



## THE EFFECT OF HIGHER-ORDER THINKING SKILL (HOTS) IN READING COMPREHENSION

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### Abstract

This study aimed to find out rather higher-order thinking helped Junior High school students develop their reading comprehension or not. The research design that used in this research was quantitative and qualitative. The treatment group consists of 30 students, and the group of control also consists of 30 students. In response to an international educational problem, the Indonesian government has created a higher education system. To participate in global competitions in the twenty-first century, Students in Indonesian must think critically and creatively. Several research studies find how teachers use HOTS in many ways. The skill is integrated into the curriculum and application methods by the teacher. The study uses a T-test and interview to find out the effect of HOTS (higher-order thinking skill). The study was conducted at SMP NEGERI 7 in Medan. The test of the research instrument was split up into two parts: Pre-test and post-test, and variability of statistical measured based on the post-test result for two groups in terms of significance.

**Keywords:** HOTS (Higher Order Thinking skill); Teaching Reading Comprehension; Reading Comprehension.

### Introduction

Indonesia's English learning prioritizes developing four language skills: speaking, reading, writing, and listening skills. According to BSNP (2013) Each Individual required to learned and mastered those skills. By reading, someone can communicate with thoughts or feelings, gain information and make students improve their intelligence and their creativity. Reading is one of the receptive skills, which is the most necessary skill to learn by students and gain knowledge from various letters and words. Reading is the strategy of word understanding and combining the word's meaning in the sentences and the reading recitation structure. According to Mikulecky (2011:5), reading is the mind that is consciously complicated or unconscious which the readers use with different strategies.

Alderson (2005, P.144) Reading has a deep interaction between a reader and the text which is created fluency in reading naturally. According to Grabe (2010), the ability to read is a critical language skill of a student as a foreign

language (EFL) in English or (ESL) second language in the context of academics. Nuary (2015) believes that for many students in the EFL context, the cultivation of good readability can involve extensive combat; it is crucial for anyone who has a low understanding level. That situation will lead significantly to a loss of interest that will produce a lower level of fluency and understanding. Reading builds knowledge and enables us to be the inquiring searchers of knowledge that we should be. Not only does it greatly help students when they need to study for exams, but that also helps improve their writing ability. Reading enables one to spend a little time figuring out the words, speed and concentration are continued to increase. With frequent breaks in between reading and by avoiding regression, you can improve your concentration.

According to Cunningham's paper entitled "What Reading Does for the mind (2011) found that reading can make individual get more knowledge. There is still so much knowledge that we still don't know certainly yet. We can gain much knowledge and sharpen our knowledge by reading diligently. Studies by Cunningham have shown that reading improves general knowledge and, more importantly, can spot patterns faster. The capacity to comprehend text content is defined as reading comprehension through the use of critical thinking and critical reading (Alqatanani, 2017; Sultan et al., 2017; Tent & Tent. 2013; Tsai et al., 2013). Miller D (2013) claims that reading comprehension is interpreted as a process of understanding summarized by the reader in the reading text. Furthermore, Khoiriyah (2010:1) believes reading comprehension is defined as the thinking process of readers that makes them aware of thought, comprehend the aspects of their experiential background, and describe it in connection with their purpose and necessity.

Reading Comprehension includes many abilities, such as making predictions, questioning, inference making, making a conclusion, synthesizing information, recognizing the passage of main text idea, summary, and analysis of the text. The same perception according to (Grabe & Stoller 2011) Reading comprehension is defined as a skill for comprehend textual information and define the text correctly. In recent years, the task of reading comprehension, where systems have to comprehend a single passage of text quite enough to answer subjective questions about it, has seen considerable progress, so that the most common databases available for this task have been solved.

In Indonesia, the government states that HOTS is intended for students' learning process (Munawati, Nursamsu, 2019). In the revised curriculum 2013, students would be required in four integrated dimensions keys: collaborative, communicative, critical thinking, and creative and HOTS, including a lesson program, literacy, and character development.

According to Ariyana, Bestary, & Mohandas (2018), The purpose of learning HOTS is to ensure all students able to evaluate, analyze or develop their understanding. There are four prior skills in English study that necessary for students to be achieved. That skill is Listening, Writing, Speaking, and Reading. The reading learning purpose is to recognize the text as set out in the general structure of National Curriculum Competence 2013. It implies that students have to be able to understand the text significantly integrates their ability to comprehend. (Sulaiman et al., 2017) stated that High Order Thinking Skills (HOTS) also relates to

the ability to adjust reasoning, reflection, values, skills, and knowledge, decision making, problem-solving, produce something new and innovate. Such an approach encourages higher-order thinking skills as good as study abilities.

According to Abduhzen (2018), HOTS is not a subject, nor is it an exam question. HOTS is the ultimate goal that is achieved through learning approaches, processes, and methods. Misunderstanding the HOTS term would result in increasingly inefficient and unproductive learning models. Wenglinsky (2002) claimed that "critical" or "strategic" thought is often referred to as HOTS. It is also defined as a skill for using the information to evaluate arguments, analyze arguments, and solve problems. Preparation Guide (2015), the Directorate of High School Development believes that the curriculum 2013 needs an international standard evaluation based on the international standard in curriculum 2013. Teachers should build student's HOTS. Who needed to think universally to find a new challenge (Heong et al. 2018) and respond in an uncommon or new situation. HOTS is the answer for people to adjust new information and knowledge.

The researchers decided to choose HOTS because it can improve student's logical thinking in brainstorming, interpretation, and text formation. The educators evaluate learning priorities to promote critical thinking (Limbach & Waugh, 2010). Also, Harvey & Goudvis (2017) state that to develop meaning, find answers, discover new information, problems solving, and question processes that require readers to ask questions themselves.

Ironically, according to the International Standard Preparation Guide (2015), the Directorate of High School Development believe that teacher's high school preferred to evaluate lower thinking skills only. Lower Order Thinking Skills (LOTS). It is not suitable to use in this curriculum because the teacher's targeted theories and contextual knowledge will not match the criteria of the 2013 curriculum.

That is why it is necessary to master reading comprehension. However, the problem is that students are unmotivated in reading comprehension to read text that tends to make them inferior in understanding reading. Kids can read, and they know every word, but it does not mean they completely understand the text that they read.

According to Dr. Linda Sillbert (2014), poor Reading Comprehension abilities Lead to poor academic performance and affect their skill to succeed in school. Reading Comprehension is necessary for all subjects, such as math and science. Tests also require a reading's understanding, which results in poor grades and poor exam results if a student did not understand reading comprehension well.

Several reasons might lead students to poor reading comprehension, including lack of interest and boredom, which tends to cause children to usually not pay attention to the text they read. The material or story that they read is easy for some children. They quickly get bored and disinterested. It does not relate to something they like or know, slows down, or prevents reading comprehension from decoding individual words. When too many words a child does not know were included in assigned content, they will concentrate on decoding rather than understanding. Others will give up on reading what is assigned. Meanwhile, some students find complex text challenges. That is so frustrating for others that they

give up. A story can be appropriate for the child's grade level but too tricky for an individual child.

The context can be unfamiliar or the story too complex, in addition to not knowing the vocabulary. Oral language deficiency is often linked to poor reading comprehension. Children with limited vocabulary and fluency in oral reading will have problems understanding written text. In fact, In Indonesia, reading comprehension tests still prepare all that activities in LOTS (lower-order thinking skills level). Many studies that have recorded HOTS use in teaching and learning have not done anything on the reading comprehension skills and evaluation.

There are some critical researches on reading comprehension related to the HOTS strategy. Samelian (2017) was performed. CAR (classroom action research) aims to examine whether the researcher can enhance the fifth-graders reading comprehension by using higher-order questioning and critical thinking research. The research showed that questioning of higher-order and information.

The findings stated that questioning higher-order and critical thinking could enhance students' comprehension of abilities to think critically and support students to participate with HOTS to improve their reading understanding. The researcher looked for several similar studies to support this research in order to verify this research.

The researcher found many studies, such as Afidaa munawati (2019) research entitled *The Effect of Higher Order Thinking Skill (HOTS) in Teaching Reading Comprehension*.

A research entitled *Analysis of Reading Comprehension Questions by Using Revised Bloom's Taxonomy on Higher Order Thinking Skill (HOTS)* by Febriana Febrina (2019), A research by Thamrin (2019) entitled *Conceptual variations on reading comprehension through higher-order thinking skills (hots) strategy*, research entitled *Developing Higher Order Thinking Skills (Hots) For Reading Comprehension Enhancement* by Nani Rosani (2018) and research entitled *Developing Students' Higher Order Thinking Skills (HOTS) In reading* by Bernadeta (2019).

The uniqueness of this study's findings proved that before applying HOTS at this school, students still had difficulty in reading comprehension skills. After using HOTS unexpectedly, students at this school got better scores, and their reading comprehension skills improved. The researcher chose this school because the researcher knew that students at this school still had difficulty in reading comprehension skills. In previous study, researchers only examined one side, namely the teacher/student side. In contrast, the researchers in this study examined both sides, namely from the teacher and student side together.

Based on the background, this research concerned more with on finding the effect of the HOTS strategy to improve students' reading comprehension in the 8th grades junior high school students of SMPN 7 Medan, Sumatera Utara. The researchers found that SMPN 7 MEDAN students are still studying reading comprehension at Lower Order Thinking Skills (LOTS). Other than their school textbooks, students are hesitant to read English texts. Students ignore what they are reading. They do not establish the terms in the text relationship to found the word's meaning and will concentrate on the questions asked in the reading comprehension test to guide themselves towards reading comprehension. Such a

problem persists because the students in junior high school have been in the phase of reading which prioritizes the meanings of a reading passage. Since they are not taught or deeply understand in reading activities that apply such strategies, students are unaware of the strategies that may help them read. The researcher also found the factors that caused the difficulty of many students in reading comprehension: most students only read at a glance and were tricked into several repeated sentences. They misinterpreted the choice as an answer.

It's caused by Lack of grammars, vocabulary and word meaning understanding. This research needs to be done because if students continue to use LOTS (Lower Order Thinking Skill), the student's reading comprehension skills are still at a low level and experience difficulties. HOTS will contribute to student's improve their reading comprehension skill, evaluate the effects of the HOTS strategy of students in reading comprehension is the research aim, and teach them to use this strategy to improve their reading comprehension skill. The process of learning English is challenging and complex. In addition, English teacher's impression shows what they do not understand about how to teach the right strategies to understand reading comprehension texts, especially when teaching HOTS strategies. The English teacher strategy in selected junior high school. According to their research, HOTS applying for reading comprehension learning can help students improve their skills in reading comprehension.

Therefore, it is a brilliant idea of problem-solving through this study by applying HOTS in learning reading comprehension. Therefore, the idea comes up into research entitled "The Effect of HOTS In Reading Comprehension." Hence, the researcher has thought to investigate whether higher-order thinking skills are practical on reading comprehension.

### **Problem of Study**

1. How is the HOTS strategy increase the 8th-grade students of SMPN 7 Medan Reading comprehension's skill?
2. Does HOTS strategy affect the 8th-grade students Reading Comprehension of SMPN 7 Medan?

### **Scope of Study**

This research studied comprehension reading skills while using the HOTS strategy for SMPN 7 Medan's 8th-grade high school students. The discussion process consisted of pre-test and post-test activities, shown in the result.

### **Objectives of Study**

The study aims are to know how to apply the Higher order thinking skill strategy to improve reading comprehension ability in 8th-grade students of SMPN 7 Medan and to know either Higher order thinking skill strategy affect students reading comprehension ability or not.

### **Method**

In Indonesia, the government indicates that the HOTS is intended for students (Munawati, Nursamsu, 2019). Maimun (2018) stated that the construct of HOTS is the skills to creatively, metacognitive, logically, and think critically. Also,

Yeung (2016) stated that HOTS is a complicated concept that can be described and used to get critical, creative thinking to solve complex problems. Based on the observation, the HOTS idea was not understood by many English teachers. According to Leung (2008), In Hong Kong, there are some objectives keys of the new education reform: to increase the capacity of young students to think critically. Lee & Lai (2017) stated that asking students open-ended questions may encourage them to compare, justify and conduct inquiries based on previous information. It can encourage them to increase their ability to think critically. Leung (2008) recommends active learning techniques to enhance students' skills in HOTS and successful investigative approaches.

So that, to guide the thinking student's level in teaching activities, the teacher suggests integrating these abilities. According to Bloom, knowledge, recognizing, and recalling information is the lowest thinking ability. However, students perhaps translate or discuss in their own words, in oral or written form, to understand reading text, put and accumulate some information in order, contrast, compare, and interpret it. Also, wat (2016) believes that Model's academic to evaluate lessons and learning is Bloom's taxonomy. Six levels consist of the updated Bloom's Taxonomy: understanding, remembering, applying, creating, and evaluating. The cognitive domain top-level is creating. Three levels of Bloom's Taxonomy are evaluating, creating, and analyzing. Those were referred to as HOTS. Williams (2016) states that in the past two decades, educators have found that most students do not have HOTS immediately, which means that HOTS in different points during one semester should be explicitly and directly.

### ***Strategy of HOTS***

Marina, Acosta, & Ferri (2015) stated that HOTS improves reading comprehension in junior high school students. Higher thinking strategies for collective and questioning groups, graphical organizers, and improved reading comprehension use specific control strategies. Peña & Cañón (2008) states that the improvement of HOTS in reading comprehension through questioning and cooperative work for junior high school students. Some skills have been divided into learning goals that are more nuanced and less; comprehension, information, modeling, usage, assessment, and analysis. To encourage students to think at a learning level, teachers have to develop and integrate the skills. The students may translate or retell in writing what they have perceived in contrast, sort out, in their own words, compare information, then analyze it for their understanding in learning. In this study, student background knowledge was activated by developing understanding and application strategies, making the students have complete graphic organizers, and indeed answering questions and predictions. In the literature and by knowledgeable others, these strategies were suggested and related to personal interest.

Teachers should employ various educational techniques to build thought skills and develop student skills by using redirection and encouragement to accomplish this goal. (Cotton in Seif 2012). In addition, higher-order questions must be the questions proposed by the teachers. Also, teachers required patience for the students. Bloom's cognitive goal taxonomy divided into six phases: Understanding, Remembering, Analyzing, Creating, Evaluating, and Applying. In

short, HOTS's primary purpose is to enable students to chat Bloom's cognitive goal taxonomy applied in any other circumstances what they have, beyond the classroom or any other chance.

#### Teacher Strategy for Applying HOTS to Teaching Reading Comprehension

Marina (2015) stated that strategies to understand this study include asking students various questions, using group discussions, reminding students about learning goals, providing input to make students review, refine, stimulate students' critical thinking, and increase their understanding. Teachers remind students about learning goals at the beginning of the semester. In teaching the ability to read, the instructor used this move to apply HOTS to improve their logical thinking in brainstorming, interpretation, and text formation. The educators evaluate learning priorities to promote critical thinking (Limbach & Waugh, 2010). Also, Harvey & Goudvis (2017) state that was discovering new information, finding answers, solving problems, finding information, solving problems, developing meaning, and improving understanding, the questioning process is needed for readers to ask themselves questions. Teachers' strategies of answer and questions for student's challenge review to think critically and examine learning. The teachers allowing students to evaluate, used various questions, even applying discussions group.

Critical thinking allows reading texts to be worked out by interpreting, generalizing, analyzing, and synthesizing based on prior or world knowledge. Apart from all cognitive abilities, reading comprehension skills should be taught. It starts with recalling data schemes for understanding, synthesis, analysis, evaluation, and application. For understanding, exercises should then be practiced or applied by reading. Therefore, exercises to develop these skills should be provided with reading comprehension text. Consequently, it is necessary to evaluate some lecture understanding exercises successively in order to confirm their work.

For developing specifically higher-order thinking skills (HOTS), cognitive skills needed effectiveness. Students with low understanding skills in reading may answer specific small group discussion or questions. The reading purpose is to build a new relationship with our lifestyle and world. In addition to showing knowledge and understanding of the text, The readers that can use higher-order thinking may create new contexts with some information and relationships between ideas. According to Samelian (2017), use of discussion methods, peer-discussed students, and based on Nuary (2015) stated that teachers used discussion techniques, such as post-test, pre-test, and other activities. There are three types of discussion: discussion-based teaching, small group discussion, and classroom discussion. The teacher used impression time and provide feedback, evaluate learning based on the process of learning. To motivate students and improve them to an understanding of the material.

The researcher describes the study's design and procedure in this chapter. This chapter includes the population, research design, and samples, location of study and time, the procedure of collecting data, research instrument, the procedures of analyzing data, validity and reliability of findings, respectively.

### ***Research Design***

This research examined in SMPN 7 Medan 8th-Grade students to integrate (HOTS) students into reading comprehension. However, for quantitative architecture, there were two classes, one experimental and the other control, with male and female students from each, while for qualitative design, there were five professional teachers. The function of the control group is as a comparison for the experimental group, where the control group did not receive HOTS treatment at all. The function of experimental group was to show the results of students' reading comprehension skills after receiving HOTS treatment to prove that either the presence of HOTS has an effect in reading comprehension or not. The quantitative analysis used quasi-experimental treatment with experimental and control study groups in pre-test and post-test for students, and the qualitative study used questionnaires for teachers. For quantitative design, higher-order thinking skills are taught in the experimental and control groups without using HOTS.

### ***Population and Samples***

The population of this study is consist of 62 person of eight grade students, also five professional English teachers in SMPN 7 Medan in the academic year 2020/2021. The researcher interviewed teachers to see if they understand and implemented Higher order thinking skill strategies in their learning or not. These schools employ university graduates with a bachelor's degree in English as a minimum, with a long teaching career of 5 to 20 years. Government school teachers are known to use the same book for teachers and students.

### ***Time and Location of Study***

The location of this study is in SMPN 7 Medan, Jalan H. Adam Malik No.12, Kecamatan Medan Barat, Kota Medan, Sumatera Utara 20236. The research was held in March 2021.

### ***Research Instrument***

According to the researcher, Johnson, R. Buke & Christensen (2014), A mixed-method design was used in this study wherein a single analysis of the researcher used qualitative and quantitative methods. The quantitative methods used pre-test and post-test, and the qualitative methods used interview. While this research aimed to describe the strategies of the effect of HOTS in reading comprehension and apply HOTS for developing student's ability in reading comprehension, the collection and analysis of data were used, qualitative and quantitative approaches, The researcher using mix method. The mixed-method that researchers used will produce complete, valid, reliable, and meaningful data by combining two research methods at once, qualitative and quantitative, in research activities (Sugiyono, 2011).

### ***The procedures of collecting data***

In March 2021, the research was done at SMPN 7 Medan. Due to students' reading restrictions during the teaching of reading comprehension, this school is chosen. Quantitative design's population was taught from both classes. The first



class was taught as an experimental group using HOTS. The second class in a contrast group did not teach by higher thinking order skill. Before starting treatment, pre-test with two classes were conducted by the researcher. Both two groups received Pre-test and post-tests that consists of questions with short answers. The pre-test, which was given to both groups, assessed the students' prior knowledge.

The test result was collected by two teachers who graded their test using a scoring scale and the answer key after the experiment was completed. The researcher provided proper guidance to the two teachers on correcting the papers, which is worth mentioning. The researcher double-checked the papers and discovered that they had been accurately and adequately corrected to keep the system running. Statistically, the scores achieved and it defined the results.

For collection of data in qualitative design, the participant is required to fill out the questionnaires about using HOTS in teaching experiences and teachers' strategies for applying HOTS. A questionnaire provides automatic data that collects information on research participants' feelings, thoughts, personality perceptions, attitudes, behavioral intentions, convictions, and attitudes; describe by Johnson, R. Buke & Christensen (2014), the purpose of this questionnaire was to get participant's overview.

#### ***The Procedures of Analyzing Data***

In analyzing the quantitative design, the researcher uses independent t-test and t-test methods and standard deviations to analyze student responses to the performance test and the collected data. To analyze the questionnaire in analyzing the qualitative design data summarization were used by the researcher.

#### ***Validity and Reliability of Findings***

The test was analyzed for content validity by the researcher. The test content's validity should be descriptive of the framework and ability being examined. In addition, the grade must be appropriate for the test. In their guidebook "When English Ring a Bell," the inquiry content takes the form of questions appropriate to the theme. The difference between higher-order thinking students and students that do not use higher-order thinking abilities are considerable. This study's findings are reliable. The researcher uses the moment of the Pearson product to measure the test.

#### **Results**

The main data collected fall into two categories: post-test and pre-test. Independent test were used to compare the reading comprehension test in the two groups. To see whether there was any difference in their after-test performance, post-test performance of the experimental group were conducted by two paired t-tests.

Table 1. Paired sample of Descriptive Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 PRE TEST	58.6667	30	23.66918	4.32138
POST TEST	92.0000	30	7.49713	1.36878

Table 2. Paired sample correlations of Descriptive Statistics

	N	Correlation	Sig.
Pair 1 PRE TEST & POST TEST	30	.540	.000

Table 3. Experimental groups Paired Samples T-test in the Pretest and posttest

	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 PRE TEST - POST TEST	-33.33333	20.60856	3.76259	-41.02870	-25.63797	-8,859	29	.000

### The hypothesis

H0:  $\mu_1 \leq \mu_2$  indicates that the average in the experimental group is below or equal to the average in the control group.

H1:  $\mu_1 > \mu_2$  indicates that the experimental group's mean is greater or equal to the control group's average.

Notes:  $\mu_1$  represents the value obtained after the treatment is received.  $\mu_2$  represents the set obtained in advance of treatment.

The level of significance is  $\alpha = 5\%$

The results confirm that the pre-test or post-test means for students are 58.66 and 92.00, shown in table 3. -8.859 the t-value and the df 29 showed in the t-test result. Because the test is one-tailed, the p-value is 0.000 and must be split in two. The equivalent of  $0.000/2$  is lower than the equal of 0.05. The null hypothesis is proven to be incorrect, shown by the result.

It is refused. After treatment the mean of hypothesis is under or equal to the mean before treatment. The researcher concluded that HOTS has an effect in reading comprehension.

Table 4. Paired sample of Descriptive Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE TEST	58.0000	30	20.91032	3.81768
	POST TEST	62.5000	30	11.19960	2.04476

Table 5. Paired sample correlations of Descriptive Statistics

		N	Correlation	Sig.
Pair 1	PRE TEST & POST TEST	30	.504	.183

Table 6. Control in the Pretest and posttest Paired Samples T-test

Pair	PRE TEST - POST TEST	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
					Lower	Upper			
1	TEST	-4.50000	18.06836	3.29882	-11.24684	2.24684	-1.364	29	.183

The results show that the students' post-test and pre-test means are 58.00 and 62.50. The t-value is -1.364, and df 24 showed in the result because the test is one-tailed. The p-value is 0, and it must be split in two; 0.183/2 equals 0.091 and is more than à 0.05. The null hypothesis is ruled out, shown by the result. It means that the post-test means higher than the pre-test.

**The hypothesis**

The result of students' pre-test showed that means without treatment are 58.00 and 62.00. The t-tests value of -1.364 and df 29 showed in the t-test result. Because the test is one-tailed, the p-value is 0.183, which must be divided in two. 0.183/2 equals 0.091, and the group of control is different from the group of experimental.

H1: the experimental group's or  $\mu_1 > \mu_2$  greater or equal to the control group's mean.

It is rejected. After the treatment the hypothesis of the average is equal or under to the average before treatment. Statistical calculation showed that HOTS affect reading comprehension.

Table 7. The Final control group and Posttest experimental of Descriptive Statistics

**Group Statistics**

	STATUS	N	Mean	Std. Deviation	Std. Error Mean
POST TEST	CONTROL	30	62.5000	11.19960	2.04476
	EXPERIMENT	30	92.0000	7.49713	1.36878

Table 8. The Posttest experimental and control group of Descriptive Statistics  
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
POST TEST	Equal variances assumed	2.903	.094	-11.989	58	.000	-29.50000	2.46061	-34.42544	-24.57456
	Equal variances not assumed			-11.989	50.644	.000	-29.50000	2.46061	-34.44072	-24.55928

The statistical basis calculation shows that the HOTS affect reading comprehension. In conclusion HOTS strategy can increase the 8th-grade students of SMPN 7 Medan Reading comprehension's skill because HOTS encouraged students to understand the text's content through intensive reading, and also the researcher asks students questions to assess their comprehension of the reading text. Based on Keshta and Sheif's (2013) statement, this reasoning is consistent. They claim that questions can support the gradual progression of thinking from lower to higher levels and with the information that used as a topic in discussion, students could obtain information from the text that merged with their prior knowledge or experiences.

**Discussion**

The study's research question is whether treating HOTS affects reading comprehension. Based on the test, the data were analyzed after they had been collected and processed. It was discovered that after implementing HOTS, the scores of students improved. The results of pre-test and post-test may not indicate whether or not students improved.

In the means of the experimental group pre-test, there is a difference, as shown in tables 1 and 2. Their score was 58.66 when they were not treated. Their

score was 58.66. The post-test means were given treatment 92.00. The mean difference is 33.33333, and the p-value is 0.000, less than or equal to 0.05, indicating that higher-order thinking skill is an efficient strategy of teaching reading comprehension.

There is a difference in the control group's pre-test results, as shown in tables 4 and 5. It was 58.00 when they were not treated, and the mean in the post-test was 62.50 when no treatment was given. The mean difference is 4.50000 because the p-value is 0.183, which is more than = 0.05.

Table 8 reflected this as well. The result shows a significant difference. The control group's mean was 62.50, and the experimental group's post-test mean was 92.00. The p-value is 0.000 the p-value under 0.05, while the differences of mean are 29.50, and indicating that the control group's mean is lower than the experimental group's mean.

Acosta (2010), who uses HOTS in teaching reading, has the same findings. He discovered that by applying HOTS, His students could apply higher-level thinking, increase their interest involvement, activate their prior knowledge in the process of teaching and learning.

HOTS must be used to teach and learn reading skills. In the process of learning and teaching, the teacher should apply several strategies, mainly if HOTS is being used. The researcher interviewed to determine whether teachers use HOTS when teaching reading comprehension. The researcher found that some teachers used HOTS when teaching reading comprehension meanwhile others not. Teachers who applied HOTS when teaching Reading comprehension stated that the students are careful, increase vocabulary in reading, and read more clearly.

Besides that, the teachers who did not apply HOTS when teaching Reading Comprehension state that they had difficulty teaching reading comprehension to students, especially in answering reading comprehension questions. In conclusion It means that the strategy for HOTS affects Reading Comprehension's skill of SMPN 7 Medan 8th-grade's students.

## **Conclusion**

One strategy for teaching reading is to create HOTS based on the previous discussion. If students use HOTS, they able to think critical and creative. The prior knowledge applied by students in learning and teaching process, increase their interest and participation, and think more critically.

HOTS strategy can increase the 8th-grade students of SMPN 7 Medan Reading comprehension's skill because HOTS encouraged students to understand the text's content through intensive reading, and also the researcher asks students questions to assess their comprehension of the reading text.

It means that the strategy for HOTS affects Reading Comprehension's skill of SMPN 7 Medan 8th-grade's students. This research was not imperfect. The experiment was carried out by only two classes from a single school. This conclusion was not available to be applied to students from another level of education or schools. Future research on this topic should consider these limitations and larger sample sizes, and more schools at different educational levels.

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