

The Development of AutoCAD Tutorial Video by Using Tiktok Social Media as a Learning Media in Vocational Highschool 2 Pekanbaru

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Abstract—This study aims to verify about the Development of AutoCAD Tutorial Video by Using Tiktok Social Media as a Learning Media in Vocational Highschool 2 Pekanbaru. This type of research is Research & Development (R&D) and using 4-D Method (Define, Design, Develop, Disseminate) by Thiagarajan et al. The data collection method uses a questionnaire method which were validation testing to Learning Expert, Media Expert, and AutoCAD Teacher in SMK Negeri 2 Pekanbaru. The result of this research are: (1) Procedure that shows how to make AutoCAD Tutorial Video by Using Tiktok Social Media through 4-D Method which are define, design, develop, and disseminate; (2) AutoCAD Tutorial Video by Using Tiktok Social Media; (3) The result of the development by expert appraisals, which get Valid Categorized from Learning Expert, Very Valid Categorized from Media Expert, and Very Valid Categorized from AutoCAD Teacher in SMK Negeri 2 Pekanbaru. The average of Student Responsibility Test is get Very Valid Categorized.

Keywords—AutoCAD tutorials video, learning media, Tiktok social media

I. INTRODUCTION

Online Learning Regulation which held by The Indonesian Government during Covid-19 Pandemic caused several transformation in Education sector in Indonesia. One of the transformation is using Social Media as a Learning Media. This kind of transformation makes Educational participants including teacher, students, and educational workers in Indonesia need to be adapt to using the new Learning Media. According to Wahidin [1], media comes from the Latin "medium" which means intermediary or introduction. According to Surti and Jailani [2], learning media is a message-carrying technology that is useful for the learning process, namely as a means of communication in the form of equipment that provides incentives for students so the learning process can occurs. Learning media is an introduction or intermediary

between teachers and students in the form of a material (software) or a tool (hardware) that contains learning material.

The learning process by using social media is also experienced by vocational education in Indonesia, which is at the secondary level, namely Vocational High School (SMK). From the results of a preliminary study conducted by researchers before, it can be seen that in distance learning activities (PJJ) at SMKN 2 Pekanbaru, especially in the subject of Software Applications & Building Interior Design in the DPIB expertise program, teachers use social media as learning media including WhatsApp, Google Classroom, and Google Meet. The teacher uses the discuss method to convey learning in classroom, especially in AutoCAD Software Subjects. According to Dharma [3], AutoCAD (Automatic Computer Aided Design) is one of the software that functions as a visual-oriented image creation, both two-dimensional (2D) and three-dimensional (3D) drawings that really require accuracy and measurement accuracy. The students are also difficult to understand the subjects when online learning is carried out. In addition, 95% of DPIB students at SMKN 2 Pekanbaru are also actively using other social media such as Instagram and TikTok.

The use of social media during this Covid-19 pandemic is the most important and crucial thing in interacting, especially in Education Sector. According to Dailey [4], social media is online content that created by using publishing technology which very accessible. According to Brogan [5], social media is a new set of communication and collaboration tools that enable many types of interactions that were previously not available to the common person. The transformation of learning duration and learning media to social media make teachers need innovation in teaching and learning activities. In order for teaching and learning activities (KBM) to run efficiently, effectively, and attractive for students, teachers need innovation in the learning process.

One of the innovations that can be made is by innovating learning materials with video tutorials by using the TikTok social media application. According to Marini [6], TikTok is a social media that provides unique and interesting special effects that can be used by users easily to create cool short videos that can attract the attention of many people who see it. TikTok can be an interesting and interactive learning media for students. According to Bohang [7] The fact that more than 10 million active users in Indonesia and the majority are school-age children (students), it can be seen that the TikTok application is a primadonna, loved and attracted to millennials, the majority of whom are school-aged children. The TikTok application can be implemented as an audio-visual type of learning media in the subjects of Software Applications and Building Interior Design. Utilization of social media can be used as a media to share learning materials in the form of video tutorials. In the TikTok application, there is also a lot of learning content for AutoCAD applications created by Content Creator. In this study, the teacher can act as a Content Creator in using the TikTok application as a learning media.

Based on the explanation above, we conclude that TikTok Social Media is close to millenials, including Vocational Highschool students. TikTok also has some multiple advantages and some more features than other social media that can easier the teachers to deliver the lesson to the students. From these background, the researchers intend to develop AutoCAD tutorial video by using TikTok social media as a learning media especially in AutoCAD subjects in SMK Negeri 2 Pekanbaru.

A. Problem Identification

- What are the stages of developing Development of AutoCAD Tutorial Video by Using TikTok Social Media as a Learning Media in online learning conditions?
- How do students respond to AutoCAD Tutorial Video by Using TikTok Social Media As A Learning Media?

B. Research Purposes

- Developing Of AutoCAD Tutorial Video by Using TikTok Social Media As A Learning Media in online learning conditions.
- To find out student’s responses to AutoCAD Tutorial Video by Using TikTok Social Media As A Learning Media.

II. METHODS

This research using Research & Development (R&D) Method, by using FourD (4-D) Model that had been developed by Thiagarajan et al.. According to Thiagarajan et al. [8], this model is kind of research-model that developing in Learning Media. There are 4 stages in this model, which are: Define, Design, Development, and Disseminate (Figure 1).

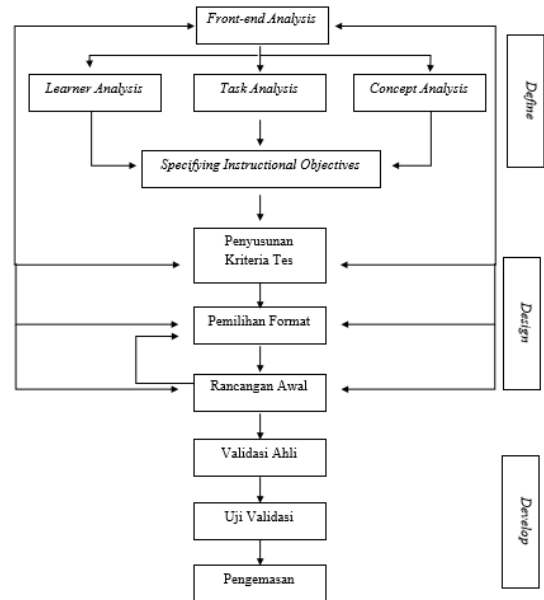


Fig. 1. Development procedures.

A. Define

Define stages is performed to set and define development requirements. According to Thiagarajan et al. define stages are conducted through five stages: front-end analysis, learner analysis, task analysis, concept analysis, and specifying instructional objectives.

B. Design

In design stages, researchers conducted to make learning documents are appropriate with the results of the analysis. In these stages, researchers creates the media based on the syllabuses & curriculum and adjusted to the needs of students & teachers.

C. Development

In development stages, researchers validating the media through the expert appraisal and developmental testing. In these stages, Learning documents that have been validated then revised before testing.

D. Disseminate

Disseminate stages is performed to see the effectiveness of the products. In this research, the steps was done until the develop stage with aims to develop AutoCAD Tutorials Video by using TikTok Social Media and to find out the validity level of these learning media.

Data collection technique used in this research is done through validation sheet that filled by validators. The validators are two Architecture lecturers and one AutoCAD subjects teacher in SMKN 2 Pekanbaru. There are two kinds of validation sheet; validation sheet of learning media and

validation sheet of product testing to students that used to find out validators assessment about learning documents that have been developed. In this research, validation sheet used Likert scale with assessment categories that can be seen in the table 1 below.

TABLE I. ASSESMENT CATEGORY OF VALIDATION SHEET

Category	Score
Very Appropriate	4
Appropriate	3
Inappropriate	2
Very Inapropriate	1

Validation of learning documents from experts can use the following formula.

$$\text{Interval scores} = \text{highest scores} / \text{total number of intervals}$$

The validation criteria based on the validation results can be seen in the table 2 below.

TABLE II. VALIDATION CRITERIA OF LEARNING MEDIA AND PRODUCT TESTING

Category	Score
Very Valid	3,26 – 4,00
Valid	2,51 – 3,25
Less Valid	1,76 – 2,50
Not Valid	1,00 – 1,75

From the result above it shows the validation of the learning media, is that media that had been created by researchers are appropriate to use in the learning of AutoCAD Subjects in Vocational Highschool 2 Pekanbaru or not.

III. RESULTS AND DISCUSSION

The research was implemented at SMK Negeri 2 Pekanbaru, Jl. Pattimura No.14, Cinta Raja, Kec. Sail, Pekanbaru City, Riau. This study aims to see the feasibility and produce appropriate learning media in AutoCAD subjects, in the DPIB expertise program at SMK Negeri 2 Pekanbaru. The data generated in this study is the result of the development AutoCAD Tutorials Video by using TikTok Social Media and to find out the validity level of these learning media.

A. Define

Based on the researchers analysis, it can be seen that researchers do some innovations on the learning process by developing an AutoCAD Tutorial Video by using TikTok social Media. The learning materials in this media is the step of drawing floorplan of the buildings by AutoCAD software. The purpose of drawing floor plans is to pursue the foundation for the students in drawing construction by using AutoCAD software.

B. Design

Based on the researchers analysis on Define Stages, researchers decided to designed a Tutorial Video as a learning

media. Tutorial video being choose because According to Dale’s Cone of experience, direct experience (concretely) provides the highest learning outcomes. Followed by artificial objects, dramatizations, field trips, television, live exhibition pictures, still images, visual symbols and word symbols (abstracts) that provide the least portion. However, the learning process does not necessarily begin with the immediate experience of the students but can use experience appropriate to the learning needs.

C. Development

In development stages, researchers validating the media through the expert appraisal and developmental testing. In these stages, Learning documents that have been validated then revised before testing. The analysis of validation result of expert appraisals can be seen in below.

1) Expert appraisal

a) *Result of learning material expert:* This media was validated by Dr. Eng. Usep Surahman, as a Learning Material Expert from Architecture Department of Universitas Pendidikan Indonesia. The analysis of validation result from Learning Material Expert can be seen in the table 3 below.

TABLE III. LEARNING MATERIAL EXPERT VALIDATION

no	Aspect	(n)	Min. scores	Max. scores	Total (x)
1	Learning Purpose	5	5	20	15
2	Learning Materials	5	5	20	13
3	Presentating	6	6	24	17
4	Motivation Quality	4	4	16	12
Total		20	20	80	57

Relevancy of Media average scores:

$$\text{Average scores} = \frac{\sum x}{n} = \frac{57}{20} = 2,85$$

The result of Learning Material Expert Validation is obtained with a score of 2,85 out of 4,00 (71,25 %) that are included to Valid Categorized. The responses & suggestion from expert appraisals can be seen in the table 4 below.

TABLE IV. LEARNING MATERIAL RESPONSES AND SUGGESTION

No	Suggestion	Responses
1	Just required to rectangle floor plan only, too fast, Video not mentioning the dimension of the floor, and door & windows has been created earlier (it shouldn't be).	Completing media by added some other series video which are: how to setting layer in AutoCAD, how to make Door & Window in AutoCAD, and how to make Dynamic Block in AutoCAD
2	It's better if AutoCAD had been taught in the beginning of the classes, avoiding the students for being clueless. Series video are reccomended.	
3	Complete more	

b) *Result of learning media expert:* This media was validated by Yudhistira Kusuma, S.Pd., M.Ars., as a Learning Media Expert from Architecture Department of Universitas Pendidikan Indonesia. The analysis of validation result from Learning Media Expert can be seen in the table 5 below.

TABLE V. LEARNING MATERIAL EXPERT VALIDATION

no	Aspect	(n)	Min. scores	Max. scores	Total (x)
1	Video Quality	3	3	12	12
2	Video Using Experience	2	2	8	7
3	Appearance	6	6	24	24
4	Learning Video	4	4	16	15
Total		15	15	60	58

Relevancy of Media average scores:

$$\text{Average scores} = \frac{\sum x}{n} = \frac{58}{15} = 3,87$$

The result of Learning Media Expert Validation is obtained with a score of 3,87 out of 4,00 (96,75 %) that are included to Very Valid Categorized. The responses & suggestion from expert appraisals can be seen in the table 6 below.

TABLE VI. LEARNING MATERIAL RESPONSES AND SUGGESTION

No	Suggestion	Responses
1	In general, short-video social media ex: (TikTok, Instagram Reels, YouTube Short, etc) can be used to share some tutorial video and interesting for some students (because it doesn't feels like a conventional studying way). Maybe that's the differences between Tutorial Video and shorts video. But because of it, shorts video can't be a comprehensive learning media for AutoCAD subjects because of limited duration. Drawing Floor Plan is such a complex lessons, so there's much important element step that been used. In my opinion, shorts video is match be used for tips & trick autoCAD video, or can make a series video. Example: how to setting layer in AutoCAD, how to make Door & Window in AutoCAD, how to make Dynamic Block in AutoCAD	Completing media by added some other series video which are: how to setting layer in AutoCAD, how to make Door & Window in AutoCAD, and how to make Dynamic Block in AutoCAD

c) *Result of AutoCAD subjects tutor expert:* This media was validated by Heri Yanses, S.T., as a Learning Media & Material Expert from DPIB Programs, Vocational Highschool 2 Pekanbaru. The analysis of validation result from Learning Material & Media Expert can be seen in the table 7 below.

TABLE VII. LEARNING MATERIAL EXPERT VALIDATION

no	Aspect	(n)	Min. scores	Max. scores	Total (x)
1	Learning Purpose	5	5	20	18
2	Learning Materials	5	5	20	17
3	Presentating	6	6	24	22
4	Motivation Quality	4	4	16	14
5	Video Quality	3	3	12	11
6	Video Using Experience	2	2	8	7
7	Appearance	6	6	24	20
8	Learning Video	4	4	16	13
Total		15	15	140	122

Relevancy of Media average scores:

$$\text{Average scores} = \frac{\sum x}{n} = \frac{122}{35} = 3,48$$

The result of Learning Media & Material Expert Validation is obtained with a score of 3,48 out of 4,00 (86,25 %) that are included to Very Valid Categorized. The responses & suggestion from expert appraisals can be seen in the table 8 below.

TABLE VIII. LEARNING MATERIAL AND MEDIA RESPONSES & SUGGESTION

No	Suggestion	Responses
1	Door & Window Positioning does not fit yet.	Completing media by added some other series video which are: how to setting layer in AutoCAD, how to make Door & Window in AutoCAD, and how to make Dynamic Block in AutoCAD
2	It can be replaced by using another door & window.	
3	Pay attention to positioning of drawing floor plan aspects	

d) *Product testing:* In this stages of this research, media were tested to 50 students of DPIB Program, Vocational Highschool 2 Pekanbaru by fill in the questionnaire that had been disseminated. This questionnaire aims to see how students responses to media. The analysis of Product Testing can be seen in the table 9 below.

TABLE IX. PRODUCT TESTING

Category	Interval	Frequen cy	Percen tages	Category
Very Valid	3,26 – 4,00	26	52%	Very Valid
Valid	2,51 – 3,25	22	44%	Valid
Less Valid	1,76 – 2,50	2	4%	Less Valid
Not Valid	1,00 – 1,75	0	0%	Not Valid
Total		50	100%	

According to the tabel, known that the percentage of relevance the media that has been tested to the students is obtained with a score of 3,312 out of 4,00 (82,8%) that are included to Very Valid Categorized.

Students shows a good response to the products of developing AutoCAD Tutorial Video by Using TikTok Social Media As A Learning Media.

IV. CONCLUSION

The product of the development of AutoCAD Tutorial Video by Using TikTok Social Media as a Learning Media in this research is suitable for use in AutoCAD subjects. AutoCAD Tutorials Video by using TikTok Social Media that are suitable for use as learning media are compiled and designing according to the needs of students and teachers. To knowing about what student's needs, this research collecting data by conducting interviews with the students. The results of data regarding the desires and needs of students then adjusted to the course syllabus and the needs of the teacher itself. The next stage is the stage of the validation process regarding the relevancy of the media to media & materials learning experts. The validation results obtained can then be used as notes for revisions or improvements regarding the product design that has been designed. Products that have passed the validation process can then be continued at the product testing stage.

Students shows a good response to the products of developing AutoCAD Tutorial Video by Using TikTok Social

Media. This shows that the learning video is suitable to be used as a learning media for them. The learning process feels more effective and more interesting in its implementation.

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