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Designing Teaching Material based-Animation Video for Teaching English language at the Elementary Level

Arimuliani Ahmad[1], Johari Afrizal[2]

[1] Universitas Islam Riau, Pekanbaru, Indonesia; arimulianiahmad@edu.uir.ac.id
[2] Universitas Islam Riau, Pekanbaru, Indonesia; johariafrizal@edu.uir.ac.id

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ABSTRACT

Enhancing teaching and learning experience in elementary school is considered rucial effort nowadays. Animation videos can be an alternative to engage students in learning, encouraging their cognitive and active learning. This study aimed to show the result of validation design for animation videos as supplementary teaching material. It described the animation video design and also the validation process from experts. The instrument used was a questionnaire. The validation questionnaire was distributed to two experts, and its validation was presented by CVI (content validation Index). The result shows that the animation video was designed through five different chapters: Here My Bedroom, My Mother is a Nurse, What Day Today?, My Bike, and Let Us Do Something. Therefore, the validation result shows 0,91 CVI for Cognitive Load for a very valid category, 0,97 CVI for Students Engaging for a very valid category, and 0,82 CVI for medium validity. It assumed that these animation videos were valid to be adopted in teaching and learning English Subjects for Elementary students.

Corresponding Author:
Arimuliani Ahmad
Universitas Islam Riau; arimulianiahmad@edu.uir.ac.id

1. INTRODUCTION

Educators have significant difficulties while instructing English to young learners, particularly in the current era characterised by the "new normal" (Siregar et al., 2021). The students possess a restricted timeframe throughout which they are capable of devoting their attention to academic pursuits. This assertion is irrefutable, given that it is a distinguishing attribute of juvenile students. Conversely, in instances where students are able to concentrate, they will find it easier to comprehend and assimilate the instructional content delivered by the teacher. When addressing this matter, it is imperative for the teacher to possess the ability to engage students and foster their active participation during the educational experience. Furthermore, the teacher should strive to optimise the allocation of time in order to achieve the desired learning outcomes. Numerous factors have a role in shaping the learning objectives of young pupils, particularly at the primary school level. These factors encompass the instructional media and methodologies employed by teachers both within and beyond the confines of the classroom (Aini, 2013; Bakhsh, 2016). In order to attain learning objectives, it is imperative that the utilisation of learning media takes into consideration the students' interests.

Recently, the integration of technology and information in learning is nothing new. Many studies have proven that the majority of students in elementary school to university respond positively to the implementation of digital media in the teaching and learning process (Hapsari, 2019; Ahmad 2022). There is digital media integration in the form of an LMS (learning management system), such as using YouTube (Justine & Jaisankar, 2019; Lee, 2022), Padlet (Ahmad, 2022), Google Classroom (Lalabegyan, 2019), Schoology (Ridho, 2021), Moodle (Satriani, 2022). In addition, there are also those who carry game-based concepts such as Mentimeter (Ranjbaran, 2022), Kahoot (Ahmad, 2021; Ahmad, 2022), Socrative (Afrizal, 2022), and Quizizz (Pratama, 2021; Lim & Yunus, 2021). Furthermore, there are also many social media used by creative teachers to convey material to their students, such as Instagram (Maslova et al., 2019; Lee, 2022) and Facebook (Sabaruddin, 2019). The use of social media supports the students' engagement in writing paragraphs.

Overall, the above media have many similarities, one of which is presenting teaching materials with multimedia integration. The display combines images and sounds so that it looks more attractive. This is in accordance with the character of students in this digital era who are used to living side by side with technology. They are commonly called digital natives (Echenique, 2014), exhibiting several characteristics influenced by their exposure to and familiarity with technology. They are comfortable consuming and creating multimedia content. They enjoy learning through videos, interactive simulations, podcasts, and other digital media formats. Despite, there still needs to be more content developed through digital media that meets the students' needs. For this reason, the researchers desire to develop learning media that fits the needs and characteristics of elementary school students, a video designed to meet their needs.

YouTube is one of the favorite platforms that can be accessed by teachers in preparing teaching media, especially for primary school (Justin & Jaisankar, 2019). Besides, it also can be useful for sharing instructional material either in the classroom or outside. Many forms of videos can be found here such as animation or Storytelling videos/Podcasts, Presentation, Talkshow, Scribing, and tutorial video. In this study, researchers focus on an animation video.

Animation videos were established for primary school students because they presented joyful materials (Laksmi et al., 2021; Pujiani et al., 2022). The students will not recognize that they are learning by watching that. When the students' attention catches, the material can be transferred effectively (Cicekci & Sadik, 2019). Based on the pre-research carried out in several public and private schools in Pekanbaru, the researchers found several weaknesses that needed to be followed up so that the learning objectives could be achieved. The first problem is the learning method which is not in accordance with the characteristics of young students so the learning process becomes less interesting. Then, the lack of integration of digital media in learning. The learning media provided by teachers is limited. The teacher focuses on textbooks rather than using appropriate digital media such as video to deliver the material. It causes a monotone atmosphere of learning. Despite this, joyful learning, especially learning English as a foreign language, needs much stimulus and scaffolding to help students acquire the language instead. Furthermore, one assistant of animation video makers that can be utilized to create animation videos is the Powtoon Platform.

Digital-based teaching media is one of the choices favoured by students in the learning process. This is because there is a combination of images and sound in one format, making it interesting to watch. Furthermore, animated videos are a type of video that can be used to convey interesting learning content (Laksmi et al., 2021). In making this animated video, one of the right applications to use is Powtoon (Buchori & Cintang, 2018; Nerissa et al., 2020). This Powtoon is used to design interesting animation-based teaching media and its use can improve the dynamics of learning (Pujiani et al., 2022).

Powtoon, a learning multimedia application, has several characteristics, including the following: 1) It has more than one convergent media, for example, combining audio and visual elements; 2) It is interactive, in the sense of being able to accommodate user responses; and 3) It is independent, in the sense of providing convenience and completeness of content in such a way that users can use it without the guidance of others. Because of that, it facilitates several advantages that can be utilized to design learning media for elementary school students, such as 1) clarifying messages to make it easier to

remember, 2) overcoming space and time limitations, 3) increasing student motivation in learning new material, 4) become independent teaching materials as main or additional material, 5) as the same stimulus material to create the same experience and understanding (Hanif, 2020).

Development of video animation-based teaching media is carried out by considering three basic concepts that must be fulfilled, namely relevance, consistency, and practicality (Plomp, 2013). In this aspect of relevance, the products designed are made according to the needs of students. Furthermore, to achieve product consistency for all students with the same level and consistency of results from time to time, this product was validated by four experts. Then, validation is carried out through trials. Regarding this validation, three aspects are considered such as cognitive load, student engagement, and active learning (Brame, 2016).

Cognitive load is an aspect that should be considered in designing the video. Primary students have limited use of memory so the material given should be selected optimally to have a long-term memory capacity. They should optimize what information they should optimize for. The cognitive theory of multimedia learning extends the cognitive load theory by stating that working memory has two information acquisition and processing channels: visual/pictorial and auditory/verbal processing (Mayer, 2001; Mayer and Moreno, 2003). Despite the fact that each channel has a limited capacity, combining the two channels can aid in the integration of new information into existing cognitive structures. Using both channels expands working memory capacity, but either channel can be overwhelmed by a high cognitive load. Absolutely, cognitive load is a crucial factor to consider when designing educational videos. Cognitive load refers to the mental effort required for information processing, and when it exceeds the capacity of working memory, it can hinder learning and comprehension.

Teaching English to primary school students has certain learning objectives that can be seen from the curriculum used. In this case, Curriculum 2013 is the guidance. For designing the instructional teaching video, researchers take five topics that the second-year student must learn of primary school. The topics refer to five chapters such as Here My Bedroom, My mother is a Nurse, What Day Today?, My Bike, and Let Us Do Something.

This study aimed to describe the design of animation videos for teaching English to second-year students. It would be carried out through the following research questions:
R1: How is the design of animation video for teaching English to Elementary school students?
R2: Is the animation video valid?

2. METHODS

This study was a part of the research and development design, which focuses on design instead. It was described descriptively to expose the validity result from two validators. To conduct the result, researchers use a validation questionnaire adopted from Brame, 2016. The quality of instructional material in animation videos was assessed by considering three parts: Cognitive Load, Student Engage, and Active Learning (Brame, 2016). There were two experts involved in measuring the animation video and five elementary students joined the small test it. To establish the validation level, the criteria were considered as follows:

The result of validation could be interpreted through some categories, as shown in the table below.

Table 1. Aiken's Validation Index (Irawan & Wilujeng, 2020).

Score	Category
$0,8 < V \leq 1$	Very Valid/high CVI
$0,4 < V \leq 0,8$	Medium Validity/medium CVI
$0 < V \leq 0,4$	Invalid/low CVI

3. FINDINGS AND DISCUSSION

This finding presents the description of animation video design and the validity result from the experts.

3.1 Design

Animation videos were designed through five chapters about 6 minutes for each video. It addressed four skills of the English Language such as listening, speaking, reading, and writing integratively. Figure 1 presents the opening section of the video which is introducing the chapter. The topic and learning objective showed obviously. It intends to tell the target of its topic. Since the students see it, they could try to achieve that goal at the end of the meeting.

Figure 1. Sample of Introduction Section

Figure 2. Sample for explaining the learning objectives

Therefore, the videos were designed to involve students' engagement. Reasonably attractive questions were provided in videos such as Figure 3.

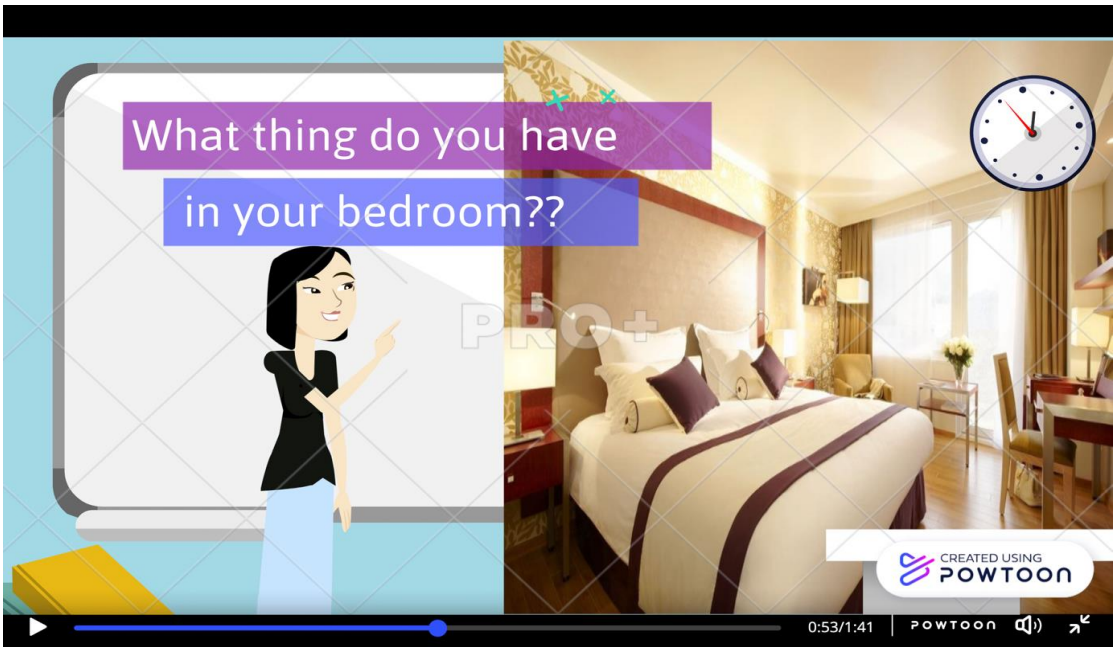

Figure 3. Sample of Opening Lesson by Asking Interactive Question

3.2 Validation of Animation Video

This validation result was carried out by gathering data from a questionnaire that was distributed to the experts after designing the product. The data presented the measurement of Cognitive Load quality (Table 2), students' engagement (Table 3), and active learning that was included in the animation video (Table 4). Regarding experts' measurement, the cognitive load quality for using signal was 1 for CVI (Content Validity Index), indicating high category. Using segmenting was 1 for CVI indicating high category. Using weeding was 0,75 for CVI indicated medium validity and matching of using auditory and visual was 1 for CVI indicated high category. The data reveals that both experts confirmed that the cognitive load for animation videos is valid.

Therefore, the videos also facilitate student engagement. The experts' validation results confirmed it. First, the video has been designed briefly for each lesson because the duration is not more than six minutes. The CVI for this aspect was 1, with a very valid category. Next, in the video, the main character (teacher) places the students in conversation by using interaction words such as you/your. There was 1 CVI for this statement with a very high category. Furthermore, the teacher's character speaks relatively quickly and with enthusiasm. The CVI of it was 0.88, with a very high level of validity. Next, the videos were created and/or packaged to emphasize relevance to the course in which they are used. The result revealed that its CVI was 1, indicating very high validity.

Another aspect that was validated is the active learning adopted by these videos. Packaging video with interactive questions (Integrate questions into videos) was measured medium level of validity. It was caused by the manual use of interactive questions applied. The teacher provided interactive questions to attack students' attention but there is no quick answer integration applied. Therefore, it used interactive features that give students control (Create "chapters" within a video using YouTube Annotate). The students can move to another chapter by clicking the link on Video on YouTube. Its CVI was 0.88 with a high category. Next, It uses guiding questions (provides guiding questions for videos designed to introduce physiology students to professional ethics related to experimenter–subject interactions). The CVI for this element was 0.75 with the medium category. The last one was about making videos part of a larger homework assignment (Package videos with a series of questions or problems that ask students to apply the concepts from the videos). The CVI of it was 0,88, indicating very valid.

Table 2. Cognitive Load Quality

Statements	Score		Process Analysis					
	Validator 1	Validator 2	S1	S2	∑S	n(C-1)	CVI	Category
Use signalling to highlight important information.	5	5	4	4	8	8	1	High
Use segmenting to chunk information (Short videos (6 minutes or less)	5	5	4	4	8	8	1	High
Use weeding to eliminate extraneous information (Eliminating loud music Eliminating complex backgrounds)	4	4	3	3	6	8	0,75	Medium
Match modality by using auditory and visual channels to convey complementary information (tutorial videos that illustrate and explain phenomena Narrated animations)	5	4	4	3	7	8	0,88	High

Table 3. Student Engagement Quality

Statements	Score		Process Analysis					
	Validator 1	Validator 2	S1	S2	∑S	n(C-1)	CVI	Category
Keep each video brief (Multiple videos for a lesson, each ≤ 6 minutes)	5	5	4	4	8	8	1	High
Use conversational language (Placing the student in the lesson by use of "your" rather than "the" during explanations)	5	5	4	4	8	8	1	High
Speak relatively quickly and with enthusiasm (Speaking rates in the 185–254 words per minute range Expressions of instructor excitement, such as "I love the next part; the way the feed-forward mechanism works is so elegant," or "Consider how the cell solves this tricky problem of needing to regulate three genes in sequence; it's really cool.")	5	4	4	3	7	8	0,88	High
Create and/or package videos to emphasize relevance to the course in which they are used (Videos created for the class in which they are going to be used, with instructor narration explaining links to preceding material)	5	5	4	4	8	8	1	High

Table 4. Active Learning Quality

Statements	Score		Process Analysis					
	Validator 1	Validator 2	S1	S2	∑S	n(C-1)	CVI	Category
Packaging video with interactive questions (Integrate questions into videos).	4	4	3	3	6	8	0,75	Medium
Use interactive features that give students control (Create "chapters" within a video using YouTube Annotate)	4	5	3	4	7	8	0,88	High
Use guiding questions (provides guiding questions for videos designed to introduce physiology students to professional ethics related to experimenter–subject interactions)	4	4	3	3	6	8	0,75	Medium
Make video part of a larger homework assignment (Package videos with a series of questions or problems that ask students to apply the concepts from the videos)	5	4	4	3	7	8	0,88	High

The utilisation of animation videos has been acknowledged as a potent medium capable of enhancing students' levels of engagement, motivation, and academic performance (Brame, 2015; Hapsari et al., 2019). The benefits of utilising custom animation movies for elementary school pupils are evident, as they cater to specific research-based demands. The process of developing these movies involves the design and validation of five-chapter videos by researchers, with the input and expertise of two specialists.

Each chapter is designed under 6 minutes duration. A brief video was designed to maximize the students' focus. Young learners have a limited capacity for memorizing (Ibrahim, 2012). The teaching material should develop interactive material to attack students' attention to maximize their long-term memory so the material will absorb for a long time (Ibrahim, 2012). Giving highlights for important information in the video is also one alternative to maximize it (Brame, 2015). Besides, eliminating back sound inappropriate timing also increases students' focus (Brame, 2015).

Another aspect that affects videos' effectiveness is student engagement. Animation video was designed by giving social interaction inside through questioning-responding cases. Before coming to the main lesson, the character in the video asks particular questions to engage students involved in the learning process. A responding session was also involved. These efforts were used because in applying media, especially animation video, students' engagement contributes a wide effect in achieving learning objectives (Hapsari et al, 2019). Speak relatively quickly and with enthusiasm (Speaking rates in the 185–254 words per minute range, Expressions of instructor excitement) also pointed students' attention.

Active learning is another important factor. The use of a single, well-crafted question can have a profound effect on a student's performance. In order to empower students to take charge of their own remote education, Hapsari et al. (2019) suggest using interactive video. To accomplish this, YouTube annotations can be used to provide relevant links within the video itself (Brame, 2019). All primary school kids, but notably those in second grade, should have those for learning English.

The goal of these animation videos is to supplement classroom instruction with engaging visuals. Teachers can make the use of this material more engaging and effective by touching it themselves. Providing students with the films and helping them absorb and evaluate the content with your support can significantly improve their learning.

4 CONCLUSION

Supplementary material such as animation videos should be considered as one solution in accelerating students' achievement, engagement and learning experience in primary school. Teachers can utilize it in the classroom and it also can be learned at home to sharpen their understanding and acquire the lesson. Practicing helps students master the material faster, so the learning objective can be achieved effectively. This study only focuses on design with validation results on learning objectives of second-year students' while the effectiveness, behavior and also other levels of students' sound interesting to be studied. Moreover, in designing the animation video, it should be designed based on students' needs. This finding can serve as starting points for further research on the effectiveness, behavior, and other aspects of students' experiences with animation videos. By exploring these areas, researchers can deepen their understanding of how animation videos can be effectively designed to meet students' needs and enhance their learning outcomes.

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