International Journal of Economic, Technology and Social Sciences
e-ISSN 2775-2976
International Journal of Economic, Technology and Social Sciences
url: https://jurnal.ceredindonesia.or.id/index.php/injects
Volume 3 Number 1 page 259 - 262

Development Of Project Based Learning-Based Video Tutorials in Vocation High School

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ABSTRACT
This research aims to: (1) know the feasibility of the media Video tutorial based on the project based learning software application and interior building, and (2) to determine the effectiveness of the use of media video tutorial based project based learning on software application learning and building interiors can improve the learning outcomes of software applications and building interiors. This type of research is development research using R&D models from the Borg and Gall combined with the Dick and Carey instructional design models. The method used in this study is a quasi-experimental method. The results of the hypothesis test study prove that there is a significant difference between the learning outcomes of software applications and building interiors that are studied using project-based learning video tutorial media and the learning outcomes of software applications and building interiors using visual media.

Keywords : ***Video tutorials, project based learning, visual media, learning outcomes, software applications and interior building.***

INTRODUCTION

SMK Negeri 1 Lubuk Pakam Has a Building Modeling and Information Design Expertise Program carrying out a series of learning activities covering various engineering training subjects. The training courses in the Building Modeling and Information Design skill program can be classified into three, namely: normative training courses, adaptive training courses and productive training courses. Of these three training courses, productive training courses are skills training subjects that are directly related to student skills. One of the productive training subjects received by class XI students of the Building Modeling and Information Design Expertise Program is Software Applications and Building Interiors. In the subject of Software Applications and Building Interiors, students are expected to have expertise and skills in Drawing With Software using software,

Based on the results of observations at SMK Negeri 1 Lubuk Pakam it was found that in the learning that took place the teacher only explained the material visually so that students only focused on the teacher. The media used by the teacher has not been able to increase student interest in learning. In addition, visual media has not facilitated students to learn independently. Submission of practical material is not enough just to explain with visual media. To overcome this, it is necessary to use learning media that can support the teaching and learning process. Thus the teacher no longer has difficulty in explaining the material and does not only depend on the material listed in the e-book but can be added with video tutorial learning media about the material How to Draw Frame ConstructionandDoors/Windows and VentilationWith AutoCAD.

Chen, et al (2018: 49-60) in their research results explained that video tutorials are part of a proficiency-based curriculum, meaning an effective method to be introduced for novice

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students. Thus video tutorials can provide students with knowledge but also motivate learning and can follow the process of the teacher delivering material with the video so that it is suitable for teaching skills.Nasir (2017:1095)in the results of his research explained that videono tutorialsnot only impart knowledge to the audience but also motivate them to learn. Henderson, Selwyn andAston(2017:1567-1579)In the results of his research it is explained that showing videos in an authentic context allows students to have very special use of control, for example if students skip parts they already know or the teacher's demonstration speed in delivering material then with video tutorials students can follow it.

To increase the activeness of students in the classroom in the learning process, it can be handled by applying a learning model, the success of a student in the learning process is not only determined by good teaching staff or a solid curriculum, but is also determined by the learning methods used by the teacher. Putra (2017:41) in his research to obtain optimal achievement of activeness requires a supportive learning atmosphere and environment and an interesting learning process so that it is possible to apply good and appropriate learning models that actively involve students.Saputra (2018:171) related to the project-based learning model shows that the implementation of the project-based learning model has an impact on increasing student learning activities that continue to be expressed in each learning cycle. So it is very clear that the project-based learning model is very suitable for skills learning.

The objectives of the research are: (1) To determine the feasibility of Project Based Learning-Based Video Tutorial Media in learning Software Applications and Building Interiors. (2) To find out the effectiveness of using Project Based Learning-Based Video Tutorial Media in learning Software Applications and Building Interiors

METHODS

This research uses a research and development approach, better known as an R&D study, which in the process includes the development and validation of educational products, as stated by Borg & Gall. Borg and Gall (1983) say that Educational Research and Development (R&D) is the process used to develop and validate educational products. In this study, the steps taken in this study reached nine out of ten steps, namely: (1) Introduction, (2) Creating learning designs, (3) Collection of materials, (4) creating and implementing learning models, (5) Review or field test in the context of formative evaluation and product revision. (6) Main Field Testing, (7) Operational Product Revision, (8) Operational Field Testing,

Next validate 3 instruments to each validator consisting of experts consisting of learning design experts, media experts, and material experts, then give another instrument or individual test consisting of 3 students then small group test consisting of 9 students last limited field test which includes all students in the class. Then the results obtained were tested again on 65 students consisting of 2 classes, the experimental class and the control class. The experimental class consisted of 33 students with video tutorials based on project based learning and the control class consisted of 32 students with visual media to gain effectiveness.

RESULTS AND DISCUSSION

1. Feasibility research test

The results of studies by materials experts and design experts and media experts in each

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aspect of the overall assessment are determined by the average score in the respective category. The results of the study were then analyzed to determine whether the learning media was developed or not. The average percentage of results from research material experts, learning design experts and media experts will be explained as follows:

Table 1. Summary of product feasibility results that have been validated by experts and trials

No	The experts	Average Percentage	Criteria
1.	Design Expert	91.91%	Very Worthy
2.	Media Expert	83.59%	Worthy
3.	Material Expert	95.19%	Very Worthy
4.	Individual Trial Students	81.81%	Very Worthy
5.	Small Group Trial Students	90.90%	Very Worthy
6.	Field Trial Students	91.48%	Very Worthy
	Average	**89.13%**	**Very Worthy**

Based on the table above, it can be concluded that Project Based Learning-based Video Tutorial Learning Media in the subject of software application and building interiors has proven to be very feasible because it has passed material experts, design experts, media experts, individual trials, small group trials and tests. tried the field and the result was declared "Very Eligible".

2. Effectiveness research test

The media is said to be feasible after showing satisfactory results in achieving the specified goals. In this case, a product trial was carried out in the learning process. The effectiveness of the media is obtained from the value of student learning outcomes. Chen, et al (2018: 49-60) also state that video tutorials are part of a proficiency-based curriculum, meaning an effective method to introduce for novice learners. Viewing video tutorials, such as in a classroom, is a reasonable method for teaching his or her particular skill. Saputra (2018:171) stated that the project-based learning model shows that the implementation of the project-based learning model has an impact on increasing student learning activities that continue to be expressed in each learning cycle. From the results of research data processing, there are differences in student learning outcomes using Project Based Learning-based Video Tutorial learning media in Software Applications and Building Interior subjects with students using visual learning media, namely the average value taught using Video Tutorial-based learning media. Project Based Learning in the subjects of Software Applications and Building Interiors is higher than those using visual learning media from the test results using the t test, obtained tcount = 5.63 while ttable = 1.63. Because tcount = 5.63 > 1.63, it can be concluded that student learning outcomes using Project Based Learning-based Video Tutorial media are higher than student learning outcomes using visual learning media.

From the calculation results obtained tcount. 5.63 > t table = 1.63 t table dk = 63 at a significant level of 0.05 through interpolation t table 1.63. It turned out that the price tcount > ttable, concluded Ho was rejected and accepted Ha, thus the research hypothesis which states, Project Based Learning-based video tutorial media developed is feasible and effective to use and

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has been verified.

Discussion

Based on the results and discussion of development researchlearning media Video Tutorials based on Project Based Learning in the subjects of Software Applications and Building Interiorswhich has been tested on class XI students of SMK N 1 Lubuk Pakam, it can be concluded as follows: (1)learning media Video Tutorials based on Project Based Learning in the subjects of Software Applications and Building Interiorsdeclared very feasible and suitable for use in class XI students of SMK N 1 Lubuk Pakamin the subject of Software Applications and Building Interiors, (2) The use of learning mediaVideo Tutorials based on Project Based Learningmore effective in improving learning outcomesSoftware Applications and Building Interiorstudents compared by using visual learning media.

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