Development of Learning Media Based on Video Tutorials on the Subjects of Software Applications and Building Interior Design at SMK Negeri 1 Sumatera Barat

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ABSTRACT

This research was motivated by the problem encountered, namely the lack of use of media in the learning process of Software Applications and Building Interior Design. This research uses the type of research and development (R&D). This development model refers to the development model (DDD-E) with 4 stages, namely Decide, Design, Development, Evaluate. The subjects of this research were media experts, material experts and class XII Competency Design Skills Modeling and Building Information, SMK Negeri 1 Sumatera Barat, 30 students. This research instrument is in the form of a validation sheet to obtain product validation data, and a student respondent questionnaire to obtain product practicality test results. The research results show that the validity of the material is in the very valid category with an achievement level of 88.4%. Media validity with an achievement level of 90.65% in the very valid category and practicality test with an achievement level of 89.53% in the very practical category. The conclusion of this research is that the learning media developed is valid and practical for use in the learning process Software Application and Building Interior Design class XII Competency Design Skills Modeling and Building Information, SMK Negeri 1 Sumatera Barat.

INTRODUCTION

Education is a means to advance all areas of human livelihood in Indonesia, both in the economic, social, technological, security, skills, noble character, prosperity, culture and glory of the nation (Ilham 2019). Education plays an important role in preparing quality human resources both through formal and non-formal education (Utomo and Ratnawati, 2018). In the era of globalization, the demands to meet the world of work are not easy, where everyone is required to work quickly and precisely, as well as the development of computer technology which is developing very quickly. In this regard, Vocational High Schools (SMK) are formal educational institutions that are oriented towards preparing students to become ready-to-use workers who are required to prepare qualified and competitive graduates with an orientation to the industrial world. Vocational high schools prioritize students' abilities and development in facing work and prioritize readiness to enter the workforce and develop professional attitudes. Vocational education is also a place to develop talents, basic skills and habits that lead to skills training.

Vocational high school (SMK) is education at the secondary level that prioritizes developing students' skills. Skills can be achieved from an effective learning system. Effective learning is

largely determined by the methods and media used in the learning process. Good and smooth learning requires good learning media that is appropriate to class conditions. SMK Negeri 1 Sumatera Barat is one of the vocational schools in West Sumatra, especially in the city of Padang. SMK Negeri 1 SSumatera Barat has several areas of expertise, one of which is the area of expertise in Information Design and Building Information (DPIB). In the DPIB expertise program, it carries out a series of learning activities covering several subjects, one of which is Software Application and Building Interior Design (APLPIG).

The Software Application and Building Interior Design (APLPIG) subject is a subject that studies software applications used in planning a building. The application used in learning is AutoCAD. This subject is a subject that must be mastered by students, especially class XI. However, in reality, student competence in the subjects of Software Applications and Building Interior Design is still lacking, so many students have difficulty understanding these subjects well. This can be seen from the relatively low student learning outcomes in APLPIG subjects. This lack of student competence is caused by many things, starting from the teaching methods and media used.

Based on the results of the researcher's observations while carrying out Educational Field Practices (PLK) in the Department of Building Modeling and Information Design (DPIB) at SMK Negeri 1 Sumatera Barat, in this case the researcher conducted interviews with teachers of the Software Application and Building Interior Design (APLPIG) subject about the process learning in these subjects. Researchers found several problems such as a lack of learning facilities, teachers' teaching methods still using the lecture method, and students not being able to study independently at home to repeat lessons given by the teacher due to students' lack of understanding of the material being taught.

From the data obtained at SMK Negeri 1 Sumatera Barat in the Software Application and Building Interior Design (APLPIG) subject, it is known that the completeness of student learning outcomes in the Building Software Application and Interior Design (APLPIG) subject is still relatively low, and students have not achieve a KKM (Minimum Completeness criteria) score of 75 set by the school.

To address the above problems, it is necessary to carry out learning evaluations by educators so that later learning outcomes are in line with the expected goals. In improving student learning outcomes, there are several alternative approaches that can be taken, one of which is using learning media where the teaching and learning process will run effectively and efficiently if supported by the availability of supporting learning media. Providing learning media is very necessary for optimal development of students' potential. Students' potential will be further explored if they are assisted by media that supports the learning interaction process.

One of the factors for successful learning is the use of learning media. The use of media can increase students' motivation and maximize all students' senses in learning (Haryanti eta Suwerda 2022). There are many kinds of learning media and one of them is video learning media. According to Hamid et al, (2020) said that learning media is anything that can convey messages through various channels, can stimulate the thoughts, feelings and will of students so that it can encourage the creation of a learning process to add new information to students, so that the learning objectives can be achieved well.

According to Warsita (2011:119) "found in" (Khomsyatun & Sulistia, 2022), video media is a

combination of audio and visual media that are used simultaneously to provide learning material. Video media as a delivery of teaching material will make it easier for a teacher in the learning process. Furthermore, according to Azhar (2013), video tutorials are computer-assisted learning programs that imitate a teacher or instructor's tutoring system but display images, text or graphics using a computer device.

Responding to the problem above, the researcher intends to examine how to increase students' grades in the APLPIG subject by using Video Tutorial-based learning media. Using Video Tutorials is one solution to enable students to participate in learning well. Based on the description of the background to the problem above, this research will examine "Development of Video Tutorial-Based Learning Media in Software Application and Building Interior Design at SMK Negeri 1 Sumatera Barat."

METHOD

The research used is the Research and Development or R&D method. The Research and Development or R&D method is a method that aims to produce a product, one of which is teaching media. Sugiyono, (2017: 30) stated that the Research and Development or R&D method is defined as scientific steps in researching, designing, producing and testing the validation of the products produced. Not only producing products, R&D methods are also used in testing and assessing the suitability of a product that has been made.

There are 2 subjects used in the research, namely the subject of product validation and the subject of product practicality. The subject of product validation is media expert carried out by 2 civil engineering lecturers and material expert carried out by 2 teachers of Software Application and Building Interior Design subjects while the product practicality subject is carried out by all class XII Modeling and Building Information Design (DPIB) students. at SMK Negeri 1 Sumatera Barat.

This research uses data collection techniques by testing the validity and practicality of learning video media using a questionnaire assessment sheet. Validation questionnaires were given to media and material validator experts, while practicality tests were carried out by giving questionnaires to class XII Software Application and Building Interior Design subjects totaling 30 people, then validation and practicality data were summarized and processed using the following formula:

a. Analysis of the Validity of Learning Media and Video Materials

$$NP = \frac{R}{SM} \text{ x } 100\% \qquad \text{Sumber: Purwanto (2012)}$$

Information:

NP = Percentage Value
R = Actual Score obtained
SM = Maximum Score

After getting the validity value, the validity assessment is then adjusted to the validation category according to the categories in Table 1.

Table 1. Validity assessment categories

Percentage (%)	Category
81 – 100	Very Good
61 – 80	Good
41 – 60	Pretty Good
21 - 40	Not Good
0 - 20	Very Not Good

b. Practicality Analysis

Practicality analysis was obtained from questionnaires from student respondents. The student respondents involved were all class XII DPIB students at SMK Negeri 1 Sumatera Barat. The results of the practicality analysis are calculated using the Riduwan (2011) formula as follows:

$$P = \frac{\sum skor\ per\ item}{skor\ maksimal} \text{ x } 100\% \qquad \text{Sumber: Riduwan (2011)}$$

From the formula above, practicality analysis results will be obtained by students with score assessment guidelines which can be seen in Table 2.

Table 2. Practicality Score Assessment Guidelines

Percentage (%)	Category
81% – 100%	Very Good
61% – 80%	Good
41% – 60%	Pretty Good
21% - 40%	Not Good
0% - 20%	Very Not Good

RESULTS AND DISCUSSION

Research into the development of video tutorial-based learning media aims to produce valid and practical media. In this research, the development model used is DDD-E with 4 stages, namely Decide, Design, Development, Evaluate (Tegeh, 2014).

a. Media Expert Product Assessment
The following are the results of the assessment by media experts for video tutorials on drawing sections of simple house plans for type 36 houses using AutoCAD 2007 software which can be seen in Table 3.

Table 3. Assessment Results by Media Experts

Evaluator	Assessment Aspect	Item	Acquisition Score	Score max	Percentage	Category
Media Expert 1	Fungsi atensi (tampilan)	7	32	35	91,42%	Very valid
	Fungsi afektif (motivasi)	5	22	25	88%	Very valid
	Fungsi kompensatoris (kepraktisan)	3	15	15	100%	Very valid

Evaluator	Assessment Aspect	Item	Acquisition Score	Score max	Percentage	Category
Total		**15**	**69**	**75**	**92%**	**Very valid**
Media Expert 2	Fungsi atensi (tampilan)	7	31	35	88,57%	Very valid
	Fungsi afektif (motivasi)	5	23	25	92%	Very valid
	Fungsi kompensatoris (kepraktisan)	3	13	15	86,67%	Very valid
Total		**15**	**67**	**75**	**89,33%**	**Very valid**

Based on the table above, it can be concluded that the video tutorial-based learning media for drawing sections of a simple house plan for a type 36 house using AutoCAD 2007 software obtained a score achievement level of 92% and 89.33% with an average of 90.66%. This falls into the very valid category.
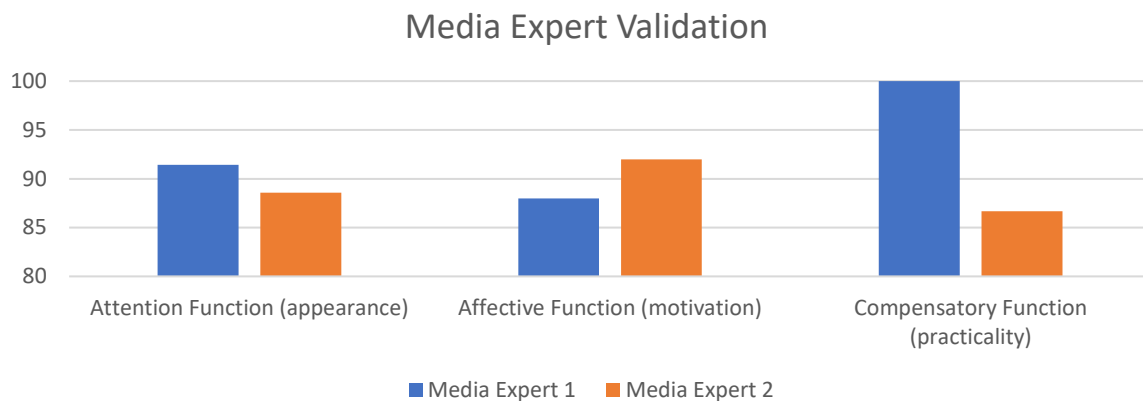

Figure 1. Media Expert Validation Graph

b. Material Expert Product Assessment

The assessment of the material in this media was carried out by 2 material experts, namely teachers who are competent in teaching Software Applications and Building Interior Design, material on drawing simple house plans (AutoCAD 2007 software). The following are the results of the assessment by material experts for video tutorials on drawing pieces which can be seen in Table 4.

Table 4. Assessment Results by Material Experts

Evaluator	Assessment Aspect	Item	Acquisition Score	Score Max	Percentage	Category
Material Expert 1	Fungsi Kognitif (Isi/materi)	8	37	40	92,5%	Very Valid
Material Expert 2	Fungsi Kognitif (Isi/materi)	8	34	40	85%	Very Valid

Based on the results of material validation calculations that have been carried out, namely with achievement levels of 92.5% and 85%, from the two results obtained an average of 88.75% was obtained. So it can be concluded that the learning media product in the form of learning videos produced falls into the very valid category.
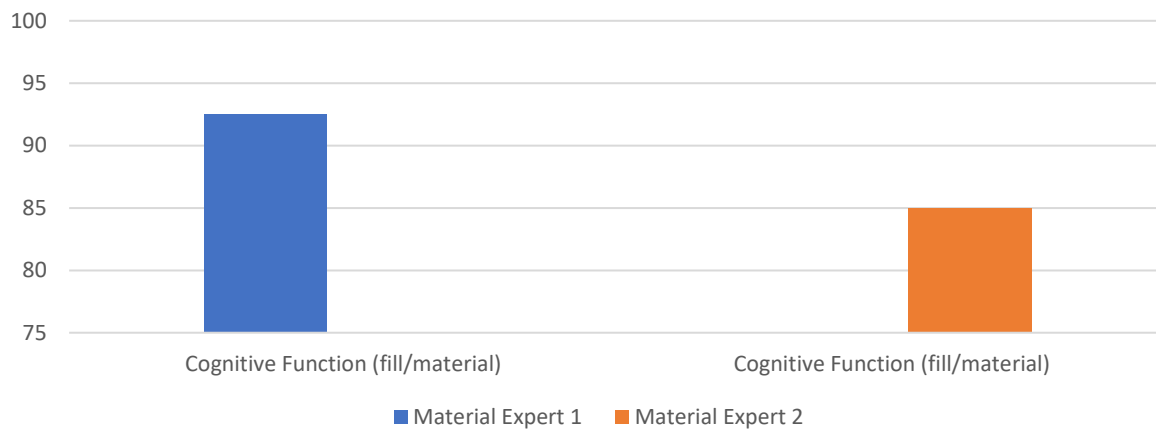

Figure 2. Material Expert Validation Graph

c. Product Practicality Assessment

The following are the results of the assessment of the video tutorial media for Software Applications and Building Interior Design, material for drawing pieces using AutoCAD2007 software by students which was processed using Ms. Excel 2013 with the formula proposed by Riduwan (2011), the practical results can be obtained as shown in Table 5.

Table 5. Product practicality results

No	Practical Aspect	Item	Acquisition Score	Score Max	Percentage	Category
1	Kualitas Isi dan Tujuan	3	401	450	81%	Very Good
2	Kualitas Instruksional	4	535	600	83%	Very Good
3	Kualitas Teknik	6	810	900	80%	Very Good
	Total	**13**	**1746**	**1950**	**89,53%**	**Very Good**

Based on the results of the calculations that have been carried out, namely with a percentage of 89.53%, it can be concluded that learning media products in the form of learning videos fall into the very practical category to use.
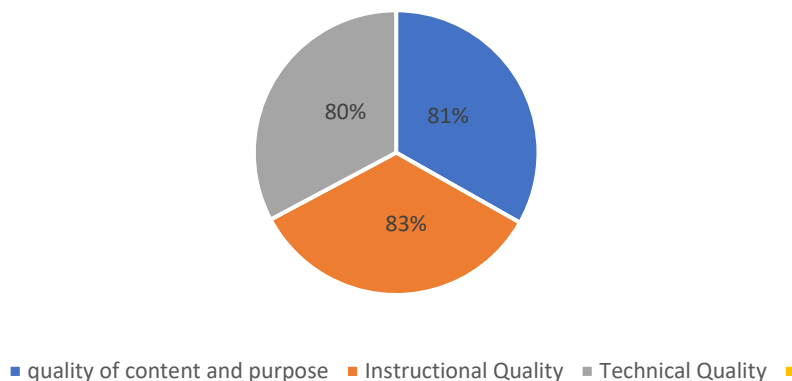
Product Practicality

Figure 3. Product Practicality Graph

The selection of material carried out at the Define stage is obtained from the results of consultation with the teacher concerned and determines the competencies and study materials that will be included in the media. The Design stage (media design) is carried out through guidance with media expert lecturers who also include one of the lecturers in charge of the drawing course and a materials expert who is also one of the teachers who is competent in preparing materials and making media designs. Next is the development stage, at this stage a validity and practicality test has been carried out on the results of the video tutorial-based learning media design using AutoCAD 2007 software. Next is the development stage, at this stage a validity and practicality test has been carried out on the results of the video tutorial-based learning media design using AutoCAD 2007 software. Next, in the final stage, namely the Evluate or Evaluation stage, at this stage an evaluation is carried out on the product that has been made to determine the quality of the product before it is used and assessed by students.

The results of validity research carried out by media expert validators obtained a score achievement level of 90.65% in the very valid category and validity carried out by material expert validators obtained a score achievement level of 88.5% in the very valid category. Furthermore, the results of the learning media practicality test obtained a score achievement level of 89.53% in the very practical category. Based on the results of the assessment that has been carried out, it can be concluded that video tutorial-based learning media in the Software Application and Building Interior Design subjects which were developed using the DDD-E development method can be said to be valid and practical to use.

The results of this research are also in line with research conducted by Oktari (2021), Muslih (2020), Susandri (2022). The results of this research are relevant and conclude that this video tutorial-based learning media is very valid and practical for learning.

CONCLUSION

The conclusion of this research is to produce video tutorial-based learning media using AutoCAD 2007 Application Software and Building Interior Design. The material in this video

tutorial includes practical objectives, an explanation of the process or steps for drawing longitudinal and cross sections of a simple type 36 one-story house plan.

Validity of learning video media Software Applications and Building Interior Design class XII Competency Design Skills Modeling and Building Information SMK Negeri 1 Sumatera Barat carried out by two learning media lecturer experts obtained an achievement level of 90.66%, while the validity of the videos carried out by material experts obtained an achievement level of 88.5%, so it can be concluded that the learning media product in the form of learning videos produced falls into the very valid category.

The level of practicality of video media is in the very practical category with an achievement level of 89.53% which is very valid and very practical to use in the learning process.

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