

# **STRUCTURED NUMBER HEADS AND NUMBERED HEAD TOGETHER MODELS ON THEMATIC LEARNING OUTCOMES**

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## ABSTRACT

The purpose of this research is to find out comparison thematic learning outcomes using *the Structured Numbered Heads (SNH)* and *Numbered Heads Together (NHT) models* for fourth grade students at SD Negeri 42 Palembang. The type of research used is quantitative research experiment. The number of samples in this study amounted to 44 people from 2 classes through technique *simple random sampling*. Data collection techniques using a questionnaire (questionnaire), interviews, and tests. *The data* analysis technique used is the t test and questionnaire analysis. The results obtained in this study were none significant comparison between using the *SNH* and *NHT models*. It is based on

criteria testing the t test hypothesis obtained  $t_{hitung} = -1.51$  and  $t_{tabel} =$

1.68, then  $-t_{tabel} \leq t_{hitung} \leq t_{tabel}$  which means  $H_0$  accepted and  $H_a$  rejected.. It means second model this is just as good and thing This seen from the average result of the class test experiment I and experiment II between classes *SNH* and *NHT* difference No significant. No way direct results This show that between second model This No there 's more good and use second model it can be customized with condition participant educate.

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## 1. INTRODUCTION

Education as a human effort to grow and develop innate potential, both physically and spiritually in accordance with the values that exist in society and culture (Gracia & Anugraheni, 2021). Education a person has intelligence and skills that are beneficial to oneself and society. The teacher is one of the determining factors for the successful implementation of learning activities. A teacher too very human resources determine success program education. Education in Indonesia begins from education at school Base, which is on level This child learns all subjects basic (Ansori et al., 2020) Real education must capably support development in Century future by developing potency student so that concerned capable face and solve problem in the life he faces. Wrong One reference in education is curriculum.

Something activity learning categorized as succeed If participant educate get results fulfilling learning criteria especially results Study cognitive which is results from changea Act in demand participant educate has process Study teach implemented (Gracia & Anugraheni, 2021; Hanggara & Awang, 2016; Jihad, 2012:14). Applicable curriculum Now is curriculum 2013. In thought refinement formulation of the 2013 curriculum all

subjects must contribute to formation attitudes, skills, and knowledge. In curriculum 2013, emphasized term learning thematic / integrated. Learning thematic is initial learning with something tree discussion or a particular theme associated with it with tree discussion another, concept certain associated with with draft others, which are spontaneous or planned, fine in One field study or more and with diverse experience Study student, then learning become more meaningful (Kadir, 2015: 6).

Role Teacher in process learning very important in determine success students, because direct teacher interact with students at school. Matter This related with results conducted interviews by researchers at SD Negeri 42 with Wrong One Teacher class IV stated that still exists constraint in process learning for example Teacher Not yet use model learning. Model learning can used as a pattern of choice, meaning Teacher can choose suitable and efficient models For reach objective learning. So, from That model learning cooperative become Wrong solution in process learning. Model learning cooperative become Wrong One model sheltered learning in learning constructivism. In learning cooperative demand involvement student For become more active at a time can develop ability cooperate (Khuzaini & Nasrulloh, 2023; Bere, 2022; Khatimah et al., 2021).

There are several cooperative learning models that can be applied to support implementation student learning outcomes using the cooperative model *Structured Numbered Heads* (SNH) and *Numbered Heads Together* (NHT). Learning model SNH Where participant educate grouped right by giving numbers each number gets a different task and can later join other numbered groups together to work together (Sari et al, 2021; Asliati, 2018; Sugesti et al, 2014; Jannah, 2013). Variant NHT learning model of the group discussion which constitutes part of the *cooperative learning* model that aims improve academic ability participant students (Santiana, 2014). Technical implementation almost Same with group discussion. First of all, the teacher asks students to sit in groups. each member numbered. When finished, the teacher calls a number to present results the discussion. This random summon will ensure all students are fully engaged in the discussion. NHT models are also suitable to be sure accountability individuals in group discussions (Huda, 2011: 130). This model is often carried out by researchers both using NHT which was previously carried out by Susila et al (2015).

Both SNH and NHT learning models are often used in learning both English language learning (Khairani & Zainuddin, 2012), History (Hapsari, 2017), Religion (Setiahati, 2018), Mathematics (Asliati, 2018; Rahmawati, 2017; Sugesti, 2014), IPS (Sari et al, 2018; Mulyana et al, 2016) and other studies. However, the two learning models rarely used in thematic learning. Most of the existing research is related to experimental research related to the influence of one of the learning models, both SNH and NHT (Novibriawan et al., 2021; Leasa & Corebima, 2017) and have not there is research that deals with comparisons both models. Involving research both models related to SNH and NHT experimentation (Jannah et al, 2013).

The purpose of this research is to find out comparison thematic learning outcomes using the *SNH* and *NHT models*, to find out results which one is better. The results of learning abilities that are owned are good knowledge (cognitive), attitude (affective), and skills (psychomotor) which are all acquired through the teaching and learning process (Gunawan & Palupi, 2014). But the focus of research is cognitive learning outcomes.

## 2. RESEARCH METHODS (10 PT)

Experimental research method is a research method used to find the effect of certain treatments. This design was carried out by means of two groups that were randomly selected, then given a pretest to find out whether there was a difference in the initial ability between the experimental group I and the experimental group II. Initial test before given treatment ( $O_1$ ) ( $O_2$ ) was given treatment (X) and post- administration treatment posttest ( $O_3$ ) ( $O_4$ ) (Sugiyono 2015: 112-113). Chart design *Pretest- Posttest Control Group*:

$O_1 \times O_2$

$O_3 \times O_4$

Variable study is all something that takes any shape by researcher to learn so that obtained inform about matter the, then pulled conclusion (Sugiyono 2015: 60). Variable in study This There is two that is as following:

Variable  $X_I$  : Results Study thematic use model learning *structured numbered Heads* (SNH) for student class IV at SD Negeri 42 Palembang.

Variable:  $X_{II}$  Thematic learning outcomes using the *Numbered Heads Together* (NHT) learning model for fourth grade students at SD Negeri 42 Palembang.

According to Hasan quoted Gunawan 2013: 2 states, population is totality of all objects or individuals who have characteristics specific, clear and complete to be examined. The population is the generalization area that it consists of on objects / subjects that have qualities and characteristics determined by the researcher to be studied and then withdrawn the conclusion (Sugiyono, 2015: 117).

From several definitions it can be said that the population whole research object, good results count or measurement from characteristics certain that will subject to generalization. So, population No only people, but also objects and things another nature. Neither does the population just the amount that exists in the object / subject being studied, but covers whole characteristics or owned properties by subject or object. Which became population in study This is student class IV consisting of 3 classes namely IV A, IV B, and IV C as in Table 1.

Table 1. Research Population

No	Class	The number of students
1.	IV A	23 people
2.	IV B	21 people
3.	IV C	25 people
Amount		69 people

The sample is part or representative of the population being studied or in simpler terms the research sample is partially from population that is taken as a data source and can represent whole population. Sample is part of the number and characteristics possessed by the population (Gunawan & Palupi, 2013).

From a number of definitions pulled conclusion that sample part from population that has characteristics or circumstances certain that will research. As for technique taking sample to be used in study This that is *probability side* use type technique *simplerandom sampling* (sample random) where all member or population own equal opportunity for chosen become sample (Lisnani, 2019). Which became sample in study This There is two class that is class IV A and IV B as in Table 2.

Table 2. Research Sample

No	Class	The number of students	Information
1	IV A	23 people	Experiment Class I (Using <i>SNH models</i> )
2	IV B	21 people	Class Experiment II (Using model <i>NHT</i> )
Amount		44 people	

The place of this research is SD Negeri 42 Palembang. The basis for choosing this school is because this school has not yet there are using *SNH* and *NHT* learning models. Data collection techniques to obtain information or data needed in the framework reach research purposes. Data collection techniques in the form of interviews, questionnaires, and tests (*pretest* and *posttest*).

Data analysis technique is to describe technique What will the researcher use? analyze the data collected, including testing it. In engineering data analysis researchers use t-test formula. The following is a data prerequisite test before using the t-test as follows: 1) The data normality test needs to be carried out to find out whether the data being analyzed is normal or not, because the t-test statistical test can only be used if the data normally distributed; 2) This test is used to perform testing homogeneity of two variances that are homogeneous or non- homogeneous. After data collection is complete, the data obtained the analyzed to find out whether the hypothesis is rejected or accepted using a two- party t-test with the formula (Sukardi, 2016).

Analysis to questions to produce valid and reliable questions done with validity and reliability test (Sukardi, 2016). Reliability said as something consistency, where a instrument study considered own high value if the test is made have consistent results in measure what you want measured. Test the reliability of the questions in this study using the Kuder Richardson formula (Sukardi, 2016). validity a research instrument as a measure that indicates successful or not and to what extent test Measuring becomes the target in measurement.

### 3. RESULTS AND DISCUSSION

This research was conducted at SD Negeri 42 Palembang which is located on Jalan Ali Gatmir, 13 Ilir, Ilir Timur II District, Palembang City, South Sumatra in the 2018-2019 academic year with the theme that will be used theme 9, namely Kayanya My Country thematic book 2013 curriculum revision 2017 Sub- theme 3 Preservation of Indonesia's Natural Resources, learning 5 with natural science and SBdP subjects. Samples taken IV A are applied with the *SNH* and IV B models were applied with *NHT* models. Learning This done in 5 times meeting where every meeting lasts 1 x 40 minutes.

#### 3.1. Description Activity Learning *SNH* and *NHT* models

Table 3. Description Activity Learning *SNH* and *NHT* models

SNH models		NHT models	
1.	Activity beginning researcher pray together.	1.	researcher start ask related questions with material For know ability beginning student after ask answer with students, researchers start learning with explain material in accordance with the specified theme.
2.	Give greetings.		
3.	roll call students and do introduction short with student as well as explain about the learning model that will be used namely the learning model <i>Structured Numbered Heads</i>		

- (*SNH*) for class IV A and introduced the *Numbered Heads Together (NHT)* model For class IV B.
4. Researcher start ask related questions with material For know ability beginning student after ask and answer with student.
  5. Researcher start learning with explain material in accordance with the specified theme.
  6. After explain material researcher ask answer about material already discussed.
  7. Researcher pointing Wrong One students and ask questions and students answer. There are students who ask when Not yet understand and researcher explain back.
  8. After That researcher give task in a manner group using the *SNH* model.
  9. Researcher share group in a manner random with consists of 3 to 5 people and gives number head to each student.
  10. Every given student number own different tasks for example Student number 1 reads question with Correct number 2 collect related information with settlement question number 3 notes settlement question number 4 report results Work groups, researchers also involve Work The same between group for example student number 5 from each group go out from group and join with together numbered students The same from group other.
  11. With thereby student with same task Can each other help Matching results Work they after get information from different groups, students who dropped out from group earlier return to group originally For tell information What just got from group other.
  12. After That researcher ask one student For read results Work the group in front of class. After finished Work group each student returns to place their seats, the teacher asked return the material discussed is Already understand or yet and deliver question back in order students remember with learning.
  13. At the second meeting material that has delivered at the meeting First that is preservation Indonesia 's natural resources. Then researcher give examples available natural resources updated or not can renewed in life everyday. And arrived meeting fifth discuss about material and provide example questions and how to solve them. And at meetings third and fourth also studied use model learning *SNH*. After meeting First until meeting fifth so meeting final researcher give last test questions as many as 9 questions essay that includes whole material that has learned at the meeting before.
2. After explain material researcher ask answer about material already discussed. Researcher pointing Wrong One students and ask questions and students answer.
  3. There are students who ask when Not yet understand and researcher explain back. After That researcher give task in a manner group using the *NHT* model.
  4. Researcher share group in a manner random with consists of 3 to 5 people and gives number head to each student. Every group numbered heads 1 to 5, students sit together group that has shared by researchers.
  5. Researcher give task groups and students discuss inside group For answer questions that have provided by researchers. Inside the group also trains Work The same between students and can each other give ideas.
  6. After finished work inside group researcher will call one student from group For proceed forward class For present results Work the group without notified past who will forward.
  7. After student finished present result researcher ask return related matters with material. At a meeting to second material that has delivered at the meeting First that is preservation source Power Indonesian nature. Then researcher give examples source Power nature can updated or not can renewed in life everyday. And arrived meeting fifth discuss about material and provide example questions and how to solve them. And at meetings third and fourth also studied use model learning *NHT*. After meeting First until meeting fifth so meeting final researcher give last test questions as many as 9 questions essay that includes whole material that has learned at the meeting before.

data in study This obtained results achieved learning student class IV A SD Negeri 42 Palembang. Population covers class IV A and IV B, because amount population in research This not enough from one hundred that is  $\pm 69$  students are taken entirely. So this research is called population research where class IV A is applied with use model *SNH* and Class IV B are applied with model *NHT*.

Data retrieved is the data obtained results test in solving 9 questions in the form essay. Test is given to find out student learning outcomes using the *SNH learning model* and those using the *NHT learning model* on the theme 9 Kayanya My country is the thematic book of the 2013 curriculum, sub-theme 3 of preservation source Power Indonesian nature, learning 5 with the eye science and SBdP lessons. Before students do the test which amounted to 9 questions students discussed in groups and did group assignments given by researchers as shown in the picture below, class IV A students discuss using the *SNH* model as shown in Figure 1. Students work in groups to complete the tasks that have been given using the *NHT* model in Figure 2



(a)



(b)

Figure 1. Activities discussion  
(a) *SNH* model, (b) *NHT* model

### 3. 2. Test Data Analysis

On process learning in the classroom experiment I with use SNH model. After process learn how to teach done and for analyze student to material that has taught so student tested with use question essay as many as 9 questions. So that data obtained in class experimental I analyzed more carry on with use statistics conditional -t test test -t data should be normally distributed. Grade point average experiment I was 60.30 and deviation standard 15.46. Data got done normally distributed when tilted lies between -1 and +1 or  $(-1 < K_m < +1)$ . Based on the above formula is obtained mark gibberish equal to 0.971 then the data in class experiment 1 normally distributed.

On process learning in the classroom experiment II with use model NHT. After process learn how to teach done and for analyze student to material that has taught so student tested with use question essay as many as 9 questions. So that data obtained in class experimental I analyzed more carry on with use statistics conditional -t test test -t data should be normally distributed. Grade point average experiment I was 67.52 and deviation default 16.48. Dirole mark gibberish equal to -0.635 then the data is in class experiment II normally distributed. For make it easy test homogeneity so used table comparison variance largest and variance the smallest in Table 3

Table 3. Test Homogeneity with variance biggest compared to with variance smallest

Variance Value Sample	Variable Type	
	Experiment I	Experiment II
$S^2$	239,1	271.9
N	23	21

Compare mark  $F_{hitung}$  obtained  $F_{tabel}$  with dk quantifier =  $n - 1 = 23 - 1 = 22$  (for variance largest), dk denominator =  $n - 1 = 21 - 1 = 20$  (for variance smallest). Level significant  $\alpha = 0.05$  then look for in table F obtained  $F_{tabel} = 2.12$  with criteria testing as following:

If  $F_{hitung} \geq F_{tabel}$  mean No homogeneous and if  $F_{hitung} \leq F_{tabel}$  means homogeneous. It turns out  $F_{hitung} \leq F_{tabel}$  or  $1.13 \leq 2.12$ .

From analysis on known data from second sample normally distributed and has homogeneous variance so that can done testing hypothesis with use -t test. For look for  $t_{hitung}$ , need searching for especially formerly standard deviation combined from second sample by way of as following. So, obtained  $t_{hitung} = -1.51$  and  $t_{tabel} = 1.68$ , then  $-t_{tabel} \leq t_{hitung}$  or  $-1.68 \leq -1.51$  p This mean  $H_0$  accepted and  $H_a$  rejected. Based on the t-test data, it can be concluded that there is no difference between classes using the SNH model and those using the SNH model NHT.

### 3.3. Discussion

SNH learning model is a learning model that actively involves students with various roles, some of which are collecting information, seeking solutions from the information obtained, recording the results of the information obtained, reporting the results of group work. In the learning process using the SNH model, students are given the opportunity to be more active and seen directly with the teacher. This learning model is applied to the experimental class I used to invite students to exchange ideas with other students, can deepen student understanding and train student responsibility (Farida et al., 2015)

Whereas the NHT model is a learning model that has the characteristic of the teacher appointing one of the students to represent the group, coming to the front of the class to present the results of group work without telling in advance who will represent the group (Yuliafarini et al., 2019; Lince, 2016). In the learning process using the NHT model students are divided into several groups and solve problems or questions given by the teacher together and present them in front of the class (Rahmawati, 2017; Faridah et al., 2015). This learning model was applied to the experimental class II using the SNH model used to be able to train students to practice their responsibilities, students can also develop a sense of mutual cooperation, can develop students' curiosity in finding answers (Sari et al., 2021).

From the results of the analysis of test data that has been tested using the t-test statistics of experimental class I and experiment II. It can be concluded that the comparison of learning outcomes using the SNH and NHT models in the learning process is classified as equally good. Matter This seen from results grade point average between classes SNH and NHT, the difference No significant. Besides it, based on analysis of

test data obtained  $t_{hitung} = -1.51$  and  $t_{tabel} = 1.68$ , so  $-t_{tabel} \leq t_{hitung}$  or  $-1.68 \leq -1.51$  this means  $H_0$  accepted and  $H_a$  rejected.

Thus it can be concluded that there is no comparison of learning outcomes using the *SNH* and *NHT* models, theme 9, my rich country, sub-theme 3, preservation of Indonesia's natural resources, learning 5 for fourth grade students at SD Negeri 42 Palembang. This can be seen from the questionnaire filled out by students learning using the *SNH* model is attractive to students 60%, learning theme 9 makes students more active in learning 63%, easy to remember material 43%, learning using the *SNH* model can train student responsibility 65%, with the *SNH* model can train students to express their opinions 60%, students understand using the *SNH* model 78%, learn using the *SNH* model students are motivated 65%, learning using the *SNH* model makes students confident 56%. And student questionnaires that use the *NHT* model for students of this *NHT* model attract 47%, in learning theme 9 this makes students more active in learning 47%, for students easy to remember material 52%, learning to use the *NHT* model can train student responsibility 57%, the *NHT* model can train students to be able to express their opinions 47%, students can better understand the material by using the *NHT* model 57%, by using the *NHT* model students are motivated in learning 47%, learning by using the *NHT* model makes students confident 57%. Calculation results questionnaire described in Table 4 and Table 5.

Table 4. Student Response Questionnaire Using the *SNH* Model

No	Statement	STS	S	SS	TS	Percentage
1.	Learning use model <i>SNH</i> interesting.			14		61%
2.	Learning theme 9 is rich my country subtheme 3 preservation Indonesia 's natural resources use model <i>SNH</i> make me more active in learn.			12		52%
3.	Learning theme 9 is rich my country subtheme 3 preservation Indonesia 's natural resources use model <i>SNH</i> make material easy remember.			11		48%
4.	Study with model learning <i>SNH</i> can practice not quite enough answer.			15		65%
5.	Learning by using the <i>SNH</i> model can train me to be able to say opinion.			14		61%
6.	I become more understand with theme material 9 is rich my country subtheme 3 preservation Indonesia 's natural resources learning 5.			18		78%
7.	Learning theme 9 is rich my country subtheme 3 preservation Indonesia 's natural resources use model <i>SNH</i> I feel more motivated.			14		61%
8.	Study with use model learning <i>SNH</i> make me believe self.			13		56%

Table 5. Student Response Questionnaire Using the *NHT* Model

No	Statement	STS	S	SS	TS	Percentage
1.	Learning use model <i>NHT</i> interesting.			13		62%
2.	Learning theme 9 is rich my country subtheme 3 preservation Indonesia 's natural resources use model <i>NHT</i> make me more active in learn.			14		66%
3.	Learning theme 9 is rich my country subtheme 3 preservation Indonesia 's natural resources use model <i>NHT</i> made material easy remember.			10		48%
4.	Study with model learning <i>NHT</i> can practice not quite enough answer.			13		62%
5.	Learning by using the <i>NHT</i> model can train me to be able to say opinion.			12		47%
6.	I become more understand with theme material 9 is rich my country subtheme 3 preservation Indonesian natural resources learning 5.			16		76%
7.	Learning theme 9 is rich my country subtheme 3 preservation Indonesia 's natural resources use model <i>NHT</i> s I feel more motivated.			10		48%
8.	Study with use model learning <i>NHT</i> make me believe self.			12		47%

#### 4. CONCLUSION

The conclusion of this study, based on the results of the T-test, was that there was no comparison of student learning outcomes using the *SNH* and *NHT* models, theme 9, my rich country, sub-theme 3, preservation of Indonesia's natural resources, learning 5 for fourth grade students at SD Negeri 42 Palembang. The absence of comparison can be seen from the average test results of the experimental class I and experiment II between

the *SNH* and *NHT* classes, the difference is not significant. Based on criteria testing hypothesis  $t_{hitung} = -$

1.51 and  $t_{tabel} = 1.68$ , then  $-t_{tabel} \leq t_{hitung} - 1.68 \leq -1.51$  this means  $H_0$  accepted and  $H_a$  rejected.

Besides that, the acquisition of the questionnaire shows that the two learning models, both *SNH* and *NHT*, are equally good for students when implemented in thematic learning theme 9. This means implementation second model learning customized with circumstances participant educate. All model learning own advantages and disadvantages and application model learning customized with circumstances participant educate and target from learning to be implemented.

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