



Animated Video Approaching Contextual Learning in Natural Science Subject Class VII

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ABSTRAK

Di era teknologi menuntut kesiapan guru untuk mendidik pesertanya melalui pembelajaran online sangat penting. Video animasi merupakan salah satu cara pengajaran yang dapat membantu siswa dalam meningkatkan hasil belajar siswa. Tujuan penelitian ini untuk menganalisis proses pengembangan dan validasi video animasi berpendekatan pembelajaran kontekstual pada mata pelajaran ilmu pengetahuan alam kelas VII di SMP Negeri. Penelitian ini merupakan penelitian pengembangan dengan menggunakan model ADDIE. Subjek penelitian ini adalah ahli isi ahli desain, ahli media, 3 orang siswa sebagai uji coba perorangan, dan 9 orang siswa sebagai uji coba kelompok kecil. Metode pengumpulan data yang digunakan yaitu, observasi, wawancara, pencatatan dokumen, dan kuesioner. Teknik analisis data menggunakan teknik analisis deskriptif kualitatif dan kuantitatif. Diperoleh hasil uji ahli isi pembelajaran sebesar 94%, uji ahli desain pembelajaran sebesar 91,66%, uji ahli media pembelajaran 97,17%, uji coba perorangan sebesar 91,33%, dan uji coba kelompok kecil sebesar 94,66% yang keseluruhan persentase skornya dikualifikasikan sangat baik. Implikasi dari penelitian ini adalah membuat siswa lebih aktif belajar, menciptakan suasana belajar lebih menyenangkan, lebih mandiri, dan mampu memahami materi pembelajaran dengan menghubungkannya pada kehidupan sehari-hari.

ABSTRACT

In the era of technological, the readiness of teachers to educate their participants through online learning is very important. Animated video is one way of teaching that can help students in improving student learning outcomes. This study aimed to analyses the process of developing and validating animated videos with a contextual learning approach in natural science subjects for class VII at Junior High School. This research is development research using the ADDIE model. The subjects of this study were content experts, design experts, media experts, three students in individual trials, and nine students as small group trials. The data collection methods used are observation, interviews, document recording, and questionnaires. The data analysis technique used descriptive qualitative and quantitative analysis techniques. The result of this study found that learning content expert test results were 94%, the instructional design expert test was 91.66%, the learning media expert test was 97.17%, the individual trial was 91.33%, and the small group trial was 94.66% with the overall score percentage. Very well qualified. The implication of this research is to make students more active in learning, create a more fun learning atmosphere, be more independent, and understand learning material by connecting it to everyday life.

1. INTRODUCTION

Science develops from time to time; the development of this science supports the development of new technologies that show the progress of the times (Del Cerro Velázquez & Méndez, 2021; Englund et al., 2017; Ivanovic et al., 2018). So far, the technology developed has entered the digital stage. All sectors in Indonesia, including starting to use technology to make work easier, including the education sector. In solving and solving problems in education, technology is fundamental to use (Achilleos et al., 2019; Angga et al., 2020; Stuchlikova, 2016). The development of technology in the world of education is significant because education is one essential aspect in efforts to improve the quality of intelligent human resources to support the progress of the nation and state in the future (Alsalhi et al., 2021; Choudhury, 2014; Garcia et al., 2018). Judging from the education system in Indonesia, Indonesian education has been quite successful in its implementation. However, in reality, the Covid-19 pandemic has made Indonesia's education system undergo drastic changes, starting from the performance of an online learning system (Chang et al., 2021; Hanik, 2020; Wren, 2021).

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The Covid-19 pandemic has had an impact on the education sector. The effect obtained in education is that Learning should not be done at school but at home. According to previous researcher state that learning is carried out by teachers and children through online Learning and online tutorial learning through the YouTube application using technology that is currently developing (Ayuni et al., 2021). This indirectly requires the readiness of teachers to educate their participants through online learning (Bayaga et al., 2021; Rashid et al., 2021; Yamtinah et al., 2022). If teachers have enthusiasm for learning in various conditions, this can improve the quality of teachers. In addition, teachers' readiness to face the distance learning process also determines student learning success. This readiness can be in lesson plans, learning materials, learning media used, arranging online learning schedules, and others (Alwiyah & Imaniyati, 2018; Nurtanto et al., 2021; Wahyuni et al., 2021). Based on the results of interviews with science teacher for class VII SMP Negeri 1 Negara, information was obtained that online learning (on the network) in science subjects for class VII SMP Negeri 1 Negara still fully uses WhatsApp Groups in the learning process and administration. In the interview, she also said that she felt she was not ready for online learning and had not fully used technology in education. This was seen from the learning process that only used WhatsApp groups, and the learning media used were still limited to textbooks obtained from schools and learning videos that were sourced from the YouTube platform; she said that the use of videos from the YouTube platform was still not following the material to be studied by students. As a result, it has an impact on student learning outcomes. The data on student learning outcomes stated that of the 32 students of class VII E SMP Negeri 1 Negara in science subjects classified under the Minimum Completeness Criteria (KKM), namely 65. Based on the data obtained, 17 students were incomplete, and 15 students completed with an average value of 58.75. This proves that the learning outcomes of class VII E students in science subjects are still experiencing problems.

Seeing these conditions, to overcome the problems above, there are now many online learning media innovations (on the network) used in online learning activities (on the web), such as animated media-based learning videos. Animated video media is media in the form of images that are collected and moved as needed (Kasih, 2017; Sukarini & Manuaba, 2021). Animated video is a computer program used to deliver information with text, images, colours, animation, and sound for a unified whole (Antika et al., 2019; Awalia et al., 2019). The advantage of this animated video is that it contains elements such as audio, video, text, energy, and motion that become one. As a result, the media becomes very interesting (Candra Dewi & Negara, 2021; Maulida et al., 2019). Base on previous research state that animated videos have benefits, namely: 1) they can attract attention, 2) they can make learning unique, 3) they can facilitate systematic learning, 4) students understand learning better, and 5) they clarify abstract material (Ayuningsih, 2017; Candra Dewi & Negara, 2021). Previous research also found that the use of animated video-based learning videos in learning can use models or learning approaches that follow the characteristics of students (Rahayu et al., 2021; Renes & Strange, 2010). A learning approach that can support animated learning videos in the learning process is contextual. A contextual approach is an approach that can help teachers connect the material they teach with students' daily life situations (Latief, 2014; Purwanto & Rizki, 2015). One effort that can be made to improve science learning is to use a contextual approach. Using a contextual system can help students relate learning materials to the real-life they experience so that knowledge will be more exciting and fun for students. Students can apply it in their lives—every day (Mutakinati et al., 2018; Suharto, 2018). The findings of previous research stated that this animated video can help students in the learning process and can improve student learning outcomes (Dewi et al., 2021; R. A. Siddiq et al., 2020). The findings of previous studies also state that animated videos can improve learning outcomes and arouse student motivation (Ponza et al., 2018; Rachmavita, 2020; Sukarini & Manuaba, 2021). There is no development of animated videos with a contextual approach to the subject of Natural Sciences. The animated video was chosen because it can explain the concept of abstract material to be more concrete and easier to understand by students.

This study aims to create a contextual approach to developing animated videos on the subject of Natural Sciences. The advantage of this animated video is that it can direct students to better understand the material by connecting it to everyday life.

2. METHODS

This research is a type of research and development or Research and Development (R&D). Research and development (R&D), in a broad sense, is the use of creative effort and knowledge that is carried out systematically based on new applications to improve scientific and technical expertise. The development model used in this study is the ADDIE model, which has five stages, including (1) analysis, (2) design, (3) development, (4) implementation and (5) evaluation (Buchdadi et al., 2018; I. M. dan I. M. K. Tegeh, 2010). This study's data collection methods were observation, interviews, document recording,

and questionnaires. The observation method determines the extent of learning activities and how effective the online learning process is. The interview method aims to discover how science learning is carried out and what problems are faced. The document recording method is used to collect essential data to support research. The questionnaire method was used for expert testing and student trials. The instrument used in this study was an instrument in the form of a questionnaire for expert testing and student trials. This research uses two data analysis techniques, namely, qualitative and quantitative descriptive analysis. Qualitative descriptive analysis methods are systematically arranged in sentences or words and categories about an object, so there is a general conclusion (Agung, 2018; Nassaji, 2015). Qualitative descriptive analysis techniques are carried out by grouping information from qualitative data in the form of suggestions, inputs and criticisms from expert tests and individual and small group trials. This quantitative descriptive analysis technique is used to process assessment data from expert trials and individual and small group trials.

3. RESULT AND DISCUSSION

Results

The development of this animated video with a contextual learning approach uses the ADDIE development model, which consists of five stages, namely, the needs analysis stage, the design stage, and the development and implementation stage. The first stage is the analysis stage, namely, needs analysis, analysis of student characteristics and analysis of facilities. Based on the needs analysis results, it is found that the appropriate learning media to support the online learning process in science subjects in class VII students is still very lacking. Based on the analysis of student characteristics, grade VII students are in the stage of formal operational cognitive development. At this stage, students will experience difficulties in learning if they are not assisted by objects or media that can support the learning process. While the results of the analysis of the facilities carried out, data obtained that the school already has a computer laboratory room and LCD but the facilities and infrastructure owned are not appropriately used in the science learning process. The second stage is the design stage; at this stage, four work stages are carried out: determining essential competencies (KD) and indicators, selecting learning materials, designing storyboards, product feasibility assessment instruments, and preparing Learning Implementation Plans (RPP). The third stage is the development stage; at this stage, the product is developed according to the design made, namely the video storyboard. This stage produces a product in the form of an animated learning video. The development of this learning animation product uses several applications such as Adobe After Effects and Adobe Premiere Pro CC 2017 as the leading software with the help of several other applications, namely, Microsoft Office and Adobe Illustrator. The results of the development of learning animation videos are presented in Figure 1.



Figure 1. Animated Video with Contextual Learning Approach

The fourth stage is the implementation stage; at this stage, an assessment is carried out to determine the feasibility of learning animation videos and to determine student responses regarding the attractiveness and feasibility of the product. The last stage is the evaluation stage; at this stage, the implemented products will be evaluated and reviewed by experts, both learning content experts, learning media design experts and learning media experts. Students also provide assessments and evaluations of learning animation video products in individual and small group tests. Expert tests are carried out on learning content experts, learning design experts, learning media experts, learning content experts, namely lecturers of the S1 Elementary School Teacher Education (PGSD) study program who have an educational background in S3 Elementary Education, then learning design experts are lecturers of the undergraduate study program Educational Technology who has an S3 Learning Technology background, as well as teaching media experts are lecturers of the S1 Education Technology study program who have an S2 Learning Technology background. After the expert test, the students were tested through individual and small group trials. Personal trials were carried out on three students with details of one student with

low academic ability, one with moderate theoretical knowledge, and one with high academic ability. Small group trials were conducted on nine students with details of three students with low intellectual ability, three students with moderate theoretical knowledge, and three students with high academic ability. The results of expert tests and trials for students are presented in [Table 1](#).

Table 1. Percentage of Expert Test Results and Learning Animation Video Trials

No	Subject	Results	Qualification
1.	Content Expert	94%	Very Good
2.	Design Expert	91.66%	Very Good
3.	Media Expert	97.14%	Very Good
4.	Individual Test	91.33%	Very Good
5.	Small Group Test	94.66%	Very Good

Discussion

Based on the study results, it was found that the animated video with a contextual learning approach obtained excellent qualifications based on the results of expert tests and trials with students, so this development research product was suitable for use in the learning process. This is because the animated video media follows the needs analysis results with the developed model, namely the ADDIE model, systematically and based on theory. Creating playful video media with a contextual approach refers to the ADDIE development model, so it has implications for the feasibility of animated video media products produced in the development process ([Kurniawan et al., 2017](#); [Y. I. Siddiq et al., 2020](#)). Based on the expert review of learning content results, I obtained excellent qualifications. Based on the results obtained from the learning content expert test, animated videos with a contextual learning approach are appropriate to be used as learning media to support the science learning process for class VII. The material discussed follows the essential competencies, indicators, and learning objectives used. The material discussed is accompanied by illustrations and the use of language that is easy to understand to motivate students in the learning process. This is in line with the opinion with previous research that learning materials delivered clearly and more realistically can help students understand better and understand the material described and provide better learning outcomes for students ([Sukiyasa & Sukoco, 2013](#)). Moreover previous researcher said the use of animation in the video will make the presentation of the video more exciting and motivating ([Wuryanti & Kartowagiran, 2016](#)). Vivid pictures, colours and compelling stories can attract students' attention to learning ([Widiyasanti & Ayriza, 2018](#); [Wuryanti & Kartowagiran, 2016](#)). Based on the learning design expert's review, he obtained excellent qualifications. Based on the results obtained from the learning design expert test, the instructional design in the animated video with a contextual learning approach is appropriate to be used as a learning medium to support the science learning process for class VII. This is because, in the design of learning animation videos, the use of learning objectives in animated videos is appropriate or in harmony with the material and evaluation provided; this is so that students can focus on the material to be achieved after watching all the learning animations. Then the display of animated learning videos is made as attractive as possible to motivate students to learn, which will indirectly affect student learning outcomes. Previous researcher argue that visualization in the form of images in animation will provide more interesting information for students ([Risabette et al., 2017](#)).

In addition to design, appropriate learning models are also needed to increase student learning motivation, making it easier for students to achieve learning goals. One of the learning models that have been integrated into this learning animation video is a contextual approach. Through a contextual approach, learning materials can be linked to real-life situations and encourage students to make connections between the knowledge they receive and their application in everyday life ([Bakhri et al., 2019](#); [Purwanto & Rizki, 2015](#)). Based on a review of learning media experts, obtained excellent qualifications. Based on the results obtained from the learning media expert test, animated videos with a contextual learning approach are appropriate to be used as learning media to support the science learning process for class VII. This animated video includes exciting pictures and sounds to attract students' interest in learning ([Batubara & Batubara, 2020](#); [S. Tegeh & Dwipayana., 2019](#)). Presentation of images is helpful because the clarity of images can support the clarity of messages in documents that can trigger student interest in learning ([Awalia et al., 2019](#); [Aziz, 2019](#)). Using suitable animated videos will improve and motivate students in their learning to influence student learning outcomes ([Kawka et al., 2021](#); [Sarnoko & Setyosari, 2016](#)). The learning animation videos developed obtained excellent qualifications in individual trials involving three students. The nine students' small group trials showed excellent results in the learning animation videos. This is because the animated video with a contextual approach for class VII

students uses clear images and can attract students' attention; the animated video also uses appropriate music and language that is easy for students to understand; this can minimize misunderstandings in the explanation of the material. This can increase student motivation in learning; the higher student motivation in the learning course will positively impact student learning outcomes. According to previous researcher state that if students' interest in learning is high in learning, the delivery of material in learning will be easy to understand, which impacts learning outcomes. Learning objectives can be achieved as desired (Nazmi, 2017). The implication of this study are animated video is that it can direct students to better understand the material by connecting it to everyday life. Then animated video can explain the concept of abstract material to be more concrete and easier to understand by students. This information will be very useful for teachers in implementing animated videos in the learning process. This study also has shortcomings, one of which involves only one school as the subject. It is hoped that future research will be able to deepen and broaden the discussion of the animated video topic by considering various factors that have not been discussed in this study.

4. CONCLUSION

An animated video with a contextual learning approach for class VII students was successfully developed using the ADDIE model. The validity of this animated video with a contextual learning approach obtained excellent qualifications, so it is said to be feasible based on the results of expert tests and individual and small group trials with students. Thus, this learning animation video product can be used as one of the suitable learning media to accommodate class VII students, especially in science subjects, to be more active in learning, create a more fun learning atmosphere, be more independent, and be able to understand learning material by connecting it to everyday life.

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