

Research Article

Comparison Of Biology Learning Outcomes In The Talking Chips Type Cooperative Model With Snowball Throwing

Nur'aini¹, Nurdiana², Neneng Agustini^{3*}

^{1,2,3} Biology Education Departement - State Islamic University of Mataram, Indonesia

*Corresponding author: neneng.agustini@uinmataram.ac.id

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ABSTRACT

The type of this research is Quasi-Experimental Design. This research aim is whether there are differences in the cooperative model of talking chips and snowball throwing on student learning outcomes in biology subjects in class VIII in Bina Baru Hamlet, Wadukopa Village, Bima Regency. The purpose of this study was to find out the differences between talking chips and snowball-throwing learning models on student learning outcomes in the material for the human respiratory system for class VIII in Bina Baru Hamlet, Wadukopa Village, Bima Regency. The population in this study were all eighth-grade students in Bina Baru Hamlet, Wadukopa Village, Bima Regency as an experimental class using talking chips and snowball throwing learning models and control classes. The sampling technique in this study was a Quasi-Experimental Design. The instrument used to collect data is a test of learning outcomes in the form of multiple-choice questions, observation sheets, and lesson plans and the data collected is a type of quantitative data. The average learning outcomes of class students using the talking chips cooperative learning model and the snowball throwing type cooperative learning model of 81.6. This is shown from the significance value of the t-test of < 0.05 , it can be concluded that there is a significant effect of using the talking chips model with snowball throwing on the learning outcomes of class VIII students in Bina Baru Hamlet, Wadukopa Village, Bima Regency on the material of the human digestive system.

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INTRODUCTION

Education is business carried out by somebody or other groups of people to become mature or reach level life or more life tall (Hasbullah, 2008). However , many graduate of formal education that has not could Fulfill criteria demands field available

work , moreover create field work new as percentage mastery the knowledge he gained from institution education. Condition like this is description low quality education (Suryabrata, 2004).

Improving the quality of education also means improving the quality of human resources. For this reason, it is necessary to reform in the field of education . Education is not only limited to transferring the results of science and technology (Trianto, 2010), but also instilling new values demanded by the development of science and technology in students, one of the most important things in education is the achievement of educational goals that have been formulated (Republik Indonesia, 2012).

The learning process has a broader meaning and understanding than teaching. In the teaching and learning process, it is implied that there is an inseparable unit of activity between students who learn and teachers who teach. There is a mutually supportive interaction between the two. In the learning process and greatly affects student learning outcomes (Nugraheni, 2008).

To realize this increase in learning outcomes can not be separated from the role of the teacher, both as a facilitator , mentor and motivator. This is in accordance with what Slameto 2017 revealed that the effective and efficient teaching and learning process can be achieved if the teacher uses a good and appropriate learning model. The use of inappropriate learning models can lead to boredom, monotony and Theory poorly understood, so students are not motivated to learn and the implications will affect learning outcomes (Slameto, 2013).

Based on the results of initial observations made by researchers through interviews with biology teachers in the bina baru sub-village, reservoiropa Bima has a problem, namely: students are less active in the teaching and learning process, due to the use of less varied learning models. Teacher only use method lecture , discussion , or assignment questions in the book package and in LKS. low results study student seen from score test daily on eye lesson biology , show with a total of 20 students , the average value of students class VIII A is 69.68 with amount student 10, and student 's average score class VIII B is 62.57 with amount students 10. only 30% of students can reach KKM and the other 70% not yet reach KKM, with KKM value for eye lesson biology is 70.

Based on the problems above, the learning process can be carried out through improvements , one of which is the learning model used by the teacher, it is necessary to make an innovation in applying the learning model. One of the learning models is the cooperative model which requires students to be active in the learning process, through application cooperative learning model , is expected to improve learning outcomes that students are easy to accept and understand the subject matter delivered so that the learning objectives will be achieved.

Cooperative learning model is a group learning model that has recently received attention and is recommended by educational experts to be used. Some learning models that can improve student learning outcomes are talking chips and snowball throwing . On model talking chips , learning is carried out in small groups consisting of 4-5 people per group , to discuss a problem or subject matter , and result each representative group express their opinion by being given 1 and 2 cards. This method makes no student dominate and no student is inactive, all students must express their opinion. This

technique provides opportunities for students to be more active in communicating with teachers or other students.

On the snowball model throwing, students are formed into several groups then each group is selected a leader to get an assignment from the teacher then each student makes a question that is shaped like a ball (question paper) then thrown into the ball. Other students, each of which answers questions from the balls obtained, the purpose of this strategy is to train students to listen to other people's opinions, train students' creativity and imagination in making questions, and encourage students to work together and be active in learning (Hanum & dkk, 2015). This research aims is whether there are differences in the cooperative model talking chips and snowball throwing on student learning outcomes in biology subjects in class VIII Dusun Bina Baru Village Wadukopa Bima

METHOD

The type of research used in this study is *Quasi Experimental Design*. This design form is a development of *true experimental design* (Sugiyono, 2015). Study there is two group that is group experiment, first treatment _ using cooperative model type *talking chips* and treatment second is use type *snowball throwing*. Group control use method conventional. Approach study that is quantitative (Noor, 2012).

Population study this that is whole student class VIII Dusun Bina Baru Village Reservoir Bima (Sugiyono, 2015). technique taking sample in study this is with type of incidental sampling. Incidental sampling is something technique in taking sample by coincidence, meaning anybody student class VIII found in the village build new village reservoir Bima used as sample. Technique incidental that researchers used that is with look for and gather VIII student as experiment with a total of 10 people and class VIII which consists of 10 people as class control. So obtained two class formed in the form of class experiment and class control.

Design research used is posttest-only control design. In design this two group is given posttest.

As for instrument used in study this is as following.

1. Instrument Test

Test used for measure results study student on Theory System respiration humans, as many as 25 grains matter. Form the test is test written in the form of choice double, before use question test, validation process is carried out on expert and try on student for knowing quality item matter.

2. Sheet Observation

Sheet observation this used for observe activity student and teacher in implementation learning using cooperative model type talking chips and snowball throwing. Scale measurement use scale gutman on four meetings.

Data analysis is carried out in study that is:

1. Analysis Descriptive

a) Analysis results study

Evaluation to Results study calculated with use percentage as following (Firdaus, 2018):

$$\text{Final assessment} = (\text{Gain Score} / \text{Max Score}) \times 100$$

Table 3.1 Criteria Result data study student

No	Percentage	Information
1	0 - 34	Not very good
2	35 - 54	Not good
3	55 - 64	Enough good
4	65 - 84	Good
5	85 - 100	Very good

2. Analysis Pre-requisite , test normality and test homogeneity
3. Analysis hypothesis , t-test

RESULTS AND DISCUSSION

1. Results Study

- a. Implementation Learning cooperative type talking chips with snowball throwing

Implementation learning conducted as much four meetings, and on class experiment is given cooperative model treatment type talking chips and snowball throwin. On cooperative learning model type talking chips, done through step first, the teacher gives presentation class for give stimulation, for awaken spirit, and knowing description general about studied material through explanation short and Q & A. Step second, implementation work group, students first join in one heterogeneous group. After that, student discuss in group that has determined. Then student work same and each other help one each other in solve problem found in Duty group. next student each other check for ensure that every member group has dominate draft as well as the material studied. Step third, implementation individual test given with destination so far where ability every member in something group. Step fourth calculation score enhancement results study individual then step fifth, give price group first calculation score earned each group of the average score enhancement performance individual member. Then lastly, the teacher gives appreciation to each group .

- b. Results Study

Before the question instrument test given to sample research, especially formerly conducted validation instrument to an expert validator , with destination for knowing is instrument the worthy or no used in research. In study this test results study student declared valid by two validators. Next conducted test given field on other students for knowing instrument the worthy used or no in research. Questions choice double used in study this tested to 20 students on class VIII in Dusun Bina Baru Village Wadukopa, analyzed use formula *product moment* with level significant 5% amount item tested questions as many as 25 items matter.

From result test expert as well as test field obtained score $r_{table} = 0,443$ with level 5% significance with provision if $r_{count} \geq r_{table}$ so question choice double it is said that 25 questions are valid, so could used for measure results study students in class VIII in Dusun Bina Baru Village bima. Because questions the already represent all indicators that will measured .

Next conducted test reliability item matter. Based on from calculation for test reliable test item question by whole conducted with use technique split two analyzed with use formula spermbrown . Range score efficient reliability between 0.60-1.00 including category very high. From test reliability obtained results as big as 0.945 and could seen that cronbach's alpha on variable this more tall from on score base that is $0.945 > 0.60$ result the prove that all question choice double declared reliable.

Results study student given on class experiment and control after learning , obtained results for class control that is there is on table 4.1

Table 3.2 Results Class Post-test Control

No.	Student Name	Class Control
1	Irn	74
2	Rki	75
3	Atn	72
4	Ksmi	75
5	Amyh	76
6	LPs	68
7	Ptr	73
8	M.ar	70
9	Fnh	68
10	Cw	72
Amount		723
Average		72.3
High Score		76
Score Low		68

From the data above, it can be concluded that use method lecture on class control not enough effective because the average value obtained is below KKM standard. Whereas learning data results class experiment comparison results study cooperative model biology type talking chips and snowball throwing.

Table 3.3 Results Class Post-test Experiment

No.	Student Name	Class Experiment	
		<i>Snowball throwing</i>	<i>Talking chips</i>
1	Sr	80	84
2	Dr	72	76
3	NRFDT	85	92
4	Afmi	80	80
5	Sa	90	100
6	Nf	80	76
7	Ice	80	88
8	Nurmm	88	96
9	Sltri	89	92
10	Ns	72	76
Amount		816	860

Average	81.6	86
High Score	90	100
Score Low	72	76

From the data above , it can be concluded that use learning model cooperative type *talking chips* on class experiment more effective from on the learning model *snowball throwing* in increase results study biology class VIII in Dusun Bina Baru village Wadukopa . Based on table the can be seen results study chart on picture 3.1

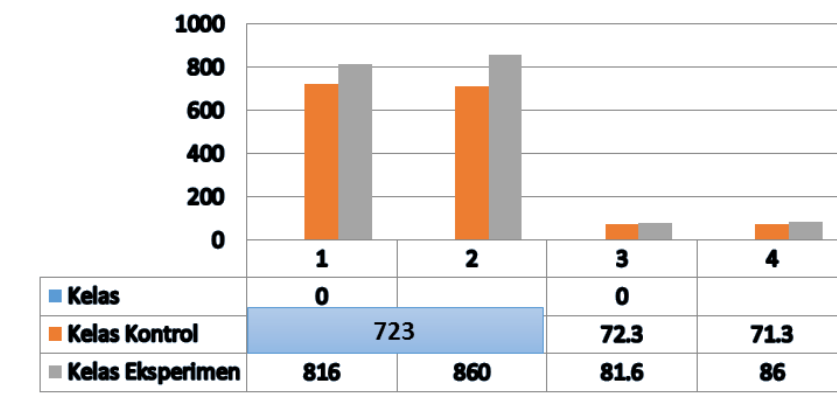


Figure 3. 1 Results study class control and experiment

From Figure 3.1 can seen there is change results study after learning model treatment *talking chips* and *snowball throwing*, cooperative model use this could increase results study student because student by active study through challenging step. Different case with learning model conventional only emphasize on more teachers active.

c. Technique Research Data Analysis

After researcher could collect data, then the data next analyzed or called with data analysis. Before data analysis is carried out, the data more formerly tested is fulfill requirements from test Anova or not named with test precondition anova. Test precondition anova is test normality and test homogeneity .

a. Test Normality

Test normality is wrong one condition for test statistics anova two path . Test normality used with destination for knowing what is the result data test understanding mathematical students who have obtained from results study normal distribution or no.

Table 3.4 Results Test Normality

No	Group	Sig	Sig. (2-tailed)	Conclusion
1	Control	0.665	0.05	Normal Distribution
	Snowball Throwing	0.810		Normal Distribution
2	(Experiment)			
	Talking Chips Type	0.936		Normal Distribution
3	(Experiment)			

On Table 3.4 shows that score cooperative model comparison type talking chips and snowball throwing in class VIII at Dusun Bina Baru Village Wadukopa in class cooperative type talking chips obtained that from results test Normality One-Sample Kolmogorov-Smirnov Test is known that score asymp . Sig. (2-tailed) > 0.5. Because score significance class cooperative type talking chips and snowball throwing > 0.05 then could concluded that the data normally distributed .

b. Test Homogeneity

Test homogeneity used on desired sample by researchers, namely on class VIII.1 and VIII.2. Test this conducted for knowing is sample used in homogeneous research or no, so if test homogeneity this fulfilled, then researcher could to do test hypothesis use anova two path. Data used on test homogeneity this is the result data study student after given treatment on class talking chips and snowball throwing in class VIII at Dusun Bina Baru Village Wadukopa. Test homogeneity this conducted through calculation using SPSS 20.

Table 3.5 Results Test Homogeneity

No	Class	Sig	Sig 5%	Conclusion
1	Control	0.646	0.05	Homogeneous
2	Snowball Throwing (Experiment)	0.567		
3	Talking Chips (Experiment)	0.117		

On table 3.5 shows the data could is known that sig value. on the learning model Snowball Throwing 0.567 > 0.05, while sig value. on the learning model Talking Chips 0.117 > 0.05, then could concluded that the data above character homogeneous because score significance obtained > 0.05.

Based on listed value on the table above, shows that Sig value < 0.05 so that concluded that second sample originated from homogeneous population.

c. Test Hypothesis

Based on results test homogeneity and result data normality study in class VIII in Dusun Bina Baru Village Wadukopa, then could concluded homogeneous data and normal distribution. Test hypothesis conducted with using the SPSS 20.0 application program for windows, with technique independent samples T-Test used for knowing there is or whether or not the average difference between second group sample that is not relate. The data could processed use help SPSS 20 program computer with test anova one path.

Table 3.6 Results Analysis Test Hypothesis

No	Class	Amount Student	Average	variance	Conclusion
1	Snowball throwing	10	76.30	64,432	Ha Accepted
2	Talking Chips	10	78.15	90.766	

On Table 3.6 above show that score significant test end from second class the more small of 0.05. This thing means that Ha is accepted and Ho rejected, it means there is influence DLPS method against results study students. Based on

results final data analysis testing hypothesis with use SPSS 20 program assistance on level significant 0.05 obtained score significant of 0.00. Results the show that score significant gain more small from 0.05 so that hypothesis alternative received and hypothesis zero rejected. On learning with Cooperative Model Type Talking Chips With Snowball Throwing student study for find draft his knowledge alone so that acquired knowledge more strong attached in memory them. With strong attached information on memory student, of course will also have an impact on acquisition results study students. Like opinion Purwanto, results study often used as size for knowing how much far somebody dominate materials that have been taught. By because that, result study need evaluated. Evaluation meant as mirror for see return is set goals has achieved and what is the learning process teach has in progress effective for get results study. In other words, measurement change behavior consequence study will will covers measurement over the cognitive, affective domains and psychomotor as results learn it, known with result domain term study (Purwanto, 2013).

2. Discussion of Research Results

This research has been carried out in the new hamlet of Bima village for one month, in class VIII in Dusun Bina Baru, Wadukopa Bima Village, in this case the research was conducted by testing the multiplechoice test to 20 students who were the research sample. From 20 students the next divided into 2 groups, there are group experiment and group control. As for group experiment totaling 10 people and group control totaling 10 people. In Thing this instrument tests performed for measure results study on Theory system respiration human.

Before researcher give treatment with apply the learning model talking chips more formerly give learning and posttest questions to class experiment for second meeting, Before given treatment second class given a posttest for knowing ability end from second class that . After that class experiment given treatment with using the learning model type talking chips and snowball throwing while class control use learning lecture in the learning process. Test used is choice double with amount question 25 already through the test process validity and test reliability. Researcher want to test comparison classes that use learning models type cooperative talking chips and *snowball throwing* with class taught with using the learning model the long lecture this normal used by teacher with meaning for knowing results study students.

Student shared into 2 groups, each group consist of 5 heterogeneous students. Formation group this based on performance even semester academic and information from the teacher lesson biology or IPA class VIII-1 and VIII-2 in Dusun Bina Baru Village Reservoir Bhima.

On the stage of the cooperative model learning process type *talking chips* student given sheet work group to discuss with friend the group. Activity this aims for students study cooperate in doing LKS, and help capable friend low. Next, the teacher guides each group for work and study by together. Participant educate no clumsy in state things that haven't been understood because they ask to friend same age so that the learning process no monotone and boring.

After the learning process is carried out, second class given a test with same material as many as 25 questions choice double to class experiment and class control for see so far where ability student in complete matter. Test the then given to class

experiment and class control when the learning process ends. Destination given test that is for knowing results study student good class taught experiment with learning model cooperative type talking chips and snowball throwing , and class taught control with method lecture .

After given test earned value between class different experiments. Where the average value obtained class experiment with learning model cooperative talking chips type that is score highest posttest on model snowball throwing is 90 and score lowest is 72, while the average value of 81.6 and score highest posttest on cooperative model type talking chips is 100 and score lowest t is 76 while the average value of 86 after use cooperative type talking chips. With so, then can be concluded that use learning model cooperative type talking chips and snowball throwing on class experiment more effective from on the learning model snowball throwing in increase results study biology class VIII in Dusun Bina Baru village Bima. This thing can be concluded that there is change results study biology after cooperative model type talking chips with snowball throwing so that could increase results study student because student by direct apply what is learned, with give test ability students. That thing also strengthened by Ali Mahmud, who said : that quality question or questions made participant educate describe ability participant educate in complete problem. In other words, participants educate must could link the information they earn with material that has been they learn. With so understanding participant educate to draft Theory in learning will more good especially ability they in solving problem (Ali & Asrori, 2008).

Based on table 3.5 Next researcher use test prerequisite. Test prerequisite in study this that is test normality and test homogeneity. Test normality use technique *Shapiro-Wilk* done for knowing what is the data normal distribution or no. Whereas test homogeneity calculation with use SPSS 20 program assistance with destination for knowing is second group sample have the same variance (homogeneous). Test normality and test homogeneity taken from result data test results study students.

After to do test normality and test homogeneity, next conducted test hypothesis. Based on results final data analysis testing hypothesis with use SPSS 20 program assistance on level significant 0.05 obtained score significant of 0.000. Results the show that score significant gain more small from 0.05 so that hypothesis alternative received and hypothesis zero rejected. On learning with cooperative model type talking chips with snowball throwing student study for find draft his knowledge alone so that acquired knowledge more strong attached in memory them. With strong attached information on memory student, of course will also have an impact on acquisition results study students. Like opinion Purwanto, results study often used as size for knowing how much far somebody dominate materials that have been taught. By because that, result study need evaluated. Evaluation meant as mirror for see return is set goals has achieved and what is the learning process teach has in progress effective for get results study. In other words, measurement change behavior consequence study will will covers measurement over the cognitive, affective domains and psychomotor as results learn it, known with result domain term study (Purwanto, 2013).

Study about there is cooperative model differences type talking chips and snowball throwing to results study biology students who do by researcher in learning

biology disclose that there is difference comparison results study cooperative model biology type talking chips and snowball throwing in class VIII SMP Dusun Bina Baru Village Bima on theory system respiration on human. Issues raised in background behind namely the cooperative model type talking chips and snowball throwing have connection positive with results study biology reviewed from communication between less students good .

In study this is a cooperative learning model type talking chips have influence more tall than the learning model snowball throwing to results study biology reviewed from communication between student class VIII at Dusun Bina Baru Village Bhima. This thing because of the learning model cooperative type talking chips more effective from the learning model snowball throwing. Because of the learning model cooperative type talking chips student more tend discussion with her friend so that they more understand to medium material studied.

That thing strengthened by results study from Haeruddin, A. Karmila, who stated that results learning using the learning model cooperative type talking chips more tall from results learning using the learning model snowball throwing or in other words that implementation of learning model cooperative type talking chips take effect to results study results study student on eye lesson biology class XI IPA MAN 1 North Sinjai (Haeruddin, 2017).

Besides that there is also results study from Asmi Amalia Akbar, stated that there is difference results study student being taught using the talking chips learning model on class experiment I and the learning model of snowball throwing on class experiment II material system digestion on class XI SMA Datuk Ribandang Makassar (Akbar, 2016).

This thing in line also with Salome Rajagukguk's opinion, stated that there is the difference between make a match and picture and picture learning models results study student class VIII on Theory system Excretion of SMP Negeri 2 Tanah Jawa TA. 2019/2020. Results this show that there is difference results study student of 4.11. From testing hypothesis use test "t" obtained tcount > from table on level = 0.05 is ($2.87 > 2.00$) with Thus H_0 is rejected H_a is accepted (Rajagukguk, 2020).

CONCLUSION

Based on formula problem and results data analysis and as well as discussion so could concluded as following, there is cooperative model differences type talking chips with snowball throwing on results study student on eye lesson biology class VIII in Dusun Bina Baru Village Bima, That Thing showed from F count > F table and score significance $0,000 > 0,05$. With average results study biology student classes that use learning models cooperative type talking chips as big as 86 and cooperative type snowball throwing as big as 81,6 .

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