The Use of Interactive Learning Video Amat Cantik to Enhance Pisa Based Cognitive Learning Outcomes and Science Literacy Skills of Grade VIII Students

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Abstract: The Use of Interactive Learning Video *Amat Cantik* to Enhance PISA Based Cognitive Learning Outcomes and Science Literacy Skills of Grade VIII Students at UPTD SMPN 5 Camplong. Thesis. Master's Program in Educational Technology, Faculty of Education, Universitas Dr. Soetomo. Supervisors: (I) Dr. Edy Widayat, M.Sc., (II) Dr. Nuril Huda, M.PdI. This research employs a quantitative approach with a quasi-experimental design, where the research sample is not selected randomly. Data collection is conducted through pre-tests and post-tests. The study is conducted in the experimental class, which receives treatment through the use of Interactive Learning Video *Amat Cantik*, compared to the control class using conventional learning media (images). The research results are analyzed using a T-paired test with a significance value below 0.05, indicating a difference between the class using the Interactive Learning Video *Amat Cantik* and the class using conventional media (images).

Introduction

UPTD SMPN 5 Camplong is one of the educational units at the junior high school (SMP) level located in Anggersek village, Camplong District, Sampang Regency, East Java Province. One of the objectives of UPTD SMPN 5 Camplong is to achieve a 100% grade passing rate after the learning process is completed. This can be achieved if the students meet the grade passing criteria, one of which is that none of their report card grades fall below the Minimum Criteria of Mastery Learning (*Kriteria Ketuntasan Minimal/KKM*). These learning grades represent cognitive learning outcomes.

Starting from the year 2021, National Assessment has been implemented in schools across Indonesia. This National Assessment involves evaluation activities administered by the central government through a sampling method. One of the components of students' learning outcomes assessed in this national assessment is reading literacy and numeracy. This assessment is also referred to as the Minimum Competence Assessment (*Asesmen Kompetensi Minimum/AKM*). The aim of this evaluation is to measure the fundamental or minimum competencies that students need in order to live productively in society in the future.

UPTD SMPN 5 Camplong operates under the Ministry of Education and Culture. According to the basic education data of UPTD SMPN 5 Camplong for the academic year 2021/2022, there are a total of 137 students enrolled, consisting of 45 students in 7th grade, 44 students in 8th grade, and 48 students in 9th grade. The parents of these students are all engaged in farming, accounting for 100% of the parent backgrounds, and 100% of them have completed only elementary school or its equivalent. Given this background, it significantly influences the community's mindset. The lack of parental attention to their children's education profoundly affects the students' learning motivation at UPTD SMPN 5 Camplong. Most of the students do not exhibit an internal motivation to study at home; they only review lesson materials or occasionally familiarize themselves with upcoming lessons. This type of learning motivation impacts their learning outcomes negatively. Furthermore, the students' limited enthusiasm for learning also affects their low literacy ability to engage with their surrounding knowledge, whether in written form or others.

The low learning outcomes are evident from the results of the Science subject for the academic year 2021/2022. The average report card grade for 8th grade students in the first semester was 66.7, and the average for the second semester was 66.9. These averages fall below the subject's KKM of 70.00. The students' limited literacy skills are evident from the Education Report of UPTD SMPN 5 Camplong in 2021, which indicates that the students' literacy proficiency remains below the average for the Sampang Regency (Source: raporpendidikan/kemdikbud.go.id).

To address these challenges, teachers, as education agents, are required to be creative in their lesson planning, offering solutions for poor learning motivation that occurs while students are at home. Teaching planning can provide solutions for creating creative learning experiences, whether through instructional models, teaching methods, or instructional media. The variety of instructional media to be used is also quite extensive. According to Dr. Mustaji (2016:13), instructional media can be classified based on the use of presentation tools, their complexity, their connection to computers, as well as their audio, visual, and audio-visual aspects. Each type of media has its own advantages and limitations.

The students enrolled in UPTD SMPN 5 Camplong are graduates of primary schools within the vicinity, specifically SDN Anggersek 1. Based on the observations and interviews conducted by the researcher with the primary school teachers in the surrounding area of UPTD SMPN 5 Camplong, it has been found that they have not utilized audio-visual media, referred to as instructional videos, in their teaching processes. This situation arises from the lack of adequate resources and the teachers' limited ability to operate such technology.

Since instructional videos are a new concept for the students at UPTD SMPN 5 Camplong, the initial observations conducted by the researcher during several teaching sessions that utilized instructional videos showed that students displayed enthusiasm for learning. This enthusiasm from the students is expected to potentially alter their learning motivation, ultimately leading to improved learning outcomes and enhanced literacy skills. As a result of this positive response, the researcher is inclined to use instructional video media as a medium for this research.

Similar research has been conducted by R. Ery Ana Awang with the study titled *The Influence of Video Learning Media on Social Studies Learning Outcomes of 5th grade Elementary School Students in Ngaliyan Sub-district, Semarang City*, as well as by Akhmad Busyaeri and colleagues with the study titled *The Impact of Using Video Learning on Enhancing Science Learning Outcomes in Min Kroya, Cirebon*.

Based on the provided background, the researcher intends to conduct a study with the title *The Use of Interactive Learning Video Amat Cantik to Enhance PISA Based Cognitive Learning Outcomes and Science Literacy Skills of Grade VIII Students at UPTD SMPN 5 Camplong*.

Research Method

This study employs an experimental research design. According to Sugiyono (2011), experimental research method is used to elucidate the relationship between a specific treatment and other variables under controlled conditions. In this research, the researcher compares a single variable with two distinct subjects.

In this study, the researcher employs a Quasi-Experimental Design. Research using a quasi-experimental design aims to identify differences between two or more variables within the research subject groups (Sugiyono, 2011). This design can be illustrated as follows::

Tabel 1. Quasi-Experimental Design

Group	Pre test	Treatment	Post test
Experiment	Pr1	X	Po1
Control	Pr2	-	Po2

(Source: Sugiyono, 2011)

Explanation:

Pr1 & Pr2: Groups that receive pre-tests.

Po1: Group that receives post-test after treatment.

Po2: Group that receives post-test without treatment.

X: Experimental group that receives treatment.

-: Control group that does not receive treatment.

The population in this study consists of all Grade VIII students of SMPN 5 Camplong in Camplong District, Sampang Regency, for the academic year 2022/2023. According to Sugiyono (Metode Penelitian Kuantitatif, Kualitatif dan R&D, 2011) a sample is a subset of the total number and characteristics possessed by the population. The sampling technique employed in this research is non-random, where the researcher directly selects the classes to be designated as the experimental group and the control group. The data collection technique in this research involves using pre-test and post-test sheets that have been previously validated.

Research Results And Discussion

In the first session, the students were administered a pre-test. The teacher then prepared the students for the learning session, encouraging them to be ready for the upcoming lesson. The teacher prompted the students to answer questions about how the body breathes and the purpose of breathing. Subsequently, the class was divided into groups. All groups were then instructed to observe the interactive learning video *Amat Cantik*.

The instructional model used in this study was Problem-Based Learning (PBL). In this model, each student within their respective groups observed the video and followed the steps outlined in the video until its completion. Subsequently, the students engaged in group discussions to work on the worksheets prepared by the teacher. After the discussions, each group presented their findings to the class. This activity was repeated until the third session,

covering the completion of one topic about the respiratory system. Once the content of a topic was completed, a post-test was conducted by the teacher.

The results of the T-test to measure cognitive learning outcomes indicate a significant improvement between the pre-test and post-test in the experimental class, showing an increase of 7.00. Meanwhile, the science literacy skills exhibited an average pre-test result of 50.00% and a post-test result of 76.70%. The T-test results show a significant average difference of 26.70%.

These findings indicate that the use of interactive learning videos can enhance cognitive learning outcomes and science literacy skills for Grade VIII students at SMP Negeri 5 Camplong.

In the first session, the students were administered a pre-test. The teacher then prepared the students for the learning session, encouraging them to be ready for the upcoming lesson. The teacher prompted the students to answer questions about how the body breathes and the purpose of breathing. Subsequently, the class was divided into groups. All groups were then instructed to observe the media provided by the teacher. In this class, the media used was visual images.

The instructional model used in this study is Problem-Based Learning (PBL). In this model, each student within their respective groups observed visual images and subsequently engaged in group discussions to work on the worksheets prepared by the teacher. After the discussions, each group presented their findings to the class. This activity was repeated until the third session, covering the completion of one topic about the respiratory system. Once the content of a topic was completed, a post-test was conducted by the teacher.

The T-test results to measure cognitive learning outcomes indicate that there is also an improvement between the pre-test and post-test in the control class, showing an increase of 4.4. Meanwhile, the science literacy skills exhibited an average pre-test result of 50.57% and a post-test result of 60.23%. The T-test results show a slight average difference of 0.26%. These findings suggest that the use of conventional media can also enhance cognitive learning outcomes and science literacy skills for Grade VIII students at SMP Negeri 5 Camplong.

Based on the post-test t-test results, it is known that the average learning outcomes for the experimental class are 16.09, while the average learning outcomes for the control class are 13.45. Consequently, it can be concluded that the average learning outcomes for the experimental class are 2.64 higher than those of the control class. From the table, the calculated t-value is 5.043 with a significance level of 0.000. The obtained t-table value for 63 degrees of freedom at a significance level of 5% is 1.998. Therefore, the calculated t_{count} is greater than the t_{table} value (5.043 > 1.998), and the significance value (p = 0.000) is less than 0.05. It can be concluded that there is a significant difference in learning outcomes scores between the experimental and control classes.

Hypothesis testing using independent sample t-test revealed that the average increase in the experimental group is 2.79, whereas the increase in the control group is 0.81. Consequently, it's evident that the increase in learning outcome scores in the experimental group is 1.98 greater than that of the control group. Additionally, the calculated t_{count} is 8.270 with a significance level of 0.000. The t_{table} value for 63 degrees of freedom is 1.998. Therefore, it can be concluded that t_{table} value > t_{count} value (8.270 > 1.998), and the significance value (p=0.000<0.05). This leads to the conclusion that there is a significant difference in the increase of learning outcome scores between the experimental and control groups. There is a significant difference between the experimental and control groups in terms of improving science literacy skills, with a difference of 26.44%. Although both groups

showed an increase in science literacy skills, the experimental group using video learning media demonstrated a larger improvement compared to the control group using conventional media.

Based on the above analysis, it has been demonstrated that there is a significant difference between interactive video learning media and conventional media in enhancing learning outcomes and literacy skills for Grade VIII students in science education at SMP Negeri 5 Camplong. The reason interactive video learning media shows higher averages and improvements compared to conventional media is due to its ability to guide students through step-by-step instructions in the video, offering a valuable learning experience.

Conclusion

Based on the results discussed in this thesis research, the following conclusions can be drawn: **1)** There is a difference in cognitive learning outcomes between the class using the interactive learning video *Amat Cantik* and the class using conventional media for the topic of the Respiratory System in Grade VIII at UPTD SMPN 5 Camplong. **2)** There is a difference in science literacy skills between the class using the interactive learning video *Amat Cantik* and the class using conventional media for the topic of the Respiratory System in Grade VIII at UPTD SMPN 5 Camplong.

Suggestions

Based on the research findings and discussions, there are several recommendations that the researcher proposes, as follows:
1. There is a need for the implementation of various learning media that can enhance cognitive learning outcomes and science literacy skills.
2. Students should be accustomed to receiving questions that can help improve their science literacy skills.
3. For future researchers, further studies are recommended to enhance cognitive learning outcomes and science literacy skills.

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