



## INCREASING STUDENTS' READING COMPREHENSION THROUGH COGNITIVE STRATEGIES OF SENIOR HIGH SCHOOL OF SIDENRENG RAPPANG REGENCY

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Keyword	Abstrak
<i>Cognitive strategies, the student's reading comprehension, and achievement.</i>	<i>This research is a quasi-experimental research at the objective of finding the increasing student's reading comprehension achievement through the cognitive strategies (rehearsal, organization, and elaboration) and to what extent these cognitive strategies influences the student's reading comprehension achievement. The subject of the research was Senior High School of Sidenreng Rappang regency consisting of 50 respondents into two classes from 11 schools of Sidenreng Rappang; each class consisted of 25 respondents, one class a control and another class as the tentative one. The data were collected through the reading comprehension test in pretest and posttest and the observation checklist during the teaching and learning process. The test consisted of 45 items of test from three kinds (news item, descriptive, and narrative text). The observation checklist consisted of four statements for rehearsal strategies, three statements for organization strategies, and one statement for elaboration strategy. The research findings showed that the students' reading comprehension increased for both groups from pretest to posttest. The experimental group was higher than the control one (60.6 &gt; 50.1) and the t-test was greater than the P-Value (0.05 &gt; 0.007) which means that there was a significant difference after giving treatment to the experimental group. The application of cognitive strategies also influenced positively to the increasing students' reading comprehension achievement. So, it was concluded that the use of cognitive strategies (rehearsal, organization, and elaboration) is useful to increase students' reading comprehension in teaching and learning words.</i>

### INTRODUCTION

Language teaching act as a central role in academic, social, and emotional progress that support students' success in

learning all of science knowledge. Instructional practices in language are often teacher centered and focus on direct knowledge transmission (Lau,

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2006). Through the language teaching, students are projected to give their culture and other ones' culture. It is also hoped to help students convey their initiative and emotion, participate in society, and even find use of their analytical and imaginative.

In terms of language teaching. English teaching plays an important role in Indonesia for the time being. English as tool of communication both spoken and written is very important to learn because it is used throughout the world. English is also used to communicate with any other people whose culture and country background are different. In order that students can take apart in the subject well, they are demanded to master actively or passively in English. Consequently, they are able to read English books, or to access the information on internet that mostly in English. In the National Education Standard (2006) book (BSNP), English for Senior High School or Madrasah Aliah (SMA/MA), aims at giving students skills on communication competence in the forms of spoken and written in the level of functional literacy. One of these competences coverage is students' ability to comprehend a course which implemented in four skills, namely listening, speaking, reading and writing. Unfortunately in facts, it is still far from the achievement of competence expected. Most of students still get difficulties to learn English. It is proved by the low level of students mean score as Senior High School in Sidenreng Rappang regency district in the summative test where this research was conducted.

The low level of students' mean may be caused by their lack of strategies in learning, such as cognitive. It was possibility because of many factors, and one of the factors was probably because the students' lack of the strategies in

learning. Therefore, the researcher formulates the research question namely can cognitive strategies (rehearsal, organization, and elaboration) increase students' reading comprehension achievement and to what extent do the cognitive strategies (rehearsal, organization, and elaboration) influences the students' reading comprehension achievement in apart and in collectively?

The students interviews were undertaken to examine the validity of the questionnaires about the cognitive strategies. The structure interviews was developed based on the studies, (Li, J and Qin, 2006). The competence on the cognitive strategies is one of teaching objectives that must be taught through summarizing, deduction, imagery and transfer. They need improvement continually.

The division of cognitive strategies is rehearsal, organization, and elaboration. Rehearsal cognitive strategy means learners memorize by means of learning the important ideas or concept, underlying the important ideas, or writing some parts of text. Organization cognitive strategy means learners arrange material into frame order, a stock of words which are remembered by learners are ordered into meaningful categories. Sahrul (2014) define that cognitive strategies is practicing, receiving and sending message strategies, analyzing and reasoning, creating structure for input and output. These cognitive strategies applied in order to get the students' improvement on reading comprehension test. The relationship between facts on text is arranged into tables. The other ways are to underline the main ideas or concept of each paragraph, then arranging its concepts into new organization. And elaboration cognitive strategy means students connect anything that is going to

be learned with any other things which are available.

The application of these cognitive strategies seems suitable in teaching reading comprehension. The third categories of these strategies give student's opportunity to maximize their capability in reading comprehension process. Rehearsal strategies, for example, may help students to internalize the text given through underlining the important ideas of the text which is read. At the same time, utilizing the organization strategies give students many ways how to understand the text by arranging materials of text based on the order of what ways to understand the text by arranging materials of text based on the order of what way they think is easy understand, such as separating main idea from the supporting ideas or arranging the relationship between the fact into table. In order that the students are able to understand the text maximally, students may do the elaboration strategies. On this way, they explain extensively the facts or details of the text content through connecting between the facts in the text or integrating main idea and supporting details of the text which are they have organized with their prior knowledge. They do the development of paragraph. Those of the strategies have the connection with applying strategies in reading such as making inferences, separating main ideas from the supporting details, and predicting. Based on the on top of three cognitive strategies mentioned, this manuscript focused on how increase students achievement in reading comprehension through applying those cognitive strategies. This piece of writing aims at finding out whether or not those strategies can magnify students reading comprehension accomplishment and how much those strategies influence the students' reading comprehension

accomplishment during teaching and learning process. The objective of the research is to find out whether or not cognitive strategies (rehearsal, organization, and elaboration) can increase students' reading comprehension achievement and to what extent of these cognitive strategies influences the students' reading comprehension achievement in apart and in collectively. And then significance of the research is expected to be useful for teachers as practitioners in education and to be references for the researchers who are interested to know much more about cognitive strategies role in teaching and learning process. It is especially for developing student's reading comprehension by applying cognitive strategies (rehearsal, organization, and elaboration) in teaching and learning process. So, scope of the research is applying of the cognitive strategies (rehearsal, organization, and elaboration) to increase students' reading comprehension achievement.

## **METHODS**

This research applies quasi experimental method with two sample groups. One group is the experimental group and the other is the control group. The subject of the research was Senior High School of Sidenreng Rappang regency consisting of 50 respondents in two classes from 11 schools of Sidenreng Rappang; each class consisted of 25 respondents, one class as a control and another class as the tentative one. This research applies the purposive sampling technique because of certainly consider. The criteria for selecting the group members for experimental and control group which consist of three classes as the sample of the research because of the three kinds of the texts-news item, descriptive, and narrative were suitable

with the curriculum content for the tenth grade students. It is also because these classes were assumed homogenous. The placement of students to their class was not based on their intelligent level, but it was randomly way. There were no classes in high or low level by one another. So, it could be in one class has an excellent students, in the middle, or low level of achievement, due to two other classes. So forth, determining two classes as the sample group of the research were taken through randomly technique. The result of the randomly technique got class X2 and X3 as the sample group the research and the rest was the class X1 which assigned as the try out class for validating instrument of the research. The experimental group was treated with cognitive strategies (rehearsal, organization, and elaboration) in the Teaching and Learning Process (PBM) to see whether or not these strategies can increase students' reading comprehension achievement. The control group was taught with the expository (conventional) strategies in ongoing PBM.

Each of the groups was given pretest and posttest. Posttest was administrated to assess the prior knowledge of students on reading comprehension. The posttest one was administered to measure the effects of the treatment. The main of this test is to find out whether or not the application of cognitive strategies (rehearsal, organization, and elaboration) was effective in increasing students' reading comprehension achievement.

## RESULTS AND DISCUSSION

### Theoretical Review

Studies to improve students' reading comprehension have been conducted by a lot of researchers in Indonesia, especially for the implementation of strategies to the

reading comprehension combining with cooperative learning such as Students Team Assistant Division (STAD, Team Assisted Individualization (TAI), JIGSAW which is named by its type on learning process like a saw, Think-Pair-Share strategy (TPS), or Directed Activity Related to Texts (DARTs). Regarding the effectiveness of strategic instruction on regarding achievement, results of the present study demonstrate that students generally increased their frequent use of reading strategies, especially using cognitive strategies for managing learning and overcoming deficiency in English reading, and they further obtained more improvement in comprehension after strategy instruction. Such results support findings in the literature (Shang, 2007), suggesting that it is more effective for students to improve their reading comprehension if they have a higher frequency of employing cognitive strategy in their reading process.

### Reading Comprehension

Reading is defined as an intern energetic progression that goes on between the reader and the text, resulting in judgment, the text in attendance, correspondence, words, sentences, and paragraphs that predetermine meaning. It is also defined as an active, fluent process which involves the reader and reading material in building meaning. Meaning does not reside on the printed page, synergy occurs in reading, which combines the words on the printed page with the reader background knowledge and experiences (Karakas, 2006:45). Students will develop stronger reading comprehension skills on their own if the teacher gives them explicit mental tools for unpacking text (Pressley, 2006:143).

Understanding the language, therefore, needs processes that are related to the certainly ways or

techniques, whether top-down or bottom-up (Fromkin, 2007: 365-369). In reading comprehension, therefore, learners may apply some endeavored a certain text.

The bottom up model refers to a process of decoding a message that the reader reads via the analysis of sound, words, and grammar. To comprehend the written language, a reader relies on his or her ability to recognize words, phrases, and sentences. Reading process with modelling is seen as one of the most useful techniques for explaining strategies for reading achievement (Houtveen & van de Gript, 2007). According to him, the bottom-up process is reading viewed as "the process of meaning interpretation" in which "the language is translated from one form of symbolic depiction to another".

### **Cognitive Strategy**

Cognitive strategy is the strategy that involves mental manipulation or information of materials or tasks and it is intended to enhance comprehension, acquisition, or retention (Stephan, 2011). Cognitive strategy divides into three categories which are presented as follows: Rehearsal strategies refers to underlining the importance ideas, writing down some important ideas in the dictionary; organization strategies refers to arranging materials into` outline order; and elaboration strategies refer to explaining extensively the facts or details of text content.

### **Cognitive Domains**

Jabu (2008:80) states that cognitive domains are the objective that emphasizes on remembering and reducing something which has perhaps been learned. It is like the objective used for solving some intellectually tasks where the human being has to decide the indispensable problem. Then the

substance given which has been learned before is reordered or collective with ideas, methods, or procedures. The precognitive objectives may vary from the simple recall of material learned to highly original and creative ways of combining and synthesizing new ideas and materials. The cognitive domains level thinking (remembering, understanding, and applying) to high-level thinking (analyzing, evaluating, and creating) as follows: remembering indicates recalling information, understanding signifies explaining ideas or concept, applying conveys using information in another familiar situation, analyzing denotes using information into parts to explore understandings and relationship, evaluating justifying a decision or course of action, and then creating refers to generating new ideas, products, or ways of viewing things. The cognitive strategies are the use of basic and complex strategies for the processing of information from text and lectures (Wernke, 2011: 20).

The recall and recognition of knowledge and the development of higher intellectual skills and abilities. The cognitive domains from lower level thinking (remembering, understanding, and applying) to high-level thinking (analyzing, evaluating, and creating) namely remembering, understanding, applying, analyzing, evaluating, and creating. Knowledge refers to the recall of specific information; comprehension refers to the converting of abstract content to concrete situation; analysis refers to the comparison and contrast of the content to personal experiences; synthesis refers to the organization of thoughts, ideas, and information from the content; and evaluation refers to the judgment and evaluation of characters, action, outcome, etc. for personal reflection and understanding.

### Expository Method of Teaching

The expository method of coaching or sometime is called as the expository instruction is method in which a teacher presents the science concepts to the students verbally. This method can also be second-hand to teach facts, skills, the concept as stated before, and principles, which compasses on teacher centered of learning or teacher conquered approaches to instruction. Teacher controls the flow of the lesson by presenting information and demonstrating solutions to problems.

Melillo (2009:54) states that expository teaching is an instruction method of the scriptures that can be taught two different ways: verse by verse or topically. The expository teaching takes one geneses through revelations, section by section and verse by verse. In teaching a Bible, for example. The researcher confirmed its own stories through repetition of statement, as a verse in revelations may not be as clear unless it was referred to prior in old statement. Flint (2009:120) states that expository teaching take a specific passage and breaks it down, findings topic with to discuss. The teaching process is a style of preaching, were method of instruction presents clear and comprehensive meaning to biblical text.

The explanation of the data unruffled through test as explained in the preceding subdivision shows that the student's reading comprehension improves significantly. It is supported by the mean score rate of the student's pretest and posttest of experimental group. The mean score of pretest and posttest of experimental group was 38.2 to 60.6 while the mean score of pretest and posttest of control group was 37.2 to 50.1.

Before the treatment was given to students through the cognitive strategies,

the mean score of students was only 38.2 and after the treatment given the mean score of student rose up to 60.6 of the experimental group. It indicated that the use of cognitive strategies (rehearsal, organization, and elaboration strategies) give better effect in erudition reading than unadventurous the (expository) way. Even though, the students' competence in applying the three strategies was indicated the differentiation.

The moderately different for both of the experimental and control group's mean score also are showed in the posttest. The mean score of the experimental group, 60.6 was higher than the control group that was 50.1 and the mean score difference was 10.5.

Even though both cognitive strategies and conventional (expository) way can be used in training reading and they can improve the students' achievement. However, the cognitive strategy develops the student's reading comprehension more evocatively than conventional one (expository way). These strategies were gifted to revolutionize the students' reading comprehension better than before. So it can be inferred statistically based on *t*-test value making an allowance for between P-Value 0.007 was smaller than *t*-table 0.05 that means that cognitive strategies is more effectual in increasing students' reading comprehension.

The students' mean score was higher in the experimental group than the control one (60.6 > 50.1) in the posttest and the standard deviation for experimental group was 15.6 and 7.9 for the control group. And in the pretest, the students' mean score was advanced in the experimental group than the control group (38.2 > 37.2) and the standard deviation for the experimental group 9.7 and 6.9 for the control group. It does, even though, not mean that there was a

noteworthy difference between both of the two groups. In the t-test section showed that the P-Value (0.686) was greater than *t*-test (0.05) that means that there was no significant difference for both of these groups. For that reason, between the two groups the researchers was free to choose which one group to be experimental. Unlike in the posttest, the P-Value was lower that *t*-test (0.007-0.05) that means that there was a significant difference for both of two groups.

The findings of students' comprehension achievement on reading through the distribution score of pretest is described in the table 1 and the distribution score of posttest is illustrated in the table 2.

Table 1. The frequency and percentage of students' pretest score of control and experimental group

Classification	Range of score	Control group		Experimental group	
		F	%	F	%
Excellent	80-100	0	0	0	0
Good	66-79	0	0	0	0
Fairly Good	56-65	1	4	2	8
Fair	46-55	2	8	2	8
Poor	0-45	22	88	21	84
Total	25	100	25	100	100

The above table 1 shows that most of the students in control group were in poor category or their range score just spread from 0 score up to 45 ranges score which only 1 student (4%) were in fairly good and 2 students (8%) were in fair, and the rest or 22 students (88%) were in poor category. The same spreading of students' score range was in the experimental group. Most of the students' score ranges only in 0 score up to 45 range score which were in poor category. Only 2 students (8%) were in fairly good and 2 others (8%) were in fair category, and the rest or 21 students (84%) were in poor category.

Table 2. The frequency and percentage of student's posttest score of control and experimental group

Classification	Range of score	Control group		Experimental group	
		F	%	F	%
Excellent	80-100	0	0	4	16
Good	66-79	1	4	4	16
Fairly Good	56-65	9	36	9	36
Fair	46-55	8	32	2	8
Poor	0-45	7	28	6	24
Total	25	100	25	100	100

Table 2 above illustrates the frequency and the rate percentage of the control and experimental group in posttest. It also indicates that the students' achievement from the two sample groups was increasing. In the control group indicated that most of the students' score range was in fairly good category or their range score spread from 56 score up to 65 where only 1 fairly good category or their range score spread from 65 where up to 65 where only 1 students (4%) was in good category, 9 students (36%) were in fairly good, 8 students (32%) were in fair category, and the rest or 7 students (28%) were in poor category.

It was different from the experimental group. There were 4 students (16%) in excellent and good category, but most of the students in this group had the same score range as in the control group 9 students (36%) were in fairly good category, 2 students (8%) were in fair, and the rest or 6 (24%) were in poor category. The tabulation data for the students' achievement in their reading comprehension is showed in the following table.

Table 3. The mean score and standard deviation of the students' pretest and posttest

Paired Statistics	Samples	Mean	N	Std. Deviation
Pair 1	Pair Control	37.212	25	6.8920
	Posttest Control	50.112	25	9.7524
Pair 1	Pair Control	38.180	25	9.7088
	Posttest Control	60.592	25	15.5944

The above table 3 showed that the total number for both of the control and experimental group were 25 students. The mean score and standard deviation were shown differences in pretest and posttest to both of the groups.

From the data showed in the table 3, the mean score of control group and experimental group was mostly in the same score before and after and after giving treatment. After giving treatment, the posttest score to both of the groups; control and experimental group showed a difference score of mean score. This means that there is an improvement after giving the treatment.

Before the treatment was conducted, both of the control and experimental groups were given pretest to know the students' achievement on their reading comprehension. The purpose of the test was to find out whether both groups were in the same level or not. The standard deviation was meant to know how close the scores to the mean score. Table 3 above showed that the mean score. Table 3 above showed that the mean score of the students' pretest of control group was 37.2 and experimental group was 38.2 and the standard deviation for control group was 6.9 and experimental group was 9.7. Table 3 above also showed that the mean score of both groups were

different after the treatment executed. The mean score after treatment was 50.1 for control group and 60.6 for the experimental group.

The hypothesis was tested by using inferential analysis. The researchers used t-test (test of significance) for independent between the results of students' mean scores in pretest and posttest in control and experimental group.

Assuming that the level of significance ( $\alpha$ ) = 0.05, the only thing which is needed; the degree of freedom (df) = 48, where  $N_1+N_2=48$ ; then the result of the t-test is presented in the following table.

Table 4. The P-Value of t-test of the students' achievement on control and experimental group.

Variables	P-Value	( $\alpha$ )	Remarks
Pretest of control and experimental group	0.686	0.05	Not significantly different
Posttest of control and experimental group	0.007	0.05	Significantly different

The result of the data analysis on the table 4 above shows that the pretest of control/experimental group was known that P-Value (0.686) is greater than the level of significance at t-table (0.05) and the degree of freedom 48. It means that  $H_0$  was accepted and  $H_1$  was rejected. In other words, there were no significant difference between the students' reading comprehension of the groups, control and experimental group, before the treatment.

In contrast, the data on posttest of control and experimental groups shows that the probability value was smaller than  $\alpha$  ( $0.0007 < 0.05$ ). It indicates that the



alternative hypothesis (H1) was accepted and the null hypothesis (H0) was rejected. It means that cognitive strategies (rehearsal, organization, and elaboration) significantly increase the students' reading comprehension.

The data of posttest as the final result significant improvement. It can be concluded that the use of cognitive strategies (rehearsal, organization, and elaboration) were able to give greater contribution in teaching and learning reading comprehension.

Based on the result of the students' answer moreover in control and experimental group before and after treatment, the researchers noticed that the students often did not understand the question for the text. When they tried to understand the text, they sometimes totally were missing the point of the question which they wanted to answer. Analyzing students' difficulties on reading comprehension, the researcher surmised that they had an underlying lack of linguistic competence in English due to vocabulary memorizing of knowledge that affected their reading competence. As the matter of fact, they led them to not recognizing the ideas of the reading and weak in interpreting the text given. Consequently, they got difficult to read professionally. The multiplicity and structure of the text. It was such in subsequent conduct through the cognitive strategies. They got the some problem to understand the reading text. These students' problems faced are discussed as follows based on the treatment process it also happened in the posttest.

## CONCLUSION

Based on the research findings and discussion, the researcher concludes that the application of cognitive strategies (rehearsal, organization, and elaboration

strategies) can increase students' reading comprehension achievement more significantly of Senior High School in Sidenreng Rappang regency than non-cognitive strategies. The mean score of pretest of the experimental and control group was not significantly different. The mean score of posttest of the experimental group was higher than the control one (60.6>50.1) and the t-test was greater than the P-value (0.005>0.007) that means that there was a significant difference after philanthropic the treatment to the experimental group. This led to the conclusion that the use of cognitive strategies is useful increase students' reading comprehension in teaching and learning process.

The authority of cognitive strategies (rehearsal, organization, and elaboration strategies) to students' reading comprehension achievement was in positively correlation for the increasing of students' achievement. On every increasing students' summit in the independent variable, it was also followed by the increasingly point in the dependent variable. It occurred in vice-versa.

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