The Impact of Video-Based Learning to Cognitive Learning Outcome of Student in Elementary School

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Abstract

The results of observations and interviews at elementary school showed that Indonesian history material was considered material that was difficult for students to accept and understand. The purpose of this study is to determine the effect of video based learning on cognitive learning outcomes of Indonesian history material in elementary schools. This research method is an experiment. The form of the experimental design used in this study was a quasi-experimental design with a nonequivalent control group type. Data analysis was carried out through tests for normality, homogeneity, paired sample t-test, and independent sample t-test. The first hypothesis test, namely the paired sample t-test, shows that there is an influence seen from Lower and Upper which is negative, namely Upper is -18.270 and Lower is -27.312. Sig. Value (2-tailed) shows the number 0.000 which means <0.05. The second hypothesis test, namely the independent sample t-test, shows that there is a difference seen from Lower and Upper which is negative, namely Lower is -13.651 and Upper is -3.109. Sig. Value (2-tailed) shows the number 0.002 which means <0.05 then Ho is rejected and Ha is accepted. It was concluded that the video based learning had an effect on the cognitive learning outcomes of Indonesian historical material at SDN 02 Temulus. Videos based learning can be used as an alternate learning resource in elementary schools to help students comprehend Indonesian history.

Keywords: Cognitive Domain, Learning Outcome, Video Based Learning

Abstrak

Hasil observasi dan wawancara di sekolah dasar menunjukkan materi sejarah Indonesia dianggap sebagai materi yang susah diterima dan dipahami oleh siswa. Tujuan penelitian ini yaitu mengetahui pengaruh video pembelajaran terhadap hasil belajar kognitif materi sejarah Indonesia di sekolah dasar. Metode penelitian ini adalah eksperimen. Bentuk desain eksperimen yang digunakan dalam penelitian ini adalah quasi experiment dengan tipe nonequivalent control group desain. Analisis data dilakukan melalui uji normalitas, homogenitas, paired sample t-test, dan independent sample t-test. Uji hipotesis pertama yaitu paired sample t-test menunjukkan adanya pengaruh dilihat dari Lower dan Upper bernilai negatif yaitu Upper sebesar -18,270 dan Lower sebesar -27,312. Nilai Sig. (2-tailed) memperlihatkan angka 0,000 yang berarti < 0,05. Uji hipotesis kedua yaitu independent sample t-test menunjukkan ada perbedaan dilihat dari Lower dan Upper bernilai negatif yakni Lower sebesar -13,651 dan Upper sebesar -3,109. Nilai Sig (2-tailed) memperlihatkan angka 0,002 yang berarti <0,05 maka Ho ditolak dan Ha diterima. Disimpulkan bahwa video pembelajaran berpengaruh terhadap hasil belajar kognitif materi sejarah Indonesia

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di SDN 02 Temulus. Video pembelajaran dapat menjadi alternatif media pembelajan dalam pembelajaran sejarah Indonesia di sekolah dasar agar mudah dipahami oleh siswa.

Kata Kunci: *Aspek Kognitf, Hasil Belajar, Video Pembelajaran*

INTRODUCTION

Learning outcomes are the ultimate goal of carrying out learning activities in schools. Learning outcomes can be improved through conscious effort that is carried out systematically leading to positive changes which are then called the learning process (Apriyana, 2015; Fidrayana & Purdiasih, 2022). The end of the learning process is the acquisition of a learning outcome (Ismiyanti & Cahyaningtyas, 2019). The results of learning activities are marked by positive actions that are relatively permanent in the person who is learning. While the results of this assessment and evaluation are feedback to find out where the teaching and learning process has been carried out (Wachtler et al., 2016).

Social Sciences is an interdisciplinary approach from the subject of Social Sciences (R. R. Sukma et al., 2022; Tanjung, 2021). IPS is an integration of various branches of social sciences, such as sociology, cultural anthropology, social psychology, history, geography, economics, political science, and so on. In the content standards it is also stated that social studies subjects are arranged in a systematic, comprehensive and integrated manner in the learning process towards maturity and success in life in society (Cahyaningtyas et al., 2022; Najib & Elhefni, 2016; Yulaeha & Rusdi, 2016). Through this approach, students are expected to gain a broader and deeper understanding of related fields of knowledge.

The reality that happened was not in accordance with the expected IPS objectives. Many problems exist in social studies learning at school. Learning social sciences (IPS) in elementary schools is a subject that is difficult for some students to understand. IPS materials are full of abstract concepts (Ismiyanti & Permatasari, 2021). Concepts such as time, change, history are abstract concepts in social studies subjects that must be taught to elementary students so learning media are needed (Ismiyanti & Afandi, 2022).

According to Piaget's theory of cognitive development, elementary school students enter the level of concrete operational thinking (Bujuri, 2018; Alten et al., 2020). The thinking stage requires learning media to facilitate student understanding. Learning media is not only in the form of materials or tools, but things that enable students to gain knowledge. Learning media makes it easy to convey, distribute, or connect messages from informants to students (Hidayah, 2021; Rusdi et al., 2022). Learning media can generate new desires and interests, generate motivation and stimulate learning activities and even bring psychological influences on students (Anastasya et al., 2021; Erni et al., 2021). The purpose of using media in general is to facilitate the ongoing learning process in students (Det et al., 2011; Istiningsih et al., 2020; Ulviah et al., 2021).

Media in the implementation of learning is an intermediary or introductory tool to convey messages (Maimunah, 2016; Masturah et al., 2018). Media is device that can be manipulated, heard, seen, read along with instruments that are used properly in teaching and learning activities, and can affect the effectiveness of instructional programs. Learning media has an important role in supporting the quality of the teaching and learning process (Khoiriyah & Sari, 2018). Learning media can increase and direct students' attention so that it can foster learning motivation, more direct interaction between students and their environment, and students learn on their own according to their interests and abilities (Mustaqim & Kurniawan, 2017; Sukmanasa et al., 2020). Some of the benefits of media in the student learning process, namely teaching methods will be more varied not solely based on verbal communication, the meaning of teaching materials will become clearer so that students can understand and

enable mastery and achievement of teaching goals, can foster student learning motivation because teaching will attract their attention, students do more activities during learning activities, not only listening but also observing, demonstrating, doing directly, and acting. That way the use of learning media will support the teaching and learning process so that students understand and remember the material presented by the teacher quickly and easily (Paramida & Permadi, 2019). From the statement above, it is concluded that learning media are media that can convey messages or materials in the learning process, learning media can also stimulate thoughts, attention, feelings, and abilities in learning skills so that they can encourage the learning process. Using learning media in the learning process helps to facilitate interaction between educators and students so that learning activities will be more effective and efficient in improving the quality of education (Hartini et al., 2017)

Based on the results of observations and interviews at SDN Temulus 02, it shows that class IV Indonesian history material is considered material that is difficult for students to accept and understand. The broad scope of the material and the many abstract concepts make it difficult for students to understand the material. The teacher has not used learning media in delivering the material. The teacher only explains with the lecture method and students are asked to sit, be quiet, and listen. This makes students less enthusiastic in learning so that it has an impact on their learning outcomes. Based on the results of daily tests on Indonesian history learning materials for class IVA and IVB 40 out of 55 students had not passed the KKM (Minimum Completeness Criteria).

The hope that the teacher never loses in delivering learning material is how the lesson material conveyed by the teacher can be thoroughly liked by children. This is a problem that is quite complicated for teachers to feel, where children have a variety of personalities, individual characteristics are unique. They are also social beings with different backgrounds. Studying social studies material on Indonesian history in elementary schools aims to enable students to acquire historical thinking skills and an understanding of Indonesian history. Through learning Indonesian history students are able to develop competence to think chronologically and have knowledge about the past that can be used to understand and explain the process of development and change.

Various media can be used to assist students in achieving the desired learning objectives or competencies. One type of audio-visual learning media that can be an alternative for presenting Indonesian history material so that it is easily understood by students is video based learning (Beege et al., 2017). Video based learnhing is a video program that is designed, developed, used to achieve learning objectives. Videos can be used for almost any topic, type of learner, and every domain (Fukkink et al., 2011). In the cognitive domain, students can observe past historical events and actual recordings of current events, because the elements of color, sound and movement can make characters feel more alive. In addition, watching videos, after or before reading, can strengthen students' understanding of teaching materials (Maulidiana et al., n.d.). The advantages obtained by using learning video media are: (1) Videos can complement the basic experiences of students when they read, discuss, practice and others. Video is a substitute for nature, and can even show objects that normally cannot be seen. (2) Video can describe a process precisely and can be presented repeatedly if needed. (3) Encouraging and generating student motivation. (4) Videos can present events to large or small groups, heterogeneous groups or individuals (Kim et al., 2011).

This research is relevant to research that analyzes the effect of instructional video media on science learning outcomes. The results of the study show that learning videos have an effect on science learning outcomes (Yunita & Wijayanti, 2017). Furthermore, this research is also in line with research on increasing motivation and learning outcomes in science through learning videos (E. Sukma et al., 2017). Application of process skills to improve science learning outcomes. Then the researcher raised about the application of learning videos to improve learning outcomes in animal life cycle material. Video-based learning can display information that students cannot see directly. Students can see the animal life cycle process without having to see the original object directly, with videos students will also see directly the animal life cycle process through animation.

Learning video media can realize the visualization of the material life cycle. So that the learning outcomes of students who use video-based learning can be satisfactory and meet the KKM criteria (Agustiningsih, 2015; Elsani et al., 2019). Based on a review of the results of the research that has been done, it shows that video-based learning can help smooth learning objectives. The results of the research with the title use of video learning media on learning outcomes of elementary school students show that research has a positive and significant influence on the use of audio-visual video learning media on learning outcomes in sub-theme 1 cultural diversity of my nation (Pamungkas & Koeswanti, 2021). Research with the title development of instructional video media to increase understanding of Style material for class IV at SDN Sukoiber 1 Jombang shows the results of increasing students' understanding of Style material by 30% and based on the N-Gain test data a gain value of 0.71 is obtained. Based on the criteria that have been set, it can be interpreted that the increase in understanding of the style material for grade IV students is classified as high (Hidayati et al., 2019).

The novelty of this research lies in the use of video-based learning on Indonesian history material which has a very broad scope, discussing past events that students cannot observe directly, packaged in a variety of interesting ways in the form of video-based learning supplemented with supporting pictures and appropriate stories. Then tested the effect on students' cognitive learning outcomes. The use of video based learning makes abstract learning concrete. It is hoped that students will be interested in learning material so that class conditions are more calm and concentration will be awakened by itself in each student. The material delivered by the teacher is also clearer because with the help of video media students can see and hear what is the subject of learning at that time. If these conditions have been created, it is hoped that the material delivered by the teacher will be easily absorbed by students. Based on the study of the background of the problem, this study aims to analyze the effect of video based learning on cognitive learning outcomes of Indonesian history material.

RESEARCH METHOD

This study uses an experimental research method with a quasi-experimental design, the type is the nonequivalent control group design (Meyer et al., 2019). This design involves two groups, namely the experimental group and the control group which cannot be determined randomly. In this design, the experimental and control groups were given pretest treatment to find out their initial conditions. Then, the experimental group will receive treatment in the form of applying video based learning and in the control group conventional learning without the application of video based learning . Furthermore, all groups will receive a posttest so they can find out the differences in the learning outcomes the two groups have obtained (Mayer, 2021). The population in this study were fourth grade students at SDN 02 Temulus for the 2022/2023 academic year with a class IV population of 55 students consisting of 27 class IVA students and 28 class IVB students. The sampling technique in this study used non-probability sampling in the form of systematic sampling, this is because the sampling was not random (Carpenter & Toftness, 2017). Determining the number of samples is assisted by the use of the Solvin formula, where this formula has a confidence level of 95% and an error rate of 5% (Hoogerheide et al., 2014). Based on calculations from the Solvin formula, a data sample of 49 students was obtained with an experimental class of 24 students and a control class of 25 students. Data collection techniques were carried out through tests in the experimental and control classes (Ismiyanti, 2020). Data analysis was carried out through tests for normality, homogeneity, paired sample t-test and independent sample t-test with the help of SPSS software (Ismiyanti & Permatasari, 2021).

RESULTS AND DISCUSSION

Pretest for Data Normality and Homogeneity

Pretest scores are obtained before students receive treatment. Cognitive learning outcomes of students through the pretest were first analyzed using normality and homogeneity tests. Through the calculation of the Lilliefors normality test assisted by the SPSS program, a total of 49 students obtained an average value of 55.204 for the control class and 62.321 for the experimental class. a significance level of 5% obtained Lmax from the control class of 0.137 and the experimental class of 0.142 and Ltabel liliiefors of 0.176 for the control class while 0.179 for the experimental class. The control class data obtained the test criteria Lmax < Ltable, so the data is normally distributed or Sig. > ∝, then the data is normally distributed. Based on the data above, the Lmax value is 0.137, meaning Lmax < Ltable, Sig. 0.200 > 0.05 then, the initial data in the form of pretest scores of students' cognitive learning outcomes are normally distributed. Then the experimental data obtained the test criteria, namely Lmax < Ltable, so the data is normally distributed or Sig. > ∝, then the data is normally distributed. Based on the data above, the value of Lmax is 0.142, meaning Lmax < Ltabel, Sig. 0.200 > 0.05 then, the initial data in the form of pretest scores of students' cognitive learning outcomes are normally distributed.

Through the calculation of the homogeneity test, the 49 students obtained an average value of 55.204 for the control class and 62.321 for the experimental class, the variance of the 190.456 control class and 195.975 for the experimental class and found Ftable 1.993 to determine the homogeneously distributed class, namely with the criteria H_0: v1 =v2 (both variances are homogeneous) and H_1 : v2≠v2 (both variances are not homogeneous). It is known that Fcount is 1.029. So the data obtained is Fcount = 1.029 <Ftable = 1.993 meaning that both classes are homogeneous.

Posttest for Data Normality and Homogeneity

Based on the final data normality test table (posttest), with the Lilliefors test assisted by the SPSS program, 49 students obtained an average value of the control class of 76.732 and the experimental class of 85.113 standard deviations from the control class of 8.670 and the experimental class of 9.292 with (Lmax) = (n-1) with a significance level of 5% obtained Lmax of the control class of 0.106 and the experimental class of 0.133 and the Liliiefors Ltable of 0.176 for the control class while 0.179 for the experimental class. Control class data obtained test criteria Lmax < Ltable indicates normal distribution of data or Sig. > ∝, then the data is normally distributed. Based on the data above, the value of Lmax is 0.106, meaning that Lmax < L table, Sig. 0.200 > 0.05 then, the posttest scores of students' cognitive learning outcomes are normally distributed. Then in the experimental class the test criteria were obtained, namely Lmax < Ltable, so the data was normally distributed or Sig. > ∝, then the data is normally distributed. From the data above, the value of Lmax is 0.133, meaning Lmax < Ltable, Sig. 0.200 > 0.05 then, the initial data in the form of posttest scores of students' cognitive learning outcomes are normally distributed.

Based on the results of the homogeneity test, the 49 students obtained an average value of 76.732 for the control class and 85.113 for the experimental class, the variance of the 78.310 for the control class and 90.093 for the experimental class and found Ftable 1.993 to determine that the class has a homogeneous distribution with the criteria H_0: v1 = v2 (both variances are homogeneous) and H_1 : v1≠v2 (both variances are not homogeneous). The Fhitug is known to be 1.150. So that the data obtained is Fcount = 1.150 <Ftable = 1.993 then Ho is accepted meaning that the two classes are Homogeneous.

Influence of Video Based Learning to Cognitive Learning Outcome of Student

The t test (paired sample t-test) is used to see the influence of students' cognitive learning outcomes between before and after being given a treatment. This can be seen through the difference from pretest to posttest learning outcomes. In the control class, it shows that the Lower and Upper

columns have negative values, namely -25.817 for Lower and -17.238 for Upper. Value from Sig. (2-tailed): 0.000. This shows that, Ho is rejected, which means Ha is accepted. The hypothesis test was in the form of a paired sample t-test, in the experimental class it was shown that in the Lower and Upper columns each had a negative value, namely -27.312 for Lower and -18.270 for Upper. Value from Sig. (2-tailed): 0.000. This shows that, Ho is rejected, which means Ha is accepted. It was concluded that there was a significant influence of video based learning on cognitive learning outcomes of Indonesian history material in social studies before and after the treatment was applied.

The t test (independent sample t-test) is used to determine whether there is a difference in the average of two unpaired samples, in this case the difference in cognitive learning outcomes between the application of learning using the lecture method without video learning and learning assisted by video learning. This can be seen from the difference between the posttest in the control class and the posttest in the experimental class. Based on the independent sample t-test, it is known that the sig. levene's test for equality of variances is $0.832 > 0.05$, it means that the variance of the data between the experimental class and the control class is homogeneous or the same. The difference in the mean or mean of the two groups can be seen in the mean difference column which is positive, meaning that the experimental class group has a higher average than the control class. Due sig. t calculated based on the line equal variances assumed, then obtained sig. t count of 0.002. So we get sig. t count <0.05 which means Ho is rejected and Ha is accepted. Thus, there is a significant difference in cognitive learning outcomes in learning using the lecture method without learning video media with video-assisted learning on Indonesian history material in social studies subjects.

The use of video based learning has a positive influence, especially on student learning outcomes in cognitive aspects. Cognitive aspect is the intellectual ability of students in thinking, knowing and solving problems. All efforts related to brain activity are included in the cognitive domain (Jensen et al., 2014; Wilson, 2016). Video based learning, is very helpful in the learning process because it can make students' knowledge deeper, this model is packaged to form a group where students directly interact with students through teacher guidance (Hsu et al., 2022). If there is something that is not clear, it can be conveyed immediately. Because here the teacher participates directly in the learning process even though it is online. This learning video media is also very helpful for students to easily remember the material presented by the teacher because by seeing the impressions displayed by the teacher accompanied by an interesting sound so that it does not make students bored with learning activities and it can be said that learning will feel interesting. In addition, because with group work students can discuss and issue student opinions to produce better products. In addition to discussing and practicing directly making products, students are also trained to speak in front of their classmates or in the school environment, so that the experiences students experience are increasing, in this model students not only seek information from textbook sources, but can seek information from classmates or people who are in the school area, students can also learn and gain broader knowledge with varied media, such as products made, videos, PPT, and collaboration in a group.

This video based learning media is a medium that can channel messages in the form of a summary of the material (Chotiyarnwong et al., 2021). This video based learning is included in visual media where visual media is media that displays still images. Visual media is media that involves the sense of sight (Munadi, 2013). In addition, there are two types of messages contained in visual media, namely verbal and nonverbal messages. Verbal-visual messages consist of words in written form and non-verbal-visual messages are messages conveyed into symbols. There are three characteristics of visual media, the first is visual messages that can be conveyed in the form of images, graphs, diagrams, charts and maps. The second is the distribution of nonverbal-graphic visual verbal messages delivered in the form jif books and modules, comics, magazines and journals, posters and visual boards. The third is the original object and the imitation object (model). In this case the learning video media is included in the second characteristic, namely the

distribution of verbal-nonverbal-graphic visual messages with the delivery of the message in the form of a visual board. A visual board is a board that can channel visual messages (Steele et al., 2019). This is in accordance with the video based learning, where in the media there is a summary of the material to be studied. There are many advantages that students get in the learning process by using video based learning, including: (1) having an attractive design so that it can motivate students, (2) it is a medium or means of learning while playing, (3) increasing

The willingness and attention of groups of students who use video based learning to receive subject matter is getting better (Tripodi, 2018). Students pay close attention to the video played by the teacher. Before using the video, students seemed less enthusiastic about participating in the lesson. Students seem less interested and bored because the presentation of the material is less varied. Then the use of video eliminates the boredom of students who have only heard lectures from the teacher. Presentation of material accompanied by pictures makes students feel happy to follow the lesson. Furthermore, when the teacher assigns students to make summaries and explanations of the material that has been studied, students appreciate the teacher more by doing the assignments given by the teacher. Students make notes and summaries as assigned because they think these notes will be useful for doing subsequent assignments because it is not possible for the teacher to always repeat the video base playback on the same material in class. Students have better attention to the subject matter, are enthusiastic in the learning process, and are more appreciative of the tasks of the teacher. Such an attitude ultimately causes students to more easily remember the subject matter, and better understand the learning material. Based on the above, it proves that the application of learning video media is able to improve student learning outcomes for fourth grade students in the even semester of SDN 02 Temulus Special Program. Improving student learning outcomes because students have a high enthusiasm for learning and participating in the learning process, the activity of observing video based learning , demonstrations of observations and group discussions is a good way of learning for students because in these activities students can manage their learning gains obtained through the teaching and learning process which provides wider opportunities for students to observe, classify, predict, apply, plan, and communicate (Belton, 2016).

In addition, the subject teacher as a facilitator always gives encouragement and appreciation to every student who can complete tasks well in groups and is able to answer questions in individual test. The award is like giving praise, applause and thumbs up. Because with these award students will feel more appreciated so that students always want to repeat their actions. Looking at the increase in student activity and learning outcomes in science learning that applies a process skills learning approach, it can be seen that this process skills learning approach is a very positive contribution in increasing activity in the learning process and optimal student learning outcomes and is very well used in improving the quality of learning in elementary school (Kleftodimos & Evangelidis, 2016).

The results of this study support and strengthen various previous studies, namely Elisabeth et. al, Elsani et al, Septiasih et al, Sukma et al, Yunita & Wijayanti, it can be concluded that learning video media can improve student learning outcomes (Elisabet et al., 2019; Elsani et al., 2019; Septiasih et al., 2016; Sukma et al., 2017; Yunita & Wijayanti, 2017). However, there are some differences from any previous research with this research, the current research is to improve learning outcomes by using instructional video media for fourth grade elementary school students. This study is only to measure the cognitive aspects of students through the evaluation of learning that has been done. Based on the things that have been said above, it proves that the use of video based learning can be an alternative in overcoming the learning problems in SDN 02 Temulus Special Program. Learning using video based learning can increase student activity, courage, and motivation in participating in the learning process. Video based learning are very appropriate for teachers to deliver abstract learning material to make it easier for students to understand.

CONCLUSION

The conclusions obtained from this research are: 1) the novelty of this research lies in the use of video-based learning on Indonesian history material which has a very broad scope, discussing past events that students cannot observe directly, packaged in a variety of interesting ways in the form of video-based learning supplemented with supporting pictures and appropriate stories. It was concluded that the video based learning had an effect on the cognitive learning outcomes of Indonesian historical material in social studies subjects; and 2) This research is limited to examining the effect of learning videos on Indonesian history material in elementary schools. Therefore, future researchers can examine the effect of learning videos with a wider scope.

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