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 PermenDirbud. 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 Debue 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](image)

| Video Learning Design at Cognitive Load | Rational Reasons | Application Form |
|----------------------------------------|------------------|-----------------|
| Signalling (emphasize important information) | Reduce extraneous load | Emphasizes important information |
| Segmenting (cut information) | Increase germane load | Not given too much materials |
| Weedling (delete unimportant information) | Reduce extraneous load | Video duration |
| Matching modality (use audio and visual) | Increase germane load | Use audio and visual, use real picture/animation that explain a phenomenon |

![Table II. APPLICATION FORM OF STUDENT ENGAGEMENT](image)

| Video Learning Design at Student Engagement | Rational Reasons | Application Form |
|--------------------------------------------|------------------|-----------------|
| Designing a variety short video | Increase percentage of videos which the student has watched | 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 |
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**

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

Adapt from Braime [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 prezi 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 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 |
| Watching behaviour  | without speeding up | 86 | speeding up | 96 |
|                     | Sometimes speed up video | 14 | Sometimes speed up video | 4 |
| Segment-ting        | 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 |
|                     | Uninterfere | 91 | Uninterfere | 89 |
|                     | No Background | 9 | No Background | 11 |
|                     | Using back-ground |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 |
| Matching modality   | Using text and audio | a reality visual | 100 | a reality visual | 100 |
|                     | Using Illustration | 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].

| 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 |
| 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.

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.

ACKNOWLEDGMENT

This paper is the part of Basic Design course with video based learning at Fashion Design Department SMKN1 Dawuan Subang, West Java, Indonesia

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