cheppy Riyana (2007) media video learning is a medium that presents audio and visual that contains learning messages both contain the concepts, principles, procedures, knowledge application theory to help the understanding of a learning material. While the tutorial according to Hermawan (2004) and Rusman (2008) is a special learning with qualified instructors using computer software that contains subject matter that aims to provide a thorough understanding to learners about the material or subject matter being studied. From this understanding it can be concluded that the video tutorial is a medium that presents audio and visual containing the material being taught that acts as a substitute educator in delivering the material. Video tutorials can help students in solving learning problems without any time limit because students can learn their own material in school Or at home, students are also able to repeat teaching materials until they really understand. Through peer tutors students can strengthen interactions with others, share knowledge they have and can build good relationships to solve learning problems encountered.

From the research that has been done by Hans van der Meij, Jan van der Meij (2014) the video used is not a video tutorial, but paper-based tutorial. The steps contained in the tutorial video are cut, pasted on paper and then printed and distributed to students as a learning guide. While in the research that has been done by T.Shiozawa, B.Hirt, M.Lammbarding-Koeppel (2016) students selected to become tutors in his group received training from the tutor first, so that students do not independently analyze the steps that must be done And then distributed to a group of friends. Students only listen to the tutor's direction to solve the problem

Students who tend to be easily saturated in the learning process using conventional learning methods into the background in this study. With the use video tutorials and peer tutors are expected to solve the problem. Cheppy Riyana (2007) video tutorials have advantages including : overcoming distance and time, eble to describe past events realistically in a short time, can be repeated if necessary add clarity, messages delivered quickly and easily remembered, and student opinions. Djamarah (2006) peer tutors have many advantages including : this works best for something children who have feelings of fear and reluctance to their theachers, both asking and answering, as student tutors the tutoring work will reinforce concepts and knowledge better than what has been discussed, for tutors to be a place of self-training, a sense of responsibility in performing their duties as a tutor and practicing patience, strengthening as well as students. Become mpre independent and mature and have a sense of loyalty. This is the basic comparison in this study. In this research in the utilization of video tutorial each student is given one same video to solve the problem. Video tutorials to help students learn are selected using easy-to-understand language, explaining easy ways so that students do not feel difficulty, have interesting colors and pictures so that students are motivated to learn and not quickly bored. With the selection of tutorial videos provided, students do not need to repeat the steps on the tutorial video. In the utilization of peer tutors students are divided into several groups and each group has a chairman. The group leader is required to seek and understand the steps to be taken in solving the available problems. From the results obtained by the group leader, he must help his friends so that the communication between students can be established and they are able to help each other in completing the task. This research purpose is (1) to know the difference of learning outcomes of students with utilization of video tutorials and peer tutors (2) to find out the effectiveness between the utilization of video tutorials and peer tutors.

## Literature Review

The best method of learning is to teach others. Studying with friends can eliminate awkwardness for students who are embarrassed to ask their incomprehension to the teacher, the tutor may play a leader in group activities as a substitute for educators according to Zaini Hisham et al (2008). Based on research conducted, (John Dent, Ronald M Harden, and Dan Hunt, 2014) peer tutors can increase confidence in clinical examination 8.4 on a 10-point scale, both peer tutors and fellow learners are able to build strong relationships with video. While the behavior of students who are trained by peers are different from students's learning behaviors that are not trained by peers (T.Shiozawa's research, B.Hirt, and M. Lammerding-Koepfel, 2016). Students trained by peers in team learning are often much more than their more organized counterparts. As well as based on research conducted (Silvia Blanch, David Duran, Marta Flores, Vanessa Valdebenito, 2012) Family as peers is the best variable in improving reading comprehension to children

Thus, research on peer tutors that will be used in teaching and learning activities for students in understanding the material given by the teacher, so as to help students in improving the level of understanding and student learning outcomes on the subject of 2 dimensional animation techniques.

## Research Method

This research uses quantitative approach of experimental quasi desain (Campbell, D.T., & Stanley, J.C. (1963)) with pretest and posttest type. This research was conducted at second grade of Vocational High School. Data collected using observation and post-test evaluation. This research uses two classes as an experimental class and control class with total sample 32 students on each class. In vocational high school that are used as research subjects there are only two multimedia classes then the researcher uses one class as the control class and the other class becomes the experimental class. On experimental class that utilizes peer tutors in the learning process and on control class that utilizes video tutorials in the learning process.

## Research Result and Discussion

### Research Result

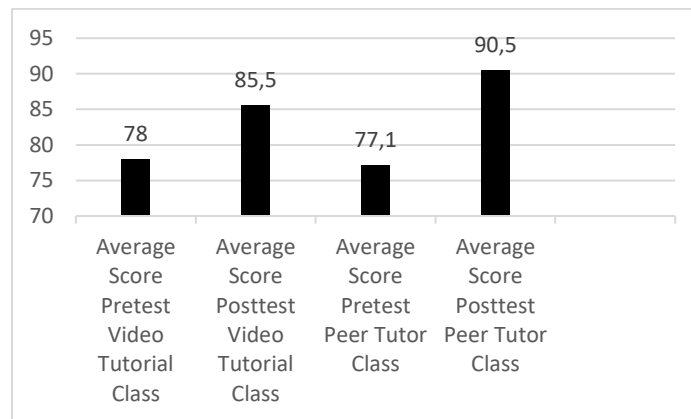


Figure 1. Improved Learning Outcomes of Students Diagram

Based on Figure 1. an improvement diagram learning outcomes of control class by using video tutorials in the learning process, the average pre-test score obtain the results 78 and the post-test score obtain the result 85.5. In the experimental class by using peer tutors in the learning process, the average pre-test score obtain the results 77 and the average post-test score obtain the results 90.5.

In the utilization of tutorial video and peer tutor there are differences learning outcomes this can be seen based on the results of hypothesis testing contained in table 1. With the use of video tutorials and peer tutors in this study note that peer tutoring is more effective than video tutorials, it can be seen in table 2.

## Hypothesis 1: There is a difference in learning outcomes between the use of video tutorials and peer tutors

The first hypothesis aims to determine the difference of learning outcomes of students between utilization of video tutorials and peer tutors. The data retrieval technique in this first hypothesis uses independent t test.

The result of the first hypothesis testing: hypothesis accepted when  $\text{sig} < 0,05$  while hypothesis rejected if  $\text{sig} > 0,05$ . Research questions, hypothesis and tables of results of the first hypothesis testing will be shown below.

Research Question 1: Is there a difference in learning outcomes from utilization of tutorial videos and peer tutors?

Hypothesis 1: There is a difference in learning outcomes between utilization of video tutorials and peer tutors.

Table 1. Summary of Post-test Hypothesis Outcomes

Value Calculation Results	N	Sig	$\alpha = 5\%$	Result
<i>Post-test</i>	32	0,032	0,05	0,032 < 0,05

From the independent t test calculation using post-test score of each class get sig result 0,032. The results can be seen through a test decision that states the sig results (0.032) < 0.05, from the results obtained that the hypothesis accepted. Thus can be stated there are differences in student's learning outcomes between utilization of video tutorials and peer tutors. Student learning outcomes that utilize peer tutors in the learning process has a superior value compared with student learning outcomes that utilize video tutorial. The difference in learning outcomes can be seen in Figure 1, with the result of the average score on each class that is 85.5 on Control class (video tutorial) and 90.5 on the experimental class (peer tutor).

## Hypothesis 2: Peer tutor implementation is more effective than the implementation of tutorial video in the learning process

The second hypothesis aims to determine the effectiveness of utilization of video tutorials and peer tutors. The data retrieval technique in this second hypothesis uses a gain test.

Second hypothesis test result: hypothesis accepted when result of gain test calculation in video tutorial class < from gain test calculation in peer tutor class while hypothesis rejected if result of gain test at video tutorial class > from gain test calculation in peer tutor class. Research questions, hypothesis and table results of testing the second hypothesis will be shown below.

Research Question 2: How effective is utilization of tutorial videos and peer tutors in teaching and learning activities?

Hypothesis 2: The application of peer tutors is more effective than the implementation of tutorial videos in the learning process.

Table 2. Summary of Gain Test Results

Class	Result Calculation Gain Test	Criteria
Video Tutorial	0,32	Medium
Peer Tutor	0,58	Medium

From the gain test calculation in each class. The control class that utilizes the tutorial video in the learning process earns a result of 0.32 while the experimental class using peer tutor earns a result of 0.58. The results can be seen through a test decision that states the test results of the control class (0.032) < experimental class (0,58), from the results obtained that the hypothesis is accepted. Thus it can be stated the application of peer tutor is more effective than video tutorial. In the result of gain test calculation, tutorial video and peer tutor have result with same criterion that is medium. But based on the results in the table above can be said that with the use of peer tutors students will better understand the material presented so as to improve student learning outcomes.

## Discussion

The effectiveness of learning is characterized by student activeness in learning, especially in organizing and discovery of information. Therefore, the more active the students in the learning process, the more effective the learning is carried out (Eggen and Kauchak (1998)). By utilizing tutorial videos and peer tutors students are able to play an active role in learning, this refers to the independence of students in finding information to complete the task given by the teacher.

The use of tutorial videos and peer tutors certainly has a different impact on students, this impact can affect student learning outcomes on the subjects of 2 dimensional animation techniques. With the use of peer tutor the average value in the experimental class is higher than that of the control class that utilizes the tutorial video (seen in figure 1) which shows the difference in student learning outcomes.

Effectiveness can be measured by looking at students' interest in learning. Interest affects the learning process of students, if students are not interested to learn something then it can not be expected he will succeed in learning something. But if students learn according to their interests then it can be expected the result will be better (Diamon in Mudhofir (1987)).

Students interest in the subject of 2 dimensional animation techniques can be said high, but the use of less precise learning methods make students become less motivated in learning. Therefore, in this research used video tutorial and tutor media to increase students' motivation in learning so that students can get good learning result. From the method used it seems that the application of peer tutors in learning is more effective than video tutorials (seen in table 2), this is caused by student learning outcomes that use peer tutor higher when compared with students who use video tutorials in learning.

## Conclusion

This research shows that learning method is very important in learning process. A proper learning method will help students in achieving the expected learning objectives. This will affect student learning outcomes. Utilization of tutorial video and peer tutor in this study affect student learning outcomes this can be proven by hypothesis test in table 1. While the results of effectiveness test of video tutorial application and peer tutor in table 2 shows that the use of peer tutor has a higher level of effectiveness when compared With the utilization of video tutorials. Thus peer tutors can be an alternative choice of learning methods to improve student learning outcomes. With the use of peer tutors can improve student learning outcomes.

## Future Research

The subjects of this research are 64 students of class XI Vocational High School in the subject of 2 Dimensional Animation Technique. For subsequent research it is expected to develop the use of tutorial videos and peer tutors combined with other learning methods at different levels of education, varied subjects, and more sample quantities.

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Maria Linda Kartka Mukti. Student of Informatics and Computer Engineering, Faculty of Teacher Training and Education, Sebelas Maret University (UNS). The motto in my life is Do The Best Now OR Never and I have an interest in singng and travelling. I will always try to get up every time I'm dropped.