Development of Media Camtasia Studio on Learning Outcomes Computer Aided Design Automotive Engineering Student in Purworejo Muhammadiyah University

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ABSTRACT

The study is to: 1) to describe the media development procedures with Camtasia Studio 6 are appropriate for use as a learning support learning Computer Aided Design, 2) to determine the feasibility Camtasia Studio 6 learning media Computer Aided Design and 3) to determine the effectiveness of learning media camtasia studio 6 which was applied to the subjects of Computer Aided Design. This study is Research and Development (R & D). Results of the study showed that: 1) the procedure of learning media development camtasia studio include searching for potential problems, data collection, product design, design validation, improved design, product testing, product testing, testing and revision of product usage. 2) camtasia studio learning media can be used as a medium to improve learning outcomes and motivation to learn in the course of Computer Aided Design, in Purworejo Muhammadiyah University. 3) t test result proved that learning media effective to improve learning outcomes and student motivation semester 2 Automotive Engineering Education of Purworejo Muhammadiyah University. Camtasia studio media is more effective than conventional learning, it can be seen from the experimental class average of 88.54 is greater than the mean control class is 76.26.

Keywords: Learning Media, Camtasia Studio, Learning Outcomes

PRELIMINARY

Learning is an important process for the change of human behavior and includes everything that is thought and done. According to Siregar (1984: 4) understanding of learning in learning is a process of change in behavior of the individual self act due to the interaction between individuals and individuals with their surroundings so that they are better able to interact with their environment. According to Djamarah (1999: 22), Learning is a series of activities and souls to gain behavioral change as a result of individual experience in interaction with an environment involving cognitive, affective and psychomotor. Meanwhile, according to Purwanto (2016: 47) learning is all personal contact with the environment that cause behavior change.

According Suyitno (2015: 1), CAD stands for Computer Aided Design, which translated into Indonesian as designing with the help of computers. AutoCAD is a software engineering drawing (drafting) is very well known in the world of engineering. Very high degree of accuracy makes AutoCAD as one of the tools
tools) to draw among engineering. According to Zico (2013: 1), AutoCAD is an application that is widely used in drawing engineering such as drawing houses, buildings, floor plans, machinery, and so on. In the course of CAD (Computer Aided Design) there is a very important subject matter, namely the material on the operation of AutoCAD. AutoCAD operation of this material contains the steps to draw a product or part of a product. The product you want to describe can be represented by lines and symbols that have a certain meaning. CAD can be a 2-dimensional images and three-dimensional images. Mastery of AutoCAD using the method adopted for this result is still not optimal, the attainment of students affected by many factors, such as infrastructure, lecturers, time and learning activities, self-reliance and the other students. Inaccuracy in choosing instructional media can lead to a longer time to achieve competence or not even achieving the desired competencies.

Delivery of material CAD in Purworejo Muhammadiyah University students who applied for this is to use the lecture method, the lecturer explains the theoretical material in front of the class and explain the operation steps in front of the class. At the time lecturer explained the operation step AutoCAD in front of the class, many students who do not understand because learning takes place tends to be one-way. Students are less active in the following study of student attitudes AutoCAD seen when following the lessons in class. These problems lead to reduced interest of students towards the operation of AutoCAD material, so that the learning process is less effective operation of AutoCAD.

In this case, so that students are more master of the material and more passionate in following the learning, then the learning needs to be designed as possible, so as to create an effective and fun learning atmosphere, and can facilitate students in receiving and processing information received. The media in question is multimedia learning media in which the way the presentation of material presented to the student can be a more interesting and clearer audiovisual display. Preparation of the multimedia-based learning media using Software Camtasia Studio 6, which is one alternative Software in the manufacture of media that can be used as a lecturer of multimedia technology. Advantages of Software Camtasia Studio 6, among others: can edit, crop and merge several video clips, edit and add audio and equipped with Interactive callouts, effect zoom-n-pan, watermark, annotation, sounds, cursors, and more. With the use of Software Camtasia Studio 6 can be generated media innovative multimedia-based learning and fun because it is a medium that has elements of sound and image.

From the description that has been described above, the researcher is interested in conducting research under the title "Development of Media Camtasia Studio on Learning Outcomes Computer Aided Design Automotive Engineering Student In Purworejo Muhammadiyah University".

The purpose of this study to describe the procedure of media development with Camtasia Studio 6, determine the feasibility media with Camtasia Studio 6,
examine the effectiveness of instructional media *Camtasia studio 6* on learning outcomes of students in the subject of *CAD (Computer Aided Design)*.

**RESEARCH METHODS**

This type of research is the research and development or *Research and Development*, with the 8-step procedure development.

![Diagram of research methods]

Figure 1. Steps of Use Methods *Research and Development* (R & D) of Sugiyono (2015: 409)

Figure 1 describes the steps of the development of this research, which are: 1) potential problem search, 2) data collection, 3) product design, 4) design validation, 5) design improvement, 6) product testing, 7) product testing, 8) product usage.

The research was conducted at the Automotive Technical Education, Purworejo Muhammadiyah University, located at Jalan KH Ahmad Dahlan 3 & 6 Purworejo 54 111. The timing of this study began in November 2016 until March 2017. The subject of this study using the 2nd semester students of Purworejo Muhammadiyah University Automotive Technical Education get *AutoCAD* material. Data used in this research is obtained through questionnaire method (questionnaire).

Instruments used in this study include instruments of media experts, material experts, student responses, and learning outcomes. Instrument of data collection is using questioner (questionnaire). The type of data of this research is to use quantitative data, then the data is analyzed statistically descriptive. Prerequisite test data analysis using normality test, homogeneity test, *t*-test.

**RESEARCH RESULT and DISCUSSION**

According to previous research (Rahmayani Mulia, 2011) it can be seen from the results of calculations using the *t* test, the obtained value of *t* count equal to 3.01. To determine the value of *t* table with degrees of freedom (df) = 78 and a significance level (α) = 0.05 and *t* table = 1.67. Thus the results of this study indicate that the use of *Camtasia studio* based multimedia (video tutorial)
provide a significant positive effect on learning outcomes. This study shows differences in learning media influence Camtasia studio to the improvement of learning outcomes in the subject of CAD (Computer Aided Design) second semester students of Automotive Technical Education Purworejo Muhammadiyah University 2016-2017 academic year.

<table>
<thead>
<tr>
<th>Statistical Indicators</th>
<th>Control Class</th>
<th>Experiment Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum</td>
<td>2669.00</td>
<td>3099.00</td>
</tr>
<tr>
<td>Average</td>
<td>76.26</td>
<td>88.54</td>
</tr>
<tr>
<td>Max</td>
<td>93.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Min</td>
<td>60.00</td>
<td>67.00</td>
</tr>
<tr>
<td>Deviation Standards</td>
<td>8.93</td>
<td>8.62</td>
</tr>
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</table>

Data Table Description Learning Outcomes

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>Mean</th>
<th>Deviation Standards</th>
<th>t_count</th>
<th>sig</th>
<th>t_table</th>
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<tbody>
<tr>
<td>Experiment</td>
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<td>88.54</td>
<td>8.62</td>
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<td>2.00</td>
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<tr>
<td>Control</td>
<td>35</td>
<td>76.26</td>
<td>8.93</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data Table Result t test for Outcomes Using SPSS 16

T test results using a technique indepedence sample t test obtained t count equal to 5.85 With p = 0.000 <0.05 indicates there is a difference in experimental class learning outcomes and control classes, meaning that the average of experimental class learning outcomes is significantly higher than control class.

CONCLUSIONS and SUGGESTIONS

Based on the results of research and development carried out in CAD courses in Automotive Engineering students semester 2 Purworejo Muhammadiyah University, it can be concluded is as follows:

1. Stage of development of instructional media Camtasia studio courses CAD (Computer Aided Design) in the semester 2 students Education Automotive Engineering Muhammadiyah Purworejo University has included a search of potential problems, data collection, product design, design validation, improved design, product testing, product testing, test Try product usage and revision.

2. Product validation results by 85.00% media experts and 85.00% of material experts, small group experiments of 84.50% and 81.95% product trial demonstration show that the product is good (both) used as a learning medium. The t test results prove that the instructional media made effective.

3. T test results prove that the media made effective learning to improve learning outcomes (t_count = 5.854 and p = 0.000) and motivation to learn (t_count = 5.116 and p = 0.000) semester 2 students Automotive Engineering Education
Purworejo Muhammadiyah University. Learning media can be used in learning as a medium to improve learning outcomes and motivation because in large group trials with a total of 35 students have succeeded in improving learning outcomes and motivation.

Based on the discussion, the conclusions in this study. Researchers put forward the following suggestions:
1. For Lecturers
   Lecturers use varied methods supported by the use of multimedia learning so that will increase interest, understanding participants and learning outcomes.
2. For the Institute
   Institutions should apply instructional media in all courses. And complete the facilities and infrastructure needed to support the learning media.
3. For Next Researcher
   Subsequent developers to be more creative and find new ideas in the making of learning media, so that will improve student learning outcomes in other subjects especially those using learning media.

REFERENCES