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THE INFLUENCE OF THE ARISAN TYPE COOPERATIVE LEARNING MODEL ON THE LEARNING OUTCOMES OF ELEMENTARY SCHOOL TEACHER EDUCATION STUDENTS

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Abstract

Learning science in higher education, especially in the UPGRI Palembang Primary School Teacher Study Program, is a challenge for students as prospective teachers, especially in elementary science learning courses. This is because the background of students' high school majors varies, such as some coming from science, social studies, culinary arts and so on. Apart from that, students' mathematical knowledge is still low. As many as 25 students out of a total of 34 people could not operate physics formulas regarding the equations of Straight Line Motion. This condition affects students' formative test results which only reach the Minimum Completion Criteria of 70%. This research aims to explain the influence of the social gathering type cooperative learning model on the learning outcomes of PGSD students at PGRI University in Palembang. The method used in this research is a quasi-experimental method. The population was all 3rd semester female students. The sample for this research was classes 3M and 3N totaling 72 peoples. This research data collection uses tests. The data analysis technique uses the t-test. The research results showed that student classes taught using the Arisan model were better than classes taught using the lecture method. The statistical test obtained tcount>ttable, namely 20.898>1.67, so H_0 was rejected and H_a was accepted. So that it can be concluded Arisan Model Type Cooperative model has a significant influence on science learning in the third semester of the UPGRI Palembang Primary School Teacher Study Program

Keyword:*; arisan model; learning outcomes; science*

Abstrak

Pembelajaran IPA di Perguruan Tinggi khususnya di Program Studi Guru Sekolah Dasar UPGRI Palembang menjadi tantangan tersendiri bagi mahasiswa sebagai calon guru terutama pada mata kuliah Pembelajaran IPA SD. Hal ini disebabkan oleh latar belakang jurusan SMA mahasiswa bervariasi seperti ada yang berasal dari jurusan IPA, IPS, Tata Boga dan lain sebagainya. Selain itu pengetahuan matematis mahasiswa masih rendah. Sebanyak 25 mahasiswa dari jumlah total 34 orang tidak bisa mengoperasikan rumus fisika tentang persamaan Gerak Lurus Beraturan. Kondisi ini mempengaruhi hasil tes formatif mahsiswa yang hanya mencapai Kriteria Ketuntasan Minimal sebesar 70%. Penelitian ini bertujuan untuk memaparkan pengaruh model pembelajaran cooperative learning tipe arisan terhadap hasil belajar mahasiswa PGSD Universitas PGRI Palembang. Metode yang digunakan pada penelitian ini adalah metode quasi eksperimen. Populasi adalah semua mahasiswi semester 3. Sampel penelitian ini kelas 3M dan 3N berjumlah 72 orang. Pengumpulan data penelitian ini menggunakan test. Teknik analisis data menggunkan t-test. Hasil penelitian diperoleh bahwa kelas mahasiswa yang diajar menggunakan model Arisan lebih baik daripada kelas yang diajarkan dengan metode ceramah. Uji statistik diperoleh $t_{hitung} > t_{tabel}$ yaitu 20,898>1,67 maka H_0

ditolak dan H_a diterima. Dengan demikian, dapat disimpulkan bahwa model Cooperative Learning Tipe Arisan memiliki pengaruh yang signifikan pada pembelajaran IPA di Semester 3 Program Studi Pendidikan Guru Sekolah Dasar.
Kata Kunci: *model arisan; hasil belajar; IPA*

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INTRODUCTION

Effective learning is characterized by active participation from students (Paradila, 2024). Therefore, varied models are needed so that learning becomes active, creative and innovative. In active learning, students are no longer seen as passive objects with teachers as teacher oriented. Teachers or educators also act as facilitators. Creative and innovative students are out comes or the output of the learning process. Being creative and innovative has its own impact on students, namely making students have independence in expressing ideas as a solution to problems faced in learning activities. The learning process is the process of conveying or instilling knowledge or skills where the teacher's role is emphasized in designing or arranging various resources and facilities that are available for students to use or exploit in learning something (Sanjaya, 2006).

Science learning in higher education has its own challenges, especially in preparing prospective teachers who are qualified, competitive and have mastery of science and technology.This challenge is greatly influenced by various factors. Data from Indonesia (Unesco, 1990) at a conference in Canberra includes that learning is still dominated by the lecture method. Pupils are not given the opportunity to express their ideas. Students' scientific literacy factors also have an influence on the success of science learning. Scientific literacy achieved an average score of 389 out of 489 from the OECD average score (Kemendikbud, 2019). Not only that, the learning process in the classroom is directed at children's ability to memorize information, children's brains are forced to remember and accumulate various information without being required to understand the information they remember to connect it to everyday life (Jhoni & Suhadi, 2018). The low level of student activity in the learning process, especially in the field of Physics, is caused by several factors, including: (1) Students do not understand the material given by the teacher, so that students are not interested in asking questions, especially in group discussions, many students do other work, such as: playing with cellphones, disturbing friends, making noise, drawing and so on; (2) In teaching Physics material, teachers pay less attention to the level of student understanding as a whole, because they want to achieve the curriculum target; (3) Student motivation to take neat and beautiful notes is still low; and (4) Student reading motivation is still low (Fitriana, 2019). This condition will have an impact on student learning outcomes. Therefore, lecturers who are the spearhead of a study program play a very important role in producing quality graduates. Various strategies are used to achieve success in learning, one of which is by using various learning models.

Science learning in higher education, especially in the UPGRI Palembang Primary School Teacher Study Program. First, students' high school major backgrounds vary. They come from science, social studies, culinary arts and so on. This of course greatly influences mathematical

knowledge or scientific literacy in science learning. Science learning is full of formulas that are relevant to mathematics, making it difficult for students to operate physics formulas. As many as 25 students out of a total of 36 people could not operate physics formulas regarding the equations of Uniform Straight Motion. This condition affects students' formative test results which only reach the Minimum Completion Criteria of 70%. The low results of the initial study became the attention of researchers to try to find a solution to make learning fun and interactive, namely using the Arisan type cooperative learning model. The learning model functions as a guide for teachers who are planning and designing teaching and learning activities (Suprijono, 2009).

The cooperative learning model is a learning concept that demands more cooperation and activeness from students by providing opportunities to learn in small groups and students must be good at solving problems from the tasks given by the teacher (Putri et al., 2023). The choice of the Arisan type cooperative learning model allows students to learn while playing and trains students' ability to discuss to solve problems related to Straight, Uniform Movement or GLBB. Not only that, the majority of students already know the term "Arisan or Social Gathering" in everyday life so this term is very familiar. The type of social gathering card is based on the principle where each participant gets a turn to answer questions according to the lottery results (Sahputra, et al., 2017).

The use of the Arisan model in this research aims to determine whether or not there is a significant influence on student learning outcomes in science learning courses in elementary school. This research is also expected to be able to improve the performance of students in academic tasks. Apart from that, students are able to accept diversity in major backgrounds, academic abilities, work together and are able to explain their ideas. the factors that influence student learning success are internal factors (physical, psychological, fatigue) and external factors likes family and school/university (Slameto, 2003).

METHODS

This research is quantitative research using experimental methods. This research was carried out in the odd semester for four months at the PGSD Study Program at PGRI Palembang University. The research population was all third semester students, while the sample was 72 third semester students from class M and class N. The sample was determined using purposive and quota sampling with special considerations. The sample is part of the characteristics and also the number of the population (Sugiyono, 2015).

Data collection for this research used tests given after the Arisan model was implemented. Class 3N is designated as the experimental class and class 3M acts as the control class. Class 3N was chosen as the experimental class because the class has different characteristics from class 3M. The majority of students in this class have not been able to operate mathematical operations on physics formulas. However, they are still enthusiastic about solving the questions given even though their final answers are wrong. This is what motivated the researcher to provide treatment that can direct students to be more active and creative in studying science topics. Meanwhile, class 3M was determined as the control class because 50% of students in this class were able to operate mathematical operations when answering the

questions given. In addition, students in this class are very enthusiastic and active in science learning. The test given in this study was in the form of 5 story questions.

Before being given to students. The test questions which are data collection instruments are first tested for validity, reliability, level of difficulty, distinguishing power and hypothesis testing. Validity will show the support of empirical facts and theoretical reasons for the interpretation of an instrument's scores, and is related to the accuracy of the measurement (Retnawati, 2016). Presenting the validity of a test is using product moment correlation:

$$r_{xy}=\frac{n\sum XY-(\sum X)(\sum Y)}{\sqrt{\left\{n\sum X^2-(\sum X^2)\right\}\left\{n\sum Y^2-(\sum Y^2)\right\}}} \quad (1)$$

Formula description:

$r_{xy}=$¿ correlation coefficient between variables x and y

$n=$¿ the number of samples

$X=$¿ score for each question

$Y=$¿ score for each question

The terms of an instrument are said to be valid if $r_{count}>r_{table}$.

Reliability is the determination and consistency of test measurement results that are relatively constant (Siyoto and Sodik, 2015). Reliability measurement uses the Alpha Cronbach formula, namely:

$$r_i=\frac{k}{(k-1)}\left\{1-\frac{\sum s_i 2}{s_t 2}\right\}. \quad (2)$$

Formula description:

$r_i=$¿instrument reliability

$k=$¿ number of questions

$\sum s_i 2=$¿ number of questions

$s_t 2=$¿ total variance

A question is said to be reliable if $r_{count}\geq r_{table}$

The level of difficulty is defined as how easy or difficult it is for students to answer the questions given. A question is said to be good if the question is not too difficult or too easy (Arikunto, 2010). Questions that are too easy do not stimulate students to be enthusiastic about trying to find solutions to solve the problems, while questions that are too difficult cause students to become discouraged and not enthusiastic about looking for answers because they are beyond their ability. The level of difficulty can be analyzed using the formula:

$$P=\frac{\overline{X}}{SM} \quad (3)$$

Formula description:
P = difficulty index
$\overline{X}$ = average
SM = maximum score

The discriminating power of a question is the ability of a question to differentiate between intelligent and less intelligent students. The degree of differentiation can be seen in the test results of which students are clever, who are average, and who are poor and can distinguish between the initial results and the final results of a test (Hamalik, 2003). Differentiating power (DP) is formulated:

$$DP = \frac{Mean\ klmpok\ atas - Mean\ kelmpk\ bawah}{Skor\ maksimum\ butir\ soal} \quad (4)$$

Test this research hypothesis using the t-test. H_a is accepted if $t_{count} > t_{table}$ with a significance level 5%.

RESULT AND DISCUSSION

The results of the validity test show that the instrument is said to be valid and the instrument is declared reliable, $r_{count} \geq r_{table}$ is $0.704 \geq 0.444$. After testing the level of difficulty, the average level of difficulty was $p = 0.56$ (medium level of difficulty). Calculating the differentiating power obtained an average score of DP = 0.24 (sufficient differentiating power). The results of the hypothesis test carried out on class N students after applying the Arisan model obtained $t_{count} > t_{table}$ namely 20.898>1.67. This means H_a is accepted dan H_o is rejected.

At the first meeting the students' learning outcomes averaged 71.86. This is because students are not yet familiar with the Arisan model. Many students do not understand the learning material for Straight, Uniform Movement. Some participants had difficulty operating the GLBB formula cross multiplication and some even had difficulty determining the GLBB component symbols such as speed, acceleration and displacement symbols.

Learning outcomes increased at the second meeting amounting to 71.94. The researcher tries to motivate students to be able to solve the problems given by the researcher on each Arisan card that has been drawn. There are students who have begun to dare to ask questions, their enthusiasm for learning is increasingly visible. Students begin to understand the relevance of the material to the learning model.

The learning score for the third meeting increased by 77.19. This increase is marked by indicators of student activity. They began to dare to argue and provide suggestions based on the answers given by representatives of other groups. However, there were still several obstacles encountered during the learning process. There is an indifferent attitude of students, they are busy playing with cellphones and do not understand the concept of movement at all. In fact, there are still students who are not able to operationalize the GLBB formula cross multiplication. The results of this research are in line with research conducted by Revolis Setyastuti, namely that the Arisan card learning model can improve student learning outcomes.

Based on the results of the overall test data analysis, the average learning outcomes have increased so it can be said that the social gathering model has an influence on learning outcomes. The use of the Arisan card type cooperative model has an influence on student learning outcomes (Yulaini, 2020). Cooperative learning is a learning strategy that places student center students into several groups so that students are freed to explore science or knowledge and places more emphasis on cooperation between students in groups (Juhji, 2017). The use of cooperative learning can have an impact on students' physics learning outcomes. This has an impact on the learning outcomes of students in the experimental class, which obtained higher learning outcomes than the control class, namely the average value of the experimental class of 74.12 has reached the KKM, and the average value for the control class is 63.67 (Rahmah & Kafrawi & Mahsul, 2019).

CONCLUSION

The test results show that the average result obtained in the experimental class (class N) was 79.39 better than the average for the control class (class M) with a figure of 67.06. The statistical test results show that $t_{count} > t_{table}$ namely 20.898>1,67. H_a is accepted dan H_o is rejected. It can be said that the Arisan model type cooperative model has a significant influence on science learning in the third semester of the UPGRI Palembang Primary School Teacher Study Program.

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