The Need Analysis for Development of Animated Video to Foster Independent Attitude in Science Subject

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Abstract. This study aims to describe the need for the development of animated video to foster independent attitude towards science subject. This study was qualitative. The subjects in this study were 1 teacher and 36 students of fifth grade SPF Wonorejo 4 Public Elementary School (W4PES). Data collection techniques were interview and questionnarie. The data validity used data triangulation in the form of source triangulation. The results indicated that teachers and students of fifth grade need an animated video to grow an independent attitude toward science content of movement system. This is shown by an average of 94.4% of students answering "Strongly Agree" and a percentage of 100% of teachers responding "strongly agree,". It can be concluded that there is a need for the development of animated video in fostering an independent attitude in science learning. The implications of this study was teachers can grow students independent attitudes by using animated video. This study analysed the need for developing animated video to foster an independent attitude towards science subject and the feasibility of animated video as a learning medium.

Keywords: learning media · animated videos · independent attitude

1 Introduction

The development of technology until right now has made much progress. With technology development, teachers must be more innovative towards the learning media used during the learning process. Media use during the learning process has changed from physical to online [1]. Changes can affect teacher attitudes when learning using digital based media. This happens in the world of education, given the uneven introduction of technology when using learning media, such as laptops, cellphones, and others [2]. Technology based learning media can instill a positive attitude in students in learning materials [3].

Media use in learning activities is essential because it can increase the quality of education [4, 5]. Uninteresting learning can have an impact on students becoming more bored. This is because media use in education is less varied [6]. Attractive learning media can increase student interest in learning and achievement [7]. Media learning is needed to

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expand and grow interested in learning during the learning process [8]. Learning media is a tool that can help students in learning activities and facilitate understanding when the teacher explains the material to students [9]. Independent attitudes can be influenced by the use of learning media [10].

Learning videos display sound elements and images that move and can be seen [11, 12]. Animated video is a suitable learning mediun for creating exciting learning media. According to Wisada et al. (2019) animated video is a medium used to stimulate students thoughts, feelings, and desires in learning activities by displaying audio-visual messages and information [13].

Science learning is learning that is carried out to prepare students when learning science and technology, who can think logically, critically and creatively [14]. In science learning, some students still have difficulty understanding the material explained by the teacher. According to Windiyani et al. (2018) lack of use of media can make students bored more quickly and not interested in learning activities [15]. In learning science, learning media is very important to attract students' attention. Less than maximum students' understanding of the material will affect their learning outcomes. This can be overcome by developing learning media so that students do not feel bored and teachers can motivate students. Teachers can use learning media in the form of videos.

Science (IPA in Indonesia) subjects are often complicated for elementary students. This happens because the teacher still uses the lecture or oral method when explaining the material. The curriculum has included science because there is basic knowledge that is needed by students to be equipped in mastering technology [16]. Science learning is a learning that can prepare students to learn science and technology and can think logically, critically and creatively [14]. Windiyani et al. (2018) said that the use of teaching media unoptimally will make students more bored. The lack of learning media that makes the lack of information obtained by students will impact students' lack of understanding of the material presented by the teacher [15]. According to Sari et al. (2020), unoptimal learning media will impact students not paying attention to the material being taught because it is difficult to memorize [17]. After all, the teacher's explanation is monotonous and boring. Teachers need to use media as support when learning takes place.

Several studies have been conducted related to the development of animated video. First, Kurniawan et al. (2018) found that the existence of video in teacher learning can be helped delivering material and helped students easily understand [19]. Meanwhile, the results of study by Sulistiowati & Khoiriyah (2014) proved that animated video media made easier for students to learn science and foster an independent attitude in students [20]. Ali (2022) developed an animated video which was categorized as an excellent medium [21]. The videos developed helped students learn to be interesting, creative, varied and meaningful. Hapsari & Puspita (2021) study obtained the expert validation with average 65.45% included in the valid criteria and for the verification of material experts and teachers received a very proper category with 86% results and student validation obtained 90% included in the excellent category [22]. Based on these results, it can be concluded that animated video was feasible to use in the learning process.

Furthermore, the results of study by Zulherman* et al. (2021) obtained an average score was 89% which can be concluded that the animated video is very feasible to use and

was included in the criteria for strongly agree [8]. This media can also help students by increasing student interest in learning and fostering student independence. Safira (2022) study showed a percentage value of 88.73% [23]. The validity is included in the correct category to be used in learning.

Based on the background and explanation, it can be concluded that this study aimed to find out and analyze the need for developing animated video to grow the independent attitude of students in science subject on movement system. The findings of this study would be necessary for all educators to create a fun learning as an effective solution to this problem. The authors analyzed the need for developing animated video to grow SPF students' independent attitude at SD Negeri Wonorejo 04.

2 Method

2.1 Type and Design

The type of study used is qualitative research. Qualitative research is an approach that examines problems related to individuals, phenomena and social phenomena [24]. This type of qualitative research focuses on analyzing the needs of animated video media in fostering an independent attitude towards science content, one of which is the material for moving organs located at the SPF of SD Negeri Wonorejo 04 in Pringapus District, Semarang Regency, Indonesia. This study was conducted from May to August 2022.

2.2 Data and Data Sources

This study's data sources were obtained from interviews, questionnaires (questionnaires), needs analysis, and documentation. This data source was conducted on class teachers and students of class V SPF SD Negeri Wonorejo 04.

2.3 Data Collection Technique

In this study, the authors conducted interviews with fifth grade teachers. This was done to find information and obtain data regarding the needs of learning media used in science learning, one of which is the material for movement system. The type of interviews conducted in this study refers to the instruments and questions that have been made. This interview contains inquiries about the need to develop animated video media to grow students' independent attitudes.

Analysis of the need for the development of animated video media in developing an independent attitude toward science content will be analyzed using the Guttman Scale. The Guttman scale is made in the form of multiple choice with the interpretation of the assessment. If the answer is positive, the score is 1, and the lousy score is 0. If the sentence is negative, the value is the other way around.

Documentation is a data collection technique that is carried out by analyzing historical documents and data. Documentation is a way to get data and information from archived documents and information supporting research.

2.4 Data Validity

The validity of the data in this study used source triangulation. The source triangulation technique checks the data obtained from various sources. In this study, triangulation was used as a data collection technique through interviews and distributing questionnaires.

2.5 Data Analysis

The data analysis in this study was a qualitative descriptive analysis. Qualitative data analysis consists of three elements in the form of data reduction, data presentation, and conclusion. The authors looked for the data needed for study in the data collection stage. Data reduction in the form of simplification carried out by focusing on selection and the validity of the raw data obtained. Presentation of data in the form of a collection of information arranged coherently so that it can be easily understood. Concluding the paper of all findings of the data that has been made.

3 Result and Discussion

3.1 Result

Based on a study conducted at the SPF of SD Negeri Wonorejo 04, it is known that teachers were already using technology-based media (ICT) during learning. The media that were often used are worksheet and PPT books only. This Media requires development to foster an independent attitude and can support learning. The results of student responses to science learning can be seen in Table 1.

Based on the data analysis in Table 1. It shows that as many as 83.3% of students answered "Strongly Agree" and as many as 77.8% answered, "Agree". Through these two questions, the study shows that learning science is one of the most critical subjects in elementary schools.

Based on Table 2. It shows from eight questions that 94.4% of students strongly agree with the development of video in growing an independent attitude. As many as 16.7% of students answered that they had never used video in the material for moving organs. This can be seen from the seven questions students answered strongly agree, and a student answered strongly disagreed.

Based on Table 3. It shows that the teacher strongly agrees with the development of animated video. It is shown that 100% of teachers need different media. As many as 100% of teachers strongly agree that animated video can make it easier for students to understand the material and make it easier for students to grow independent attitudes.

Table 1. Student Responses to Science Learning

Question	Percentage	Criteria
I am very interested in learning science	83.3%	Strongly Agree
I have difficulty when learning science for moving organs	77.8%	Agree

Table 2. Student Responses to the Use of Animated Video Media

Question	Percentage	Criteria
Teachers have used learning media when learning science	100%	Strongly Agree
Learning media used during the learning process can assist and support the learning process	88.9%	Strongly Agree
The media used in the learning process can foster an independent attitude in students	91.6%	Strongly Agree
Using media during the learning process makes it easier for students to understand the subject matter	83.3%	Strongly Agree
The teacher has used animated video media in the material for moving organs	16.7%	Strongly Disagree
Students agree that learning the material for moving organs uses animated video media	100%	Strongly Agree
Animated video media is an exciting and fun medium	100%	Strongly Agree
Animated video media can help foster an independent attitude and needs to be developed	94.4%	Strongly Agree

Table 3. Teacher's Responses to Use of Animated Video Media

Question	Percentage	Criteria
The teacher has used the media during the learning process	100%	Strongly Agree
Teachers need new media in addition to the existing ones	100%	Strongly Agree
The media used by the teacher already supports and facilitates the learning process	100%	Strongly Agree
Teachers have used learning media in the form of animated videos	0%	Strongly Disagree
Teachers are interested in using animated video media to add to existing media	100%	Strongly Agree
Video-based learning media makes it easier for students to grow independent attitudes	100%	Strongly Agree

3.2 Discussion

Based on the analysis of the need for developing animated video to grow an independent attitude towards science subject, it is categorized as suitable for use in learning. Teachers and students of fifth grade SPF SD Negeri Wonorejo 04 need the development of animated video to foster an independent attitude, obtained from 94.4% of students who strongly agree and 100% of teachers who strongly agree with media development.

Based on the results of the analysis that has been done, it can attract students' attention when learning takes place, which can achieve learning objectives, especially the material for movement organs. The absence of good media will result in low student

understanding, so interesting teaching materials are needed. This is in line with Rusnilawati & Gustiana (2017) that education requires using exciting teaching materials to motivate students to learn. In helping students not to get bored and feel more interested in the learning process that uses the media, not just lectures by the teacher during the learning process [25]. The press can increase and attract students' attention when understanding the material given by the teacher. This is in line with a study conducted by [26] that the media can increase students' interest and attention when learning. According to Lukman et al. (2019) Media is anything that can provide information between a source and a receiver [27].

The existence of students' interest in learning science learning the material for movement organs makes students more active and enthusiastic when learning. This aligns with the study by Ricardo & Meilani (2017) that interest in learning is a motivating factor for students based on a sense of pleasure, interest, and desire to learn [28]. Students' independence can be marked by students' unpreparedness to know. This is caused by students who depend on using worksheets and other textbooks and the habit of cheating during exams or tests [29]. Good independence in students can stimulate students to learn actively and be able to solve problems [30]. This independence or independent attitude is divided into three aspects: emotional autonomy, freedom of action and independence of thinking [31].

Learning media through animated videos can improve and support students to be more active during the learning process. When learning takes place, it can be said to be more effective if it can achieve the desired learning goals that have been made previously. Effectiveness in learning in the form of teacher behavior when teaching students in the class can provide new experiences with appropriate strategies to achieve learning objectives.

Using animated video learning media requires teachers to be more understanding and creative when providing learning tools. Teachers can develop this lively video media creatively and repeatedly for science learning activities for moving organs. This is in accordance with a study conducted by Dewantara (2020), a teacher must consider choosing and utilizing media that is suitable for learning by looking at the student's learning style [32]. With this consideration, the teacher can develop the learning media in learning activities.

Based on the discussion, it can be concluded that students' independent attitudes can be instilled and grown with the development of animated video that can motivate them to learn the science of moving organs.

4 Conclusion

Based on the results of the studies and discussions that have been carried out, it can be concluded that the development of this animated video can foster an independent attitude in students, especially the science subject of movement system. Students' interest in the development of animated video was indicated by a percentage of 100%, so it is categorized as strongly agreeing with the use of animated video media in fostering an independent attitude in science learning. Teacher must be able to use devices and media that can increase students' interest in learning so they don't feel bored and it's easy to understand the material provided.

This study has limitations, including only conducting research in one elementary school, so it is hoped that the following analysis can compare learning media needs in several schools. After conducting the study, the authors gave suggestions so that teachers and school principals better understand and take advantage of the use of technology-based media in learning. Teacher have to be able to create fun and not monotonous learning. Schools' facilities must be appropriately used to motivate students while studying. For researchers, the results of the studies that have been carried out can be used as a guideline and reference in following up on subsequent studies.

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