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EFFECTIVENESS OF VIDEO TUTORIALS IN IMPROVING STUDENTS' UNDERSTANDING IN INFORMATICS LEARNING AT SENIOR HIGH SCHOOL 1 PAGARAN TAPAH DARUSSALAM

Zainul Arifin[1], Sri Wahyudi[2]
[1]Universitas Rokania
Email Correspondence: zainul69@gmail.com

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Abstract

This study aims to test the effectiveness of video tutorials in improving students' understanding of Informatics learning at SMA N 1 Pagaran Tapah Darussalam. This study uses a Quasi-Experimental method with a Pretest-Posttest control group design, the results of the study showed that the experimental class using video tutorials experienced a significant increase in learning outcomes with an N-gain value of 0.74 (high category), compared to the control class with the lecture method which obtained an N-Gain of 0.43 (moderate category). Observations showed that the implementation of learning was very good with an average of 92.06%, and students' responses to video tutorials were also positive with good assessments. In conclusion, video tutorials have proven to be more effective in improving students' understanding, providing learning flexibility, and increasing student involvement, so it is recommended to be applied in Informatics learning.

Keywords: ***Video Tutorial, Learning Effectiveness, Informatics Education***

A. INTRODUCTION

Informatics learning at the senior high school level often faces challenges in conveying abstract and complex concepts, such as programming and data processing. Conventional learning methods, such as lectures and discussions, tend to be less effective in helping students understand technical materials.(Febrianti et al., 2023). Lack of interactive learning mediacapablevisualize the stepsproceduremakes it difficult for students to connect theory with practice(Sediyaningsih, 2018). As a result, students' understanding of the material becomes limited, which results in low learning outcomes.(Septi et al., 2024).

As one solution, video tutorial media is increasingly used to improve student understanding. Video tutorials present step-by-step explanations visually and audibly, allowing students to understand the material more deeply.(Husein Batubara et al., 2020). This media provides flexibility for students to access materials.Whatonly and repeat it as needed, thus overcoming the limitations of learning time.in the classroom (Haryadi et al., 2023). Previous studies have shown that video tutorials not only improve students' understanding, but also their interest in learning, due to their interactive and accessible nature.(Septi et al., 2024).

Observation results at SMA Negeri 1 Pagaran Tapah Darussalam revealed that students still have difficulty in understanding Informatics subjects. The limited effectiveness of conventional learning methods and the minimal use of technology-based learning media worsen the situation. In this context, the use of video tutorials in learning is expected to bridgegapbetween theory and practice in Informatics learning. Video tutorials allow students to learn independently and repeat difficult parts without having to rely on teachers.(Husein Batubara et al., 2020).

This study aims to examine the effectiveness of using video tutorials in improving students' understanding of Informatics subjects. This study has new value with a focus on the application of video tutorial technology to overcome Informatics learning problems in high school. In addition, this study is expected to provide theoretical contributions to the development of multimedia-based learning, as well as practical benefits for teachers and students in improving the quality of learning.

B. RESEARCH METHODS

This study uses a Quasi-Experimental method with a Pretest-Posttest control group to test the effectiveness of using video tutorials in Informatics learning, the study was conducted at SMA N 1 Pagaran

Tapah Darussalam in the odd semester of the 2024/2025 academic year, involving two classes XI as samples. The sample selection was carried out purposively based on the equality of students' academic abilities in both classes.

Table 1. Control Group Posttest Design

Group	*Pretest*	Treatment	*Posttest*
A	T1	XI one	T2
B	T1	XI two	T2

Information:
(A) Experimental Class, (B) Control Class, (XI One) Conventional Learning with lectures, (XI Two) Learning with Video Tutorials, (T1) Pretest, (T2) Posttest.

The experimental class consisted of 26 students who studied using video tutorials, while the control class consisted of 26 students who studied using the lecture method. Before the treatment, a Pretest was conducted to measure students' initial understanding of the material. The treatment in the form of learning with video tutorials was given to the experimental class, while the control class received conventional learning. After the treatment, both groups were given a Posttest to measure learning outcomes.

The research instruments include: (1) Pretest and Posttest, in the form of multiple choice questions to measure student learning outcomes before and after treatment. (2) observation sheets, to assess student involvement during the learning process. And (3) questionnaires, to collect data on student perceptions of the use of video tutorials.

The research instrument has been validated by experts to ensure its accuracy and relevance. The t-test was used to compare learning outcomes between the control and experimental classes. The increase in student learning outcomes was calculated using the N-Gain value to determine the level of effectiveness of the treatment. Analysis of non-test data, including observation and questionnaire results, was conducted descriptively to provide an overview of student engagement and their perceptions of the learning method.

C. RESULTS AND DISCUSSION

This section presents the results of the study which include the results of the Pretest and Posttest tests, analysis of observation sheets, and student responses to learning using video tutorials. Furthermore, these results will be discussed by referring to previous theories and research to provide a deeper understanding of the effectiveness of using video tutorials in improving student learning outcomes.

The research results consist of three main parts, namely the results of the Pretest and Posttest, analysis of the observation sheet, and the results of the questionnaire measuring students' perceptions of learning using video tutorials.

1. Pretest and Posttest test results

   Test*Pretest* and Posttest is conducted to measure the initial and final abilities of students in understanding the learning material. The results of the comparison of the average scores*Pretest* and Posttestin class experimentand controldisplayedin table 2 below.

Table 2. Average Results of Pretest and Posttest

class	result (T1)	result (T2)	N-Gain	Effectiveness Category
experiment	65.20	85.70	0.74	Tall
control	64.80	76.40	0.43	Currently

The results of the Pretest and Posttest showed that the experimental class using video tutorials experienced a significant increase in learning outcomes with high effectiveness. In contrast, the control class using the lecture method showed a lower increase with moderate effectiveness. This shows that video tutorial-based learning methods are more effective than lectures.

2. Learning Implementation Observation Analysis

Resultsobservation implementationlearning shows consistency in previously designed achievement indicators. Each meeting is measured based on a series of parameters to determine the level of implementation systematically andstructured.

Table 3. Results of Observations on Learning Implementation.

Meeting	Total Score	PercentageImplementation
1st	21	100.00%
2nd	20	95.24%
The 3rd	19	90.48%
4th	19	90.48%
The 5th	19	90.48%
The 6th	18	85.71%
Average Implementation		**92.06%**
Category		**Very good**

Based on the average observation results, the implementation of learning is in the very good category. This reflects that the learning process is in accordance with the planning and is able to achievetargetas expected, this evaluationgivepositive picture of the implementation of the applied learning strategies.

3. Results of the student response questionnaire regarding learning using video tutorials.

Based on the results of the response questionnaire given to students, the following table presents data on the results of responses to the practicality of using video tutorials.

Table 1. Student response questionnaire results

Number of Respondents	Average	Practicality Category
26 Respondents	66.65	Good

Based on the data presented, it can be concluded that the majority of students gave a positive assessment of the practicality of learning using video tutorials, with an average in the good category. This shows that the video tutorials used have met the criteria for adequate practicality according to student perceptions.

The results of the study indicate that the use of video tutorials has a significant impact on improving students' understanding in Informatics learning. This finding is relevant to the theory underlying the effectiveness of video tutorial-based learning media. The results of the Pretest and Posttest showed an increase in the N-Gain value of 0.74 which is included in the high category, compared to the control class which achieved an N-Gain of 0.43, a medium category. This finding supports previous research conducted byHusein Batubara et al (2020), which states that video tutorials can improve students' understanding through visual and systematic presentation of materials. This significant increase shows that video tutorials are not only effective as a learning medium but also allow students to study the material independently and repeatedly, thus overcoming time constraints in class.

Analysis of observation results shows that the average implementation of learning reaches 92.06% with a very good category. This high implementation reflects that the video tutorial-based learning method can be applied consistently and supports the achievement of learning indicators that have been designed. This finding is consistent with researchHasan & Larumbia (2021),which states that learning using video tutorials can increase the effectiveness of the learning process due to higher student involvement. In addition, the video-based learning structure allows teachers to focus more on supervision and additional guidance.

Based on the questionnaire given, the average student response to the use of video tutorials is in the good category with an average value of 66.65. This shows that students feel the benefits and practicality of this learning media. Positive student opinions are in line with the results of the studyKharysma et al (2021), which shows that video tutorials are able to increase learning motivation due to their interactive and flexible nature. In addition,First

Love (2014)emphasized that audio-visual media, such as videos, can make it easier for students to understand abstract concepts through in-depth visual explanations.

This finding also supports research bySepti et al (2024), money states that video media not only improves students' understanding but also their interest and independence in learning. Thus, the results of this study confirm that video tutorials are effective and feasible learning media, especially in Informatics subjects that require an understanding of technical materials.Overall, the results of this study not only confirm the effectiveness of video tutorials as a learning medium but also highlight its potential in increasing student engagement, learning flexibility, and student independence. This success can be used as a guideline for teachers in designing more innovative and technology-based learning.

D. CONCLUSION

This study concludes that the use of video tutorials significantly improves students' understanding in Informatics learning at SMA N 1 Pagaran Tapah Darussalam. The results of the Pretest and Posttest showed that the experimental class using video tutorials obtained an N-Gain of 0.74 which is included in the high category, while the control class using the lecture method obtained an N-Gain value of 0.43 which is included in the moderate category. This indicates that video tutorials are more effective than lecture methods in improving students' understanding.

The results of the observation of the implementation of learning also showed that the learning process with video tutorials went very well, with an average implementation reaching 92.06%. This process shows that the use of video tutorial media not only increases student involvement in learning but also supports the achievement of learning indicators that have been designed. In addition, the results of the questionnaire showed that students gave a positive response to the practicality of video tutorials, with an average of 66.65 which is in the good category, which confirms that this media is easy to use and relevant for learning.

Based on the results of this study, it is recommended that teachers make greater use of video tutorials as a learning medium, especially for materials that require visual and technical explanations of steps. Further research can be conducted to explore the impact of video tutorials on other aspects, such as learning motivation, practical skills, and learning effectiveness in various subjects. By optimally utilizing video tutorials, it is hoped that the quality of learning can be improved in accordance with the demands of the development of educational technology.

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