

EFFECTIVENESS OF METACOGNITIVE READING STRATEGIES ON READING COMPREHENSION OF FIRST-YEAR HIGH SCHOOL STUDENTS**^{1,*}Fajar Arianto, ²Lamijan Hadi Susarno, ³Rusijono and ⁴Haliim Murhandini**^{1,2,3}Teknologi Pendidikan, Universitas Negeri Surabaya, Surabaya, Indonesia⁴SMA Negeri 19 Surabaya, Surabaya, Indonesia**Received** 11th September 2023; **Accepted** 20th October 2023; **Published online** 28th November 2023

Abstract

This research aims to determine the effectiveness of metacognitive reading strategies on reading comprehension of high school students. The participants in this research were 50 high school students in their first year. The research was carried out using pre-tests and post-tests on participants. Participants were given metacognitive reading strategy treatment for three weeks with teacher guidance. Data analysis compared the participants' pre-test and post-test results using the paired sample t-test. The test results obtained a pre-test mean of 55.40 and a post-test mean of 86.60, and $p = .000 (<.05)$, it can be concluded that metacognitive reading strategies improve reading comprehension for high school students in the first year.

Keywords: Metacognitive reading strategy, Reading comprehension, Knowledge metacognitive, Self-questions.

INTRODUCTION

Reading comprehension is not just about understanding text but is related to ease of learning and the broader educational process (Oakhill, Cain, & Elbro, 2019). The ability to understand reading is a fundamental ability for students. Reading comprehension is a complex process, requiring several high cognitive skills (Nouwens, Groen, Kleemans, & Verhoeven, 2021). Working memory in reading plays an important role in storing short-term information which is transferred to long-term memory (Wibowo, Syafrizal, & Syafradin, 2020). Each individual has different abilities in reading, depending on context, reading intensity, planning, expectations, goals, knowledge, and objectives (Pirozzolo & Wittrock, 2013). Reading comprehension is a complex process related to understanding sentences, activities to integrate meaning in sentences, the reader's background knowledge, identifying text structures, considering the author's goals and motives, and producing conclusions (Graesser, 2015 in (Kendeou, McMaster, & Christ, 2016). Collins & Smith (1980) suggest that the process of reading comprehension that must be taught is monitoring comprehension, and forming and evaluating hypotheses. Monitoring understanding is related to the metacognitive process, namely the ability to evaluate the ongoing comprehension process when reading text, and improve the process. The reading comprehension process requires a strategy that can manage written text to obtain meaningful reading comprehension. Reading strategies are related to the development of cognitive abilities related to improving attention, memory, communication, and learning which are controlled by individuals selectively and flexibly (Carrell, 1992). Reading comprehension is not only knowledge about the strategies used, but understanding how to successfully use them, and knowing how to use other strategies (Anderson, 1991 in Carrell, 1992). Students in reading comprehension must know what strategies to use when to use

them, why to use them, and how to use the strategies appropriately and effectively. (Yang, 2006) explains that the ability to use strategies at different times is called metacognitive awareness, or metacognitive strategies. The use of metacognitive strategies in reading comprehension helps in thinking about thinking before reading, processing, and after reading (Channa, Nordin, Siming, Chandio, & Koondher, 2015). Metacognitive strategies require readers to be active during the reading process. In general, the use of metacognitive strategies consists of the planning stage, preparation stage, and evaluation stage. The planning stage is the process of reading and setting goals or reading targets before doing it. The ordering step refers to questioning and rearranging information during reading. The evaluation stage is the stage of constructing one's assessment and evaluating the status of achieving goals (Keskin, 2013). Metacognitive strategies are learning planning techniques, thinking about the learning process, monitoring understanding, and evaluating learning (Ali & Razali, 2019). Metacognitive reading strategies have two components, namely analytical cognition and pragmatic behavior. (Öztürk & Aydoğmuş, 2021) explains further that the analytical cognition component plays a role in reading comprehension which involves the skills of identifying reading goals, evaluating texts, and making predictions and conclusions. The pragmatic behavioral component plays a role in memory and the skills of organizing the environment, underlining, taking notes, marking important parts, and visualizing descriptions. (Kung & Aziz, 2020) expressed the opinion of Mohktari and Reichard (2002) that metacognitive reading strategies consist of three categories, (1) global reading strategies, steps to get an overall picture of the text; (2) Support reading strategies, ways to maintain reading skills; and (3) problem solving strategies, means to overcome problems when encountered. Teachers must provide systematic learning in the application of metacognitive strategies. Teachers provide clear instructions for implementing metacognitive strategies so that students can understand them better and know how to apply them (Muhid, 2020). For metacognitive strategies, teachers can help students improve their reading skills by

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modeling several preparation, tracking, and assessment approaches when reading (Al-Qahtani, 2020). By modeling, students can know why, when, and how to use their declarative, conceptual, and procedural knowledge (Muhid, 2020). The teacher helps with learning, students will gradually think metacognitively in applying strategies that can be used to improve their reading comprehension. Metacognitive strategies can involve students in improving their understanding of reading texts. Teachers in modeling reading comprehension strategies support students in their use and then reduce this support and teach them how to use them independently (Iwai, 2011).

METHODS

This research aims to find out whether metacognitive reading strategies are effective in improving reading comprehension for high school students. This research is a quasi-experiment using a one-group pre-test and post-test. Participants in this research were 50 high school students in their first year. The procedure for this research is that participants are given a pre-test in the form of a reading comprehension test. In the second stage, participants were given treatment using metacognitive strategies and in the third stage, they were given a reading comprehension posttest. In the treatment stage, participants received intervention during six meetings within three weeks. The data analysis technique used was comparing the results of the reading comprehension pre-test with the post-test using a paired sample t-test.

RESULTS AND DISCUSSION

The results of data analysis using paired sample t-test showed that there was a difference between the pre-test and post-test reading comprehension, $t(df = 49) = -24.183$, $p = < 0.05$. The mean value shows significance between the pretest ($M = 55.40$) and post-test ($M = 86.60$). Data analysis using paired sample t-tests can conclude that metacognitive reading strategies improve the reading comprehension of high school students in the first year. (Mohseni, Seifoori, & Ahangari, 2020) his research results showed that metacognitive reading strategies showed an increase in reading comprehension from the results of the pre-test and post-test.

Table 1. Paired Samples Statistics

	Pair 1	
	Pretest	Posttest
Mean	55.40	86.60
N	50	50
Std. Deviation	8.071	5.292
Std. ErrorMean	1.141	.748

Table 2. Paired Samples Test

	Pair 1	
	Pretest - Posttest	
PairedDifferences	Mean	-31.200
	Std. Deviation	9.123
	Std. ErrorMean	1.290
	95% Confidence Interval of the Difference	Lower -33.793
		Upper -28.607
t		-24.183
df		49
Sig. (2-tailed)		.000

Metacognitive reading strategies help students find and use appropriate techniques to understand reading (Halim, Arif, & Supramaniam, 2020). Students who learn with metacognitive reading strategies have more awareness of what they are thinking while reading and provide positive experiences in reading (Thongwichit & Buripakdi, 2021). Monitoring comprehension during the reading process is based on efforts to achieve learning goals (Soto, 2019). The use of metacognitive reading strategies indicates a higher level of metacognitive awareness for reading use (Maasum & Maarof, 2012). Metacognitive awareness in the reading process helps students in understanding reading texts, where they know how strategies can be used in reading comprehension (Carrell, 1989). Students with metacognitive awareness in the reading process plan, sequence, and monitor their understanding of reading directly in their performance (Kallio & Virta, 2018).

The use of metacognitive reading strategies can overcome problems that arise when reading and help achieve understanding which has an impact on increasing reading comprehension (Ismail & Tawalbeh, 2015). Metacognitive reading strategies allow students to actively assess the achievement of understanding through planning, evaluating, and regulating their understanding (Nash-Ditzel, 2010). Students who use metacognitive reading strategies pay attention to controlling, monitoring, and evaluating their reading process which is purposeful, effortful, deliberate, and facilitative (Çubukçu, 2008). Metacognitive reading strategies change passive recipients of learning into active participants in their learning and increase their cognitive skills (Maftoon & Alamdari, 2020).

In the process of reading comprehension, students ask themselves questions related to efforts to understand reading. Self-questioning is followed by thinking hard to improve reading comprehension (McKeown & Gentilucci, 2007). Think-aloud helps students recognize, mark, and define text that they have not yet understood and helps focus students' attention (Zayed, 2021). Teachers in the learning process play an important role in helping students' reading comprehension. Teachers model metacognitive reading strategies through think-aloud activities by connecting information in the text, predicting, monitoring understanding, and/or comprehending the text (Thu & Vien, 2022). Metacognitive reading strategies help students understand reading texts and answer reading comprehension questions using texts that suit their abilities. Students activate understanding by monitoring knowledge through monitoring, evaluating, or regulating the reading process (Yang, 2006). The application of metacognitive reading strategies is seen when students carry out activities of underlining texts that need to be understood, taking notes, rereading, or skimming. This activity is an awareness of what is done to achieve reading comprehension. Students are aware of what they are thinking and learning, which is metacognitive awareness (Hiver, Whiteside, Kim, & Whitehead, 2021). Metacognitive awareness is very important in developing students' reading skills, if students are aware of how they learn, they can identify effective methods.

Conclusion

The use of metacognitive reading strategies in this research was proven to improve high school students' reading comprehension. In implementing the metacognitive reading strategy, the teacher accompanies and guides students in its

application. Learning about metacognitive awareness is critical to successful reading comprehension. Students know how to understand reading, but it still needs to be improved with teacher guidance. Increasing the ability to apply metacognitive reading strategies is always carried out in stages so that students can monitor and monitor their knowledge. The teacher provides modeling of metacognitive reading strategies and will gradually reduce them to independence.

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