

# The Effect of Teaching Methods on Students' Achievements in Narrative and Report Text in SMA Negeri 1 Dolok Pardamean

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**Abstract:** *The objectives of this experimental research were to investigate whether: (1) Is there any effect taught by using Jigsaw method on students' achievement in reading comprehension, Is there any effect taught by using Cooperative Reading Integrated and Composition (CIRC) method on students' achievement in Reading Comprehension, and is the effect of Cooperative Reading Integrated and Composition (CIRC) method more significant than the effect of Jigsaw Method. The population of this study was the Second year students of state senior high school in Pematangsiantar, SMAN 1 Dolok Pardamean in academic year 2012/2013. It is located on Jl. Sipintuangin Kab. Simalungun. Each class consists of 40 students. The total numbers of the students are 120 students. So, hopefully this research will also be useful for them not only in understanding further about what class is more suitable based on their learning style but also in knowing the appropriate way of comprehending text whether by CIRC or Jigsaw. So the writer will take 25%, they were from students of second grade exactly Class II IPA 1. The research design was experimental research by using factorial design 2x2. The students were divided into two experimental groups. The experimental group I was treated by using Jigsaw and experimental group II was treated by using CIRC. The data were analyzed by applying two-way analysis of variance (ANOVA) at the level of significance  $\alpha = 0.05$ . The result reveals that (1) There is the effect of Experimental group by using jigsaw method on students' achievement in reading comprehension. It shows from the score of the students' achievement taught by using jigsaw that the mean is : 73 and varians is  $(S_2^2) = 9,28$  (2) There is significance effect in Experimental group by using Jigsaw method on students achievements taught by using Cooperative Reading Integrated and Composition ( CIRC ). It shows from the score of the students achievement in CIRC method that the mean is  $X_3 = 78$  and Variance  $= (S_3^2) = 8,67$  . (3) The students' achievement in class control is = mean =  $X_1 = 70$  and variance is  $(S_1^2) = 12,10$ . The significance effect on students' achievement in reading comprehension between Jigsaw teaching method and Cooperative Reading Integrated and Composition ( CIRC ) method is CIRC because from the data analysis above we can conclude that students' achievement taught by using CIRC method higher than jigsaw method. It shows from the score of Mean in CIRC = 78 and The mean in Jigsaw method = 73..*

**Keywords:** *CIRC, Jigsaw, Narrative Text, Report Text, Teaching Technique*

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## I. INTRODUCTION

Reading is an essential skill for an students all levels and it has a large portion in teaching and learning. It is supported by Brown (2000: 185) stating that reading is arguably the most essential skill for success in all education contexts and remains a skill of paramount importance as one creates assessment of language ability. The purpose of reading is to connect ideas in the page to what you already know. By reading the students are able to gain information and to

improve their knowledge. Nunan (1999: 68) stated that reading is a fluent process of readers combining information from a text and their own background knowledge to built meaning. The fact shows that the result of teaching learning English is still low. For example, the students who have graduated from junior high school, they still find difficulty in reading. (Balitbang Depdiknas, 2002). An other fact, reading is not as a people think. It is difficult to have an ability to draw meaning from the passage and interpret the information appropriately.

Nowadays, the ability to read and understand written materials in a foreign language is very important. It indicates that reading ability is one of the requirements to succeed not only in academic life but also in occupation, since most information and references are written in English. This condition is turns out to be one of the major concern in developing English teaching in Indonesia. Finally reading is a productive skill. Although one may read fictions for pleasure, one often reads nonfictions with eyes to perform the pleasure reading therefore serves to integrate a variety of language activities and purposes. Scientific and technological information written in English are available in large number nowadays. To access such as information, the students need to be able to read and understand written source. One of the requirements of understanding the text is having linguistics competence. Linguistic competence is the system of rules that governs an individual's tacit understanding of what is acceptable and what is not in the language they use.

The fact that must be realized is that to be able to access the world's scientific and technological information, English teaching in Indonesia has been started by giving much more attention to the implementation of developing reading comprehension. And we know, the significance of reading comprehension is really realized by government so that in the national examination (UN), the government inserts some questions which are based on reading comprehension activities from text. Event, the reading comprehension takes dominant point among the other kinds of questions starting from number sixteen until forty.

However, one of the greatest problems is that reading comprehension of senior high school students in SMA N.1 Dolok Pardamean Kab. Simalungun are still poor. The reality is there are so many students who are able to read aloud some texts in the class with the appropriate pronunciation but they do not know what they are reading about. They just spent their time to earn the meaning word by word, then consult the unknown vocabularies, continue with the meaning of each sentences. The fact the writer found the data from 2012/2013 , many students of SMA N.1 Dolok Pardamean Kab. Simalungun get low score in the English final Examination. It is shown by the highest scores that they got only 60,5 from 100 and the average score is about 59,5. Other data found that 70 % of the topics taught to the students were about reading comprehension and most of the texts were contain of specific words. It is not easy to solve this problem by the teacher and the students, but there are some books which explain about reading methods and effective reading to help learners in reading comprehension and also there are some books about the methods in teaching reading to help teacher to teach reading comprehension.

**Table 1. English semester data in academic year of 2011/2012 and 2012/2013**

Semester	Means of students' achievement in language learning			
	Reading	Writing	Listening	Speaking
I	60,5	72,1	69,7	68,6
II	58,5	70,6	70,2	66,3

Semester	Means of students' achievement in language learning			
	Reading	Writing	Listening	Speaking
III	57,57	71,5	67,8	65,8
Mean	58,5	71,4	69,2	66,9

Based on the score of students list above, it was found out that teaching English hasn't been satisfied especially in reading skill. It is because the students get bored directly when the text is given for them. As the result, they are less interested with further activities related with the reading text. Consider the fact happened shows that methods which are challenging the students is needed so that they are more curious in reading class. However, not all teaching methods are applicable for reading comprehension. To get effective classrooms, teachers are responsible for helping students develop better metacognitive skills by incorporating active reflection throughout the learning process (Shannon, 2008). The teaching methods needed are those able to connect the students' prior knowledge with the new information in given text.

By having some facts related to reading comprehension, students need methods in order to overcome their lack desire of reading comprehension. By having those methods, students are expected to achieve good comprehension in reading. There are many methods can be used to increase students' reading comprehension. Here are two simple methods which are selected in this study. They are Cooperative Integrated Reading and Composition (CIRC) and Jigsaw.

Cooperative Integrated Reading and Composition (CIRC) is a comprehensive approach to instruction in reading and composition/language arts for grades twelve in senior high school. In CIRC students are taught in reading groups and then return to mixed ability teams to work on a series of cognitively engaging activities, including partner reading, making predictions, identification of characters, settings, problem and problem solutions, summarization, vocabulary, reading comprehension exercises, and story-related writing. Meanwhile, Jigsaw is a cooperative teaching strategy with a three decade track record of successfully reducing racial conflict and increasing positive educational outcomes. The jigsaw process encourages listening, engagement, and empathy by giving each member of the group an essential part to play in the academic activity. Group member must work together as a team to accomplish a common goal; each person depends on all the others. No student can succeed completely unless everyone works well together as a team.

These two methods actually are not new anymore. They apply students centered approach where the students are in active learning while the teacher is just a facilitator. These two methods will be treated in teaching-learning process in reading.

Besides those methods the researcher will carry the reading comprehension focus to Narrative text and Report text. Based on Senior High School Syllabus developed by government, Narrative text and Report text are taught in the grade eleven grade of Senior High School. There some problems to be overcome as these following: Is there any effect taught by using Jigsaw method on students' achievement in reading comprehension, Is there any effect taught by using Cooperative Reading Integrated and Composition ( CIRC ) method on students' achievement in Reading Comprehension, and is the effect of Cooperative Reading Integrated and Composition ( CIRC ) method more significant than the effect of Jigsaw Method. This research is to know the effect of teaching methods on students' reading comprehension. Cooperative Integrated Reading and Composition (CIRC) and Jigsaw are applied to be the teaching methods in the classroom. All

of the methods will be applied to investigate students' reading comprehension. The text of Narrative text and Report text were used as the reading materials for senior high school.

## II. THEORETICAL REVIEW

### 2.1 Reading Comprehension

Comprehension means that a hierarchical relationship which is requiring some skills be taught before other and it is also a complex process in which a reader applies various skills and knowledge almost simultaneously. In addition, Bond, at all (1984:265) bravely stated that comprehension depends on the background the reader brings to the reading, his vocabulary, development, and his ability to interpret the author's word into concepts through constant attention to words and the meaning built from vocabularies. It is because the words, phrases, and the sentence structure will be useful for the students in getting the clues implied in the text.

Grabe and Stoller (2002:9) state "Reading is the ability to draw meaning from the printed page and interpret this information appropriately." However this definition is inadequate to explain the definition of true nature of reading, there are number of ways to engage. A reader has several possible purpose for reading, and each purpose emphasize a somewhat different combination of skills and methods. That definition is inadequate also because it doesn't emphasize the criteria that define the nature of fluent reading abilities; and it doesn't reveal many skills to create the overall reading comprehension ability that we commonly think as reading.

To understand reading comprehension one should by analyzing what comprehension involves and how it relates to the entire reading process. The word 'comprehension' itself can be said as a social kind of thinking process. The reader comprehends by actively construction, the acting internally from interacting with the material that is read.

Mc Neil (1992:16) states that comprehension is making sense out of text from interaction perspective, reading comprehension is acquiring information from the context and combining disparate elements into a new whole. It is the process of using one's existing knowledge (schemata) to interpret text in order to construct meaning. Although writers structure texts for their own construction of what the text means. Comprehension includes understanding the information in the text as well as changing the knowledge one used to understand the text in the first place.

Reading comprehension involves taking meaning to a text in order to obtain meaning from the text. When read a text, a reader is not merely saying the words in the text in the conventional way of sounds, but moreover able to derive meaning from the words combination in the text in a consecutive fashion of process at reasonable speed without necessary vocalizing it. Reading must be a meaning from interaction internally with the material that is read.

Critical comprehension refers to the ability to make judgement about ideas and information a writer offers. Competent reader will measure them against what they already know accepting or rejecting them in whole or part or with holding judgement until confirmation is reached.

At this level, students can be tested on the following way.

- a) The ability to differentiate between facts and opinion.
- b) The ability to recognize persuasive statement.
- c) The ability to judge the accuracy of the information given to the text.

Burns, Roe, and Ross (1984:177) states that it is possible to understand materials on the number of different levels. To take in ideas that are directly stated is literal comprehension; to read between the line is interpretive comprehension; to read for evaluation is critical reading. Perhaps because literal comprehension is easiest to attain, teacher have given it a disproportioned amount of attention in the classroom: but students need to achieve higher levels of reading comprehension to become informed and effective citizens.

### **2.1.1 Purposes of Reading**

The purpose of reading is to connect ideas in the page to what you already know. By reading the students are able to gain information and to improve their knowledge. It is supported by Grabe and Stoller (2002:13) classifying the reading purposes as the following:

(1) Reading to search for simple information and reading to skim.

Reading to search for simple information is a common reading ability, taught some researchers see it as a relatively independent cognitive process. It is used so often in reading tasks that is probably best seen as a type of reading ability. In reading to search, we typically scan the task for a specific piece of information or specific word. Similarly, reading to skim is a common part of many reading tasks and useful skill in its own right. It involves, in essence, a combination of strategies for guessing where important information might be in the text.

(2) Reading to learn from texts

Reading to learn typically occurs in academic and professional contexts in which a person needs to learn a considerable amount of information from a text. It requires abilities to

a) Remember main ideas as well as a number of details that elaborate the main and supporting ideas in text, and

b) Link the text to the reader's knowledge base.

(3) Reading to integrate information, write and critique texts

Reading to integrate information requires additional decisions about the relative importance of complementary, mutually supporting or conflicting information to accommodate information from multiple sources. In this respect, both reading to write and reading to critique texts may be task variants of reading to integrate information. Both require abilities to compose, select and critic information from a text.

(4) Reading for general comprehension

Reading for general information is the most basic purpose for reading, underlying and supporting most other purposes for reading. General reading comprehension is actually more complex than commonly assumed. Reading for general comprehension, when accomplished by a skilled fluent reader, requires very rapid and automatic processing of words, strong skills in forming a general meaning representation of main ideas, and efficient coordination of many process under very limited time constrain.

Nunan (1999:251) suggests that there are seven main purposes for reading, they are

(1) To obtain information for some purposes or because we are curious about some topics,

(2) To obtain instruction on how to perform some task for our work or daily life,

(3) To act in play, play a game, do a puzzle,

(4) To keep in touch with friends by correspondence or to understand business letters,

(5) To know when or where something will take place or what is available,

(6) To know what is happening or has happened (as reported in newspaper, magazine, reports),

(7) For enjoyment or excitement.

In teaching learning process, the purpose of reading is appropriate with the level of the students so that the objectives of the study can be achieved.

### **2.1.2 The Assessment of Reading Comprehension**

The assessment of reading comprehension is a test containing some questions related with the information in the text. It is used to measure students' ability in getting general information, finding specific information, finding explicit meaning of main idea, finding detail information, getting implicit information, and interpreting meaning of words, phrase and sentences based on the context. In fact, comprehension is something that cannot be examined directly (Coldwell, 2008:34) because it is a process happened in students' mind. Automatically, the assessor cannot actually see what is occurring in students' head as they comprehension. To measure students reading comprehension, Weir (1990) suggests seven methods: 1) multiple-choice questions, 2) short answer questions, 3) cloze, 4) selective deletion gap filling, 5) c-test, 6) cloze elide and 7) information transfer. A multiple-choice test is chosen as the test to measure reading comprehension. Multiple-choice is the most frequent to be used because it is kind of objective test which is able to show the students' comprehension objectively by their choice in the test. That is why this research also uses this test as the assessment of reading comprehension.

## **2.2 Narrative Text**

Narrative text is a story with complication or problematic events and it tries to find the resolutions to solve the problems. An important part of narrative text is the narrative mode, the set of methods used to communicate the narrative through a process narration. The purpose of Narrative text is to amuse or to entertain the reader with a story.

The generic structures of narrative text:

### 1) Orientation

Sets the scene, where and when the story happened and introduces the participants of the story, who and what is involved in the story.

### 2) Complication

Tells the beginning of the problems which leads to the crisis (climax) of the main participants.

### 3) Resolution

The problem (the crisis) is resolved, either in a happy ending or in a sad (tragic) ending.

### 4) Re-orientation/Coda

This is a closing remark to the story and it is optional. It consists of a moral lesson advice or teaching from the writer.

## **2.3 Report Text**

Report text is to describe the way things are, with reference to range of natural, man made and social phenomenon in our environment. A report is a text containing two components. The first is the general classification of the object being described. The technique which is commonly used is a definition. This way commonly introduces the class of the object. It can also be about specific or the origin or the type, or the function, the age or the size, or the color of the object. The second component is the description of the object. The common techniques used to describe the object accords with the orientation given in general classification.

### **2.3.1 Generic Structure**

- a. General Classification; tells what the phenomenon under discussion is
- b. Description ; tells what the phenomenon under discussion is like in terms of
  - a. Parts ( and their function )
  - b. Qualities
  - c. Habits or behaviors, if living; uses, if non natural

### **2.3.2 Significant Lexicogrammatical Feature**

- a. Focus on Generic participants.
- b. Use of relational process to state what is and that which it is
- c. Use simple Present Tense

## **2.4 Teaching Methods**

Slavin (1995: 2) uttered that cooperative learning refers to a variety of teaching methods in which students work in small groups to help one another learn academic content. In cooperative classroom, students are expected to help each other, to discuss and argue with each other, to assess each other current knowledge and fill in gaps in each other understanding. Cooperative work rarely replaces teacher instruction, but rather replaces individual seatwork, individual study, and individual drill. When properly organized, students in cooperative group work with each other to make certain that every one in the group has mastered the concepts being taught. Their success as a group depends on their ability to ensure that everyone has grasped the key ideas. In this case, there are two Cooperative Learning methods applied, namely Cooperated Integrated Reading and Composition (CIRC) and Jigsaw.

### **2.4.1 Cooperative Learning**

Kagan (1989) defines Cooperative learning as a successful teaching method in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement. Students work through the assignment until all group members successfully understand and complete it. Teams earn certificates or rewards if they achieve above a designated criterion. Individual accountability means that team's success depends on the individual learning of all team members. This focuses the activity of the team members on explaining concepts to one another and making sure that everyone on the team is ready for the test or assessment that they will take without teammate help. Equal opportunities for success mean that students contribute to their teams by improving their own best performance.

#### **2.4.1.1 Cooperative Integrated Reading and Composition (CIRC)**

Cooperative Integrated Reading and composition (CIRC) is a comprehensive method for teaching reading and writing and language art in the upper elementary grades. CIRC consists of three principal elements: story related activities, direct instruction in reading comprehension, and integrated language arts and writing. In all these activities, students work in heterogeneous learning teams. All activities follow a regular cycle that involves teacher presentation, team practice, independent practice, assessment and testing.

The mayor components of CIRC based on Slavin (1995) are three folds as special below

- 1) **Reading Groups** : Students are divided into two reading groups according to their level, as determined by their teachers. The level is based on the score they get in the pre-test. Teacher should explain that students have different abilities in reading, tell students that they are divided into groups by what they are good and not so good at in reading. Ensure students that it doesn't matter which reading group they are in as long as they do their best.
- 2) **Teams** : Students are divided into several teams from different reading groups. A team consists of two pairs of students. For example a team consists of two students from the low reading group. Teams that meet an average criterion of 90 percent on all activities are designated super teams and receive attractive certificates, those meet an average criterion of 80 percent are designated great teams and receive smaller certificates. By giving rewards to teams is expected to encourage students to do their best in team in order to form best score to their teams.
- 3) **Story-related Activities** : Story is introduced and discussed in teacher led reading groups that meet an approximately twenty minutes each day. In these groups, a teacher set a purpose for reading, introduces a new vocabulary, review old vocabulary, discuss the story after student have read it, and so on. Story discussion is structured to emphasize such skill as making and sporting prediction and identifying the problem in narrative. After the story is introduced, then the students will do a series of activities for them to do in their team. The sequence of activities is as following.
- 4) **Partner Reading** : Students read the story aloud with their partner, alternating each paragraph. The listener corrects any errors the reader may make. The teacher assesses student's performance by circulating and listening in as students read to each other. For example, the reading text consists of six paragraphs. Than in pairs, each student read three paragraphs. Students who act as listener may correct any error his partner (student who act as reader) may make. The teacher assesses student's performance by circulating and listening in as students read to each other. If the teacher hears the error of student in reading the text, she can directly correct the error. After the students finish their partner reading then the teacher reads the text again for the students.
- 5) **Story Grammar and Story related Writing** : Students are given question related to story that emphasize the story grammar- the structure that underlies all procedure. They are instructed to identify the goal, the Material/ingredients, and steps. The instruction is given by the teacher, teacher explains about the features that underlie the narrative (character, setting, problem, and solution) by giving an example of a short story. After given instruction of Narrative features in a story, teacher than give a student an explanation about the grammar features in a short story. For example, the use of simple past tense in the story, the use of regular and irregular verbs in the past form.

#### 2.4.1.2 Jigsaw

The jigsaw classroom is cooperative teaching strategy with a three-decade track record of successfully reducing racial conflict and increasing positive educational outcomes. Just as in a jigsaw puzzle, each piece-each student's part is essential for the completion and full understanding of the final product. If each student's part is essential, then each student is essential; and that is precisely what makes this activity so effective (Aronson: 2008).The jigsaw process encourages listening, engagement, and empathy by giving each member of the group an essential part to play in the academic activity. Group members must work together as a team to



accomplish a common goal; each person depends on all the others. No students can succeed completely unless everyone works well together as a team. This “cooperation by design” facilitates interaction among all students in the class, leading them to value each other as contributors to their common task (Aronson: 2008). The jigsaw classroom is very simple to use. Teacher just follows these steps: 1) divide students into 5- or 6-person jigsaw groups. The groups should be diverse in terms of gender, ethnicity, race, and ability, 2) appoint one student from each group as the leader. Initially, this person should be the most mature student in the group, 3) divide the day's lesson in to 5-6 segments. 4) assign each student to learn one segment, making sure students have direct access only to their own segment, 5) give students time to read over their segment at least twice and become familiar with it. There is no need for them to memorize it, 6) form temporary “expert groups” by having one student from each jigsaw group join other students assigned to the same segment. Give students in these expert groups time to discuss the main points of their segment and to rehearse the presentations they will make to their jigsaw group, 7) bring the students back into their jigsaw group, 8) ask each student to present her or his segment to the group. Encourage others in the group to ask questions for clarification, 9) float from group to group, observing the process. If any group is having trouble (e.g. a member is dominating or disruptive), make an appropriate intervention. Eventually, it's best for the group leader to handle this task. Leaders can be trained by whispering an instruction on how to intervene, until the leader get the hang of it, 10) at the end of the session, give a quiz on the material so that students quickly come to realize that these sessions are not just fun and games but really count (Aronson: 2008).

#### **2.4.1.3 The difference between Cooperative Integrated Reading and Composition (CIRC) and Jigsaw**

The differences can be seen in the following table in the next page:

<b>CIRC</b>	<b>Jigsaw</b>
1. Teacher is encouraging students to interact with fellow friends in group.	1. The students actively dominate the classroom activities.
2. Students have opportunities to develop successful learning and communication.	2. The teacher only monitors the students and assists them in working with the material.
3. The students are divided into groups by combining their abilities, ages and races.	3. The students are divided into some groups, namely base group and expert one.
4. Students are given the same material and discuss with their friends in a group.	4. The students are given the different material and required to meet in the expert group to do the same segment.
5. Having discuss, the students share the information each other in a group.	5. Having discussed, the students must go back to the base group and share the information they get from the expert group.
6. The students are assessed by test.	6. The work of group as a whole is also assessed.

### III. RESEARCH METHODOLOGY

#### 3.1 Research Design

The design of this research is experimental research with quantitative research. A quantitative research is a kind of research that gives a pressure in systematic analysis, using statistic analysis toward the the quantitative data that includes correlation study , experiment. Experimental research is one of the most powerful research methodologies because it is the best way to establish cause and effect relationship between variables. Factorial design is a further development of the experimental technique, which allows for two or more different charesteristics, treatments, or evens to be indepently varied within a single study. This research used experimental method with factorial design because this research is to compare the two teaching methods such as Cooperative Integrated reading and Composition and Jigsaw in Senior High school.

Group	Method	PRE-TEST	TEACHING				POST-TEST
			1	2	3	4	
Experimental	Jigsaw	X1	V	V	V	V	Y1
	CIRC	X2					
Control		X3	-			-	Y3

Where :

- X1 : Pre-test by using Jigsaw
- X2 : Pre-tes by using CIRC
- X3 : Pre Test of Group control
- Y1 : Post-test of group by using Jigsaw method
- Y2 : Post test of group by using CRIC
- Y3 : Post test of group Control

#### 3.2 Population and Sample

##### 3.2.1 Population

The population of this study was the Second year students of state senior high school in Pematangsiantar, SMAN 1 Dolok Pardamean in academic year 2012/2013. It is located on Jl. Sipintuanguin Kab. Simalungun. Each class consists of 40 students. The total numbers of the students are 120 students. So, hopefully this research will also be useful for them not only in understanding further about what class is more suitable based on their learning style but also in knowing the appropriate way of comprehending text whether by CIRC or Jigsaw.

##### 3.2.2 Sample

The researcher stated that the sample of research of thiss study are the students of second grade in SMA N. 1 Dolok Pardamean exactly in Class II IPA 1. Based on Arkunto (1999:144), if the subject of population less than 100, it is better for the researcher to take all, but if number of

the population is more than 100, the researcher can take minimally 10% - 15% or 20% - 25%'. So the writer will take 25%, they were from students of second grade exactly Class II IPA 1.

### 3.3 The Instruments of Data Collection

An instrument is very useful in research because the instrument is used as facilitation in the research by the researcher. Reading Comprehension Test is the instruments in this study. In this study the instrument used multiple choices. The multiple choice technique is chosen for assessing students' comprehension in this research because the multiple-choice questions are a common device for testing students' text comprehension. Furthermore, some choices given in those questions will acts as a trick in order to evaluate students' reading comprehension. The questions for the test are related to the students' need and the curriculum in Senior High School. The test is teacher made test. It consists of 40 questions in multiple choices with 5 options answers in each item. The multiple choice technique is chosen for assessing students' reading comprehension in this research because the multiple choice questions are a common device for testing students' text comprehension. The required time for the test is about 60 minutes. Correct/possible score is chosen to be the measurement of the test score. The correct answer for the test will get 2,5 as the score which means if the students can answer all questions, they will get 100 for score.

### 3.4 Validity of the test

Validity refers to the concept of whether the text is measuring what is designed to measure. A test is valid if the test is capable of measuring what it intends to measure. According to Ary, Jacobs, Sorensen & Razavieh (2010) there are three kinds of validity, namely: content, construct, and criterion-related validity. In establishing the validity of the instrument , content validity was applied. Content validity was choosen because content validity refers to the extent to which the instrument represents the content of interest. Content validity includes taxonomy reading comprehension and content curriculum appropriateness in comprehension level and content.

To get the validity of learning style, it was used the Pearson Product Moment formula. It will be presented as follows:

$$r_{XY} = \frac{n \sum XY - (\sum X \sum Y)}{\sqrt{(n \sum X^2 - (\sum X)^2) \cdot (n \sum Y^2 - (\sum Y)^2)}}$$

#### Notes:

- n = The number of sample
- $\sum X$  = Total score of each items test
- $\sum Y$  = Total score
- $\sum XY$  = Total product score for each items
- $r_{XY}$  = Pearson Correlation

### 3.5 Reliability of Reading Comprehension Test

Reliability refers to the notion that an instrument trustworthy enough to be used as a data collection tool because the instrument is good. A test said to be reliable if the measurement results remain if done repeatedly. A test is said to be trusted if: if it is used to generate the data

that is correct, do not deviate or differ from reality. Used to test the reliability and the Kuder Richardson formula 20 (K-R 20) as follows:

$$r_{11} = \left( \frac{n}{n-1} \right) \left( \frac{S^2 - \sum pq}{S^2} \right)$$

Where :  $r_{11}$  = reliability of all test

$n$  = Sample

$p$  = The answer of students who answer correctly

$q$  = The answer of students who answer incorrectly ( $q = 1 - p$ )

$S^2$  = The standard deviasi of test

$\sum pq$  = Number of p and q

$$= S^2 = \frac{N \sum y^2 - (\sum y)^2}{N(N-1)} ; N = \text{Sample}$$

$$r_{\text{tabel}} \alpha = 0,01, r_{\text{hitung}} > r_{\text{tabel}}$$

### 3.6 The Technique of Analyzing data

Generally, the research method is done two groups: first experimental group and second is control group. After the research have finished done and then here the steps to be taken in analyzing the data are below :

1. To Determine the everage of each group
2. To calculate the standard deviation of each group
3. To see the normality of test in each group
4. Statistical Hyphotesis

#### 3.6.1 Mean

Data yang diperoleh ditabulasikan dalam tabel sebaran frekuensi, lalu dihitung rataannya dengan rumus:

$$\bar{X} = \frac{\sum_{i=1}^k f_i x_i}{N} \quad (\text{Ary, 2009: 22})$$

dimana:  $\bar{X}$  = mean (rata-rata)

$f_i$  = frecuency group

$x_i$  = median

$k$  = The number of class

#### 3.6.2 Standart deviation of each sample

To determine the Standart deviasi by using this formula :

$$S = \sqrt{\frac{N \sum_{i=1}^k f_i x_i^2 - \left( \sum_{i=1}^k f_i x_i \right)^2}{N(N-1)}}$$

This formula used to calculate the varians.

$$S^2 = \frac{N \sum_{i=1}^k f_i x_i^2 - \left( \sum_{i=1}^k f_i x_i \right)^2}{N(N-1)} \quad (\text{Simbolon, 2009: 31})$$

Dimana :  
 N = sample  
 $x_i$  = median  
 $f_i$  = freuency of group  
 $S^2$  = varians  
 S = standart deviasi

### 3.6.3 Statistical Hypothesis

This formula is used in testing Hypthesis of research by using formula selisih dua rata-rata :

$$t_{hitung} = \frac{(\bar{X}_1 - \bar{X}_2)}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$S^2 = \text{variens gabungan} = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}$$

Where  $S_1^2, S_2^2$  = The first sampel varians and second sample.

$$: t_{hit} < -t_{1-\frac{1}{2}\alpha; n_1 + n_2 - 2} \quad \text{or} \quad t_{hit} > t_{1-\frac{1}{2}\alpha; n_1 + n_2 - 2}$$

Ho:  $\mu_1 = \mu_2$  ( The mean of students' taught by using Jigsaw and Cooperative Integrated Reading and Composition Methods )

Ha:  $\mu_1 \neq \mu_2$  ( The mean of students' taught by using jigsaw method diefferent with the mean of students taught by using Cooperative Integrated Reading and Composition ).

If : Ho rejected if  $t_{hit} < -t_{tab}$  and Ho accepted

## IV. FINDINGS AND DISCUSSION

### 4.1 Findings

After analysis the data, the problem statement mentioned in the previous chapter were successfully testified. The finding of research are:

1. There is the effect of Experimental group by using jigsaw method on students' achievement in reading comprehension. It shows from the score of the students' achievement taught by using jigsaw that the mean is : 73 and varians is  $(S_2^2) = 9,28$
2. There is significance effect in Experimental group by using Jigsaw method on students' achievements taught by using Cooperative Reading Integrated and Composition ( CIRC ). It shows from the score of the students' achievement in CIRC method that the mean is  $X_3 = 78$  and Variens =  $(S_3^2) = 8,67$  .
3. The students' achievement in class control is = mean =  $X_1 = 70$  and variens is  $(S_1^2) = 12,10$ .
4. The significance effect on students' achievement in reading comprehension between Jigsaw teaching method and Cooperative Reading Integrated and Composition ( CIRC )

method is CIRC because from the data analysis above we can conclude that students' achievement taught by using CIRC method higher than jigsaw method. It shows from the score of Mean in CIRC = 78 and The mean in Jigsaw method = 73.

#### 4.1.1 The Data Descriptions

The data of students' achievement in reading comprehension test from every reading methods which obtain the highest and lowest scores, mean, median, mode, standard deviation and variance.

The research hypotheses were tested by using t – test. The data description below.

$$t_{hit} = \frac{\bar{X}_1 - \bar{X}_2}{S \sqrt{\frac{1}{N_1} + \frac{1}{N_2}}}$$

$$S^2 = \frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2}$$

From data above we can be conclude:

The mean of Class Control ( $\bar{x}_1$ ) = 70

The mean of Experiment Class ( Jigsaw ) ( $\bar{x}_2$ ) = 73

The mean of Class Experiment ( CIRC ) ( $\bar{x}_3$ ) = 78

Variance of Class Control ( $S_1^2$ ) = 12,10

Variance of Class Experiment ( Jigsaw ) ( $S_2^2$ ) = 9,28

Variance of Class Experiment ( CIRC ) ( $S_3^2$ ) = 8,67

$N_1 = N_2 = N_3 = 40$  students

1. H 1 : Experiment class Jigsaw and Control class

$$S^2 = \frac{(40 - 1) 9,28 + (40 - 1) 12,10}{40 + 40 - 2} = 10,69$$

$$S = \sqrt{S^2} = \sqrt{10,69} = 3,270$$

$$t_{hitung} = \frac{73 - 70}{3,270 \sqrt{\frac{1}{40} + \frac{1}{40}}}$$

$$t_{hitung} = \frac{3}{(3,270)(0,224)} = \frac{3}{0,73248} = 4,095$$

2. H 2 : Class Experiment CIRC and Class Control

$$S^2 = \frac{(40 - 1) 8,67 + (40 - 1) 12,10}{40 + 40 - 2} = 10,385$$

$$S = \sqrt{S^2} = \sqrt{10,385} = 3,223$$

$$t_{hitung} = \frac{78 - 70}{3,223 \sqrt{\frac{1}{40} + \frac{1}{40}}}$$
$$t_{hitung} = \frac{8}{(3,223)(0,224)} = \frac{8}{0,721952} = 11,081$$

3. H<sub>3</sub> : Jigsaw method CIRC method

$$S^2 = \frac{(40-1) 9,28 + (40-1) 8,67}{40 + 40 - 2} = 8,975$$
$$S = \sqrt{S^2} = \sqrt{8,975} = 2,996$$
$$t_{hitung} = \frac{78 - 73}{2,996 \sqrt{\frac{1}{40} + \frac{1}{40}}}$$
$$t_{hitung} = \frac{5}{(2,996)(0,224)} = \frac{5}{0,671104} = 7,450$$

$t_{tabel} = \alpha = 0,05$ ;  $dk = (n_1 + n_2 - 2) = 78$ ;  
 $t_{tabel} = t_{(1-1/2\alpha);dk} = t_{(0,975);dk} = t_{0,975;78} = 1,991$   
 $1,991 < 4,095$ ;  $1,991 < 11,081$ ; dan  $1,991 < 7,450$   
 $H_0$  rejected and  $H_a$  accepted.

The writer concluded some hypothesis below,

1.  $H_0: \mu_1 = \mu_2$

$H_a: \mu_1 \neq \mu_2$

Mean of CIRC method is 78

Mean of Jigsaw method is 73

So,  $H_a$  can be accepted and  $H_0$  is refused.

2.  $H_0: \mu_1 = \mu_2$

$H_a: \mu_1 \neq \mu_2$

Mean of CIRC method is 78

Mean of jigsaw method is 73

They are different so  $H_a$  is accepted.

3. From the data the writer found that CIRC method < is more influence on students achievement in reading comprehension than Jigsaw method.

#### 4.2 Discussion

The use of various teaching method is very important for students. It also occurs in teaching reading. Teachers should have an effort to implement many methods in teaching in

order to see the ability and the comprehension of the students. Reading comprehension resulted when the reader knows which skills and methods are appropriate for the type of the text, and understand how to apply them to accomplish the reading purpose. Thus, equal change for achievement, group support for achievement, and the performance, all basic components of cooperative learning ensure realization of personal responsibility (Senemeglu, 1997). CIRC and Jigsaw are two of methods in reading and teaching reading. From the data result it concluded that CIRC is higher than jigsaw.

Theoretically, Slavin (1995) stated that CIRC is a comprehensive method for teaching, writing, and language arts. CIRC consist of three principal elements: story related activities, direct instruction in reading comprehension, and integrated language arts and writing. In all of these activities, the students work in heterogeneous learning-teams. All activities follow a regular cycle that involves teacher presentation, team practice, independent practice, assessment and testing. The independent practice is the indicator which is appropriate with the indicators in reading comprehension.

In additional, Fitzgerald and Spiegel (1983) stated A major objective of CIRC is to use cooperative teams to help students learn broadly applicable reading comprehension skills. Several components of CIRC are directed toward this end. During follow-up, students work in pairs to identify five critical features of each narrative story: characters, setting, problems, attempted solutions, final solution. Instruction in story structure has been found to increase reading comprehension of low-achieving students.

This method is student centered so they engage a higher level of thinking. Because it is student centered, it promotes meaningful learning. It can be beneficial to students that work well in cooperative setting, and can be used to promote leadership, team work, and problem solving skills. Another researcher who have ever conduct in this method is Durukan, E. (2010) on *Effects of Cooperative Integrated Reading and Composition (CIRC) technique on reading writing skill*, and the conclusion of this research is CIRC method used in the experimental group is more effective for achievement and retention level than the traditional method. This method is most beneficial to students that work well in a cooperative environment rather than a competitive one. This method also has advantages. Students are able to determine the main idea, chronological sequence and grasp/guess the meaning of certain vocabularies from context and the students are able to find detail information. Meanwhile, concerning on the improvement of students participated actively in the learning process and their motivation and interest improved well when joining the reading class. In conclusion, CIRC is an alternative teaching method that benefits both for the students' achievement and for the teaching and learning process.

In other side, the using of Jigsaw is also important as the method of reading and teaching. Jigsaw is a cooperative teaching strategy with a three decade track record of successfully reducing racial conflict and increasing positive educational outcomes. Just as in a jigsaw puzzle, each piece-each student's part is essential for the completion and full understanding of the final product. If each student's part is essential, then each student is essential and that is precisely what makes this activity so effective.

What is the benefit of the jigsaw classroom? First and foremost, it is a remarkably efficient way to learn the material. But even more important, the jigsaw process encourages listening, engagement, and empathy by giving each member of the group an essential part to play in the academic activity. Group members must work together as a team to accomplish a common goal; each person depends on all the others. No student can succeed completely unless everyone



works well together as a team. This "cooperation by design" facilitates interaction among all students in the class, leading them to value each other as contributors to their common task.

The jigsaw structure is complex and is probably more appropriate for experienced students or instructors. It may be best suited for the end of the semester when the students are comfortable with group work. There are high expectations and responsibilities placed on the students. Teaching the students in the original group can be a demanding experience for students. This can be mitigated if the jigsaw structure is altered so two group members share the same section and then join with another pair of students, if the sections are more open-ended so there is no single right answer, or if students are encouraged to take notes during the focus groups to provide a support when the original groups re-assembles (Clarke, 1994).

On the other hand, disadvantages of the jigsaw approach are present as well. Some disadvantages include misunderstanding the content and a lack of participation. It is possible a group of students researching could get distracted and be led down a path not intended by the teacher. This could lead to the whole group not learning the correct information and, in turn, be behind the rest of the class. Another problem in any group situation is when a student does not hold his/her weight in the responsibilities. A lack of participation by one or more student in a group would lead to either, 1) the other students in the group have to cover his/her material and have more work or, 2) the group being without that student's responsibility. Both of these would hinder the group's productivity rather than help them learn in a different way. However, by using CIRC students know that ones performance is generally caused by oneself and one member of a team. This method gives much time to students to be active in the English teaching and learning process Beside that, they can develop critical thinking and learn to solve the problem. They feel proud and jointly celebrate when a group member is recognized for achievement. In fact, that is the reason why the first hypothesis formulated students taught by using CIRC methods have higher achievement than students taught by using jigsaw method is proven in this research. Based on the fact, it is concluded that CIRC method is more effective in improving students' achievement in reading comprehension.

## V. CONCLUSION

Based on the data analysis and research findings at the previous chapter, it is concluded that: Students' achievement in reading comprehension text by using Jigsaw method is higher than that taught by using jigsaw method. There is the effect of Experimental group by using jigsaw method on students' achievement in reading comprehension. It shows from the score of the students' achievement taught by using jigsaw that the mean is: 73 and variance is  $(S_2^2) = 9,28$ . There is more significance effect in Experimental group by using Cooperative Reading Integrated and Composition (CIRC) method on students achievements in Reading Comprehension than taught by using Jigsaw method. It shows from the score of the students achievement in CIRC method that the mean is  $X_3 = 78$  and Variance =  $(S_3^2) = 8,67$ . While the score of mean by using Jigsaw = 73 and variance  $(S_2^2) = 9,28$ .

It's known that the students' achievement in reading comprehension taught by using CIRC method is higher than taught by using jigsaw method. It emphasis that actually whatever the method chosen by teachers is good if it is based on the students' need, style and background so that it is highly matching. It is because every method has its own strengths and weaknesses. However, it does not mean the jigsaw method is not as good as CIRC method. It is proven by the students' achievement taught by jigsaw method can also achieve satisfactory score. In

connection to the conclusions, there are some suggestions staged as the following: 1) English teachers are recommended using Cooperative Integrated Reading and Composition (CRIC ) method and Jigsaw method in teaching reading comprehension since these two methods can be improve students' achievement in reading comprehension. 2) It is highly recommended for teachers to use CIRC method for class dominated by students especially In Senior High School. 3) Other researchers may take a further research in the area CIRC and jigsaw method that will improve student's achievement in reading comprehension. While still many weakness of this research, for the other research who want to conduct this method, it is suggested to learn more about the symbols in CIRC method and the application of the jigsaw's principles in the application.

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