



# The Effectiveness Of The Stad Learning Model On Students' Concept Understanding And Critical Thinking Skills In Pancasila Lectures Of Affirmation Students

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**Abstract**—The purpose of this research is to identify whether or not the STAD learning model is effective for the learning outcomes of Pancasila as the national ideology of the nation and state of Indonesia. This type of research is quantitative research in the form of Pre-Experimental Design with the type of One Group Pretest-Posttest. The population of this research is Affirmation students at the 2022/2023 State Polytechnic. Data was collected using a test instrument in the form of questions on mastery of concepts and critical thinking skills which had been tested for the level of validity, reliability, difficulty and discriminatory power. Data processing techniques using descriptive analysis and statistics. The increase in students' concept mastery test results and critical thinking skills is calculated using the normalized gain formula ( $N$ -gain).

Where the results of the pretest = 6.778 for Pancasila material in the perspective of the history of the Indonesian nation and posttest 8.877. For material Pancasila as the basis of the Republic of Indonesia pretest = 5.345 and posttest = 7.885 and for material Pancasila as the ideology of the Unitary State of the Republic of Indonesia pretest = 7.133 and posttest value = 9.105. While the normality and homogeneity tests found that the samples came from populations that were normally distributed and had the same variance, then a hypothesis test was carried out and the decision was obtained  $t$  count = 1.235 >  $t$  table = 0.046 thus  $H_0$  was rejected and  $H_1$  was accepted. Based on the description above, it can be concluded that there is an influence of the Student Teams Achievement Divisions (STAD) cooperative learning model on increasing conceptual understanding and critical thinking in Affirmation students at the Bali State Polytechnic.

**Keywords**—stad, afirmasi, concept mastery, critical thinking skills, pancasila

## I. INTRODUCTION

Education has a very important role and education is an effort to improve the quality of human life by developing the potential that exists within each individual [1][2]. Because education is not a simple activity, but a dynamic activity. Paying attention to the dynamics of implementing education, of course education requires good management so that educational goals are achieved properly and effectively as desired [3].

Through education it is hoped that transformation will occur which can develop positive character and be able to change bad behavior into good [4]. Because education is the main vehicle for cultivating good behavior in the learning process, especially in this era of educational autonomy.

In the educational process, of course, attention must be paid to the management of institutions and resources that occur in educational institutions, in addition to educational and academic processes as well as student affairs. Because this is the essence of an educational institution, which we must run consciously and healthily in accordance with established rules and procedures. Also includes issues of management and leadership, educators and educational staff, administration and financing as well as development and the environment.

Various educational issues that need serious attention include: first, the role of education in national development in an open society that demands national education reform; second, the importance of education management in the context of building a strong and dynamic national education system towards quality output; third, advances in information technology that affect the educational process in the knowledge society; and fourth, regional autonomy which demands the implementation of national education that meets the needs of regional development as the basis for national development and regional cooperation [5].

The success and failure of education in the context of Law no. 32 of 2004 regarding regional autonomy which also has an impact on education, depending on three main factors namely teachers, principals and supervisors, because these three components are the determinants and main drivers for achieving quality education [6]. This reminds us that the quality of education is closely related to the dignity of the nation and the quality of education is an important aspect to continue to study, especially with regard to input (especially teachers) as a service role and output (students) can become fully human beings and other educational user actors [7].

The role of education is a strategic tool in improving human quality and dignity as well as being a benchmark for the value and dignity of a nation. Where we can see the benchmark for the quality of a nation from the extent of the success of implementing education in a country. Because the higher the level of education of the people of a nation, the higher the quality of the people of that nation[8].

Education is currently facing very tough challenges, including having to be able to facilitate students to build competencies according to the needs of this century [9]. The learning environment developed by lecturers often does not prepare students to be involved in the process of constructing a concept in their minds, resulting in a lack of development of basic thinking patterns towards higher-order thinking patterns. Concept mastery and students' critical thinking skills regarding environmental concepts as indicators of the success of a teaching and learning process from various studies are generally lacking [10]. Besides that, the world of education is currently facing a crucial problem regarding how to strive to build an understanding [11] and empower thinking skills [12]. Because after all, in learning, understanding is far more important of learning achievement. With (achievement) which is measured by the achievement of test scores [13], which only places more emphasis on memorizing knowledge.

To be able to develop mastery of concepts and critical thinking skills in concrete Pancasila learning, appropriate learning models are needed. As [14] said in her research, she stated that when teachers deliver learning materials using conventional methods students will get bored easily. So the teacher needs to create a variety of effective learning methods and models. Variations in methods and models are also complemented by the existence of varied learning media so that students can easily receive material, are interesting, and create a fun learning atmosphere as well as the use of adequate supporting facilities to make the newest alternative in the learning process. In addition [15] explains that innovative learning media such as multimedia are effective and feasible to apply in the learning process.

II. RESEARCH METHOD

A. Design and Research Design

This research involved Affirmation class Bali State Polytechnic Students. The research will be conducted in two groups (clusters) of the Affirmation class. This type of research is experimental research conducted using the pretest-posttest control group design (Sugiyono, 2012) [16] as shown in Table 2.1 as follows:

TABLE 1. RESEARCH DESIGN

Design Class	Treatment	Initial Test	End of test
Eksperimen	O1 X1 O2 X1	Ya	Ya
Kontrol	O3 X2 O4 X2	Ya	Ya

Information:

X1 = Using the STAD model.

X2 = Using conventional learning

Based on the research procedure, the 2 x 2 factorial experimental design used follows the pattern shown in Figure 2.2. With a factorial design like this, it will be possible to determine the main effect (main effect) and interaction effect (interaction effect) of all treatment variables.

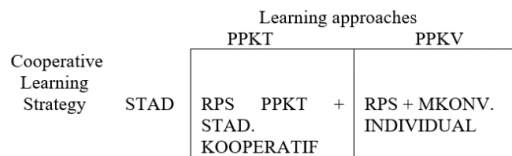


Fig.1. The 2 x 2 factorial experimental design pattern

Figure 1 shows that the learning approach used as a treatment in research has two dimensions, namely the cooperative learning approach (PPKT) and the conventional learning approach (PPKV). Pancasila learning also has two dimensions, namely

cooperative and individual. Thus, the main effect and the interaction effect of each treatment variable can be disclosed and divided into two.

The main influences, namely (1) the influence of the cooperative learning model variables and (2) the influence of the variables of conceptual understanding and critical thinking. In the main effect, the first will be seen the effect of the treatment of the cooperative learning model. As for the second, we will see the main influence of cooperative learning and individual learning strategies without paying attention to the influence of cooperative learning model variables and PPKV.

### B. Population and research sample

The research population was Affirmation Semester IV students for the Academic Year 2020/2021 Bali State Polytechnic, Campus Bukit Jimbaran Badung Bali. As suggested in the principles of classroom action research, it will only be taken by fourth semester students. While the research samples were two clusters (groups) each consisting of 2 groups, which were selected using the cluster random sampling technique. By using this cluster random sampling technique, cluster 1 and cluster 2 were selected.

Furthermore, to determine which class uses contextual or conventional learning and the STAD cooperative strategy is determined by a lottery system. The results of the draw, scenarios and learning facilities, and research implementers in each class are presented in detail in Table 2.

TABLE 2. DESIGN OF EXPERIMENT IMPLEMENTATION IN EACH CLASS

TESTING CRITERIA		
Value Reference	Value Croubach's	Conclusion
0.70	0.737	Reliabel

### C. Research Variables

The experimental variables in this study are independent variables (independent variables) and dependent variables (dependent variables). The independent variables consist of two variables, namely 1) the STAD learning model, and 2) the conventional learning model. The metric independent variable is students' initial knowledge in Pancasila lectures. The dependent variables studied were 1) conceptual understanding, and 2) students' critical thinking skills in Pancasila lectures at the Bali State Polytechnic.

In addition to the variables mentioned above, there are also several other variables that need to be controlled. These variables are (1) learning time, (2) learning facilities and infrastructure (outside those prepared by researchers), (3) the attitude or seriousness of students and lecturers in learning, and (4) the interactions that are expressed during learning activities. These two variables are assumed to be constant, so it is assumed that they will not have a significant effect on the two dependent variables. This assumption is quite reasonable, because the learning approaches and learning strategies that are implemented through learning scenarios and teaching materials really strive to be able to provide conditions and an active learning environment for students inside and outside the classroom.

## III. DISCUSSION

### A. Research Results

This section describes matters relating to data processing and hypothesis testing based on the data obtained in accordance with the techniques and procedures for data collection in research. The data processing referred to here includes descriptive analysis, normality and homogeneity testing, and hypothesis testing.

#### 1. Instrument Trial Analysis

Before the student learning outcomes test instrument is used in research, it is first tested on respondents outside the experimental class and control class. This can be described as follows:

##### a. Validation Test

The validation test was carried out to determine the validity of the instrument or item items. For the validation test in this study using the product moment formula with 30 multiple choice items with a value of  $\alpha = 0.05$  and  $r_{count} = r_{table} = 0.433$  and it is known that  $N = 25$  because there are 25 student respondents. If  $r_{count} > r_{table}$  then the item is said to be valid and vice versa if  $r_{count} < r_{table}$  then the item is said to be invalid. Based on the results of the calculation of the test instrument validation test with 30 multiple choice items, valid questions are obtained with a total of 26 items, and 4 invalid items with numbers (4,8,10,20), and are declared not to have a function as a tool measure test.

##### b. Reliability Test

In this study the calculation of the reliability index of the test was carried out on test items totaling 30 multiple choice questions which would be used to collect data. The following is a summary of the results of the reliability test of the items. The basis for decision making is if Croubach's value is greater than  $> 0.70$  then it is concluded that it is Reliable, and vice versa.

TABLE 3 SUMMARY OF INSTRUMENT RELIABILITY TES

	Group A	Group B
Learning approaches	Kontekstual	Konvensional
Facility	Teaching Technology + LKM Facility (Contextual Model)	Teaching + LKM (Conventional Model)
Lecturer Name	I Ketu Suja, SE.,M.Si	

According to [17], a variable can be said to be reliable if it gives a Cronbach alpha ( $\alpha$ ) value of  $> 0.6$ . Based on table 3.2 above, it is known that the Cronbach's test value has a reliability index of 0.737. The data is then compared with the table of interpretation of the reliability correlation figures in the reference value column. Based on the results of the comparison, it was found that the degree of reliability of the multiple choice questions in this study was included in the very high criteria and deserved to be tested.

#### c. Difficulty Level Test

The items that have been tested are 30 multiple choice questions, then the level of difficulty is tested. Based on the test results it is known that the item difficulty index has criteria of 2 items with very difficult criteria, 2 items with very easy criteria, 22 items with difficult criteria and 4 items with medium criteria, then 26 items are eligible to be tested on students .

#### d. Discriminating Power Test

The differential power test aims to determine whether the ability of a test can distinguish between high and low ability students. Based on the results of the analysis, it can be seen that the results of calculating the differential power of the questions on student learning outcomes can be seen from the 30 items there are 18 very good questions, 8 questions with sufficient criteria and 4 questions with poor criteria.

#### e. Conclusion of Instrument Testing Results

Based on the results of the calculations that have been carried out, namely by means of validation tests, reliability tests, difficulty level tests and differentiating power tests. So it can be concluded table 4 as follows.

TABLE 4. CONCLUSION OF INSTRUMENT TESTING RESULTS

Question item	Validity	Reliability	Difficulty level	Power differentiator	Power differentiator
30	26 valid 4 invalid	Reliable	a. 2 very hard b. 2 very easy c. 22 hard d. 4 currently e. 26 worth testing	a. 18 very good. b. 8 enough. c. 4 not good	Out of 30 questions, 26 are valid for testing and 4 are not feasible for testing.

## B. Discussion

The purpose of the research to be conducted is to determine the effectiveness of the Student Teams Achievement Divisions (STAD) type model for increasing conceptual understanding and critical thinking. In achieving an educational goal, it is necessary to make deliberate and planned efforts in choosing content (material), activity strategies and learning models.

Implicitly in learning there are activities of selecting, establishing and developing methods or models to achieve the desired learning outcomes. Therefore the STAD type cooperative learning model allows the creation of fun learning situations, increases the interaction and cooperation of students, both with their groups and with the teaching lecturers, and creates a conducive teaching and learning situation. The Bali State Polytechnic was chosen as the research location because in terms of the teaching and learning process carried out in class, they already used a hybrid learning model, but most of the affirmative children still lacked, especially conceptual understanding and critical thinking, or who emphasized overall understanding without paying attention to the abilities of students in particular. in Pancasila courses. Based on this information, the researcher conducted a trial or conducted research for approximately half a semester. Before conducting the research, the researcher made a research instrument in the form of a validated multiple-choice test which serves as a measuring tool for research objects, especially the cognitive domain of students. Then the researcher took the population, namely Affirmation children in all study programs with a

total of 55 people. For the sample taken by the researcher, 22 people as the control class and 23 people as the experimental class were given the STAD type cooperative learning model.

The material to be used in the Pancasila course is 1. Pancasila in the perspective of the History of the Indonesian Nation, 2. Pancasila as the Foundation of the Republic of Indonesia and 3. Pancasila as the Ideology of the Unitary State of the Republic of Indonesia. In the experimental class and the control class, there were 8 meetings each, 1 meeting was held for the initial test (pretest) and 1 meeting for the evaluation or final test (posttest). Students as research data in the form of multiple choice questions and 6 meetings were taught using the STAD type cooperative model for the experimental class and the conventional model for the control class. After doing the pretest and posttest. Researchers collected data in the form of pretest and posttest value data. Based on the descriptive analysis on the learning outcomes of students in the control class, namely group A, the results of the pretest were obtained with an average of 6.5 and posttest of 8.6 so that a difference of 2.1 or 24% was seen.

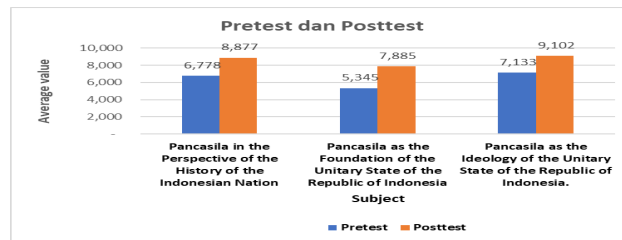


Fig.2. Pretest and Posttest

Before concluding the hypothesis, a prerequisite test is carried out including normality and homogeneity tests followed by hypothesis testing. After carrying out the normality and homogeneity tests, it was found that the samples came from populations that were normally distributed and had the same variance, then a hypothesis test was carried out and the decision was obtained  $t_{count} = 1.235 > t_{table} = 0.046$  thus  $H_0$  was rejected and  $H_1$  was accepted. Based on the description above, it can be concluded that there is an influence of the Student Teams Achievement Divisions (STAD) cooperative learning model on increasing conceptual understanding and critical thinking in Affirmation students at the Bali State Polytechnic.

#### IV. CONCLUSION

From the data and facts collected, it can be concluded that : One: learning activities will have a significant impact on various aspects if packaged properly and correctly. Two: The learning process in tertiary institutions is a very important activity in improving the quality of education, where the teaching and learning process aims to be able to achieve national education goals and can improve quality human resources. Three: In order for learning to be effective, efficient and fun a lecturer must be in harmony with the learning time, provide subject matter according to the syllabus and lesson plan, the choice of learning method/model must be in accordance with the teaching material for example the STAD cooperative model, and learning resources can be in the form of books and tools display.

The STAD model is very suitable for Pancasila lectures, because of the advantage of the STAD type of cooperative learning, namely students work in groups so that students can understand existing material concepts with the help of their group mates. Besides that, every student has the opportunity to make a substantial contribution to the group and the position of group members. Promote active and positive interaction so that the form of cooperation of group members becomes better.

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