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THE EFFECT OF COOPERATIVE LEARNING MODEL OF DISCOVERY LEARNING ASSISTED WITH VIDEO LEARNING ON STUDENTS' CRITICAL THINKING ABILITY

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Abstract

This study aims to determine whether there is a significant effect of the use of video-assisted Discovery Learning (DL) learning models on students' critical thinking skills in introductory education courses. after being delivered the Discovery Learning model assisted by learning videos. This research is a quasi-experimental research with the non equivalent control group design. The population in this study were PGSD students in semester 1 of Triatma Mulya University for the 2022/2023 academic year. Samples were taken using a random sampling technique, namely class A as the control class and class B as the experimental class. Data analysis In this study, the t-test was used which was analyzed using SPSS version 16. The instruments in this study were observation sheets and pre-test post-test questions. The results showed that: (1) Video-assisted Discovery Learning (DL) model There is a significant influence in introductory education courses using video-assisted Discovery Learning (DL) models. This can be seen from the results of the Independentsample T-test which show the Sig. (2-tailed) Less than 0.05 ie $0.000 < 0.05$.

Keywords: discovery learning, learning videos, critical thinking

Abstrak

Penelitian ini bertujuan untuk mengetahui adanya pengaruh yang signifikan penggunaan model pembelajaran *Discovery Learning* (DL) berbantuan video pembelajaran terhadap kemampuan berpikir kritis mahasiswa pada mata kuliah pengantar Pendidikan. setelah disampaikan model *Discovery Learning* berbantuan video pembelajaran. Penelitian ini merupakan penelitian eksperimen semu (*quasi experimental*) dengan *desain the non equivalent control grup design*. Populasi dalam penelitian ini adalah mahasiswa PGSD semester 1 universitas Triatma Mulya tahun akademik 2022/2023. Sampel diambil dengan menggunakan teknik random sampling yaitu kelas A sebagai kelas kontrol dan kelas B sebagai kelas eksperimen. analisis data Dalam penelitian ini menggunakan uji-t yang dianalisis menggunakan spss versi 16. Instrument dalam penelitian ini berupa lembar observasi dan soal pre-test post-test. Hasil penelitian menunjukkan bahwa Model *Discovery Learning* (DL) berbantuan video pembelajaran Terdapat pengaruh yang signifikan dalam matakuliah pengantar Pendidikan menggunakan model *Discovery Learning* (DL) berbantuan video pembelajaran. Hal Ini Terlihat Dari Hasil Uji *Independent sample T-test* Yang Menunjukkan Nilai Sig. (2-tailed) Kurang Dari 0,05 yaitu $0,000 < 0,05$.

Kata Kunci: *Discovery Learning*, video pembelajaran, berpikir kritis



INTRODUCTION

One key tool for enhancing the general caliber of human resources and guaranteeing the long-term viability of a country's development is education. According to (Adnyani et al., 2020), education is the action of a person who helps children grow and develop to their fullest potential so they can be independent and responsible. Humans and education go hand in hand because of their interdependence. Education has a crucial role in maintaining human life. Humans are born with the mind and intellect necessary to function in the world, and through education, they can broaden their knowledge and cultivate their minds (Putri et al., 2018)

The Introduction to Education course is one of the courses offered by the department of elementary school teacher preparation. According to (Wahyuni & Prasetyo, 2022), education is a science that investigates how to understand education, educational sciences, as well as the components of education. The first semester of the Elementary School Teacher Education program at Triatma Mulya University is required to complete the subject Introduction to Education. Students who enroll in the Introduction to Education course must possess critical thinking abilities. This ability is anticipated to be obtained through learning outcomes in accordance with the current education and learning system.

Critical thinking is one of the fundamental abilities that students should have, especially in the twenty-first century. Therefore, critical thinking skills should be given priority in classroom instruction so that learning involves not only grasping the subject matter but also critically evaluating every pertinent component of it. A person uses critical thinking as a mental activity to decide how to solve problems in numerous ways using data gathered from diverse sources (Ratnaningtyas, 2016). By seeing how a person approaches and resolves a problem, one can gauge a person's capacity for critical thought (Hidayat et al., 2022). According to (Setyawan & Kristanti, 2021), critical thinking is a high-level thought process that is used to create decisions based on problem analysis, problem recognition, problem solving, conclusion, and evaluation of the problem.

Based on the findings of observations made in classes A and B of the Elementary School Teacher Education Program at Triatma Mulya University, it can be seen how the Introduction to Education course is applied in daily life. Students weren't using their critical thinking abilities when replying to group conversations between teachers and students, it was discovered. Additionally, the pupils' learning outcomes were poor, with the majority of their scores falling below the cutoff for passing. The program has an agreed-upon minimum passing score of 85. This is a result of the students' passive learning style and a lack of comprehension of the course's foundational ideas. The accuracy of the teaching model employed by instructors during instructional activities is essential to the success of the Introduction to Education programme at Triatma Mulya University. The Discovery Learning approach of instruction is one that is thought to aid and encourage students in becoming more active and process-oriented. Students who use Discovery Learning will be better able to remember information because they find the solutions on their own (Faan et al., 2021). The focus of classroom instruction should be on offering hands-on learning opportunities through the application and growth of scientific method skills and attitudes, which are crucial components of life skills.



A teaching strategy that places an emphasis on student engagement in learning is called discovery learning, commonly referred to as the discovery-based learning model. Activities in discovery learning are created in a way that allows students to understand ideas and principles on their own. In order to find certain concepts or principles, students observe, categorize, form hypotheses, explain, draw conclusions, and so on (Kanaah & Mardiani, 2022).

Technology-based learning media in the form of instructional films is one engaging learning tool that may be used. Videos are considered audio-visual media since they include direct-observable sound, visuals, or animations. Videos provide several benefits, including the capacity to be reviewed again if necessary to develop and clarify students' ideas, as well as the ability to spark interest in and enthusiasm for physics learning. Videos in science classes provide students the chance to collaborate in groups. Following that, students can interact with one another to explore occurrences and clarify the concepts being taught. According to Jeffi Harkina's (2015) research, the Discovery Learning model, when used in conjunction with instructional videos, is more useful and successful at enhancing students' capacity for learning (Keguruan et al., 2021)

There are various benefits to using the Discovery Learning approach along with video learning materials. In order to have a greater impact on their activities and learning outcomes, it can help students reach their intellectual potential, discover knowledge on their own, solve issues, gather and analyze information independently, and increase their memory. Based on the aforementioned context, the research question is whether using the Discovery Learning model with video learning in the Elementary School Teacher Education program at K. Jembrana Triatma Mulya University's Introduction to Education course has a significant impact on students' critical thinking skills.

METHOD

In this study, a control group with a pretest-posttest setup was used in a quasi-experimental research design. Students from Universitas Triatma Mulya make up the population and sample for this study. Although this design includes a control group, it is not completely effective in controlling outside factors that impact the experiment (Artawan et al., 2020). In this study, there are two groups: one getting therapy X (the experiment), and the other acting as the control group. The following figure shows the research design diagram.

Table 1 Pretest-posttest control group design research.

Pretest	Perlakuan	posttest
O ₁	X ₁	O ₂
O ₃	X ₂	O ₄

- O1: Pretest score in the experimental class (before to treatment).
- O2: Posttest result in the experimental class following treatment.
- O3: Pretest score in the control class (before to treatment).
- O4: The posttest result for the control group following treatment.



X1: The experimental class is given a learning task that uses the Discovery Learning approach and is supported by video learning.

X2: The control class is subjected to a learning activity that uses the discovery learning model.

In the Introduction to Education course at Universitas Triatma Mulya, PGSD students were tested to see how much the Discovery Learning approach and video learning materials impacted their capacity for critical thought. Class B PGSD Semester 1 served as the control group while Class A PGSD Semester 1 served as the experimental group. The use of the Discovery Learning model with video learning media to the experimental group, as opposed to the Discovery Learning model alone for the control group, was the difference in treatment between the two courses

The information gathered for this study was obtained through the use of pretest-posttest exams, observations of learning implementation, and questions designed to test students' critical thinking skills. In order to gauge students' starting skills prior to treatment, a pretest was administered. After that, a posttest was used as the final assessment to gauge how much the students' learning outcomes, particularly their capacity for critical thought, had improved as a result of the treatment. The observation method is a way of gathering data that involves having observers watch as the Semester Implementation Plan (RPS) is carried out. Independent sample t-test using SPSS version 16 is the data analysis method employed to address the study challenge. First, the Shapiro-Wilk test is used with SPSS version 16 to determine the normality of the data. The homogeneity of the two samples is assessed using a homogeneity test using SPSS version 16 after the data's normality has been established. When it is established that the data are normal and homogenous, the independent sample t-test in SPSS version 16 is used to test the hypothesis.

An ongoing statistical hypothesis test is discussed in this line. The question being investigated is whether or not using the Discovery Learning teaching methodology has a substantial impact on students' capacity for critical thought. The alternative hypothesis (H1) asserts that there is a significant effect, whereas the null hypothesis (H0) asserts that there isn't any.

The statistical hypotheses used are:

- Null Hypothesis (H0) = There is no significant effect of using Discovery Learning model on students' critical thinking skills.
- Alternative Hypothesis (H1) = There is a significant effect of using Discovery Learning model on students' critical thinking skills.

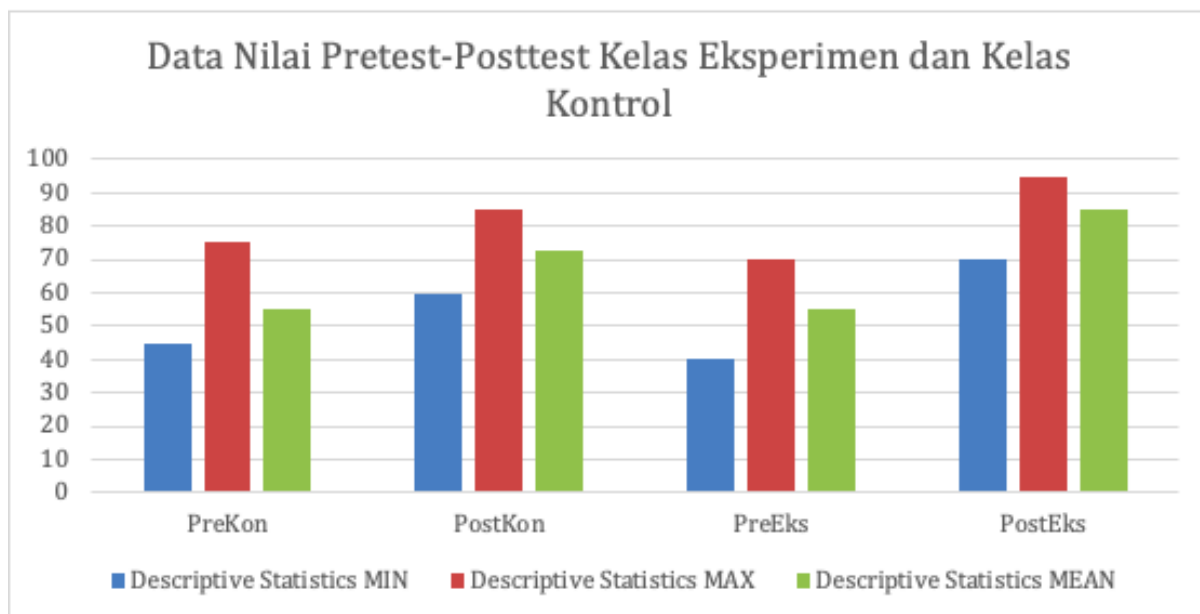
The decision-making basis in the Independent Sample T-test is based on the following testing criteria:

- If the value $>$, then H0 is rejected and H1 is accepted.
- If the value $<$, then H0 is accepted and H1 is rejected.
- If the significant value (2-tailed) < 0.05 , then H0 is rejected and H1 is accepted.
- If the significant value (2-tailed) > 0.05 , then H0 is accepted and H1 is rejected.

FINDINGS AND DISCUSSIONS

The data on students' critical thinking skills both before and after utilizing the Discovery Learning teaching model are covered in this paragraph. The information was gathered from two classes: Class A of first-semester PGSD students who used the Discovery Learning paradigm with instructional videos, and Class B of first-semester PGSD students who did not use the videos. Figure 1 displays the outcomes of the pretest and posttest scores.

Figure 1. Pretest-Posttest Score Data for the Experimental Group and Control Group.



The average pretest score for the control group is greater than that of the experimental group, as can be shown in Figure 1. The experimental group's average pretest score is 55.17, compared to the control group's average of 55.50. The control group's average posttest score, though, is lower than the experimental group's. The experimental group's average posttest score is 85.00 whereas the control group's is 72.50.

The average score for the implementation of the learning process in the experimental group is 3.86, whereas it is 3.69 in the control group, according to an examination of the process' implementation. These results show that both groups successfully implemented the learning process according to the same standards, which is excellent.

The data were determined to be evenly distributed and homogeneous after normality and homogeneity tests were conducted. In order to ascertain if the study hypothesis was accepted or not, an independent sample t-test was carried out. The independent sample t-test resulted in a significant value of 0.000 0.05, or 0.000 0.05 (2-tailed). According to the Independent Sample T-test's decision-making methodology, H₀ was disregarded and H₁ was accepted as the posttest score. Based on these calculations, it was decided to accept the alternative hypothesis, which claims that using the Discovery Learning model with instructional videos in the



Introduction to Education course at Triatma Mulya University has a significant impact on the students' capacity for critical thought. This demonstrates how the Discovery Learning paradigm, backed by instructional videos, may help students develop their critical thinking skills. Numerous pertinent studies, including one by (Pujiningsih et al., 2022) titled "The Effect of Using the Discovery Learning Model Supported by PhET Simulations on Student Learning Outcomes," which demonstrated an improvement in student learning outcomes following the use of the discovery learning model supported by PhET Simulations, provide support for this study. The use of discovery learning, facilitated by PhET Simulations, has an impact on students' learning outcomes in science for Grade 4 students at SD Negeri 1 Kamarang, Greded District, Cirebon Regency, it may be determined. Other relevant studies on the Discovery Learning model were conducted by (Rahmayani, 2019) (Aryani & Wasitohadi, 2020) (Damayanti & Setyaningsih, 2022) (Oktavioni et al., 2020) (Istidah et al., 2022) (Bahtiar et al., 2022) (Mustofa, 2019; Widiasih, 2020) (Trianingsih et al., 2019) (Pebrian & Fitria, 2022; Yuliani et al., 2020) whose research findings support the use of the Discovery Learning model for teachers in the classroom.

CONCLUSION

Using the Discovery Learning methodology with the aid of instructional films had a tremendous influence on the introduction to education course. An independent sample t-test result that showed a significant value (2-tailed) of less than 0.05, precisely 0.000 0.05, provides evidence of this.

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