

A COMPARATIVE STUDY OF STUDENTS' READING COMPREHENSION ACHIEVEMENT BETWEEN NUMBERED HEADS TOGETHER TECHNIQUE AND PREDICTIVE READING TECHNIQUE AT THE FIRST GRADE OF SMA NEGERI 1 GEDONG TATAAN

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Abstrak : Bagi pelajar bahasa asing, reading-salah satu skil bahasa yang penting, sangatlah kompleks. Tujuan penelitian ini adalah untuk mengetahui apakah ada perbedaan yang signifikan didalam pemahaman membaca diantara siswa yang diajarkan dengan tehnik *Numbered Heads Together* dan *Predictive Reading* serta aspek membaca apa yang paling meningkat setelah penerapan tehnik NHT dan PR yang berfokus pada skill makro. Penelitian ini menggunakan pendekatan kuantitatif dan dilakukan didalam 2 kelas di SMAN 1 Gedong Tataan. Peneliti memberikan tes membaca untuk pengumpulan data. Hasilnya menunjukan bahwa terdapat perbedaan yang signifikan didalam pemahaman membaca diantara siswa yang diajarkan dengan tehnik *Numbered Heads Together* dan *Predictive Reading*. Hal itu dapat terlihat dari peningkatan nilai rata-rata siswa dari pretes ke posttest dan uji T-Test menyatakan bahwa hasil tes tersebut adalah signifikan, karena $p < 0.05$, $p = .000$. Disamping itu, aspek membaca yang paling meningkat diantara semua aspek adalah aspek kosakata. Hal ini dapat terlihat dari nilai dari pretes ke posttest. Dengan demikian, terdapat perbedaan yang signifikan diantara siswa yang diajarkan dengan tehnik NHT dan tehnik PR. Selain itu, aspek kosa kata adalah aspek yang memiliki peningkatan tertinggi dikedua kelas diantara semua aspek membaca.

Kata Kunci: Teknik *Numbered Heads Together*, Teknik *Predictive Reading*, kemampuan membaca, perbedaan, peningkatan.

Abstract : For foreign language learners, reading-one of crucial language skills is naturally very complex. This research was aimed at finding out whether there is a significant difference in students' reading comprehension achievement between those who are taught through NHT and PR technique and which reading aspect improved the most after being taught through NHT and PR technique in terms of macro skills. This research used quantitative approach and was conducted to 2 classes in SMAN 1 of Gedong Tataan. The researcher administered reading test to collect the data. The result showed that there is a significant difference in students' reading comprehension achievement between those who are taught through NHT and PR technique. It could be seen from the increase of students' mean score from pre-test to posttest and the T-test revealed those results are significant because $p < 0.05$, $p = .000$. Besides, reading aspect which improved the most is vocabulary aspect. This could be seen from the mean score from pre-test to posttest. Thus, there is a significant difference in students' reading comprehension achievement between those who are taught through NHT and PR technique. Moreover, vocabulary aspect is the aspect which improved the most in each class.

Keywords: *Numbered Heads Together technique*, *Predictive Reading technique*, Reading Comprehension, difference, improvement.

INTRODUCTION

Theoretically, Reading is one of crucial skills for most students of English throughout the world, especially in the countries where foreign language learners do not have the opportunity to interact with native speakers but have access to the written form of that language. Snow (2002:11) points out that reading comprehension is a process of extracting and constructing meaning simultaneously by doing some interaction and involvement with written language.

For this very reason, Nuttal (2000: 2) states reading means a result of interaction between the writer's mind and the reader's mind. It is the way how to the reader tries to get the message or the intended meaning from the writer. Reading is one of the basic skills in English which is not simply learnt through translating word by word but principally needs to be acquired appropriately during and after language course. For this reason, when the students learn to read, they should be able to comprehend the reading text during the process of reading. However, it is commonly acknowledged that SMA students are still not yet able to achieve reading comprehension skills.

Previous studies conducted by Masrurroh (2011) found that the tenth grade students of SMAN 1 Cerme principally were still not able to comprehend reading materials in their reading practice, especially in terms of macro skills (determining main idea, identifying specific information, reference, inference, and vocabulary). It was indicated on the students' scores of test is bad. She also said that they got difficult to answer some questions about the reading text.

Additionally, Evinda (2009) found that the first year students of SMA Al Huda Jatimulyo also still not able to comprehend reading text well. She also found that the students often answer the questions wrongly which makes the average scores of students in the pre-test were below the average.

Furthermore, during pre-observation activity in SMAN 1 Gedong Tataan, it was found that students had difficulty in comprehending the reading text in terms of macro skills. Possibly, this might be caused by interest in the material (the text), schemata, and teaching techniques. This was actually seen when the teacher asked some questions, they experienced a number of difficulties to answer the questions. Consequently, they often answered the questions with a wrong answer even no one answered the questions.

Advisable, to handle this problem, teacher thereby should be able to choose the appropriate method and teaching technique so that students can be led to properly acquire skills of comprehending the text. Numbered heads together and predictive reading techniques are equally proposed.

Ultimately, NHT is one of the cooperative learning strategies that hold each student accountable for learning the material. In dealing with this technique, Lie (2003: 6) stated that the students are grouped in small group and solve the problem cooperatively. It is expected that through this technique, students are able to solve the problem together and each of them has a chance to express their idea to find the best answer so the students seems to be more active in learning. In his study, he proved that NHT was able to give a chance to students to express their idea and compare which answer is the best.

According to Smith (1982: 68), the basis of learning is prediction. The students will predict the material when they do not understand the material well. From that statement, it can be inferred that the students do prediction in every time they learn something. In this case, prediction can make the students more comprehend the material well through

the pictures.

With reference to the opinion, this study tries to propose NHT and PR technique. This is reasonable because both NHT and PR technique are considered effective teaching techniques which can improve students' reading comprehension.

METHODS

Under this heading of the research, the objectives of this research were to investigate whether there is a significant difference of students' reading comprehension achievement between those who are taught through numbered heads together technique and those who are taught through predictive reading technique, and which aspect of reading improves the most after being taught through NHT technique and PR technique.

This research was conducted in X IPA 5 and X IPA 6 in SMAN 1 Gedong Tataan. The instrument, which was used in this research, was reading test. The reading test was conducted to find out how far teaching reading comprehension through NHT and PR technique. The test contained five aspects of reading main idea, specific information, inference, reference, and vocabulary. The test was given in a form of multiple-choice (a, b, c, d and e).

In analyzing the data, the researcher used Independent Sample T-test of SPSS to find out whether there was any significant difference of students' reading comprehension achievement between students who are taught through NHT and PR technique. The researcher also used ANOVA and Repeated measures t-test to find what aspect of reading improved the most in each class.

According to Hatch and Farhady (1982:281), there are two basic types of validity: content validity and construct validity. Firstly, content validity is concerned with the comprehensiveness and representativeness of the instruments toward the material which was taught. In this type of validity, the material given should be suitable with the curriculum. Precisely, in this research, the material given was suitable with the Curriculum 2013 which was applied in SMAN 1 Gedong Tataan.

Secondly, Construct validity is the process of determining the extent to which test performance can be interpreted in terms of one or more construct. Since the researcher wants to know the students' reading ability, this research administered a reading test in the form of narrative text, which consisted of a pretest and posttest, as the instrument. It investigated the result of the students' reading ability based on five aspects of reading in terms of macro skills: determining main idea, finding the detail information, reference, inference, and vocabulary. Therefore, it can be concluded that the test of this research was valid because in maintaining the validity, the researcher used the indicators which were stated in the competency and syllabus of the curriculum of senior high school.

In order to know the reliability of the test, the researcher used split-half method, the researcher classified the test items into two similar parts, i.e. odd and even numbered. By splitting the test into two equal parts, it is made as if the whole test have been taken twice. Pearson Product Moment was used to measure the coefficient of the reliability between odd and even group (reliability of half test). Moreover, the result showed that the reliability was 0,94. It could be assumed that this instrument had a high reliability.

RESULTS AND DISCUSSIONS

After conducting the research and gathering the data, the researcher analyzed the result of the pretest and the posttest as follows:

Table 1. Distribution of Students' Pretest in Experimental Class

No.	Aspect of Reading Comprehension	Items Number	Mean	Total Correct Answer	Percentage
1	Main Idea	1, 7, 10, 13, 19, 26, 29, 33	17,2	138	59,4%
2	Specific Information	2, 3, 8, 14, 20, 21, 28, 34	21,2	170	73,2%
3	Reference	5, 6, 15, 23, 24, 27, 30, 36	19,3	155	66,8%
4	Inference	4, 9, 11, 16, 22, 32, 39, 40	19	152	65,5%
5	Vocabulary	12, 17, 18, 25, 31, 35, 37, 38	15,1	121	52,1%

In accordance with the Table 1. In experimental class, main idea achieved 59,4% the percentage of the total correct answer with 138 points. In specific information, it achieved the highest percentage of total correct answer with 73,2%;170 points. For reference and inference aspect achieved 155 and 152 points with the difference only 3 points. The aspect which achieved the lowest score is vocabulary. In vocabulary, the percentage is 52,1% with the total correct answer is 121.

Table 2. Distribution of Students' Pretest in Control Class

No.	Aspect of Reading Comprehension	Items Number	Mean	Total Correct Answer	percentage
1	Main Idea	1, 7, 10, 13, 19, 26, 29, 33	15,7	126	56,25%
2	Specific Information	2, 3, 8, 14, 20, 21, 28, 34	18,2	146	65,1%
3	Reference	5, 6, 15, 23, 24, 27, 30, 36	16,3	131	58,4%
4	Inference	4, 9, 11, 16, 22, 32, 39, 40	17	136	60,7%
5	Vocabulary	12, 17, 18, 25, 31, 35, 37, 38	18,1	145	64,7%

Table 2. shows the total correct answer for main idea is 126 with the percentage 56,25%. In specific information aspect, the percentage is 65,1% with the total correct answer is 146. The total correct answer for the reference aspect is 131 points and for the inference aspect is 136, with the percentage 58,4% for the reference and 60,7% for the inference. For the vocabulary aspect, it achieved 64,7% with the total correct answer is 145.

Table 3. Distribution of Students' Posttest in Experimental Class

No.	Aspect of Reading Comprehension	Items Number	Mean	Total Correct Answer	percentage
1	Main Idea	1, 8, 11, 14, 22, 28, 31, 35	22	176	75,8%
2	Specific Information	2, 3, 9, 15, 23, 24, 30, 36	24,6	197	84,9%
3	Reference	5, 6, 17, 26, 27, 29, 32, 37	24,3	195	84,5%
4	Inference	4, 10, 12, 20, 21, 25, 34, 38	21,2	170	73,2%
5	Vocabulary	7, 13, 16, 18, 19, 33, 39, 40	25,7	206	88,7%

Table 3. shows the total correct answer for determining main idea is 176 with the percentage 75,8%;means that more than half of the students in class could answer the main idea questions. For determining specific information, the total correct answer is 197

with the percentage 84,9% and total correct answer for finding reference is 195 with the percentage 84,5%. The percentage of finding inference is 73,2% and the total correct answer is 170. Lastly, mastering vocabularies achieved the highest percentage among other aspects with 88,7% with the correct answer is 206.

Table 4. Distribution of Students' Posttest in Control Class

No.	Aspect of Reading Comprehension	Items Number	Mean	Total Correct Answer	Percentage
1	Main Idea	1, 8, 11, 14, 22, 28, 31, 35	17,8	143	63,8%
2	Specific Information	2, 3, 9, 15, 23, 24, 30, 36	22	176	78,5%
3	Reference	5, 6, 17, 26, 27, 29, 32, 37	20,6	165	73,6%
4	Inference	4, 10, 12, 20, 21, 25, 34, 38	19,2	154	68,75%
5	Vocabulary	7, 13, 16, 18, 19, 33, 39, 40	25,5	204	91,07%

Table 4. shows the total students who answered correctly for determining main idea is 143 with the percentage 63,8%. In determining specific information the total correct answer is 176 and the percentage is 78,5%. Finding reference's percentage of total correct answer is 73,6% with total correct answer is 165. In finding inference, the percentage is the lowest among other aspect with 68,75%. Meanwhile in mastering vocabularies, it is the highest among the other aspects with the percentage 91.07%.

Table 5. The comparison result of experimental class and control class

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Post test	Post Test Experimental Class(NHT)	29	77,76	6,539	1,214
	Post Test Control Class (PR)	28	69,89	7,187	1,358

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Post Test	Equal variances assumed	,784	,380	4,325	55	,000	7,866	1,819	4,221	11,511
	Equal variances not assumed			4,317	54,089	,000	7,866	1,822	4,213	11,518

In accordance with the table above, there are three aspects being compared. The first is the mean of both classes;77,76 for experimental class and 69,89 for control class. The

control class gained lower average score in post test than experimental class. The mean difference was 7,87, meant that the experimental class gained 7,87 score, higher than control class in post test. The second is the significant value of students that was sig.(2tailed) is 0.000 ($p=0.000$). It meant that the sig. $< \alpha$ ($p<0.05$, $p=0.000$). the last is t-ratio $> t$ -table ($4.325 > 2.052$) and thus, in simply way it was accepted that there is a significant difference between students who are taught through NHT technique and those who are taught through PR technique.

Table 6. The Improvement of Reading Aspects from the Pretest to the Posttest in Experimental Class

No.	Aspect of Reading Comprehension	Pre Test		Post Test		Gain	Significant level
		Total Correct Answer	Percentage	Total Correct Answer	Percentage		
1.	Main Idea	138	59,4%	176	75,8%	38	0.497
2.	Specific Information	170	73,2%	197	84,9%	27	1.000
3.	Reference	155	66,8%	195	84,5%	40	0.556
4.	Inference	152	65,5%	170	73,2%	18	1.000
5.	Vocabulary	121	52,1%	206	88,7%	85	0.028

Table 6. above shows the improvement of each aspect of reading that was achieved by students in the experimental class. In determining main idea, the percentage increase from 59,4% to 75,8% with the significance 0.497. The improvement in specific information is from 73,2% to 84,9% with the significance level 1.000. In reference aspect the percentage improvement is 17,7%, from 66,8% to 84,5%. Meanwhile in inference aspect the percentage only increase from 65,5% to 73,2%, the difference is only 7,7% and for the vocabulary aspect the improvement is from 52,1% to 88,7%. Vocabulary is the aspect which improve the most and significantly in experimental class.

Table 7. The Improvement of Reading Aspects from the Pretest to the Posttest in Control Class

No.	Aspect of Reading Comprehension	Pre Test		Post Test		Gain	Significant level
		Total Correct Answer	Percentage	Total Correct Answer	Percentage		
1.	Main Idea	126	56,25%	143	63,8%	17	1.000
2.	Specific Information	146	65,1%	176	78,5%	30	1.000
3.	Reference	131	58,4%	165	73,6%	34	1.000
4.	Inference	136	60,7%	154	68,7%	18	1.000
5.	Vocabulary	145	64,7%	204	91,07%	59	0.734

In accordance with Table 7., the improvement of determining main idea aspect is 17 points from the total correct answer from pretest to posttest with the significance 1.000 which means did not improve significantly. In specific information the percentage

increase from 65,1% to 78,5% with the significance score 1.000 and the gain from pretest to post test is 30 points. In reference and inference aspect, the significant score is 1.000 which is higher than the significance level means that it did not improve significantly. The gain from the total correct answer from pretest to posttest in reference is 34 points and 18 points for inference aspect. Vocabulary aspect was the aspect which improved the most in control class. The significant of this aspect is 0.734 means that it did not improve significantly. In reference to the total correct answer from pretest to posttest, the gain of this aspect is 59 points; higher than the other aspects.

DISCUSSION OF FINDINGS

The objectives of this research are to find out whether there is a significant difference of students' reading comprehension achievement between those who are taught through NHT technique and PR technique, and to find out what aspect improved the most after being taught through NHT and PR technique. In this part, the researcher tries to discuss quantitative data which found that there was a significant difference of students' reading comprehension achievement after being taught through NHT and PR technique.

NHT technique provides the better steps in teaching reading than in PR technique. In experimental class which applied NHT technique, the students get higher score than the students in control class (PR technique). It can occur since the influence of NHT technique which gives the students chances to learn through their friend, because NHT technique encourages the students to be able to express their ideas.

According to Kagan (1992) NHT is designed to involve more students in reviewing materials covered in a lesson and in checking their understanding of a lesson's content. It gives them an opportunity to share ideas and consideration of the most appropriate answer. Kagan (1986, p. 13) developed the NHT cooperative learning technique to help teachers to improve the competence of students in reading comprehension. Based on the result of the research, the NHT technique is better than PR technique in teaching reading comprehension. Although control class showed improvement, it was not significant as experimental class.

The researcher found that there was a significant difference between students who are taught through NHT technique and students who are taught through PR technique. It was because the first is the mean of both classes; 77,76 for experimental class and 69,89 for control class. The control class gained lower average score in post test than experimental class. The mean difference was 7,87, meant that the experimental class gained 7,87 score, higher than control class in post test. The second is the significant value of students that was sig.(2tailed) is 0.000 ($p=0.000$). It meant that the sig. is lower than the alpha ($p<0.05$, $p=0.000$). the last is t-ratio higher than the t-table ($4.325>2.052$).

The result of the Repeated measures T-test shows that vocabulary is the aspect which improves the most both in experimental class and control class. It occur since the influence of both techniques. In NHT class, the students were given many chances to express their ideas, help each other and solve the problem together. It makes the students could learn more through friend. The students who were lack of vocabulary would learn through their friend who have better knowledge about vocabulary. Frey, Fisher and Everlove (2009:59) state that in the teaching learning process through Numbered Heads Together Technique, the students are divided into groups and each member is assigned a number. Tileston (2004:85) also states that Numbered Heads Together Technique can be used to see how well the groups had read and discussed the assignment given by the teacher. In addition, Numbered Heads Together technique is an effective way to be used in improving the students' vocabulary mastery. It indirectly trains the students to share

information to each other, listen and speak accurately, so that they will be more productive in the teaching learning process.

Meanwhile in PR class, vocabulary aspect improved because prediction could develop their ability to find out the word which has the same meaning with word on the question. It does not require students to make their own conclusion to find the answer. In addition, PR technique also provides the students some pictures related to the topic that would be discuss in the class. It could make the students more interested in the learning activity. (Levie and Levie, 1975 as cited Arsyad, 2011) Picture is one of visual aids which has been used in many countries for centuries, it is simple media and easy to gain. It can be assumed that using picture can support the teaching and learning process and it would be more effective to encourage the students to learn English.

Finally, it can be stated that there is a significant difference between NHT and PR technique in students' reading comprehension achievement. Those technique also improves some aspects of reading. The aspects are main idea, specific information, inference, reference, and vocabulary. The aspect which improved the most was vocabulary for both classes, but in control class vocabulary was not significantly improved since the significancy score in this class was 0.734; higher than the significancy level ($p > 0.050$). Meanwhile in experimental class, vocabulary was significantly improved because it gain 0.028 which is lower than the significancy level ($p < 0.050$). Clearly, it can be approved that NHT technique is more effective for teaching reading especially in narrative text than PR technique at the first grade students of SMAN 1 Gedong Tataan.

CONCLUSIONS AND SUGGESTIONS

In reference to the previous discussions, points of conclusion are drawn as follows:

1. There is a significant difference between students who are taught through NHT technique and those who are taught through PR technique as seen from the result of the hypothesis which shows that the p is smaller than 0.05 ($0.000 < 0.050$). In experimental class which applied NHT technique, there was increase 753 point for the total point after being given the treatments through NHT technique. While in PR class, there was increase 456 point. In addition, NHT technique is better than PR technique because NHT technique seemed to give higher effect in students' score than PR technique, especially in students' reading comprehension of narrative text.
2. The results of this research revealed that all the aspects of reading skills that improved the most in terms of macro skills in each class ranging from the highest to the lowest aspects are:
 - 2.1 In experimental class, all the reading aspects which improved the most ranging from the highest to the lowest are:
 - 2.1.1 Vocabulary aspect improved significantly because the sig. is lower than the significancy level ($p < 0.050$). Vocabulary aspect's sig. is 0.028 which means the aspect improve significantly. Vocabulary aspect improved significantly because the students could answer the questions correctly about the synonym and antonym based on the text.
 - 2.1.2 Reference aspect improved slightly; in other words it did not improved significantly because the sig. is higher than the significancy level ($p > 0.050$). This sig. of this aspect is 0.556.
 - 2.1.3 Main idea aspect not improved significantly since the significancy of this aspect is 0.497; higher than the significancy level(0.050).

- 2.1.4 Specific information improved slightly by looking at the gain. The significant score of this aspect is 1.000; higher than the significance level. This aspect improved but did not improve significantly.
- 2.1.5 Inference aspect improved but not significantly since the significant score of this aspect is 1.000 which is higher than the significance level (0.050).
- 2.2 In control class, all the reading aspects which improved the most ranging from the highest to the lowest are:
 - 2.2.1 Vocabulary aspect improved but not significantly because the sig. is higher than the significance level ($p > 0.050$). Vocabulary aspect's sig. is 0.734 which means the aspect did not improve significantly.
 - 2.2.2 Reference aspect improved slightly by looking at the gain. It did not improve significantly because the sig. is higher than the significance level ($p > 0.050$). This sig. of this aspect is 1.000.
 - 2.2.3 Specific information improved but not significant because the significant score of this aspect is 1.000; higher than the significance level.
 - 2.2.4 Inference aspect improved but not significantly. The significant score of this aspect is 1.000 which is higher than the significance level (0.050).
 - 2.2.5 Main idea aspect not improved significantly because the sig. of this aspect higher than the significance level. The sig. of this aspect is 1.000, which is higher than the significance level (0.050).

In sum, it could be concluded that in each class, the highest improvement is on the vocabulary aspect.

5.2 Suggestions

Referring to the conclusion above, some suggestions can be listed as follows:

5.2.1. Suggestions for teacher

5.2.1.1 Since the students have the lowest score in making inference, it is necessary for the teacher to increase students' understanding of making inference by explain what inference is and how to make an inference in a text.

5.2.1.2 It is also necessary for the teacher to increase students' comprehending about finding main idea by doing some activities: for example, the teacher gives the students lesson about how to find main idea and make a list of some clue about the text.

5.2.2 Suggestions for further researchers

For the further researchers who want to conduct the similar research, should aware of the time allocation for the treatments. It is because of the time limitation. The target material may not be explained fully when the class is in crowded.

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