

THE INFLUENCE OF COURSE REVIEW HORRAY LEARNING MODEL AND INDEPENDENT LEARNING ON MATHEMATICS LEARNING OUTCOMES OF STUDENTS IN CLASS V SD NEGERI 163080 TEBING TINGGI

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Abstract

This study aims to determine the effect of applying the Course Review Horay learning model on mathematical learning outcomes based on the learning independence of fifth grade students at SDN 103080 Tebing Tinggi. This research is a Quasi-Experimental research and the design used is Factorial Experimental. The population in this study were all fifth grade students at SDN 103080 Tebing Tinggi. The sample in this study was the VA class as the experimental class and the VB class as the control class. The sampling technique used in this research is Cluster Random Sampling. The instruments used were descriptive tests to measure mathematical learning outcomes and questionnaires to measure student learning independence. Data analysis techniques were carried out using the t test for all hypotheses. Based on the t tests carried out for hypotheses 1, 2 and 3, it was obtained t count $>$ t table, meaning that H_1 was accepted. So it can be concluded that there is a difference between the experimental class which learns using the Course Review Horay model and the control class which learns using conventional learning. The average score in the experimental class is better than the average score in the control class. Whereas for hypothesis 4, it is obtained t count $\leq$ t table, meaning that H_1 is rejected. So it can be concluded that there is no difference between the experimental class that learns using the Course Review Horay model and the control class that learns using conventional

learning. With the same average score for the experimental class and the control class. The results of this study can be used by teachers to improve the quality of learning in class.

Keywords: *Course Review Horray, Independent Learning, Learning Outcomes*

A. Introduction

Mathematical ability according to some experts is one ability important mathematics is owned and mastered by every student, because of mathematical mathematical abilities is Wrong One aspect Which want controlled by achievement objective learning mathematics listed in the Minister of Education and Culture Number 21 of 2016. Besides that, it's important learning outcomes are also stated by Santrock who said that the key to learning is mathematical ability. Then Zulcardi (Herawati et al, 2010:71) suggests that mathematics subjects emphasize concepts. Likewise with Hendrianad, et al argued that to develop and mastering mathematical abilities such as, problem solving, communication, reasoning to ability think critical And think creative mathematical as well as ability mathematical other well, it is necessary to have the support of learning outcomes that are controlled by Good. Based on opinion expert the, mathematical abilities mathematical is basic mathematical skills that are important to have in order to master math skills other.(Primayana, 2019)

The importance of mathematical ability and the magnitude of its role in learning mathematics, mathematics learning outcomes should have been ingrained from an early age in every student. However, based on existing facts, mathematical mathematical ability not instilled in every student. This is shown by the results of the Program survey for International Student Assessment (Guria, 2015: 5) the survey results show

Indonesia obtain 386 average score mathematics from 490 average score International and occupy ranked 63 out of 71 countries. In addition, there are many research results from several educational journals researcher mathematics from various area in Indonesia Which researching related with students' mathematical mathematical abilities. The existence of this shows that nationally students' mathematical abilities have problems and need to be improved again. Mathematical learning outcomes that are still low also occur where researchers carry out research as evidenced by the acquisition of the results of the learning outcomes test trials given to 29 students which shows that 75.86% of students scored below KKM that is 75. (Asngad, A., Bagas, A., & Nopitasari, 2018)

According to Purwanto (2006: 102) low mathematical abilities mathematical as learning outcomes are influenced by many factors, and teaching methods are one of them. Because of Therefore, efforts are needed to apply an appropriate learning model. Course Models Review Horay (CRH) is used as one of the recommended learning models, because Huda (2015: 230) argues that good students' mathematical abilities can be achieved with the help of group discussions in its application through the CRH learning model. Besides In addition, Kurniasih & Berlin (2016: 80) added that this CRH learning model can creating a lively and fun classroom atmosphere. The CRH model is also supported with the theory of cognitive psychology, namely the Gestalt theory put forward by John Dewey.

Based on the description that has been put forward, there is a relationship between mathematical ability mathematics with the CRH learning model. When viewed based on student learning independence, it turns out independence Study student Also each other related with mathematical abilities mathematical and the CRH learning model (Hayati,

Lu'luil, Inyoman Loka, 2019). According to Afgani (2011: 5.60) in learning, active activities carried out by students to achieve learning objectives and is an activity that Supporting cognition, behavior and attitudes is an effort that comes from independent learning student. Likewise the CRH learning model which in its implementation can make students active and directly involved in the implementation of learning. Then, Lusiana (Ernawati, 2009: 2) reveals that the low mathematical ability possessed by students is caused by many things and one of them is low learning independence as well. Based on opinions that have been expressed, independence learning affects learning outcomes mathematical as results Study Which obtained student.(Trianto, 2009)

According to Wiharno (Hendriana, 2017: 4) mathematical ability is a strength Which must noticed in learning mathematics by achievement knowledge mathematics Which meaning. Whereas according to Kusumawati (2008: 235) in Study Mathematics requires an important foundation for solving good problems in mathematics That Alone And in life daily that is mathematical abilities mathematical.

In line with the opinion of Kesumawati, Bani (2011: 13) also stated that one of the important goals in learning mathematics is to have good mathematical learning outcomes, where mathematical ability confirms that in learning mathematics the material is obtained not just being able to mention formulas, but requires other abilities which is more than that(Asriningtyas, 2018). A good understanding will make students better understand the concept being studied. According to Seomarmo in Hendriana & Utari (2014: 20) mathematical abilities are divided into two types, namely "computational understanding, an understanding that can apply concepts or formulas to routine/simple calculations or work on something algorithmically only. functional understanding, an

understanding that can relate a concept with other concepts correctly and realize the process carried out (Wahyu Ari Wibowo, 2017). Measuring mathematical learning outcomes requires an indicator, and the indicators used in this study are indicators of mathematical mathematical ability according to Kalpatrick et al (Afrilianto, 2012: 196), namely: "(1) Restating concepts that have been studied; (2) classify objects based on fulfilled or nope condition to form the concept; (3) Applying the concept algorithmically; (4) Presenting concepts in various forms of mathematical representations and; (5) Associating various conceptual form (internal and external mathematics)". The assessment used can be seen in Table Guidelines Scoring.

Table 1. Guidelines Scoring

Level understanding	Criteria	Score
No Understand	No answer The same very	0
Misconceptions	There is answer, But draft And the calculations Wrong all	1
Misconceptions Part	Give information Which needed in apply draft, However answer Wrong Because show error draft in explain	2
Partly Understand	Answer almost Correct Because there is little error calculation And make conclusion	3
Understand Whole	Calculation Correct, answer Correct And contain whole draft as well as make conclusion	4

The CRH learning model according to Kurniasih & Berlin (2016: 81) is a model learning that tests students' understanding with the questions given by the teacher, Then students in groups will write their answers in the appropriate numbered boxes wishes and for groups of students who answered correctly based on the results of the discussion should immediately shout "Horay!" and continued it by displaying the group's yells.

Implementation of the CRH learning model that is applied according to the learning steps according to Uno & Nurdin (2012: 89), namely: "(1) The teacher conveys the desired competence achieved; (2) The teacher demonstrates or presents the material; (3) Gives students opportunities question and answer; (4) To test understanding, students are told to make boxes 9/16/25 accordingly needs and each box is filled with numbers according to the tastes of each student; (5) Teacher read question in a manner random And student write answer in in box Which the number is mentioned by the teacher and immediately discussed, if it is correct, fill in the correct mark (v) and fill in the wrong mark wrong (x) ; (6) Students who have received a vertical, horizontal or diagonal (v) mark must shout *Hooray!* or Yell, yell other; (7) Mark student counted from answer Correct amount *Hooray!* Which obtained And final is (8) Closing". (Seranica, Christinsenia, Agus Abhi Purwoko, 2018).

According to Winne (Amir & Risnawati, 2014: 168) learning independence is a way someone to organize and solve the problem of his learning experience to achieve it targeted goals. Then Desmita (Suhendri, 2010: 34) added "characteristics Learning independence is characterized by the ability to determine one's own destiny, creative and initiative, managing behavior, responsible, able to hold back, able to take own decisions, and able to overcome problems encountered without any influence from people other" (Mutiara et al., 2019). Learning independence owned by students can be measured by learning independence indicators, according to Hendriana et al (2017: 233) indicators of learning independence consist of nine indicators including: "(1) Initiative and motivation to learn; (2) Diagnosing learning needs; (3) Establishing objective or target in study;(4) monitor, arrange as well as control study;(5) Seeing difficulties as challenges; (6) Utilizing the surrounding conditions to find relevant sources;

(7) Select and implement learning strategies and; (8) Evaluate learning processes and outcomes as well; (9) Concept in ri to able a n self". (Wahyuningtyas & Wulandari, 2020).

Based on the exposure that has been described, the objectives in this study are to see (1) Whether or not there are differences in students' mathematical learning outcomes implement models CRH learning with models conventional learning; (2) There is whether or not the differences in students' mathematical learning outcomes are independent high, medium, and low learning who learn to apply the CRH learning model with model learning conventional.

B. Method

Type study This is study quasi experimental or experiment pseudo (Arikunto Suharsimi, 2013). The research design used is Factorial Experimental (J. W Creswell, 2014). Design This notice exists variable moderator Which influence something treatment. As for design from factorial experimental that is:

Table 2. Design Factorial Experimental

<i>A</i>	<i>O 1</i>	<i>X</i>	<i>Y 1</i>	<i>O 2</i>
<i>A</i>	<i>O 1</i>	<i>C</i>	<i>Y 1</i>	<i>O 2</i>
<i>A</i>	<i>O 1</i>	<i>X</i>	<i>Y 2</i>	<i>O 2</i>
<i>A</i>	<i>O 1</i>	<i>C</i>	<i>Y 2</i>	<i>O 2</i>
<i>A</i>	<i>O 1</i>	<i>X</i>	<i>Y 3</i>	<i>O 2</i>
<i>A</i>	<i>O 1</i>	<i>C</i>	<i>Y 3</i>	<i>O 2</i>

With *A* : Random sampling, *O*₁ : *Pretest* results, *X* : *Treatment* given, *C* :Control to treatment, *Y*₁ : independence Study Height, *Y*₂ : independence Study Currently, *Y*₃ : Independence Study Low And *O*₂ : *Posttest* results independence Study participant educate be measured

with use questionnaire Which given in the experimental class and control class which aims to see and classify learning independence of students into three, namely high, medium and low(John W Creswell, 2012). Draft research on learning models and learning independence on learning outcomes mathematical that is:

Table 3. Draft Connection Model Learning And independence Study To Learning outcomes Mathematical Student

Independence Study (Y)	Model Learning(A)	
	CRH (A 1)	Conventional (A 2)
Tall (Y 1)	A 1 Y 1	A 2 Y 1
Currently (Y 2)	A 1 Y 2	A 2 Y 2
Low (Y 3)	A 1 Y 3	A 2 Y 3

The population of this study were all fifth grade students at SDN 103080 Tebing Tinggi. Furthermore, sampling is carried out with the condition that all populations have similarity average and No own difference ability at the beginning, so selected in a manner random VA class as the experimental class and VB class as the control class. Determination taking sample using questions *pretest* mathematics learning outcomes.

Instrument used in research implementation, namely:

- 1) Tests (*Pretest and Posttest*) learning outcomes, the steps taken are: make a grid of questions, validate questions on experts, conduct test questions. Analysis validity question use formula *product moment*, reliability use formula alpha and Power differentiator as well as level hardship use formula for *essay questions*. The conclusion of the analysis results of 10 learning outcomes test questions, namely all valid with fairly constant reliability, distinguishing power with Very Good criteria 3, good 2, enough 2 and not good 3, and the level of

difficulty with easy criteria is four, moderate 4 and difficult 2. The questions used in the study totalled 7 questions except questions with Power Differentiator Which not enough Good.

- 2) Learning Independence Questionnaire, the steps taken are: making a questionnaire grid, validating the questionnaire to experts, conducting questionnaire trials. The questionnaire trial was carried out at SDN 103080 Tebing Tinggi, the criteria for answering the independent learning questionnaire the researcher eliminated the "Neutral" criteria to reinforce the respondents' answers. Then analysis of validity and reliability was carried out, with the conclusion of the results of the analysis of 36 questionnaires learning independence, namely 30 valid and 6 invalid questionnaires accompanied by the reliability of the questionnaire with good criteria (Rayanto, 2020). The number of independent learning questionnaires used in the research 30point statement. After being analysed, questionnaires were distributed to the two classes to be studied in order to find out groups of students with high, moderate and independent learning low in accordance with criteria on Table 4.

Table 4. Criteria Grouping Independence Study Student

Criteria	Category
$SRL \geq \bar{x} + s$	Group Tall
$\bar{x} - s < SRL < \bar{x} + s$	Group Currently
$SRL \leq \bar{x} - s$	Group Low

Based on results analysis and criteria grouping independence Study student, it was found that students with high learning independence in the experimental class totalled 37 people and in the control class there are 32 people, for students who study moderately

independently totalling 69 people for the experimental class and control class. While students who low learning independence in the experimental class totalling 37 people and sis in the control class amount 32 person.

- 3) Observation Sheet, the observation sheet that researchers use is a checklist. Observers give sign check (v) For determine how much implementation learning activities based on the results of observations. The observation sheet used is sheet observation teacher and sheet observation student. (Sugiyono, 2015)

The instruments that have been described are used to collect data. After data collected, the data will be analysed in order to determine the research objectives. (Sugiyono, 2017) Data analysis was performed with use test statistics. Before done test statistics, data results final test Mathematical abilities are first analysed with prerequisite tests, namely the normality test and homogeneity. Based on the results of the prerequisite test, then a statistical test was carried out with the criteria provisions: (1) If the prerequisite test data analysis is normal and homogeneous, the statistical test is used is test t ; (2) If the analysis of the prerequisite test data is normal but not homogeneous, the statistical tests are used is the test t' and; (3) If the prerequisite test data analysis is not normal, the statistical test is used is test statistics non-parametric that is test *Mann Whitney U* .

C. Finding and Discussion

Table 5. Results Analysis Data Learning outcomes

Class	independence Study	Lots Sample	Score Test Learning outcomes		
			$\bar{x}$	X_{max}	X_{min}
Experiment	Tall	6	25,833	28	19
	Medium	16	23.312	27	18
	Low	4	19.500	22	18
	Overall	26	23,307	28	18
Control	High	5	21,800		
	Medium	16	19.375	25	14
	Low	6	19.500	25	14
	Overall	27	19,851	25	14

Table 5 show that average whole score learning outcomes class experiment is higher than the average of the entire control class. This matter means learning outcomes mathematical student class experiment more Good from on class control. Table 5, show learning outcomes mathematical based on learning independence. The average score of students learning independence is high and while the experimental class is higher than the average score of students' mathematical learning outcomes students with high learning independence and moderate control class. However, for the average mathematical learning outcomes of students with low learning independence in the experimental class and the control class have the same average score. Based on learning independence, this means that the mathematical learning outcomes of students who have high learning independence and are just in the experimental class better than the control class. In addition, the average score of mathematical learning outcomes the indicator also shows that

the experimental class is better than the control class showed on chart Which served on Chart 1.

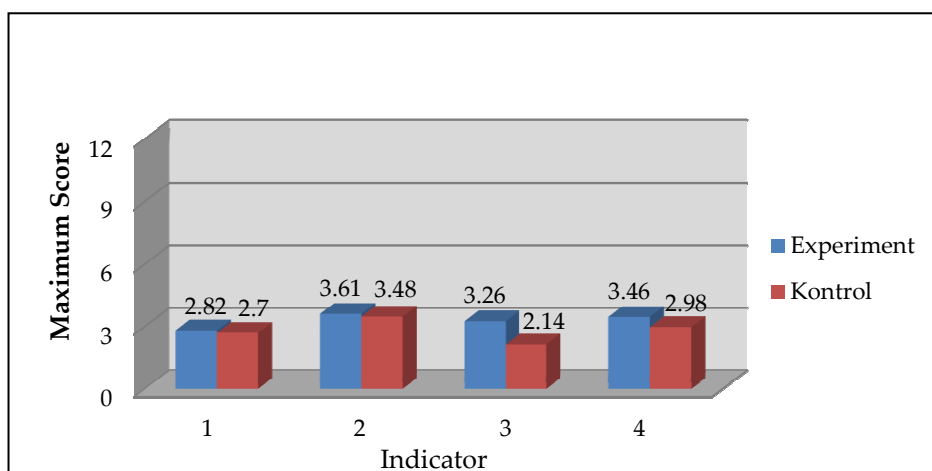


Chart 1. Average Score Indicator Learning Outcomes Class Sample

The results of the analysis of hypothesis testing for students' mathematical learning outcomes can observed on Table 6

Table 6. Results Analysis Test hypothesis with t Test

hypothesis	Model	Independence Study	N	Results
hypothesis 1	CRH	-	37	
	conventional	-	32	
hypothesis 2	CRH	Tall	37	There is Difference
	conventional	Tall	32	
hypothesis 3	CRH	Currently	37	
	conventional	Currently	32	
hypothesis 4	CRH	Low	37	There is No Difference
	conventional	Low	32	

Based on Table 6, it can be seen that hypotheses 1,2 and 3 show there is differences in understanding the concept of students who learn to apply the CRH learning model with students who study with the conventional model with a value of t count $> t$ table that is $3,733 > 2,007$. The same is true for students with high and moderate independence who show there are differences in understanding the concepts of students who learn to apply the CRH learning model with students who study with conventional models with test scores t respectively, namely t count $> t$ table, namely $2.300 > 2.262$ and t count $> t$ table that is $3.152 > 2.042$. The analysis proves that overall and for students with high independence and while the CRH learning model is better for improving mathematical learning outcomes compared to with model learning conventional.

However, it is different for students who show low learning independence there is no difference in the ability to understand the problems of students who learn to apply the model learning CRH with student Which Study with model conventional because t count $< t$ table that is $0 < 2.306$.

In line with this analysis, it has been explained previously that the learning model CRH is a learning model that helps students understand concepts well. So also with independent learning that plays a role in implementing the CRH model and participating influence learning outcomes mathematical student.

D. Conclusion

Based on the results and discussion, it can be concluded that:

1. Overall there is difference learning outcomes mathematical student And show that learning in the experimental class with the CRH model is better than learning in the classroom control with conventional models;

2. Based on learning independence, there are differences mathematical learning outcomes of students with high learning independence and students who independent learning is moderate, so it also shows that learning in class experiment with the CRH model is better than learning in the control class with the model conventional. However, this does not apply to students with low learning independence because there is no difference between students who learn to apply the CRH model and students Which Study with model conventional.

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