

## The Effect of Cooperative Instruction Model and Formative Test Form toward PKn (Civics Education) Learning Outcome Controlled by Prior Competence

(Experiment at Class VII of SMP Negeri 5 Kendari)

Hamuni and Muhammad Idrus\*

Teacher Training and Educational Faculty of Halu Oleo University Kendari-Southeast Sulawesi, Indonesia

Received 08 Feb 2019, Accepted 09 April 2019, Available online 10 April 2019, Vol.7 (March/April 2019 issue)

### Abstract

*This study aims at investigating the effect of cooperative instruction model and formative test form toward PKn (civics education) learning outcome controlled by prior competence. 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 competence: 1) student's PKn (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type is higher than students who are taught under cooperative instruction model with NHT type, 2) student's PKn (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 instructional model and formative test toward PKn (civics education) learning outcome, 4) for students who are given essay formative test, student's PKn (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type is higher than students who are taught under cooperative instruction model with NHT type, 5) for students who are given multiple choice formative test, student's PKn (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type is same or not different to students who are taught under cooperative instruction model with NHT type, 6) for students who are taught under cooperative instruction model with Jigsaw II type, student's PKn (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 instruction model with NHT type, student's PKn (civics education) learning outcome who are given essay formative test is same or not different to students who are given multiple choice formative test.*

**Keywords:** Cooperative Instruction Model, formative test, PKn learning outcome, Prior Competence

### 1. Introduction

It is commonly found that there are many problems in the instruction activity at schools. Most students think that PKn is complex and difficult subject. As a result, there are many students who have low PKn 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 Junior High School, PKn 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 indicates that PKn 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 PKn subject in SMP Negeri 5 Kendari in the year 2015/2016, namely lowest score is 2,25 and the highest one is 6,25. Likewise, in the year of 2016/2017, lowest score is 4,50 and the highest one is 6,25. The achievement of PKn study results are still low.

The low achievement of PKn study results is a serious problem for all sides. Therefore, it needs various improvement efforts to increase PKn study results. One of the ways is improving the factors that influence the students' PKn 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 SMP Negeri 5 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 PKn is the teachers do

\*Corresponding author's ORCID ID: 0000-0002-9252-5597

DOI: <https://doi.org/10.14741/ijmcr/v.7.2.4>

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 *PKn* 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 *PKn* subject can be solved through implementation of innovative instruction models, one of them is cooperative learning model with Jigsaw II and NHT types. Lines to Rokot's study (2016: 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 Jigsaw II and NHT types. Besides, cooperative learning model with Jigsaw II and NHT types also can increase students' motivation, students' participation or encouragement, and student's cooperation.

This study lines to Hunter, et.al's study, (2015: 345-362), that cooperative learning model with Jigsaw II and NHT 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.

Other factor that really influence students' study result is formative test forms, namely essay and multiple choice. It lines to Hopkins's statement (1981: 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: 196-204) states that essay test is more effective used to measure students' ability to organize, analyze, and synthesize than other tests. Essay test can measure students' opinion and attitude effectively.

It lines to the study result of Sumantri and Satriani (2016: 507-524) that student score who are given essay test is higher than students who are given multiple choice test. 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 *PKn* (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type higher than students who are

taught under cooperative instruction model with NHT type?

2. Is student's *PKn* (civics education) 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 instructional model and formative test toward *PKn* (civics education) learning outcome?
4. for students who are given essay formative test, is student's *PKn* (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type higher than students who are taught under cooperative instruction model with NHT type?
5. for students who are given multiple choice formative test, is student's *PKn* (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type is lower than students who are taught under cooperative instruction model with NHT type?
6. for students who are taught under cooperative instruction model with Jigsaw II type, is student's *PKn* (civics education) 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 instruction model with NHT type, is student's *PKn* (civics education) 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 follow.

#### 1. 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.

#### 2. 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 in the following table.

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

Formative test Forms (B)	Cooperative Instruction Model (A)	
	Jigsaw II (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> )

The data collection is done through cluster random sampling technique, and the sample consists of 80 students, in which 40 students as cooperative instruction model group with Jigsaw II type, and other 40 students as cooperative instruction 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 follow.

**Table 2** Estimate Parameter of Factors A, B, AB and X

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	738.701 <sup>a</sup>	4	184.675	9.203	.000
Intercept	2973.994	1	2973.994	148.207	.000
A	125.591	1	125.591	6.259	.015
B	76.860	1	76.860	4.110	.030
A * B	367.802	1	367.802	18.329	.000
X	86.963	1	86.963	4.334	.041
Error	1504.987	75	20.066		
Total	161109.000	80			
Corrected Total	2243.688	79			

Based on the analysis as summarized in table 1 above, hypothesis 1 is rejected with  $F_{count} = 6,259 > F_{tab(1;75)} = 3,98$ . Hypothesis 2 is also rejected since value of  $F_{count} = 4,110 > F_{tab(1;75)} = 3,98$ , and hypothesis is rejected since value of  $F_{count} = 18,329 > F_{tab(1;75)} = 3,98$ .

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 the table below.

**Table 3** Estimate Parameter of Hypothesis of 4 and 5

Parameter	B	Std. Error	T	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	38.098	2.962	12.864	.000	32.198	43.998	.688
X	.166	.080	2.082	.041	.007	.325	.055
[B=1.00]	-2.481	1.485	-1.670	.099	-5.440	.478	.036
[B=2.00]	0 <sup>b</sup>	.	.	.	.	.	.
[A=1.00] * [B=1.00]	6.834	1.420	4.811	.000	4.004	9.663	.236
[A=1.00] * [B=2.00]	-1.757	1.433	-1.226	.224	-4.613	1.098	.020
[A=2.00] * [B=1.00]	0 <sup>b</sup>	.	.	.	.	.	.
[A=2.00] * [B=2.00]	0 <sup>b</sup>	.	.	.	.	.	.

Based on the analysis result on table 3 for hypothesis 4, it is found that  $t_{count} = 4,811 > t_{tab(1;20)} = 1,725$ , so  $H_0$  is

rejected. Hypothesis 5 is received with  $t_{count} = -1,226 < t_{tab(1;20)} = 1,725$ .

**Table 4** Estimate Parameter of Hypothesis of 6 and 7

Parameter	B	Std. Error	T	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	38.098	2.962	12.864	.000	32.198	43.998	.688
X	.166	.080	2.082	.041	.007	.325	.055
[A=1.00]	-1.757	1.433	-1.226	.224	-4.613	1.098	.020
[A=2.00]	0 <sup>b</sup>	.	.	.	.	.	.
[A=1.00] * [B=1.00]	6.110	1.455	4.200	.000	3.212	9.008	.190
[A=1.00] * [B=2.00]	0 <sup>b</sup>	.	.	.	.	.	.
[A=2.00] * [B=1.00]	-2.481	1.485	-1.670	.079	-5.440	.478	.036
[A=2.00] * [B=2.00]	0 <sup>b</sup>	.	.	.	.	.	.

Based on the result of analysis as presented on table 4 for hypothesis 6, it is found that  $t_{count} = 4,200 > t_{tab(1;20)} = 1,725$ , so  $H_0$  is rejected. Hypothesis 7 is received with  $t_{count} = -1,670 < t_{tab(1;20)} = 1,725$ .

**Discussions**

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

**Student's *PKn* (Civics Education) Learning Outcome after Controlling Prior Competence who Are Taught Under Cooperative Instruction Model with Jigsaw II Type Is Higher Than Students who Are Taught under Cooperative Instruction Model with NHT Type**

Based on the result of ANKOVA, testing of hypothesis 1 found that there is a difference of *PKn* learning outcome after controlling prior competence between students who are taught under cooperative instruction model with Jigsaw II type and students who are taught under cooperative instruction model with NHT type. It is shown from value of  $F_{count}$  that has been controlled statistically their prior competence, that is 6,259. The amount of  $F_{count}$  that is resulted in this hypothesis is pure from the effect of applying instruction model that is given to students. The result of counting shows that the mean score of students' *PKn* study results after controlling prior competence for who are taught under cooperative instruction model with Jigsaw II type is higher than students who are taught under cooperative instruction model with NHT type. It indicates that students who are taught under cooperative instruction model with Jigsaw II type can increase students' *PKn* study results rather than students who are taught under cooperative instruction model with NHT type.

The role of cooperative instruction model gives positive contribution toward students' *PKn* study results. According Lie (2014: 73), that in cooperative instruction model with Jigsaw II 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 instruction model with

Jigsaw II type have good achievement, good attitude, good curiosity, and respect the differences and other opinions.

The result of Johnson & Johnson's study in Rusman (2014: 219) shows that Jigsaw cooperative instruction model has positive effect toward the development of children. The positive effects are: 1) improve the study result, 2) increase remember ability, 3) achieve the high level thinking, 4) build the intrinsic motivation, 5) build good relationship to heterogeneous others, 6) keep the self value of child, and 7) improve the cooperative live skill.

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

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

In contrast, students who are taught under cooperative instruction model with NHT type have less motivation if their willingness is very difficult to be achieved because they are convinced to face the difficult *PKn* tasks. As a result, they can not get optimal *PKn*'s study result.

### **Student's *PKn* (Civics Education) Learning Outcome after Controlling Prior Competence 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 *PKn* 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  $F_{\text{count}} = 4,110$ . 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 competence have been controlled.

The result of counting shows that the mean score of students' *PKn* study results after controlling prior competence 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 *PKn* study result. Giving essay formative test effectively in *PKn* instruction can be proved from the result of Sumantri and Satriani' study (2016: 507-524) that student's score who are given essay formative test is higher than students who are given multiple choice formative test.

Further discussion of the result above is the maintenance of *PKn* study result on given essay test. According Oosterhorf (1996: 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 Gronlund (1982: 119) that essay test gives freedom in answering questions, give the answers by themselves, and organize their answer and the given pressure to the answers.

In addition, applying essay test is suitable if it is given to *PKn* subject on high level cognitive aspect, as stated by Wieresma and Jurs (1990: 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 teachers hope the students can answer the questions in essay form based on their alone ability. Questions in essay test usually need long answer, so the students' thinking map can be known. The students' ability in organizing and relating the facts can be known and measured. It can inform more like way of thinking, background, the supporting reasons, and even the students' personality and attitudes.

The characteristics of essay formative test lines to the mastery of *PKn* concept that encourage students think and analyze critically. So, it can be concluded that *PKn* is created from the result of human thinking in terms of idea, process, and analyzing.

To answer essay test on *PKn* subject, the students need to have complex thinking. The students's answer include fact knowledge, evaluating the fact, and organize it in their thinking in logical and argumentative explanation in the narrative form. Ability to make narration by using their own words is the high ability. So, the answer complexity of essay test involves various ability levels.

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 *PKn* study result.

It differs to multiple choice test. According Oosterhof (1992: 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 *PKn*, 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 *PKn* 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 *PKn* subject.

### **The Effect of Interaction between Cooperative Instructional Model and Formative Test Toward Students' *PKn* (Civics Education) Learning Outcome after Controlling Prior Competence**

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 *PKn* (civics education) learning outcome after controlling prior competence. It is shown from value of  $F_{\text{count}} = 18,329$ . The amount of  $F_{\text{count}}$  that is resulted in this hypothesis is pure because their prior competence 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' *PKn* (civics education) learning outcome. However, to reach the maximal result of *PKn* learning, it needs agreement (considering the condition and situation) among cooperative instruction models.

The students feel happy and challenging in learning *PKn* 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 Jigsaw II 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 instruction model with Jigsaw II 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 Jigsaw II type are not suitable if they are given multiple choice test.

Further, students who are taught under cooperative instruction model with NHT type are not confident with their competence 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 instruction 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 instruction model with Jigsaw II type is high or good if they are given essay test. Likewise, the students' learning outcome who are taught under cooperative instruction 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 *PKn* (civics education)'s learning outcome after controlling prior competence.

### **For Students who Are Given Essay Formative Test, Student's *PKn* (Civics Education) Learning Outcome who Are Taught under Cooperative Instruction Model with Jigsaw II Type Is Higher Than Students who Are Taught under Cooperative Instruction Model with NHT Type after Controlling Prior Competence**

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 *PKn* (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type and students who are taught under cooperative instruction model with NHT type. It is shown from value of  $F_{\text{count}} = 4,811$ . The amount of  $F_{\text{count}}$  in this hypothesis is pure that has been controlled statistically. In other words, the mean of *PKn* study result is not influenced by prior competence, but because of giving essay test and the applying of cooperative instruction model with both Jigsaw II and NHT types in this study.

Next testing of hypothesis in this study found that for students who are given essay test, student's *PKn* (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type is higher than students who are taught under cooperative instruction model with NHT type after controlling prior competence. It indicates that students who are given essay formative test and taught under cooperative instruction model with Jigsaw II type can improve student's *PKn* learning outcome.

The result of this study lines to cooperative instruction model and formative test. Cooperative instruction model and formative test that are used in the instruction process are suitable to characteristics of essay test, need students' independence and high confidence in expressing idea, and analyze the answers from the difficult and complex *PKn* questions.

The most important is essay test can increase *PKn* study result since it give freedom in stating the answer and can consider the more complex answer. Popham (1981: 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: 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 instruction model with Jigsaw II type. The students like challenging that describe interest and participation in

handling the *PKn* questions, keep motivation when facing the failure, look for the factors causing the failure, and not worried in facing the *PKn* questions. As a result, the students have low stress level. Consequently, the use of essay formative test can improve student's *PKn* (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type.

In contrast, students who are taught under cooperative instruction model with NHT type will avoid the difficult tasks, are not motivated to study hard, and yieldingly when facing challenging and less attention to the given tasks.

Based on the explanation above, for students who are given essay formative test, student's *PKn* (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type is higher than students who are taught under cooperative instruction model with NHT type after controlling prior competence.

#### **For Students who Are Given Multiple Choice Formative Test, Student's *PKn* (Civics Education) Learning Outcome who Are Taught under Cooperative Instruction Model with Jigsaw II Type Is Lower Than Students who Are Taught under Cooperative Instruction Model with NHT Type after Controlling Prior Competence**

Based on the result of ANKOVA, testing of hypothesis 5 found that  $H_0$  is received based on the statistic  $t$ -test, value of  $t_{\text{count}} = -1,226$  is smaller than  $t_{\text{tab}(0,05;20)} = 1,725$ . The amount of  $t_{\text{count}}$  in this hypothesis is pure that has been controlled statistically of the effect of prior competence.

The result of counting shows that student's *PKn* (civics education) learning outcome who are taught under cooperative instruction model with Jigsaw II type is same or not different to than students who are taught under cooperative instruction model with NHT type after controlling prior competence. Besides, the students who are given multiple choice test and taught under cooperative instruction model with both Jigsaw II and NHT types can not increase student's *PKn* (civics education) learning outcome.

It may occur and it can be viewed from several factors, including factor of multiple choice formative test. According Oosterhof (1981: 86-89) that multiple choice test used in class has weakness, namely it tends to bring to guessing of answers. The use of multiple choice test is not suitable to the concept of *PKn* subject, in which the subject needs analyzing process. Gronlund and Linn (1982: 119-174) state that multiple choice test has weakness; the students commonly do guessing in choosing the answer.

The use of formative test aims at helping the teachers in monitoring the students' study result during learning process. For the teachers, multiple choice test is very difficult to monitor or give information about the students' knowledge. The students only choose one given

choice answer in multiple choice test and they do not explain why choosing it, so it is very difficult to know the students' ability, weakness, and personality on learning process. Consequently, it can not help the teachers to analyze what the students have learnt and what they want to learn.

Based on the explanation above, the use of multiple choice test is not effective in improving student's *PKn* (civics education) learning outcome. The use of multiple choice test that is used in class at that time is not suitable because it does not give opportunity for students to know their weaknesses in answering the questions of *PKn*.

#### **For Students who Are Taught under Cooperative Instruction Model with Jigsaw II Type, Student's *PKn* (Civics Education) Learning Outcome who Are Given Essay Formative Test Is Higher Than Students who Are Given Multiple Choice Formative Test after Controlling Prior Competence**

Based on the result of ANKOVA, testing of hypothesis 6 found that  $H_0$  is rejected as  $t$ -test statistic, in which  $t_{\text{count}} = 4,200$  is higher than  $t_{\text{tab}(0,05;20)} = 1,725$ . The amount of  $t_{\text{count}}$  in this hypothesis is pure that has been controlled statistically of the effect of prior competence.

Testing of hypothesis based on ANKOVA found that for students who are taught under cooperative instruction model with Jigsaw II type, student's *PKn* (civics education) 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 instruction model with Jigsaw II type can improve *PKn* study result.

The result of counting shows that if the students are taught under cooperative instruction model with Jigsaw II type, the student's *PKn* 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 *PKn* instruction. Students who are taught under cooperative instruction model with Jigsaw II have convenience that they will get success by doing wanted performance based on the objectives of instruction and encourage them to study continuously to reach the development of *PKn* study result. Students who are taught under cooperative instruction model with Jigsaw II 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 prestatation.

Learning *PKn* needs analyzing power and high thinking based on the logical, critical, and rational thought that can be used to answer the complex and difficult essay test items. According Wieresma and Jurs (1990: 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 *PKn* subject in challenging condition. Therefore, students who are taught under cooperative instruction model with Jigsaw II and given essay test can improve student's *PKn* 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 *PKn* learning outcome optimally.

### **For Students who Are Taught under Cooperative Instruction Model with NHT Type, Student's *PKn* (Civics Education) Learning Outcome who Are Given Essay Formative Test Is Lower Than Students Who Are Given Multiple Choice Formative Test after Controlling Prior Competence**

Based on the result of ANKOVA, testing of hypothesis 7 found that  $H_0$  is received as t-test statistic, in which  $t_{\text{count}} = -1,670$  is lower than  $t_{\text{tab}(0,05;20)} = 1,725$ . The amount of  $t_{\text{count}}$  in this hypothesis is pure that has been controlled statistically of the effect of prior competence.

Testing of hypothesis shows that for students who are taught under cooperative instruction model with NHT type, student's *PKn* (civics education) learning outcome who are given essay formative test is same or not different to students who are given multiple choice formative test. It means that the applying of cooperative instruction model with NHT type can not improve the study result

The students tend to feel tired if they are taught under cooperative instruction model with NHT type, either for students who are given essay formative test or students who are given multiple choice formative test because they feel unmotivated when looking at the number total of questions. However, the number total is suitable to the given time to answer it. The cause is they are often taught under cooperative instruction model with NHT type, in which they often avoid the difficulty tasks and easy to get yielding when facing obstruction or difficulty problem, so they can not reach *PKn* study result optimally.

Other factor that cause there is not difference of *PKn* 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 instruction model with NHT type is the effectivity of the given formative test.

According Hopkins and Antes (1979: 96) that essay test has weakness, it is very difficult to express idea in written form, although the ability to express idea in written form is the main aspect to classify the students' achievements. Through essay test, the students need to organize the idea or the learnt materials in explanatory of written form.

The students who are taught under cooperative instruction model with NHT type get difficulty in answering essay test since they commonly avoid much tasks, mainly when they are asked to illustrate their answer. They have less motivation in answering questions of *PKn* because the test needs analyzing.

In other aspect, according Hopkins and Antes (1979: 96) that essay test has weakness in terms of the scope of materials that are tested. Consequently, the students are not ready to master all materials, and the students who are taught under cooperative instruction model with NHT type may do speculation about the materials that are tested. It can bring unoptimal result of *PKn* learning.

Other essential issue is discussion of the students' *PKn* learning outcome who are taught under cooperative instruction model with NHT and given multiple choice test.

According Nitko (2001: 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 that 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 as result, the teachers do not what the *PKn* 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 *PKn* 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 *PKn* 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 Jigsaw II type are not motivated to improve their study results. Therefore, the students who are taught under cooperative instruction model with Jigsaw II type and given multiple choice test are not optimal to improve the *PKn* study results.

### **Recommendation**

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

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

and essay formative test as the main choice in *PKn* instruction at school.

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

### Acknowledgement

The authors appreciate Mr. Maulid Taembo for his kind support in conducting the research.

### References

- [1]. Gronlund, Norman E. and Linn, Robert L. (1982). *Constructing Achievement Test* (London: Prentice-Hall Inc., pp. 119-174.
- [2]. Hopkins, Charles D. and Antes, Richard L. (1979). *Classroom Testing: Construction*. Illinois: FE. Peacock Publisher, Inc., p. 96.
- [3]. Hunter, William C, et al. (2015). *Numbered Heads Together as a Tier 1 Instructional Strategy in Multitiered Systems of Support*, *International Journal Education and Treatment of Children*, The University of Memphis, USA, 38 (3): pp. 345-362.
- [4]. Lie, Anita. (2014). *Cooperative Learning*. Jakarta, PT. Gramedia Widiasarana Indonesia, p. 73.
- [5]. Marrow, James R, Jr et.al., (2005). *Measurement and Evaluation In Human Performance*, USA: Human Kinetics, pp. 196-204.
- [6]. Nitko. J, Anthony. (2001). *Educational Assessment of Student*, New Jersey: Prentice-Hall, p. 3.
- [7]. Oosterhorf, Albert. (1996). *Developing and Using Classroom Assessments*. New Jersey: Prentice Hall, pp. 86-89.
- [8]. Popham, W. James, (1981). *Educational Measurement*. New Jersey: Prentice Hall, 1981, p. 123.
- [9]. Rokot, Agus, The Influence Of Cooperative Learning Model And Formative Test Toward The Chemistry Learning Achievement By Controlling The Initial Competency. *International Journal of Health Medicine and Current Research*, North Sulawesi, Indonesia, Vol. 1, No. 2, 2016, pp. 217-225.
- [10]. Sumantri, Mohamad Syarif & Satriani, Reni. (2016). The Effect of Formatif Testing and Self-Directed Learning on Mathematics Learning Outcomes. (*IEJEE*, *Internasional Electronic Journal of Elementary Education*, Jakarta state, Vol. 8 No. 3, pp. 507-524.
- [11]. Rusman, (2014). *Model-Model Pembelajaran: Mengembangkan Profesionalisme Guru*. Jakarta: Raja Grafindo Persada, p. 219.
- [12]. Wiersma, William and Jurs, Stephen G. *Educational Measurement and Testing*. Boston: Allyn and Bacon, 1990, p. 72.