

## THE EFFECTIVENESS OF DEVELOPING VIDEOS ON VERTEBRATES AND INVERTEBRATES AS A MEANS OF ENHANCING STUDENT LEARNING OUTCOMES

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### ABSTRACT

Education has a very important role, without education the young generation today will not be able to compete in the international world. Video is a media development that presents audio and visuals containing concepts, principles, mechanisms, theories of knowledge applications to help students' understanding towards learning materials so that the use of learning media supported by technology can improve skills and learning outcomes of students. This study was conducted at MTs Jabalnur Kandis. Biology subjects in the even semester start from May 20, 2023 until completion. This study shows that the average value of student learning outcomes before treatment for the experimental class was 56.7 in the medium category and the control class was 55.1 in the low category. After the provision of learning videos, the experimental class increased the average learning interest of the experimental class to 81.9 in the high category and the control class to 62.8. The n-Gain in the experimental class was 0.58 in the medium category, while the control class n-Gain obtained was 0.17 in the low category.

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### Introduction

The world of education today continues to develop, and various reforms continue to be carried out to improve the quality and quantity of education. Education plays an important role in improving the quality of human resources. To improve the quality of education, breakthroughs are needed in curriculum development, learning innovation, and development of educational facilities and infrastructure . (Lumintang et al., 2023) Education is defined as the main path in guiding students in determining their future. (Siwu et al., 2024) Improving the quality of human resources in the field of education is very necessary and needs to be implemented immediately. One component of human resources in the field of education is teachers. (Priadi et al., 2024) Teachers are the central point in the implementation of learning because teachers are components of education that are directly related to students. So that teachers become the mainstay of hope to realize aspects of National Education. Teachers as one of the determinants of the success of teacher education are required to be able to adapt and utilize technology in learning. (Afina et al., 2024) . Teachers must be responsible for increasing knowledge and trying to find the right way to use technology to improve the learning process. (Ningsih, 2024) . Furthermore, teachers who can create good learning

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strategies can create student interest in learning so that it has a positive impact on student success (Fadilla et al., 2023) .

Education has a very important role, without education the current young generation will not be able to compete in the international world. (Priadi et al., 2024) Realizing the world of education requires a figure who is able to be the mainstay of the educational process. In addition to requiring a figure who is able to be the mainstay of education, education also requires renewal of educational programs. The latest education program is implementing a new curriculum called the Merdeka Curriculum. The Independent Curriculum is expected to provide flexibility for educators to create quality learning according to the needs and learning environment of students .

Teachers' teaching methods and strategies must adapt due to the very rapid progress of technology and science. In today's digital era, the use of technology in teaching is becoming increasingly important. If teachers under-utilize technology or are limited to conventional teaching methods, students may miss out on opportunities to develop digital skills and information literacy, which are essential for independent learning in the 21st century. (Alonemarera, 2024) . One of the applications of technology in learning is by utilizing technological resources as learning media (Mediana et al., 2024) . Learning media is anything that can be used to convey messages from the sender to the recipient, so that it can stimulate the thoughts, feelings, attention and interest of students to learn. (Mellisa & Anthonia, 2024) . The right learning media used by teachers will make it easier to deliver more interesting and innovative learning material to students. (Kotimah, 2024) . So, there are five components related to learning media. First, as a facilitator of messages and materials in the learning process. Second , as a source of learning. Third, as a tool to motivate learning. Fourth, as an effective tool to achieve comprehensive and meaningful learning outcomes. Fifth, tools for learning and improving skills. The right cooperation of the five components can affect the success of learning to meet the expected goals (Hasan et al., 2021) . One of the media developed is the development of teaching media in the form of videos.

Video is a media development that presents audio and visuals containing concepts, principles, mechanisms, theories of knowledge applications to help students' understanding towards learning materials so that the use of learning media supported by technology can improve skills and learning outcomes of students. (Sari et al 2023) Video-based learning has the advantage of its audio-visual nature and can be repeated until students understand the learning concept according to learning objectives (Anggriani et al., 2022) . Some examples of audio-visual media include; films, videos, television programs and others. Video is an audio-visual media that displays movement. (Tiwi & Mellisa, 2023) . Furthermore, the use of audio-visual media in the learning process, this media has advantages. and weaknesses, namely: 1) Video adds a new dimension to learning, videos present moving images to students in addition to accompanying sound. 2) Videos can display a phenomenon that is difficult to see in real life. The weaknesses are as follows: 1) Opposition, inappropriate shooting can cause doubts among viewers in interpreting the images they see. 2) Supporting Materials, videos require projection equipment to be able to display the images in them. (Setiati et al., 2021) . In addition, learning media in the form of videos can simplify complex materials so that they are easy to understand in the learning process, especially in science learning, namely about the Diversity of Living Creatures of Vertebrates and Invertebrates.

Based on the results of the initial observations conducted by the researcher at MTs Jabalnur Kandis School, the researcher obtained information through an interview process with one of the grade VII Science teachers using the independent curriculum and observations of the learning process in the classroom. In the observations conducted by the researcher,

there were obstacles when science learning was implemented, namely the media used by teachers in the learning process in the classroom was the teacher's textbook. Teachers still tend to convey material verbally using the lecture method and still do not utilize learning media, due to the limited ability of teachers to develop learning media. Based on the results of these observations, the researcher tried to develop media that can be used by teachers in the learning process, namely by using learning video media.

## Method

This type of research uses the "Research and Development" (R&D) method, the ADDIE development model is based on five stages. Namely (1) analyze, In this stage, the main activity is to analyze the need for the development of teaching media in learning objectives (Sukariasih et al., 2020) Activities carried out in this phase are needs analysis, curriculum analysis, learning material analysis, student characteristics analysis, pedagogical analysis and technology analysis (2) design stage (design) This stage is known as making a product design. In this stage, a user interface from the product design will be produced. (Purnamasari, 2020). The activities carried out in this phase are designing media drafts, compiling instruments such as device designs (RPP, Syllabus ), validation sheets, pretest and posttest questions (3) development, containing product design realization activities. In the previous stage, the design that had been prepared was realized into a product that was ready to be implemented. Activities carried out in this phase are validity testing, practicality testing, and student response testing. (4) implementation (implementation) based on the application of supporting materials to convey the level of effectiveness and efficiency of learning (Rosdianto, et al., 2019). Activities carried out in this phase are field trials. and (5) evaluation stage (evaluation). the process carried out to provide value to the development of learning videos. (Cahyadi, 2019). The activities carried out in this phase are evaluation of achievement based on implementation results.

This type of research is *quasi-experimental research*. Quasi -experimental research aims to investigate cause and effect relationships or find out the cause of an event. Based on the research problem, namely to determine the influence of learning interest and student learning outcomes.

**Table 1. Class And Treatment**

Class	Pretest	Treatment	Posttest
Experiment	M0Y0	X	M1Y1
Control	M2Y2	-	M3Y3

*Source: Amelia, 2022*

Information :

M0 : Interest after treatment

X : Treatment with video media

Y0 : *Pretest* (before being given treatment)

M1 : Interest before treatment

Y1 : *Posttest* (after treatment)

M2 : Interest after treatment

Y2 : *Pretest* (before being given treatment)

M3 : Interest before treatment

Y3 : *Posttest* (after treatment)

The types of data in this study consist of primary data and secondary data. Primary data includes data obtained directly from data sources, namely validation data, student questionnaires, and trial data (implementation). While secondary data is supporting data from research data obtained from other relevant sources. Instruments are the means used in research such as a set of tests that used to collect data as processing material (Sari, 2021)

## Results And Discussion

Data collection of pretest and student test results was carried out in both control classes. as well as in experimental classes. In the experimental class, the treatment was in the form of implementing learning videos and in the control class, the treatment was in the form of conventional learning. Presented in Table 2 below:

**Table 2. Average Percentage of Students' Interest in Learning**

Class	Average Percentage of Learning Interest (%)				N-Gain Index and categories	
	Before Treatment (Pretest)	Category	After Treatment (Posts)	Category	n-Gain Index	Category
Experiment	56.7	Currently	81.9	Tall	0.58	Currently
Control	55.1	Low	62.8	Currently	0.17	Low

The table above shows that the average value of student learning outcomes before treatment for the experimental class was 56.7 in the medium category and the control class was 55.1 in the low category. After the experimental class learning video was given , there was an increase in the average learning interest of the experimental class of 81.9 in the high category and the control class of 62.8. The n-Gain in the experimental class was 0.58 in the medium category, while the control class n-Gain obtained was 0.17 in the low category.

Thus, this means that the experimental class that was given treatment experienced a higher increase than the control class that was not given treatment. This happens because learning media allows us to concretize abstract concepts, and also makes it easier to simplify complex things (Mardianti et al., 2021). In addition, learning videos can be used as an effective means to facilitate student understanding, improve learning outcomes, and achieve learning goals better.

During treatment using learning video products In the experimental class, students were very enthusiastic about the new teaching media to watch and read. So that it increases student learning outcomes higher compared to control classes that do not use video learning media, This section resulted in increased learning outcomes in the experimental class and they really liked the product that had been developed. The advantages of learning videos This can be seen when compared with textbooks in general, digital books are superior in terms of practicality and usefulness. In addition, the advantage of learning videos is that they make it easier for students to understand more deeply about the material presented in the video. Learning videos are expected to be a learning medium that can increase the effectiveness of student learning, one of the uses of videos is as a supplement to teaching materials. One of the factors that can influence the improvement of learning outcomes is learning media. Yakin (2021) In line with research (Kurnia *et al* 2021) stated that video learning media has several benefits, including that learning media can increase and direct children's attention so that it can generate interest in learning.

## Conclusion

Based on the results of the research analysis and discussion, it can be concluded that there is a comparison of critical thinking values in each indicator. The average critical thinking ability of students in the control and experimental classes in the pretest scores is not much different, but a significant difference is seen in students' critical thinking abilities in the posttest scores. In the posttest score, the critical thinking ability of students in the experimental class is classified as moderate compared to the control class. This is because in the experimental class, in learning activities using interactive media based on Adobe Flash so that students are able to explore their knowledge and train their critical thinking skills through questions presented on interactive Adobe Flash media. While in the control class, it does not use media as the main teaching media.

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