

# Formal Versus Entertain, Which is Better?

An Analysis Video Based Learning Design at SMKN 1 Dawuan, Subang, West Java,  
Indonesia

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**Abstract**—This study aims to design educational videos as video based learning and determine the design educational videos which makes students more interested in paying attention to the distance learning process (PJJ). If students want to pay attention to the material during the learning process, hoped that students will also get the maximum learning experience. The case study was conducted at the Department of Fashion, SMKN 1 Dawuan, Subang. The research method uses a descriptive quantitative with comparative approach. The steps are input measurement (design video with Bandicam and Prezi) and output measurement obtained from the evaluation results based on three elements for video design and implementation, specifically: 1) cognitive load, 2) student engagement, 3) active learning together. The data collection technique uses a questionnaire. The results are a formal video based learning was best in organize tempo but must pay more attention to segmentation, and an entertain video based learning was best in signalling and segmenting with speeding up relative lower.

**Keywords**—bandicam, learning media, distance learning, prezi, video based learning, vocational

## I. INTRODUCTION

The Covid-19 pandemic had hit the world since end of December 2019, and had a visible impact in various fields, such as economy, health, social, tourism and also culture [1]. Not only them, but also the education system in Indonesia during the Covid-19 pandemic has several changes. This has been announced by the Minister of Education and Culture Mr. Nadiem Makarim [2]. However, education is the process without end [3], so education is endless, and whatever the conditions, education must be going continuously. So at this time, Indonesia began to implement a distance learning system.

The distance learning system also applies for vocational education. Implementation of Distance Learning (PJJ) in Indonesia has actually been regulated by the Permendikbud. Distance Learning (PJJ) is a learning system in which students are separated from educators and their learning uses various learning sources through information and communication technology, and other media [4]. One of many forms of distance learning can be held by video based learning. The

video based learning can represent the teacher and the material simultaneously.

SMKN Dawuan is one of many vocational school which has prepared for the distance learning in this time. It 'seen with a training called by in House Training. For this year, it carries out a training of video learning making using the Bandicam application on July 16 till 18, 2020. The aims for the teachers to be able to organize the distance learning. Video based learning can represent class learning and it can be accessed repeatedly and downloadable, so they still can get the material and relearn when they don't understand enough. Refer to Brame theory, video has function as a learning experience, if it has three elements for video design and implementation, specially: 1) Cognitive load, 2) Student engagement, 3) Active learning together [5]. These three elements provide a strong foundation for the development and use of video as an effective learning tool.

Video creating applications with basic screen and presenters recording features can be made with various applications. For example, Bandicam, Screen cast o matic, Kinemaster, Prezi Video, Video Show, Filmora and many more. Even though it has the same basic features, each application has its own characteristics. The use of video in education is very beneficial, one of which can be a useful tutoring tool [6,7]. However, video can be an effective media for sharing if it has several elements that can support a maximum learning experience [5,8,9]. In this study, a video-based learning design will be compared which is best for vocational schools in a distance learning system using brame theory, so it can provide a maximum learning experience for the students even in a distance learning condition.

## II. METHODS

The Research Method use a descriptive quantitative with comparative approach with the respondents are students of Department of Fashion; Dawuan vocational school at Raya Cisampih St. No.08, Subang, West Java, Indonesia. The study consists of two steps specifically input measurement and output measurement. First, input measurement step by design two

videos with Proportion Body Course by Bandicam and Prezi video application based on three elements Brame for video design and implementation: cognitive load, student engagement, and active learning together. For comparison reasons, video 1 have 16 minutes duration but video 2 have 5 minutes. Second, output measurement by compare the results also based on three elements Brame for video design and implementation. The data collection technique uses a questionnaire, and data analysis uses a descriptive statistic, calculating the percentage, and then interpreting the results. Different Interface of the videos can be seen in figure 1 and figure 2.



Fig. 1. Video 1 designed by Bandicam application.



Fig. 2. Video 2 designed by Prezi Video application.

III. DISCUSSION

A. Implementation Theory to the Proportion Body Video Learning Design

In designing the video, using Brame’s theory which consists of three elements, namely cognitive load, student engagement, and active learning together. The first element is about cognitive load. The cognitive load indicates that memory has several components and has very limited performance, so that the teacher must be selective about the information that will be given during the learning process. According to Brame's theory in Table I, an effective learning experience will perform extraneous load, optimize germane load, and manage intrinsic load. Extraneous load is a cognitive effort that does not help students achieve the goal learning outcomes. Germane load is the level of cognitive activity required to achieve the goal learning outcomes. For example, to make comparisons, conduct analysis, and explain the steps needed to master a material. Furthermore, the intrinsic load is attached to the

subject being studied and is determined by the level of connectivity in the subject [5].

The sentence above is supported also by Debie and Leemput said that germane load refers to the mental resources devoted to acquiring and automating schemata in long-term memory. Sweller et al conceptualized this load when they observed that some instructional formats could increase cognitive load and learning as well. If effective learning has to be reduced to avoid exceeding working memory resources, germane load must be promoted to enhance learning [10-12].

TABLE I. APPLICATION FORM OF COGNITIVE LOAD

Video Learning Design at Cognitive Load	Rational Reasons	Application Form
<b>Signalling</b> (emphasize important information)	Reduce extraneous load Increase germane load	Emphasizes important information  Not given too much materials  Use of colour
<b>Segmenting</b> (cut information)	manage Intrinsic load Increase germane load	Video duration
<b>Weeding</b> (delete unimportant information)	Reduce extraneous load	Reduce/using music Reduce/using background
<b>Matching modality</b> (use audio and visual)	Increase germane load	use audio and visual, use real picture/animation that explain a phenomenon

Adapt from Brame [5]

The second is student engagement. Student engagement use elements that aid student engagement. Based on Table II. some ways to help student involvement are making videos with a duration not too long, using conversation in daily conversation rather than formal language, speaking relatively fast and enthusiastically, ensuring that the material from the video can be used for various classes and audio and visual uses.

TABLE II. APPLICATION FORM OF STUDENT ENGAGEMENT

Video Learning Design at Student Engagement	Rational Reasons	Application Form
Designing a variety short video	Increase percentage of videos which the student has watched So it also can increase the total times viewing	Short video duration
Use daily conversation	Create flavour social partnerships between students and teacher, encourage students to trying harder for understand the lesson.	Use daily conversation

Table II. Cont.

<b>Video Learning Design at Student Engagement</b>	<b>Rational Reasons</b>	<b>Application Form</b>
Tempo speak	Can improve taste social partnership between students and teachers.	Talk with enthusiasm speaking rate in range 185-254 words per minute. There is an expression of joy instructor, like "I'm so happy we can meet again ", or " I like the next part "
Designing video which Relevant with student purpose	Increase percentage of videos which the student has watched  Increase germane load	Use of phenomena picture / illustrations problem solving, with show the steps

Adapt from Brame [5]

The third is active learning together. This element provides tools to help students process information and monitor their own understanding, such as giving assignments via video. Based on Table III, application form from active learning can be done by ask an interactive question on video, and give a task through video. Interactive question and task are used to improve the student's thinking ability [13].

TABLE III. APPLICATION FORM OF ACTIVE LEARNING TOGETHER

<b>Video Learning Design at Active Learning Together</b>	<b>Rational Reasons</b>	<b>Application Form</b>
Packaging videos with questions interactive	Increase germane Improve memory through Test, and improve self-assessment.	Ask an interactive question on video such as: "Do you still remember what is body proportion?"
Make a part of video as a task	Increase motivation, increase germane and self-assessment.	Give a task through video

Adapt from Brame [5]

**B. Interpretation of Proportion Body Video Learning Design**

Based on Table IV. About Cognitive Load aspect analysis on body proportion video show that in general, the material on each videos are simple because they only present important points so the material is easy to understand. Even so, there were respondents who argued that the material was complex but easy to understand on video 1, 18% students and on video 2, 11% students. It can be a different of level understanding. Therefore, the teacher acts as a guide in the teaching and learning process so that it is expected to be able to get to know and understand each student not only as individually but also as a group [14]. Meanwhile, the use of colours both of each videos are considered attractive, according to respondents, with 95% of students on video 1 and 100% students on video 2, The use of colour at video 2 reaches 100% because it is supported by the appearance of the template in the video prezzi so that it

increases student attractiveness. This indicates that Prezi as a learning media development has fulfilled the VISUALS principle (Visible, Attractive, Simple, Useful, Accurate, Legitimate, Structured). It is supported by Nurseto research, that learning media that has VISUAL aspects of its use will be more interesting the learning process so that it is expected to maximize the learning experience of students [15].

Segmenting allows students to engage with small pieces of new information and gives them control over the flow of new information. This segmenting is implemented by means of the teacher uploading to Google Classroom and students can immediately watch, speed up, slow down, and even download videos. But, 86% students on video 1 and 96% students from video2 are watching without speeding up. It means they were paying attention to videos. But the video 2 was higher, almost 100%, because video 2 not always shows the file presentation but teach with speaking and the duration was short. Based on the result of Sutisna research, the same and repetitive activities will cause fatigue, boredom, even sleepiness, so that when the video display is monotonous it will make at least students feel bored so they want to speed up the video [16].

Still based on Table IV about segmenting in duration aspect, the video duration is ideal for the students was between 11-15 minutes. This was answered by 46% of students from video 1 and 61% on video 2. So for the ideal duration for a body proportion learning video is 11-15 minutes. Even though in theory said that the learning video should ideally reach 6 minutes [9], this is caused by different comprehension of vocational students who need a longer time so that in video 2 which duration was fast they agreed the duration of the video was made longer [17].

Weeding is the limitation or deletion of information that does not contribute to learning objectives that can grab students' attention, so it just to improve extraneous load and can reduce learning. In this study, the aspects analysed regarding weeding are reducing / using music and background images. In both videos, it is designed to have no music so students are expected to focus on listening to the teacher's explanation. However, based on the results of the questionnaire, as many 59% of students from video 1 and 57% of students from video 2 stated that the use of music did not interfere with them in understanding the material. In fact, the use of music in the instructional videos prevented them from feeling drowsy. Even so, there are 41% of respondents in video 1 and 33% in video 2 who argue that the use of music in video learning can interfere with understanding the material if it is too loud and dominant. The expected music in the video based learning is music with a moderate and constant rhythm [18].

Different from Nurseto's opinion, music for learning media can be divided into four: 1) Ice Breaking Music: Before starting lessons or when taking breaks for students excited at the same time relaxed, use cheerful music or trending music; 2) Theme Music: Music that describes a certain character or situation accordingly with a media theme. Theme music is made in a unique way, it must be different from the music

existing so that it becomes the hallmark icon of an audio media program learning; 3) Transition Music: Used to link between media, the duration of this music do not need to be long enough 5 to 15 seconds. This needs attention because changing media without accompanying transitional music, makes the shift be stiff, not smooth; 4) Background Music. Used to reinforce a particular situation. The volume of the background music should not be too dominant, approximately 25% of 100% of the volume and choose classic music with soft tones, do not use loud music [15].

Next is the result of distributing questionnaires regarding the use of internal background images. On video 1 91% and on video 2 89% of respondents stated that there was no background image that interfere. The video design in this study use a minimalist background for the slide that is not too dominant so it doesn't distract. As Nurseto said, the simple background, contrast and consistent, will not distract students' attention so that attention will be focused during learning [15].

From the matching modality aspect, there are using verbal and visual/ pictorial audio to convey information. The use of these two channels will increase the germane load of the learning experience. In this study, the aspects analysed

regarding modality matching are the use of audio and visuals and animations that explain a phenomenon. Based on the results of distributing questionnaires, 64% of respondents from video 1 said more like videos in text, images, music audio, and presenters while in video 2, 52% said they prefer videos just with text videos, pictures, with the presenter's voice. Music, audio, and voice of presenter (teacher) can make an "ice breaking" during the learning activity [15].

In video 1 respondents choose complete with the presenter because it can help students' understanding in capturing material while in video 2 respondents said the effect of zooming in and zooming out on text or images has helped attract their attention to keep paying attention even though the display is only in the form of text images and audio music without teacher's appearance. Furthermore, all respondents revealed that the illustrations of everyday life are very help in understanding the material. However, refers to the Baugh in Arsyad, Azhar [19] states that approximately 90% to obtain one's learning outcomes through the sense of sight, 5% obtained through the sense of hearing, and 5% by other senses. So, what the student see and hear (image, illustration, text-audio and other part of cognitive load), must be important and the point of the material.

TABLE IV. PERCENTAGE OF RESPONDENS ANSWER FROM COGNITIVE LOAD

Element to consider	Recommendation	Video Answer			
		Video 1	%	Video 2	%
Signalling	Practice Course that served in video	Simple and easy to understand	77	Simple and easy to understand	89
		Complex but easy to understand	18	Complex but easy to understand	11
	Use of color	Attractive colour	95	Attractive colour	100
		Unattractive colour	5	Unattractive colour	0
Segment-ing	Watching behaviour	without speeding up	86	speeding up	96
		Sometimes speed up video	14	Sometimes speed up video	4
	Duration Video	20 minute	26	20 minute	15
		11-15 minute	46	11-15 minute	61
		5-10 minute	27	5-10 minute	21
Less than 5 minutes	1	Less than 5 minutes	4		
Weeding	Using music in the video	uninterfere	59	Uninterfere	67
		No music	41	No music	33
	Using back-ground	Uninterfere	91	Uninterfere	89
		No Background	9	No Background	11
Matching modality	Using text and audio	Videos include text, images, music audio, and presenters	64	Videos include text, images, music audio, and presenters	48
		Text videos, pictures, without the presenter's voice	36	Text videos, pictures, with the presenter's voice	52
	Using Illustration	a reality visual	100	a reality visual	100
		a text visual	0	a text visual	0

The second one is student engagement consists of language and speaking tempo. Based on Table V, the video 1 there were 82% of respondents and 74% of respondents argues that the use of language that can be understood in the video is to use formal language. Meanwhile, 18 % in video 1 and 26% in video 2 expressed that they prefer to use daily conversational. Formal conversation is preferred because it is in the context of a formal institution so it is only natural to use formal language. The important thing, based on Suwartono research the use of language should emphasize aspects reasoning, not just skills. Language situations like this will have an impact on creative thinking, innovation, proactiveness, and communication [20].

From the speaking tempo aspect, 91% of video 1 stated that the teacher tempo was right, but in video 2 it was dominated by fast tempo as much as 93%. Video 2 is designed to be fast because it has a shorter duration than video 1, which affects the tempo of speech. In addition, teachers do not depend too much on presentation files, so when giving material based on personal understanding, but still on the points. Whereas in video 1 the teacher has a long enough duration so it is easy to adjust the tempo in explaining the material. Thus the right tempo of speech, not too fast and not too slow is suitable for students in learning. Yurtbasi’s research has shown that lowering the speech rate does affect the intelligibility of the speakers’ utterance; and the students need this more than anything. Teachers who wish to be effective in their teaching should not only relate information to their students but especially be able to communicate with them at a speed level of their understanding at a steady but not fast rate, and make sure to pause briefly at the end of their meaningful phrases [21].

TABLE V. PERCENTAGE OF RESPONDENS ANSWER FROM STUDENT ENGAGEMENT

Application form	Video Answer			
	Video 1	%	Video 2	%
Practice Course that served in video	Formal conversation	82	Formal conversation	74
	Daily conversation	18	Daily conversation	26
Use of color	The tempo is right	91	The tempo is right	93
	Fast talking tempo	9	Fast talking tempo	7

The third element is active learning. Based on Table VI, 86% of respondents on video 1 and 90% of respondents on video 2 asked questions to help remember the material. This result relates with Azra research, that one of the advantages of using video media is able to improve the memory of students, able to increase the ability of students to think and understand students’ thinking [22]. Furthermore, regarding video as an assignment media generally, respondents will do the tasks given via video. While 5% of respondents on video 1 and 7% on video 2 said that they were postponing do the tasks. However, if look at the dominant results, it is known that most students are disciplined in doing assignments. As stated by Sulasmi, discipline is the most influential factor in learning

achievement [23]. So, the students have to get motivations from the teacher even though in distance learning.

TABLE VI. PERCENTAGE OF RESPONDENS ANSWER FROM ACTIVE LEARNING

Application form	Video Answer			
	Video 1	%	Video 2	%
Using questions interactive in video	The Questions can help remember the material	86	The Questions can help remember the material	89
	Just a few questions to help remember material	5	Just a few questions to help remember material	11
Video as a Media Assignment	No Question	9	No Question	0
	Doing task	95	Doing task	93
	Postponing the task	5	Postponing the task	7

IV. CONCLUSION

Formal video-based learning is best at adjusting the tempo but must pay more attention to segmentation. The displays material tends to be monotonous especially with a long duration making students want to speed up and skip several sessions of videos to be higher. Entertaining video-based learning is best at signalling and segmentation at a relatively lower speed than formal video-based learning. Zooming User Interface functions not only attract the attention of students, but also make the students pay attention more to imagine and understand the material. In addition, the duration must be taken into account more in learning because the presentation of files that are less time-lapse can make the duration faster, so it is feared that the teacher's explanation is clear and ultimately students do not achieve the maximum learning experience.

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