

# The Effect of Cooperative Learning Models and Formative Test Forms toward PPKn (Civics Education) Learning Outcomes by Controlling Prior Knowledge

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## ABSTRACT

This study aims at investigating the effect of cooperative learning model and formative test form toward PPKn learning outcome controlling by prior knowledge. It used factorial design 2 x 2. Sample of this study consists of 80 students who are selected through cluster random sampling. The data was obtained through test instrument. The data was analyzed by using covariance (ANACOVA). The result of this study shows that, after controlling prior knowledge: 1) student's civics education learning outcome who are taught under cooperative learning model with STAD type is higher than students who are taught under cooperative learning model with NHT type, 2) student's civics education learning outcome who are given essay formative test is higher than students who are given multiple choice formative test, 3) there is an effect of interaction between cooperative learning model and formative test toward civics education learning outcome, 4) for students who are given essay formative test, student's civics education learning outcome who are taught under cooperative learning model with STAD type is higher than students who are taught under cooperative learning model with NHT type, 5) for students who are given multiple choice formative test, student's civics education learning outcome who are taught under cooperative learning model with STAD type is higher than students who are taught under cooperative learning model with NHT type, 6) for students who are taught under cooperative instruction model with STAD type, student's civics education learning outcome who are given essay formative test is higher than students who are given multiple choice formative test, 7) for students who are taught under cooperative learning model with NHT type, student's civics education learning outcome who are given essay formative test is higher than students who are given multiple choice formative test.

**Keywords:** cooperative learning model, formative test, PPKn learning outcome, prior knowledge

## INTRODUCTION

It is commonly found that there are many problems in the instruction activity at schools. Most students think that PPKn is complex and difficult subject. As a result, there are many students who have low PPKn learning outcome. The learning achievement has not been satisfied, there are many students who get decided under standard score.

As one of subjects that are taught in Senior High School, PPKn often gets notes as a subject with lower study results than other subjects. Besides, it is commonly not considered or interested for most students. It

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indicates that PPKn subject needs some scientific studies, so it has alternative instruction model that can bring the maximal result of student's learning outcome.

Empirical data that support the condition is the result of school examination for PPKn subject in SMA Negeri 9 Kendari in the year 2018/2019, namely lowest score is lowest score is 5,63 and the highest one is 6,70. The achievement of PPKn study results are still low.

The low achievement of PPKn study results is a serious problem for all sides. Therefore, it needs various improvement efforts to increase PPKn study results. One of the ways is improving the factors that influence the students' PPKn study result, like teachers, students, curriculum, instruction process quality, instruction model, and assessment such as formative test.

Further, based on the result of observation in class, the teachers in SMA Negeri 9 Kendari teach by using monotonous model, the students are bored, and are not motivated to study. One of the factors causing the students feel boring when learning PPKn is the teachers do not use varied learning and not interesting. It can not motivate students to learn. Based on the phenomena, the factor that bring the low achievement of PPKn study result is the students are not motivated to learn and less process skill of students so that they can not think creatively and critically that really influence their study result.

From those factors, instruction model is considered as dominant aspect that influence student's study results. Therefore, instruction process is one of indicators to reach quality education aims as the core of education process in the whole and the teachers here have big role.

The present problem, mainly at PPKn subject can be solved through implementation of innovative instruction models, one of them is cooperative learning model with STAD and NHT types. Lines to Rokot's study (2016, p. 2017-225) that the student's study result are really influenced by instruction model that is used by the teacher, and the mentioned model is cooperative learning model with STAD and NHT types. Besides, cooperative learning model with STAD and NHT types also can increase students' motivation, students' participation or encouragement, and student's cooperation.

This study lines to Supit Pusung study, (2016, p. 209-217), that cooperative learning model with STAD and Jigsaw types is the effective strategy that can increase students' performance in class since this model can accommodate the students' need and behaviour during the learning process. This research is also in line with the research conducted by Hamuni & Muhammad Idrus (2019, p. 115-121) that the cooperative learning model NHT and Jigsaw II types is an effective model that can improve student learning outcomes and can improve the learning process, because both learning models can accommodate students' needs and behaviors during the learning process in the classroom.

Other factor that really influence students' study result is formative test forms, namely essay and multiple choice. It lines to Hopkins's statement (1981, p. 232-233) that basically essay test can inform several things like: 1) ability of critical, synthetical, and evaluative thinking, 2) student's maximum ability with freely thinking appreciation, 3) train the students to have opinion, 4) give students' opportunity to express their idea in written form, and 5) student's maximum ability in organizing their thought naturally. Likewise, Marrow (2005, p. 196-204) states that essay test is more effective used to measure students' ability to organize, analyze, and synthesizethan other tests. Essay test can measure students' opinion and attitude effectively.

It lines to the study result of Sumantri and Satriani (2016, p. 507-524) that student score who are given essay test is higher than students who are given multiple choice test. While the results of research conducted by Hamuni and Muhammad Idrus (2019, p. 115-121) when given a test the description and multiple choice forms are not much different. This is because there are other factors that influence it, such as the selection of learning models that teachers use when learning activities take place.

Based on the illustration above, it is assumed that cooperative learning model and essay test can influence the students' learning outcome.

## RESEARCH QUESTIONS

Based on the background and identifying of problems above, the research questions of this study are as follow:

1. Is student's PPKn learning outcome who are taught under cooperative learning model with STAD type higher than students who are taught under cooperative learning model with NHT type?

**Table 1.** Experiment Design of Factorial 2 x 2

Formative test Forms (B)	Cooperative Instruction Model (A)	
	STAD (A <sub>1</sub> )	NHT (A <sub>2</sub> )
Essay (B <sub>1</sub> )	(A <sub>1</sub> B <sub>1</sub> )	(A <sub>2</sub> B <sub>1</sub> )
Multiple Choice (B <sub>2</sub> )	(A <sub>1</sub> B <sub>2</sub> )	(A <sub>2</sub> B <sub>2</sub> )

2. Is student's *PPKn* learning outcome who are given essay formative test higher than students who are given multiple choice formative test?

3. Is there an effect of interaction between cooperative learning model and formative test toward *PPKn* learning outcome?

4. For students who are given essay formative test, is student's *PPKn* learning outcome who are taught under cooperative learning model with STAD type higher than students who are taught under cooperative learning model with NHT type?

5. For students who are given multiple choice formative test, is student's *PPKn* learning outcome who are taught under cooperative learning model with STAD type is lower than students who are taught under cooperative learning model with NHT type?

6. For students who are taught under cooperative instruction model with STAD type, is student's *PPKn* learning outcome who are given essay formative test higher than students who are given multiple choice formative test?

7. For students who are taught under cooperative learning model with NHT type, is student's *PPKn* learning outcome who are given essay formative test is lower than students who are given multiple choice formative test?

## THE OBJECTIVE OF STUDY

The objectives of the study can be classified as follows:

### Theoretical Objective

The result of this study is hoped can be used as reference and guide to improve students' *PKn* learning outcome. Besides, it gives detail explanation about the strength of cooperative instruction model and formative test that can be used to improve students' *PKn* learning outcome. This study also relates the prior competence and *PKn* learning outcome.

### Practical Objective

Implementation of good cooperative instruction model and formative test in learning process can improve students' study result. Implementation of good cooperative instruction model and formative test has big role in building students' learning motivation, and as result it can help the students to reach the optimal result. This study is hoped can give information to the teachers about the importance of prior competence and the use Implementation of good cooperative instruction model and formative test. In *PKn* instruction, the teachers can recognize the implementation of Implementation of good cooperative instruction model and formative test to improve students' *PKn* learning outcome.

## METHODS OF STUDY

This study used experiment model with factorial design 2 x 2, as **Table 1**.

The data collection is done through cluster random sampling technique, and the sample consists of 80 students, in which 40 students as cooperative learning model group with STAD type, and other 40 students as cooperative learning model group with NHT type. The data was analyzed by using ANKOVA test.

## RESULTS

Based on the result of covariance (ANKOVA) analysis, this study found several results as shown in **Table 2**.

**Table 2.** Summary of Ancova Results with F-Test after Controlling Prior Knowledge

Source	dk	JKYRES	RJK	F <sub>count</sub>	F <sub>tab</sub>	
					$\alpha = 0.05$	$\alpha = 0.01$
A	1	3.27	3.27	6.57*	3.98	6.99
B	1	8.51	8.51	17.06**	3.98	6.99
A*B	1	29.89	29.89	59.96**	3.98	6.99
Error	75	37.38	0.50			
Corrected Total	78	75.79	0.97			

**Table 3.** Summary of t-test Calculation Results after Controlling for Prior Knowledge

No	Compared Groups	dk	t <sub>count</sub>	F <sub>tab</sub>	
				$\alpha = 0.05$	$\alpha = 0.01$
1	A <sub>1</sub> B <sub>1</sub> with A <sub>2</sub> B <sub>1</sub>	75	7.62**	1.67	2.38
2	A <sub>1</sub> B <sub>2</sub> with A <sub>2</sub> B <sub>2</sub>	75	4.62**	1.67	2.38
3	A <sub>1</sub> B <sub>1</sub> with A <sub>1</sub> B <sub>2</sub>	75	9.01**	1.67	2.38
4	A <sub>2</sub> B <sub>1</sub> with A <sub>2</sub> B <sub>2</sub>	75	3.23**	1.67	2.38

Based on the analysis as summarized in **Table 2**, hypothesis 1 is rejected with  $F_{\text{count}} = 6.57 > F_{\text{tab}(1;75)} = 3.98$ . Hypothesis 2 is also rejected since value of  $F_{\text{count}} = 17.06 > F_{\text{tab}(1;75)} = 3.98$ , and hypothesis is rejected since value of  $F_{\text{count}} = 59.96 > F_{\text{tab}(1;75)} = 3.98$ .

It then did continued hypothesis test (one side) with statistic t-test. The result of the test for each group pair can be presented in **Table 3**.

Based on the analysis result on **Table 3** for hypothesis 4, it is found that  $t_{\text{count}} = 7.62 > t_{\text{tab}(1;75)} = 1.67$ , so  $H_0$  is rejected. Hypothesis 5 is rejected with  $t_{\text{count}} = 4.62 < t_{\text{tab}(1;75)} = 1.67$ . Next for hypothesis 6 so  $H_0$  is rejected with  $t_{\text{count}} = 9.01 < t_{\text{tab}(1;75)} = 1.67$  and hypothesis 7 so  $H_0$  is rejected with  $t_{\text{count}} = 3.23 < t_{\text{tab}(1;75)} = 1.67$ .

## DISCUSSIONS

The discussion of hypothesis test result in this study is described below.

### Student's *PPKn* Learning Outcome after Controlling Prior Knowledge who Are Taught Under Cooperative Learning Model with STAD Type Is Higher Than Students who Are Taught under Cooperative Learning Model with NHT Type

Based on the result of ANKOVA, testing of hypothesis 1 found that there is a difference of *PPKn* learning outcome after controlling prior knowledge between students who are taught under cooperative learning model with STAD type and students who are taught under cooperative learning model with NHT type. It is shown from value of  $F_{\text{count}}$  that has been controlled statistically their prior competence, that is 6.57. The amount of  $F_{\text{count}}$  that is resulted in this hypothesis is pure from the effect of applying learning model that is given to students.

The result of counting shows that the mean score of students' *PPKn* study results after controlling prior knowledge for who are taught under cooperative learning model with STAD type is higher than students who are taught under cooperative learning model with NHT type. It indicates that students who are taught under cooperative instruction model with STAD type can increase students' *PPKn* study results rather than students who are taught under cooperative learning model with NHT type.

The role of cooperative learning model gives positive contribution toward students' *PPKn* study results. According Lie (2014, p. 73), that in cooperative learning model with STAD type, the students have many opportunities to express their idea and organize the given information, improve the communication skill, have good responsible for grouping work and finishing the given material task, and can inform it to other groups. Students who are taught under cooperative learning model with STAD type have good achievement, good attitude, good curiosity, and respect the differences and other opinions.

Research result Supit Pusung (2016, p. 209-217) the STAD type cooperative learning model has various positive influences on child development. The positive influence is that it can improve student learning outcomes, improve memory, and can be used to achieve high level reasoning.

Students who are taught under cooperative instruction model with STAD type have big willingness to do the given homework or task, while students who are taught under cooperative learning model with NHT type may avoid the subject that has much homework, mainly for challenging tasks.

Cooperative learning model with STAD type lines to the mastery of *PPKn* concept that encourage students think and analyze critically that can be used to solve the difficult problems. Students who are taught under cooperative learning model with STAD type consider the challenging tasks of *PPKn* can encourage them to do more. The illustration indicates that who are taught under cooperative learning model with STAD type can improve *PPKn*'s study result.

#### **Student's *PPKn* Learning Outcome after Controlling Prior Knowledge who Are Given Essay Formative Test Is Higher Than Students who Are Given Multiple Choice Formative Test**

Based on the result of ANKOVA, testing of hypothesis 2 found that student's *PPKn* learning outcome who are given essay formative test is higher than students who are given multiple choice formative test. It is shown from value of  $F_{\text{count}} = 17.06$ . The amount of  $F_{\text{count}}$  that is resulted in this hypothesis is pure from the effect of giving formative test that is given to students because their prior knowledge have been controlled.

The result of counting shows that the mean score of students' *PPKn* study results after controlling prior knowledge for who are given essay formative test is higher than students who are given multiple choice formative test. It indicates that giving the essay formative test can increase *PPKn* study result.

The effectiveness of giving a description test in *PPKn* learning has been proven by the results of research conducted Hamuni and Muhammad Idrus (2019, p. 115-121) that the scores obtained by students when given a formative description form were higher than the scores obtained by students given multiple choice formative tests.

Further discussion of the result above is the maintenance of *PPKn* study result on given essay test. According Oosterhof (1996, p. 89-90) that in the applying of essay formative test: 1) tends to measure directed attitude to the decided learning objectives, 2) measure the ability in expressing idea in written form, and 3) essay test items do not ask to choose only the given choice answers. Specifically, essay formative test asks students to organize idea and ability to analyze. It lines to Wieresma and Jurs (1990, p. 72) that essay test can measure the study results on higher or complex level, and essay test items give opportunity for students to organize, analyze, and synthesize the idea, and write it systematically.

The explanation above shows that essay test stimulate the students to have complex and high thinking, and know which materials that have not been mastered, so they can do improvement or remedial learning of the materials. So, giving essay formative test can improve *PPKn* study result.

It differs to multiple choice test. According Oosterhof (1992, p. 86-89) that one of the weaknesses of multiple choice test is the answers tend to the guess. Giving multiple choice test is not suitable to the concept of *PPKn*, in which the subject needs analyzing process. In the multiple choice test, the students only choose the given choice answers rather than expersing their idea or knowledge, so the students do not use their own idea and it can not build the critical and creative thinking because students just choose one of given choice answers. It tends to the guess the answer.

Based on the explanation above, multiple choice test is not effective in improving *PPKn* study result. The use of multiple choice that is commonly used at that time is not suitable since it can not give opportunity for students to know their weaknesses in answering the questions of subject.

#### **The Effect of Interaction between Cooperative Learning Model and Formative Test Toward Students' *PPKn* Learning Outcome after Controlling Prior Knowledge**

Based on the result of ANKOVA, testing of hypothesis 3 found that there is an effect of interaction between cooperative instructional model and formative test toward *PPKn* learning outcome after controlling prior knowledge. It is shown from value of  $F_{\text{count}} = 59.96$ . The amount of  $F_{\text{count}}$  that is resulted in this hypothesis is pure because their prior knowledge have been controlled.

The result of this study lines to cooperative instruction model and formative test. Both cooperative instruction model and formative test really determine the students' *PPKn* learning outcome. However, to reach the maximal result of *PPKn* learning, it needs agreement (considering the condition and situation) among cooperative learning models.

The students feel happy and challenging in learning *PPKn* if they are given essay test because they should answer the questions steps based on the concept asked in the questions.

Students who are taught under cooperative instruction model with STAD type tend to be more effective in facing problems and motivated to face the mistakes, and always improve their effort to reach the success. Therefore, students who are taught under cooperative learning model with STAD type tend to be easier in facing essay test since they are very confident about their ability and it has positive effect for their study. Differently, students who are taught under cooperative instruction model with STAD type are not suitable if they are given multiple choice test.

Further, students who are taught under cooperative learning model with NHT type are not confident with their learning and they have less motivation in facing the difficult tasks, but they tend to be easier in doing multiple choice test. In multiple choice test, the students only choose one of given choice answers, so it is hoped that the using of multiple choice test can help to reach the study objectives optimally. In contrast, students who are taught under cooperative learning model with NHT type are not suitable if they are given essay test.

Based on the explanation above can be concluded that the students' learning outcome who are taught under cooperative learning model with STAD type is high or good if they are given essay test. Like wise, the students' learning outcome who are taught under cooperative learning model with NHT type is high or good if they are given multiple choice test. So, this study shows that there is an effect of interaction between cooperative instructional model and formative test toward *PPKn* learning outcome after controlling prior knowledge.

**For Students who Are Given Essay Formative Test, Student's *PPKn* Learning Outcome who Are Taught under Cooperative Learning Model with STAD Type Is Higher Than Students who Are Taught under Cooperative Learning Model with NHT Type after Controlling Prior Knowledge**

Based on the result of ANKOVA, testing of hypothesis 4 found that for students who are given essay formative test, there is difference between student's *PPKn* learning outcome who are taught under cooperative learning model with STAD type and students who are taught under cooperative learning model with NHT type. It is shown from value of  $F_{\text{count}} = 7,62$ . The amount of  $F_{\text{count}}$  in this hypothesis is pure that has been controlled statistically. In other words, the mean of *PPKn* study result is not influenced by prior knowledge, but because of giving essay test and the applying of cooperative learning model with both STAD and NHT types in this study.

Next testing of hypothesis in this study found that for students who are given essay test, student's *PPKn* learning outcome who are taught under cooperative learning model with STAD type is higher than students who are taught under cooperative learning model with NHT type after controlling prior knowledge. It indicates that students who are given essay formative test and taught under cooperative learning model with STAD type can improve student's *PPKn* learning outcome.

Popham (1981, p. 123) states that essay is suitable test to measure the complex study result, so it can be known the students' ability in arranging their own essay. Marrow (2005, p. 196-204) states that essay test is more effective used to measure ability to organize, analyze, and synthesize than other test forms. Essay test can measure the students' opinion and attitude effectively.

It thus needs ability to express idea and high level ability. Some characteristics of essay formative test are suitable to students who are taught under cooperative learning model with STAD type. The students like challenging that describe interest and participation in handling the *PPKn* questions, keep motivation when facing the failure, look for the factors causing the failure, and not worried in facing the *PPKn* questions. As a result, the students have low stress level. Consequently, the use of essay formative test can improve student's *PPKn* learning outcome who are taught under cooperative learning model with STAD type.

Based on the explanation above, for students who are given essay formative test, student's *PPKn* learning outcome who are taught under cooperative learning model with STAD type is higher than students who are taught under cooperative learning model with NHT type after controlling prior knowledge.

**For Students who Are Given Multiple Choice Formative Test, Student's *PPKn* Learning Outcome who Are Taught under Cooperative Learning Model with STAD Type Is Lower Than Students who Are Taught under Cooperative Learning Model with NHT Type after Controlling Prior Knowledge**

Based on the result of ANKOVA, testing of hypothesis 5 found that  $H_0$  is rejected as t-test statistic, in which  $t_{\text{count}} = 4.62$  is higher than  $t_{\text{tab}(0,05;75)} = 1.67$ . The amount of  $t_{\text{count}}$  in this hypothesis is pure that has been controlled statistically of the effect of prior knowledge.

The result of counting shows that student's *PPKn* learning outcome who are taught under cooperative learning model with STAD type is same or different to than students who are taught under cooperative

learning model with NHT type after controlling prior knowledge. Besides, the students who are given multiple choice test and taught under cooperative learning model with both STAD and NHT types can increase student's *PPKn* learning outcome.

According Nitko (2001, p. 148) that multiple choice tests have several advantages: 1) can be used on a variety of broad learning outcomes, 2) does not require students to write and describe answers and minimize students' opportunities to guess answers, 3) multiple choice tests prioritize reading and thinking, the items of this test only measure aspects superficial and limited memories, 4) multiple choices have the opportunity to guess the answers to the choices provided, 5) the deceiver is given as a choice whether students have insight or knowledge.

Furthermore according Sudjana (2012, p. 49) multiple choice tests have advantages including: (1) the material being tested can cover most of the teaching material that has been given, (2) student answers can be corrected (assessed) easily and quickly using the answer key, (3) answers for each the question is definitely true or false so that the assessment is objective.

The use of multiple choice formative tests aims to help teachers monitor student learning outcomes during the learning process. Students in answering multiple choice tests only choose one answer from the available answer choices.

By looking at some of the advantages possessed by multiple choice tests, then it can be said that giving multiple choice tests is able to have an impact on improving *PPKn* learning outcomes.

**For Students who Are Taught under Cooperative Learning Model with STAD Type, Student's *PPKn* Learning Outcome who Are Given Essay Formative Test Is Higher Than Students who Are Given Multiple Choice Formative Test after Controlling Prior Knowledge**

Based on the result of ANKOVA, testing of hypothesis 6 found that  $H_0$  is rejected as t-test statistic, in which  $t_{\text{count}} = 9.01$  is higher than  $t_{\text{tab}(0,05;75)} = 1.67$ . The amount of  $t_{\text{count}}$  in this hypothesis is pure that has been controlled statistically of the effect of prior knowledge.

Testing of hypothesis based on ANKOVA found that for students who are taught under cooperative instruction model with STAD type, student's *PPKn* learning outcome who are given essay formative test is higher than students who are given multiple choice formative test. It indicates that the use of essay formative test and applying cooperative learning model with STAD type can improve *PPKn* study result. The result of counting shows that if the students are taught under cooperative learning model with STAD type, the student's *PPKn* score who are given essay formative test is higher than students who are given multiple choice formative test.

The result of this study lines to the concept of *PPKn* learning. Students who are taught under cooperative learning model with STAD have conviction that they will get success by doing wanted performance based on the objectives of learning and encourage them to study continuously to reach the development of *PPKn* study result. Students who are taught under cooperative learning model with STAD already to improve their effort, face the difficulty tasks consistently and feel challenging to do it, and believe to their ability in reaching the high or good prestation.

According Wieresma and Jurs (1990, p. 72) that essay test is very effective used to measure high level of study result, such as analyzing, synthesizing, and evaluation. So, the use of essay test needs high confidence and individuality in expressing idea, needs reasons in answering the questions with high difficulty level, so the questions in essay test is a media to answer the questions of *PPKn* subject in challenging condition. Therefore, students who are taught under cooperative learning model with STAD and given essay test can improve student's *PPKn* learning outcome optimally.

In contrast, students who are given multiple choice test, the students only answer one of given choice answers, so it tends to the guess and speculative, and it does not motivate to face challenging. Therefore, the use of multiple choice test can not improve student's *PPKn* learning outcome optimally.

**For Students who Are Taught under Cooperative Learning Model with NHT Type, Student's *PPKn* Learning Outcome who Are Given Essay Formative Test Is Lower Than Students Who Are Given Multiple Choice Formative Test after Controlling Prior Knowledge**

Based on the result of ANKOVA, testing of hypothesis 5 found that  $H_0$  is received based on the statistic t-test, value of  $t_{\text{count}} = 3.23$  is smaller than  $t_{\text{tab}(0,05;75)} = 1.67$ . The amount of  $t_{\text{count}}$  in this hypothesis is pure that has been controlled statistically of the effect of prior knowledge.

Testing of hypothesis shows that for students who are taught under cooperative learning model with NHT type, *PPKn* learning outcomes between groups of students who were given a description test differed from the group of students given a multiple choice test after controlling for the influence of the initial abilities. This means that the treatment given to students taught with the cooperative learning model of the NHT type can have an impact on improving *PPKn* learning outcomes when given a descriptive or multiple choice test.

Other factor that cause there is difference of *PPKn* study result between students who are given essay formative test and students who are given multiple choice formative test for students who are taught under cooperative learning model with NHT type is the effectivity of the given formative test.

According Hopkins and Antes (1979, p. 232-233) that the description test can reveal things such as: 1) the ability to think analysis, synthesis, and evaluation, 2) the maximum ability of students to freely appreciate thinking, 3) train students 'ability to argue, 4) open opportunities for students' ability to express writing, 5) maximum ability of students can organize their thoughts naturally. With a description test students are required to organize ideas or things that have been learned by expressing these ideas in the form of written descriptions.

This condition is for students who are taught by the cooperative learning model of the NHT type, it is felt very appropriate to be given a description test because students can describe the answer in answering questions that require reasoning.

Other essential issue is discussion of the students' *PPKn* learning outcome who are taught under cooperative instruction model with NHT and given multiple choice test. According Nitko (2001, p. 3) that multiple choice test has weakness, the students may do gueses in answering because all choice answers are given and the students do not explain their answers. For teachers, the multiple choice test does not guarantee the real students' ability because the teachers do not know thinking process of students. In other words, the students only choose the given choice answers and they are not given opportunity to explain or integrate their thought, so the condition can not help the teachers to identify the whole development of students study result. As a result, the teachers do not what the *PPKn* materials are that need reinforcement, remedial, or the next materials. Therefore, the use of multiple choice test is less effective used in instruction process because it can bring unoptimality of *PPKn* study result.

In other aspect, the multiple choice test can not inform accurately the students' knowledge since they do not express idea systematically in steps by steps based on the principle and concept of *PPKn* subject. The multiple choice test that only permit to one choice answer can not measure other students' ability, so the students who are taught under cooperative instruction model with STAD type are not motivated to improve their study results. Therefore, the students who are taught under cooperative learning model with STAD type and given multiple choice test are not optimal to improve the *PPKn* study results.

## CONCLUSION

The use of cooperative learning model and formative test form can improve the students's *PPKn* learning outcome after controlling prior knowledge. Students who are taught under cooperative instruction model with STAD type is more appropriate when it is given essay formative test. Likewise, students who are taught under cooperative learning model with NHT type is more appropriate when it is given multiple formative test. Therefore, the teachers need to improve their teaching skills or methods, mainly in the use of cooperative learning model since it can increase students's *PPKn* learning outcome, and the teachers should improve their knowledge of the use of formative test, especially in essay and multiple choice forms in *PPKn* learning.

## RECOMMENDATION

Based on the conclusion and implication of this study, there are several suggestions as follow.

1. The teachers should use cooperative learning model with STAD type as the main learning model in teaching *PPKn* subject at school.
2. The teachers who teach *PPKn* should use essay formative test as the main choice in teaching *PPKn* subject.
3. The teachers who teach in junior high school should use cooperative instruction model with STAD type and essay formative test as the main choice in *PPKn* learning at school.



4. Because this study has several limitations, the next researchers can investigate other learning models and other formative tests so it can enrich learning model and evaluation model of *PPKn* in experiment study design by maintenance of internal validity to be used as a guide for teachers who teach *PPKn*.

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## Disclosure statement

No potential conflict of interest was reported by the authors.

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