Implementation of Story Mapping and Mind Mapping
Toward Students' Reading Comprehension Enhancement: A Comparative Study

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Abstract

The purpose of this study is to find out significant difference in implementing Story Mapping and Mind Mapping techniques toward students' reading comprehension enhancement. This study used a quantitative research method and comparative design by measuring the achievement of pre-test and post-test. This study addressed three research questions: (a) What is the achievement of the students after being treated with Story Mapping and Mind-mapping Techniques? (b) Is there any significant difference between Story Mapping and Mind-mapping techniques in enhancing students' reading comprehension?, (c) What is students' response towards Story Mapping and Mind-mapping techniques?

There are different types of text in reading; however, the researcher limited the texts given to the participants—utilizing narrative and descriptive texts only. This study utilized small average amount of sample size—72 eight graders to be given the treatment. The purpose of limiting the number of participants is to provide effective treatment for them.

The result of this study shows that p. value (sig) = $0.279 > \alpha$ (0.05). After analyzing the data, the researcher found out that the students reading comprehension are enhanced but there is no significant difference in reading comprehension enhancement between those who acquired Story Mapping technique and those who acquired Mind Mapping technique. Both techniques are deemed to be effective in enhancing students' reading comprehension.

Keywords Reading comprehension, Story Mapping, Mind Mapping

Introduction

Reading comprehension is the process of understanding meaning from a text. The purpose of reading is to obtain an overall understanding of what is described in the text rather than to obtain meaning from particular words or sentences. Duke (2003) stated that in order to succeed in reading, a person should have good comprehension; comprehension is a process in which readers make meaning by interacting with text through the combination of prior knowledge and previous experience. Nguyen (2013) asserted that reading comprehension in a foreign language is more complicated than reading in the first language. "In the case of Indonesians, there is a high level of acceptability and tolerance of the use of English. The teaching of English in the school curriculum is given a higher priority over all other foreign languages in the school systems". "Thus, the teaching of English as a Foreign Language (EFL) is in fact compulsory" (Katemba, 2013). However, "as Indonesian students, they have already encountered problems with reading

comprehension in Indonesian, the language that they've acquired and learned, they also find it way more difficult to read and comprehend reading in English, the foreign language that they do not acquire and learn it barely for a short time" (Siagian & Katemba, 2016).

The outcome of reading comprehension is the mental representation of a text meaning that is combined with the readers' previous knowledge. However, there are still many students who learn English deal with comprehension issues. Siriphanich (2010) stated that students cannot understand the text because they do not know the meaning of words in the text. They have hard time making conclusion on what they read. Therefore, to help students enhance their reading comprehension, the researcher implemented two techniques: Story Mapping and Mind-Mapping and compared both techniques to seek students' achievement in reading and find out significant difference between both techniques in terms of teaching reading. In this field, the teacher has important role to encourage students to establish passion for reading by providing them with related resources in enhancing reading comprehension.

Reed and Vaughn (2012) stated that Story Mapping helps students improve their vocabulary knowledge, helping students identify main idea of the text and different parts of a text in order to construct the meaning. Additionally, Kusmaningrum (2016) stated that Story Mapping has a great potential to help the student have a better understanding in reading a text. English teachers may use it to assist students to overcome the inability to understand reading (Slavin, 2005). According to Dawi (2010), A story mapping can be used as an outline for creating a story or summarize the story events. It helps the students visualize the people, place, and events of the story. Story mapping also can be used to generate ideas during brainstorming sessions.

Meanwhile Mind Mapping is one of the appropriate techniques to teaching reading. It helps students to represent their understanding in reading. Furthermore, Smith et al. (2003) added that Mind Mapping is a good way for organizing information so that the ideas become more visual and the chain of thought and hierarchical relations can be easily followed and turned into a paper. Mind mapping is effective in terms of helping communicate information because they can clarify complex concepts into simple, meaningful displays so that learners can develop a holistic understanding of the content to be learned. Kaufman (2010) said that Mind Mapping is a useful technique to be used while reading, learners can easily place new information in the appropriate branch or make connections between ideas. This is in line with the theory of top-down process proposed by Nuttall cited in Brown, (2001).

Purpose of Enhancing Reading Comprehension

Parr (2010) stated that the purpose of reading is to develop the children to love literature, the multitude of genres and to be confident in their own reading to share with others. Reading also develops the children to have a wide range of opportunities for reading then become independent readers. Moreover, it develops powers of imagination, inventiveness and critical awareness, equally important, read it with expression and emotion. Grabe and Stoller (2002) stated that there

are five purposes of reading, as follow: (1) reading to search for simple information; (2) reading to skim quickly; (3) reading to learn from texts; (4) reading to integrate information, write and critiques texts; (5) reading for general comprehension.

Reading Types

According to Kozak (2011), readers typically make use of background knowledge, vocabulary, grammatical knowledge, experience with text and other strategies to help them understand written text. There are the following types of reading and the corresponding types of activities to develop the corresponding reading skills such as extensive reading and intensive reading. There are different definitions for extensive reading. Mikeladze (2014) stated that extensive reading is a long-run approach, through which learners cannot expect a prompt effect. It is a time-consuming approach. Extensive reading activities can be beneficial in aiding learners to become self-directed individuals who are searching for meaning provided that they are based on student-selected texts that learners will be interested in what they are reading. The process of choosing reading texts will be done according to content, level of difficulty, and length. Aside from that Yang, et al (2012) expressed that intensive reading is useful to develop reading comprehension. According to Waring (1997), intensive reading is very important for learning vocabulary and understanding how text is formed. Stahl (2003) found that there is a relationship between intensive reading activities and language proficiency. Moreover, Paran (2003) said that teachers need intensive reading to increase the three phases of learning called pre, during, and post-reading for better language readiness, retention, and activation strategies. Pollar, et al (2011) said that intensive reading is considered as a significant instrument for improving reading comprehension.

Teaching Reading to Junior High School

When teaching English in Junior High School, the teacher should know the purpose of the process and what should they do in the process. Teaching English in Junior High School is based on the curriculum. There has been School-Based Curriculum 2013 which is the last curriculum used in Indonesia. This curriculum provides guidance for teachers in English reading, especially in Junior High School. Based on the School-Based Curriculum 2013, there are three goals of teaching English in Junior High School: (1) Develop the competence of communicating in oral and written form to achieve the level of functional literacy; (2) Have an awareness of the nature and importance of English to improve the nation's competitiveness in a global society; (3) Developing learners' understanding of the interrelationship between language and culture. Accordingly, Behroozi, et al (2013) showed students' challenges in enhancing reading comprehension ability.

Reading Challenges

Harmer (2007) stated that there are some problems with reading. The final goal of reading is to establish good comprehension. According to Jennings, et al (2010) there are several factors that cause reading problems, as followed: (1) Emotional Factors. Emotional problems can influence reading achievement. Among the emotional problems exhibited by poor readers is emotional blocks, hostility, aggressiveness, learned helplessness, low self-esteem, depression, and anxiety.

Emotional factors may be informally assessed using the sentence completion activity (Silver, 2006). (2) Environmental Factors. Environmental factors include the home, school, cultural, and social environments. The home is the child's first environment, where the critical learning of the early years occurs. The school environment is another important system for the student, one that is often difficult for students with reading problems. Students with reading disabilities tend to have difficulty in their social environments. The cultural environment is another system that affects attitudes and interest in reading (Lerner and Johns, 2012). (3) Physical Factors. Physical factors are also related to reading improvement. Reading skills may be severely affected by even moderate or temporary hearing loss, students should be screened for auditory acuity, or the improvement to hear sounds. Other physical factors, such as general health and nutrition or neurological conditions, are related to reading disabilities (Jennings, et al, 2010). (4) Lack of Repeated Reading. According to Therrien (2004), repeating in reading will have a big effect on a student in comprehending text. "Reading before the performance will develop reading comprehension". (Rasinski, et al 2000). In another word, without repetition in the classroom it will have a bad effect on the student because students have lower achievement. (5) Limited vocabulary knowledge. Zugel (2009) said that students who have a lack of vocabulary have a lower score in reading comprehension. "Reading before the performance will develop reading comprehension". (Rasinski, et al 2000).

Methodology

Research Design
This is a quantitative study, utilizing comparative-research design. The techniques used to compare are Story Mapping and Mind Mapping. There are two groups in this study. One group was taught using Story Mapping Technique and the other group was taught using Mind-mapping Technique.

Participants
The population of the research was eight graders in Lembang, Bandung Barat. The samples of this study were 72 students from SMPN I, Lembang. In the beginning of the research, the two groups were given pre-test to know the reading comprehension ability of the participants. Afterward, both groups were treated with given treatment and finally at the end of the meeting, both groups had a post test to see whether there is an enhancement on reading comprehension or not. This research was conducted from February until March 2018.

Research Instrument
There are two instruments used for this study: (1) Reading comprehension test. The researcher made a reading comprehension test for pre-test and post-test. However, the test was piloted before giving the test to the actual participants. The test was designed to find out participants' achievement reading. It is a multiple-choice test, designed based on reading indicators and (2) Participants' response questionnaire. It is to know the response of the participants after being treated with the given technique.

Procedure

In gathering the data, the researcher started with the following steps: (1) Conducting a Pilot Test. The purpose is to check validity, reliability, discrimination and difficulty level of the test. (2) Conducting Pre-test. It was given to both comparative groups before applying the treatment in order to diagnose students' reading comprehension ability. The test was confirmed to be valid and reliable to get an accurate result. (3). Giving the Treatment. After administering the pre-test, the treatment was given to both groups. The teaching procedures through Story Mapping are adopted from Reutzel (1985); meanwhile the procedures from Mind-Mapping are adopted from Buzan (2007).

Findings of the study

In order to obtain results from this study, the researcher calculated the data of pre-test, post-test, and normalized gain after conducting the treatment. The following is the table:

Table I. Pre-Test, Post-Test, Standard Deviation, and Normalized Gain

	Story Mapping		Mind Mapping	
	Mean	St. Deviation	Mean	St. Deviation
Pre-test	61.72	10.581	64.27	9.107
Post-test	76.77	6.928	77.80	5.951
Normalized Gain	0.3947	0.0556	0.3790	0.0658

As it is seen from the table, there is an increasing score between both groups. However, students who were treated using Mind-Mapping technique obtain a slightly higher score of achievement than the students who were treated using Story Mapping. The mean of the pre-test is 64.27 with standard deviation 9.107 and the mean of the post-test is 77.80. Meanwhile, the mean of the pre-test of Story Mapping is 61.72 with standard deviation 10.581 and the mean of the post-test is 76.77. Other than that, the normalized gain of Story Mapping is 0.39 and the normalized gain of Mind Mapping is 0.37. Conclusively the normalized gain of both groups falls on *Moderate* category.

In order to find out whether there is a significant difference between the two techniques, the researcher conducted a normality test. The purpose of the normality test is to know whether the data population of pre-test is normally distributed or not. After that, the researcher did the homogeneity test in order to know whether the populations are homogenous or not

Table 2. Normality Test of Gain Score

Group		Shapiro-Wilk		
		Statistic	df	Sig.
Gain Score	SM	.972	36	.483
	MM	.947	36	.086

Based on the data table above, both data were normally distributed because the significant value of the gain score for SM group is 0.483 which is greater than α (0.05) and the significance of the gain score for Mind Mapping group is 0.086 which is greater than α (0.05).

Table 3. Homogeneity Test of Gain Score

Levene Statistic	df1	df2	Sig.
.419	1	70	.520

The variance of data population is homogeneous if the p-value is greater than α (0.05) and if the p-value is equal or lesser than α (0.05), it means the variance of data population is not homogeneous. Based on the result of table 4.6, the result of the variance data population was homogeneous because 0.520 is greater than α (0.05).

Table 4. The Result of Independent Sample T-Test of Normalized Gain

	Levene's Test		t-test		
	F	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed	.419	.520	1.092	70	.279

Since the population variances of the normalized gain score were homogeny, the row of equal variances assumed is used. The result showed that the p-value of the gain score is 0.279 which is larger than α (0.05), so it can be concluded that H$_0$ is not rejected. Thus, there is no significant difference between those who taught by Story Mapping and those who taught by Mind Mapping towards reading comprehension enhancement.

Aside from calculating the data, the researcher distributed the questionnaire to both groups in order to gain information toward the two techniques. The result of questionnaire of each group was calculated through excel. The questionnaire was given to the groups after giving the post-test. The goal of giving questionnaire is to know the response of the students toward the technique. The result can be seen on table:

Table 5. Students' Response toward the Techniques

	Story Mapping	**Mind Mapping**
Mean of the Questionnaire Result	**91%**	**99%**

From the table above, it can be seen that the Story Mapping technique got 91% of the mean result. It can be considered that the participants have a positive response toward Story Mapping technique in enhancing reading comprehension. Meanwhile, Mind-mapping technique got higher mean result which is 99%. The participants also have a positive response toward Mind Mapping technique in enhancing reading comprehension. Conclusively, both groups' response fall under 'really like' category.

Conclusion

From the result of data analysis on the pre-test and post-test, the researcher concludes that there is no significant difference between those who acquire Story Mapping and those who acquire Mind Mapping. However, both techniques are effective in enhancing students' reading comprehension because each group achieved higher score after being treated with the techniques. Moreover, participants made positive response regarding the two techniques. In conclusion, English teachers may use Story Mapping and Mind Mapping techniques as an alternative in teaching English reading because the students will become active and interested in reading. In addition to that mapping would be helpful to improve students' reading enhancement, therefore the teacher needs to maintain using mapping in the next new academic year in teaching narrative text. It is hoped that the result of this study can be used as additional reference for future researcher in different levels and contexts.

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