

The Effect of Using Interactive Learning Videos to Improve Learning Outcomes in ICT Subjects in Computer Systems Material

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Abstrak

This study aims to determine the application of interactive learning videos to student learning outcomes in ICT learning on computer system material in class IX SMP N 18 Surakarta. the subject of this study refers to class IX H SMP N 18 Surakarta with a total of 31 students and the feasibility of using interactive learning videos. This research uses the Classroom Action Research ("CAR") method consisting of several cycles, each cycle consists of four steps, namely Planning, Implementation/ Action, Observation, and Reflection. This research learning media with interactive learning video media. Data analysis uses those obtained from the results of classroom learning research with pretest and posttest instruments. The results showed that the learning outcomes of students in cycle I average value of 56 with a percentage of student success of 48.3% increased in cycle II with an average value of 58 with a percentage of student success of 58% then in cycle III increased with an average value of 70 with a percentage of success of 70.9%. The results showed that there was an increase in the learning outcomes of students in class IX H SMP N 18 Surakarta by 22.6%. The response of students to the video interactive learning material was very enthusiastic and very good. This research contributes to learning methods for teachers so that learning becomes more interesting and can improve learning outcomes.

Keywords: Interactive Learning Video, Learning Outcomes, Computer Systems

A. Introduction

One of the factors that influence the progress of a nation is the quality of human resources in the management of science and technology in the Industrial Revolution 4.0 era. The quality of education in Indonesia must be further improved following the rapid development of the times. The learning environment is a very important learning component as a bridge in the transfer of material. The use of media in learning can have many positive impacts and benefits, and also facilitate the student learning process. (Harsiwi & Arini, 2020)

Nowadays learning is using 21st century learning, or the "information century", which can be said to be the foundation of all aspects of life. The selection of appropriate teaching and learning methods is considered very important for a teacher in the 21st century. In order for the learning material to be understood by students, the teacher must have good classroom management knowledge, which allows the teacher to determine the right method in the learning process. One thing that needs to be done in choosing the right method is to pay attention and adapt the method to the characteristics of students. (Widiyastuti et al., 2018)

The 21st century education paradigm reflects democratic education, nuanced in play, full of disclosure, challenge, responsibility, and encourages students to be fun at school, not because they are forced. The skills emphasized in the 21st century are understanding and solving problems in students' social lives by using creative and innovative thinking, critical thinking and problem-solving skills, as well as communication and group skills (Trisiana, 2020). To improve the quality of education is done by increasing the quality of learning and that can be achieved by increasing

teachers' knowledge about how to design learning methods more efficiently and attractively. (Rante et al., 2013)

Audio Visual Media "comes from three words, namely "media" which according to the “Kamus Besar Bahasa Indonesia” or the Big Indonesian Dictionary means communication tools (media). While the words "Audio and Visual" respectively mean related to hearing and can be seen with the means of sight (eyes). The word Media and audio Visual can be interpreted as a tool (media) of communication that can produce sound and images that can be heard and can be seen with the eye. Audio visual media is a way of producing or conveying material using mechanical and electronic machines, to present audio and visual messages. Learning videos are one way to improve better student learning outcomes, learning videos are learning media that are able to provide good visualization. The existence of learning videos is expected to be able to provide maximum results in relation to the delivery of material so that students easily understand the subject matter.

Interactive learning videos are expected to facilitate independent learning and improve learning outcomes (Anindya Wati, 2013). High-quality learning maximizes student learning outcomes. The students can improve their visualization skills by watching learning videos. In addition to visualizing, students can improve their listening skills and learn from the video by using the discovery learning model to facilitate the learning process. The view of teaching and learning activities is still considered to be teacher-centered in the learning process. (Rosidah et al., 2019)

Computer system material is one of the productive subjects that contains material about the basic concepts of computer systems. The material explains abstract concepts, causing difficulties for teachers and students to explain and understand the material. The use of simple presentation media has not been effective to be used as a learning support. Requires media that is able to provide a concrete picture of the material explained by the teacher so that students can easily understand the learning material. One of the materials taught is the concept of computer systems. The use of video as a learning resource is an impressive choice in learning. Learning videos are media that can make learning easier and more interesting in presentation. Learning videos can display learning messages realistically, besides that learning becomes easier for students to understand. (Winarni et al., 2021)

Based on the background and observations made by the researcher during the “Pengenalan Lapangan Persekolahan (PLP)” or School Field Introduction activities on September 20 - December 20 2022 at SMP N 18 Surakarta. At present most of the learning in schools still relies on conventional (teacher-centered) teaching methods using PPT, as well as learning that is carried out at SMP N 18 Surakarta. Learning media developers are encouraged to create media that can attract the attention and motivation of students and can be used both during classroom learning and independent learning. There are various considerations due to the limited media used to support the computer learning process, especially at SMP N 18 Surakarta. Researchers are interested in using interactive learning media in the Informatics subject of computer system material which will lead to an increase in student learning achievement. This leads to the right learning system to be used in interactive learning, this is a learning procedure that can foster students' responsiveness, mentality effectively, fundamental, and creative manner.

B. Research Methods

This research was conducted at SMP N 18 Surakarta, which is located on Jl. Translucent, RT.3/RW.32, Kadipiro, Kec. Banjarsari, Surakarta City, Central Java 57136. This research was conducted in May during the even semester of the 2022/2023 academic year.

This research is a Classroom Action Research. The research design consisted of several cycles, each cycle consisting of four steps, namely planning, implementation/action, observation, and reflection. The subjects in this study were class IX H of SMP N 18 Surakarta in the 2022/2023 academic year which consisted of 31 students.

C. Results and Discussion

Based on the background and observations made by the researcher at SMP N 18 Surakarta, currently most of the learning in schools still relies on conventional (teacher-centered) teaching methods using PPT, as well as learning that is carried out at SMP N 18 Surakarta. Learning media developers are encouraged to create media that can attract the attention and motivation of students and can be used both during classroom learning and independent learning. Due to various considerations and limitations of the media used to support the computer learning process, especially at SMP N 18 Surakarta, the researcher are interested in using interactive learning media in the Informatics subject of computer system material which will lead to an increase in student learning achievement. According to (Metayanti et al., 2022) By using interactive learning video media, for example in the learning process, the video can describe the process and encourage students to increase learning enthusiasm and student motivation to continue to see or pay attention to the learning material used. These interactive learning videos can present information, describe process, explain complex concepts, teach skills, and save time.

This assessment uses pre-test and post-test questions to determine the ability of student learning outcomes in mathematics, especially in fractional material. The pre-test questions are used to assess students' initial abilities. This classroom action research was carried out in three cycles and four stages. With each cycle consisting of one meeting, held on May 16, 2023 for cycle I; May 23, 2023 for cycle II; and May 30, 2023 for cycle III. Based on the data presented in the pre-cycle and between cycles, it can be concluded that interactive learning video media can improve learning outcomes or student achievement in the ICT subject on computer systems in class IX H SMP N 18 Surakarta in the 2022/2023 academic year. This improvement can be seen in the average value of cycle I getting 56 then there is an improvement in class average in cycle II getting 58, then improve in cycle III to 70. It can be seen that the average cycle I, II, and III increased by 16.

Cognitive learning outcomes of students in the learning process cycle I got a percentage of 51.6% of students who scored less than KKM and 48.4% of students who got KKM scores. It can be explained that in cycle I got results with details of the lowest score of 31, the highest score of 77, the average score of 56, students who got a complete score totaled 15 students and students who did not reach the KKM totaled 16 students. The results of cognitive learning cycle I can be seen in the table below :

Table 1. Table of Cycle 1 Student Learning Outcomes in Cycle 1

Information	Cycle I
Lowest score	31
Highest score	77

Average score	56
Complete	15
Not complete	16

Source: Research Data

Cognitive learning outcomes of students in the learning process cycle II got a percentage of 42% of students who scored less than KKM and 58% of students who got KKM scores. It can be explained that in cycle II the results with details of the lowest score were 18, the highest score was 80, the average score was 58, the students who got the complete score were 13 students and the students who did not reach the KKM were 18 students. Cycle II cognitive learning outcomes can be seen in the table below :

Table 2. Table of Cycle 2 Student Learning Outcomes in Cycle 2

Information	Cycle II
Lowest score	18
Highest score	80
Average score	58
Complete	18
Not complete	13

Source: Research Data

Cognitive learning outcomes of students in the learning process cycle III got a percentage of 29.1% of students who scored less than KKM and 70.9% of students who got KKM scores. It can be explained that in cycle III, the results with details of the lowest score were 33, the highest score was 90, the average score was 70, the students who got the complete score were 24 students and the students who did not reach the KKM were 7 students. The results of cognitive learning cycle III can be seen in the table below :

Table 3. Table of Cycle 3 Student Learning Outcomes in Cycle 3

Information	Cycle III
Lowest score	33
Highest score	90
Average score	70
Complete	24
Not complete	7

Source: Research Data

Based on the result of cognitive learning outcomes in cycles I, II, and III, it can be concluded that the actions taken during the learning process using interactive learning video media were successful. This can be proven by a comparison of the lowest score in cycle I to 31 and the lowest score in cycle III experienced an increase in the lowest score to 35. Then the highest score in cycle I became 77 while in cycle III the highest score increased to 90. The increase in the class average in cycle I to 56 increased in cycle III to 70. The increase in students who got a complete score in cycle I as many as 15 students experienced an increase in cycle III to 24 students, while

students who scored below the KKM decreased from cycle I which totaled 16 students to 7 students in cycle III.

Based on the cognitive learning outcomes of students who have been carried out by researchers, the cognitive learning outcomes in cycles I, II, and III have increased by 22.6% according to the achievement indicators that have been determined in the research instrument. Therefore it can be explained that the interactive instructional video media used in the learning process in cycles I, II, and III is appropriate. Students experience changes in learning motivation and are more active in the learning process provided by the teacher. In addition, students are enthusiastic about using interactive learning video media in similar learning.

D. Conclusion

Based on the results of the study it was concluded that interactive learning video media with the discovery learning model can improve achievement or learning outcomes of class IX H students of SMP N 18 Surakarta in the academic year 2022/2023 with the results namely, Cycle I obtained results with details of the lowest score 31, the highest score 77, the class average score is 54, students who get a complete score are 15 students, and students who do not reach the KKM are 16 students. Cycle II gets results with details of the lowest score 18, the highest score is 80, the class average value 58, students who got a complete score totaled 18 students, and students who did not reach the KKM totaled 13 students. Cycle III got results with details of the lowest score of 33, the highest score of 90, the class average score of 70, students who got the complete score is 24 students and students who do not reach the KKM are 7 students.

Therefore it can be concluded that the results of the student achievement score have reached an indicator of research success that is equal to 77%. So this study proves that interactive learning video media can improve achievement or learning outcomes for students in class IX H SMP N 18 Surakarta for the 2022/2023 academic year.

References

- Anindya Wati, L. (2013). Pemanfaatan Media Video Pembelajaran Untuk Meningkatkan Hasil Belajar Ips Pada Siswa Kelas Iv Sdn Babatan I/456 Surabaya. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, 1(1), 1–10.
- Harsiwi, U. B., & Arini, L. D. D. (2020). Pengaruh Pembelajaran Menggunakan Media Pembelajaran Interaktif terhadap Hasil Belajar siswa di Sekolah Dasar. *Jurnal Basicedu*, 4(4), 1104–1113. <https://doi.org/10.31004/basicedu.v4i4.505>
- Metayanti, N. K. A., Ida, B. G. S. A., & I, Wayan, S. (2022). Video Pembelajaran Interaktif Berbasis Pendekatan Kontekstual Materi Perkembangbiakan Tumbuhan Vegetatif Muatan IPA untuk Siswa Kelas VI Sekolah Dasar. *Jurnal Pendidikan Dan Konseling*, 4, 86.
- Rante, P., Sudarto, & Ihsan, N. (2013). Pengembangan multimedia pembelajaran fisika berbasis audio-video eksperimen listrik dinamis di smp. *Jurnal Pendidikan IPA Indonesia*, 2(2), 203–208. <https://doi.org/10.15294/jpii.v2i2.2724>
- Rosidah, N., Sugiaryo, S., & Trisiana, A. (2019). PENERAPAN METODE PEMBELAJARAN PROBLEM BASE LEARNING DALAM MENINGKATKAN PRESTASI BELAJAR PKn PADA SISWA KELAS X PS-2. *Jurnal Global Citizen: Jurnal Ilmiah Kajian Pendidikan Kewarganegaraan*, 8(2). <https://doi.org/10.33061/jgz.v8i2.3375>
- Trisiana, A. (2020). Penguatan Pembelajaran Pendidikan Kewarganegaraan Melalui Digitalisasi

Media Pembelajaran. *Jurnal Pendidikan Kewarganegaraan*, 10(2), 31.
<https://doi.org/10.20527/kewarganegaraan.v10i2.9304>

Widiyastuti, N., Slameto, S., & Radia, E. H. (2018). Pengembangan Media Pembelajaran Interaktif Menggunakan Software Adobe Flash Materi Bumi Dan Alam Semesta. *Perspektif Ilmu Pendidikan*, 32(1), 77–84. <https://doi.org/10.21009/pip.321.9>

Winarni, S., Kumalasari, A., Marlina, M., & Rohati, R. (2021). Efektivitas Video Pembelajaran Matematika Untuk Mendukung Kemampuan Literasi Numerasi Dan Digital Siswa. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 10(2), 574.
<https://doi.org/10.24127/ajpm.v10i2.3345>