

THE EFFECT OF STUDENT-GENERATED QUESTIONS AND SEMANTIC MAPPING STRATEGIES ON STUDENTS' READING COMPREHENSION SKILL AT GRADE XI OF MA PP DAARUN NAHDHAH BANGKINANG

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Abstrak: Penelitian ini bertujuan untuk mengetahui apakah ada perbedaan efek di antara pengajaran dengan menggunakan strategi student-generated questions, semantic mapping, dan guided reading terhadap pemahaman membaca siswa. Ini adalah penelitian quasi experimental yang menggunakan pre test post test control group sebagai desain penelitian. Sampel penelitian adalah kelas XI E yang merupakan kelas eksperimen I yang diajar dengan menggunakan strategi Student-generated Question, kelas XI C merupakan kelas eksperimen II yang diajar dengan menggunakan strategi Semantic Mapping, dan kelas XI D merupakan kelas kontrol yang diajar dengan menggunakan strategi Guided Reading. Data dianalisis dengan analisis Varian (One Way ANOVA). Temuan menunjukkan bahwa ada perbedaan efek dari hasil pemahaman membaca antara siswa yang diajarkan dengan strategi Student-generated Question, Semantic Mapping dan Guided Reading. Untuk analisis lebih jauh lagi, strategi student-generated questions memberi efek yang lebih baik terhadap pemahaman membaca dibandingkan dengan siswa yang diajar dengan strategi guided reading; strategi semantic mapping memberi efek yang lebih baik terhadap pemahaman membaca siswa dibandingkan dengan siswa yang diajar dengan strategi Guided Reading; dan strategi student-generated questions memberi efek yang lebih baik terhadap pemahaman membaca siswa dibandingkan dengan siswa yang diajar dengan strategi semantic mapping.

Keywords : *Student Generated Questions, Semantic Mapping Strategy, Reading Comprehension Skill*

INTRODUCTION

Teaching strategy used by a teacher plays important role in teaching and learning process in the classroom. It influences how to help students in learning. In applying teaching, suitable activities in the teaching and learning process in the classroom are needed. Moreover, teaching reading comprehension needs more attention since the students should comprehend text

from the beginning to the end in reading.

In fact, the result of teaching reading comprehension skill had not been satisfactory yet. Based on the researcher's observation and interview to the teacher and students, there were still many problems appeared in the application of the way the teacher

taught and the students learnt. Based on the students' statements on the researcher' interview that seven from ten students felt difficult to read and answer reading comprehension questions. Furthermore, the test result shown by the teacher indicated that more than 50% students didn't do reading comprehension test well. In addition, the strategies used in the classroom could not encourage students' critical thinking and participation in the process of teaching and learning.

Realizing the facts above, it was necessary for the teacher to use appropriate strategies which were interesting to attract students' thinking in learning process. Moreover, two of the strategies that could attract students' critical thinking and participation in the learning process of reading comprehension were by using Student-Generated Questions and Semantic Mapping Strategies in reading comprehension skill.

Reading is an activity that requires the readers to read for meaning. It means that they not only read the text but also understand the meaning of written text being read. Nuttal (1989:18) views reading as essentially concerned with meaning, specifically with the transfer of meaning from mind to mind; the transfer of a message from writer to reader. This is as also stated by Weir (1993: 64), that reading is a selective process between the reader and the text. In this case, the reader and the text have a unique contribution as interaction in understanding it for making sense of text. In other words, readers' understanding of the text is a kind of exchange ideas with

the author. Readers' ability to understand the author's message is influenced by their background knowledge to the topic given in the text.

In comprehending the texts, the readers need to prepare themselves by knowing some skills that they can apply while they are reading so that the goal of reading can be achieved. In this research, the researcher combine the skills based on the experts. In short, the skills of reading comprehension are identifying the topic, finding main idea, finding supporting idea, finding implied information, finding meaning of vocabulary based on the context, identifying references, and finding synonym antonym. The components are also used as the indicators of assessment in reading comprehension.

There are some strategies and procedures done by the teacher in teaching reading comprehension. In reading a text, the readers need the way or strategy to make easier or faster in comprehending it. Duffy (2009:19) explains some strategies that the readers can use various combinations over from one reading situation to another. They include making predictions, monitoring and questioning what is happening, adjusting predictions as go reading, creating images in the mind, removing blockages to meaning, and reflecting on the essence or the significance or the importance of what has been read. Almost similar as Duffy's opinion, Galla in Stone (2009:101) concludes that there are seven strategies that are very useful in the classroom, they are asking questions, making predictions, making connections, visualizing,

determining important information, synthesizing, and making inference. These strategies can be categorized as before beginning reading, as beginning reading, during reading and after reading.

One of the ways in comprehending a text is by asking questions. Asking or forming questions is one of the effective reading comprehension strategies, which is commonly recognized as an important strategy in reading researchers, as said by Grabe (2009: 209). It has important role in teaching and learning process because through questioning, teachers and students can establish what is already known, to use and extend the knowledge and then to develop new ideas. Question-forming strategy requires training students in how to generate appropriate questions in relation to a text.

There are some advantages that can be got by applying student-generated questions strategy in the classroom. Chin (2006:113) states that students can scaffold their thinking through questioning and discussion. They can be encouraged to use self questioning as part of 'self-talk'. The ability to ask oneself questions can elicit and promote self-regulated, reflective thinking.

Furthermore, Chin (2002:60) says that self students questioning is effective to both cognitive and metacognitive functions. It is consistent with the view of generative learning to reconcile students' prior knowledge and new information to make sense of these ideas.

Some procedures in teaching reading comprehension by applying student-generated questions strategy can be done in pre, during and after reading. Pre-reading questions are intended to activate, review and develop background knowledge, preview key concepts, and set purposes for the reading to follow. Pre-reading questions can be asked by teacher firstly as an important role in modeling for students appropriate activities for their actual independent question asking prior to reading and students make it with their own as prediction.

The second part of strategy is done during reading. The purpose of asking questions during reading is to anticipate what is to come in the text and look for information that confirm or not confirm their predictions. According to Lapp, Flood and Farnan (2004: 314), during reading questions are able to check the meaning that students create from the text (content questions), focus on the strategies used to arrive at such meaning (process questions) and doing organizational questions. It means that in during reading questioning, the students are supposed to understand the content, as well as the process of reading that lead to understanding. Questioning activities help students see a text's organization and use that organization to select important ideas, class ideas together, and anticipate information based on what questions should be answered can promote these text-processing and comprehension-monitoring goals.

Moreover, in after reading questioning strategies, it is

important for students to remember, as well as comprehend, what they have read. After-reading activities should provide students with additional opportunities to practice or rehearse what has been learned from the text, as well as to increase the associations that can be made between the textual information and their own background knowledge. In this case, the teacher would eventually help students to determine how well the strategy worked by checking if their answers make sense or checking their answer with their peers.

The other strategy is semantic mapping. Semantic mapping has been familiar, especially for teacher of language since it is very helpful to enable the engagement in teaching and learning process. Joan and Susan (1986:126) say "Semantic mapping is a visual strategy for vocabulary expansion and extension of knowledge by displaying in categories words related to one another."

Moreover, Oxford (1990: 61) includes semantic mapping as one of memory strategies that apply images. This is incorporates a variety of other memory strategies: grouping, using imagery and associating elaborating. It is useful for remembering new expressions that have been heard or read; and immediately helpful for comprehension, too. This strategy involves arranging and relationships among ideas, which a key concept is linked with related concepts via arrows or lines become a semantic map. In this case, students can make semantic mapping like cluster or group related concepts visually, thus

making the concepts easier to remember.

Brown (2001:308) that states the semantic mapping strategy which group ideas into meaningful clusters helps the reader to provide some orders to the complete unity. It means that semantic mapping might be very useful for the students to take notes and to represent the information from the text as a visual representation of knowledge, a picture of conceptual relationship between students' knowledge and text.

Some procedures can be done in applying semantic mapping strategy. According to Gunning (2004: 23), teaching procedures of semantic mapping is firstly, the teacher decides on a topic for instruction and the new words that are important to be taught. The topic or concept is briefly introduced, and a key word is written on the whiteboard. Then the students are asked to think of other words that come to mind when they read the key word. It is appropriate for the students to write down a list of these words to be shared with classmates and have class discussion. After the list of words is completed, the words are grouped and named by category. The students discuss why certain words go together. At this time, students are encouraged to add items to the categories or even to suggest new categories. As other words that relate to the topic are discovered through reading of the text, additions are made to the map.

The two previous strategies are compared to conventional strategy. Conventional strategy is a strategy that is used by many

teachers as usual. This strategy is related to teacher's help in reading comprehension which is called guided reading strategy. Guided reading is a strategy that supports students to discover the meaning of a text for themselves.

Moreover, Kester (2008: 2) says that guided reading includes both direct explicit instruction and opportunities for the readers to explore and investigate to come to conclusions about meaning, phonics rules, fix-up strategies, etc. The students are instructed in whole groups, small groups, or individually depending on the demands of the task and the needs of the child. The group activities are based on developmental levels so that children are grouped according to abilities.

Procedures in Guided reading are divided into before, during, and after reading activities. Kester (2008: 4) explains stages of guided reading activities. Before reading activities prepare the students to get ready to read by activating background knowledge and engaging the learners in questioning and predicting. It provides teachers with opportunities to assess what children already know and assisting them in teaching what they need to know to be successful in reading the text that will follow. It often includes mini-lessons on skills or strategies that may be helpful to the students to successfully read the selection. During Reading activities may include reading out loud (sometimes called whisper reading), reading silently, reading to answer questions or for information, and opportunities to discuss comprehension or word

difficulties as they arise. These conversations may also lead students to reveal their understandings or confusions about print or meaning. After Reading activities include discussion of the material on a cognitive or affective level. This requires students to explain their positions using the text, prior experience, or both. Follow-up lessons often include specific target skills or strategies lessons based on the text.

Based on the problems and theories, in this study, the researcher compared the two new strategies: student-generated questions and semantic mapping strategies to the usual strategy, guided reading strategy because the strategies could increase students' critical thinking and participation in the learning process and become independent learners.

METHOD

This was quasi experimental research that used pre-test post test control group design as research design. This thesis compared three strategies as independent variables and reading comprehension skill as dependent variable. There were two experimental classes in this research. The first experimental class was a class which was taught by using Student-Generated Questions strategy for reading comprehension skill; and the second experimental class was class which was taught by using Semantic Mapping strategy for reading comprehension skill. Control class was a class which was taught by using guided reading strategy.

Moreover, pre-test and post-test did toward the three classes (experimental and control). Pre-test was a test which was done at the beginning of the research, before doing different treatments in the research; while post-test was a test which was done at the end of the research.

Population of the research was all eleventh grade students of MA PP Daarun Nahdhah Bangkinang with total 188 students. The technique that was used in choosing sample was by cluster random sampling which got three classes as sample with total 93 students, they were XI E with 31 students, grade XI C with 32 students, and grade XI D with 30 students.

Instrumentation

To get the data, the researcher used reading comprehension test in form of multiple choice as instrument. In this research, the researcher gave test for pre-test and post test. Both of the tests were in the same material and level of difficulties considering the internal validity of the instrument, although with some revisions and changes of numbers. Students had to answer thirty questions multiple choices in 90 minutes which focused on the indicators of assessment reading comprehension. Before the pre-test was given to the students, a try out was distributed to the other class which was as level as the sample to determine validity, reliability, difficulty indices and discrimination indices of the test.

After data got, they were analyzed by using Varian analysis (One Way ANOVA). Gay, et al (2011:357) define One Way ANOVA

analysis as a parametric test of significance used to determine whether scores from two or more classes are significantly different at a selected probability level. Because this research was using three classes of sample, it was better to use ANOVA that much more efficient and keeps the error rate under control.

FINDING AND DISCUSSION

1. Data Description

The researcher conducted two tests of reading comprehension skill; they were pre-test and post-test. Pre test was distributed for three classes of students' grade IX C, IX D, IX E as samples. The pre test scores were obtained before giving treatment to the students to know their reading comprehension skill. Moreover, post test was done after the researcher gave new strategies as treatments for experimental classes and strategy as usual for control class for eight meetings. The following was table of data description of pre-test and post test:

Table 1. Data Description of Pre-test and Post test for Experimental and Control Classes

	Experimental Classes				Control Class	
	Student-Generated Question		Semantic Mapping		Conventional	
	Pre-test	Post test	Pre-test	Post test	Pre-test	Post test
N	31	31	32	32	30	30
MEAN	52.90	71.29	52.40	65.94	51.11	61.89
MIN	33.33	53.33	30.00	46.67	30.00	46.67
MAX	83.33	93.33	83.33	90.00	80.00	90.00

Based on the table, it could be seen that the number of the students in Student-generated question class

was 31 students. The mean of pre-test was 52.90 while mean for post test was 71.29, which meant it increased 18.39 point on post test. The minimum score of the pre-test was 33.33; increased 20 point on the post test became 53.33. While the maximum score of the students' pre-test was 83.33; increased 10 point on post test became 93.33. Moreover, the number of the students in Semantic Mapping class was 32 students; mean of pre-test was 52.40 increased 13.54 point on post test became 65.94. The minimum score of the pre-test was 30.00; increased 16.67 point on the post test became 46.67. While the maximum score of the students' pre-test was 83.33; increased 6.67 point on post test became 90.00.

Furthermore, for control class, the number of the students in conventional class was 30 students; mean of pre-test was 51.11 increased 10.78 point on post test became 61.89. The minimum score of the pre-test was 30.00; increased 16.67 point on the post test became 46.67. While the maximum score of the students' pre-test was 80.00; increased 10 point on post test became 90.00.

2. Pre-requisite Analysis

To verify the data whether those data fulfilled the requirements of the experimental research or not, the researcher would see the normality and homogeneity of the data.

a. Normality Testing

The purpose of testing normality is to examine the assumption that the data normally distributed. The normality test was analyzed by using SPSS 18 for Kolmogorov-Smirnov on the

significance level of 0, 05 (5%). The result of normality testing of pre-test and post test could be seen on the following table:

Table 2. Result of Normality Testing of Pre-test and Post Test of Experimental and Control Classes

	Class	Strategy	N	Sig	Data Distribution
PRE-TEST	Experimental	SGQ	31	0.200	Normal
		SM	32	0.170	Normal
	Control	C	30	0.149	Normal
POST TEST	Experimental	SGQ	31	0.200	Normal
		SM	32	0.177	Normal
	Control	C	30	0.200	Normal

Hypotheses that were tested:

Ho = data are distributed normally

H1 = data are not distributed normally

Based on the table above, it could be seen that the results in pre test and post test were normally distributed because *significance value* > α 0, 05. It showed that Ho was accepted and H1 was rejected which meant that all classes of data were normally distributed.

b. Homogeneity Testing

The homogeneity of the pre test was conducted by *Levene* formula using SPSS 18. The purpose of testing homogeneity is to know whether the data variances are homogenous or not. The result of homogeneity testing of pre-test and post test could be seen on the following table:

Table 3. Result of Homogeneity Testing of Pre-test and Post Test of Experimental and Control Classes

		Sig	
Pre test	Experimental and Control Classes	0.195	Homogenous
Post test	Experimental and Control Classes	0.860	Homogenous

Hypotheses tested were:

Ho = variances of classes were homogenous

H1 = variances of classes were not homogenous

The criteria of homogeneity is if $sig > 0,05$ means that the data are homogenous and if $sig < 0,05$ means that the data are not homogenous. According to the table above, the computation of *Levene* showed that the *significance value* of pre test was $0.195 > 0.05$. Moreover, the *significance value* of post test was $0.860 > 0.05$. It could be concluded that Ho was accepted and H1 was rejected, meant that the data of pre test and post test were homogenous.

2. Hypothesis Testing

Since the data are normally distributed and homogenous, the researcher continued to analyze them by using parametric statistic. In this case, the researcher used *Analysis of Variance (One Way ANOVA)* by using SPSS 18.

The criteria were:

If $F_{calculated} \geq F_{table}$ = the null hypothesis is rejected and

alternative hypothesis is accepted. It means that there was difference effect on students reading comprehension skill among those who are taught by using Student-generated Question, Semantic Mapping and Guided Reading Strategies.

If $F_{calculated} \leq F_{table}$ = the null hypothesis is accepted and the alternative hypothesis is rejected. It means that there was no difference effect on students reading comprehension skill among those who are taught by using Student-generated Question, Semantic Mapping and Guided Reading.

The result of calculating ANOVA could be seen in the following table:

Table 4 Result of ANOVA Testing

ANOVA

Gain Mean

	Sum of Squares	df	Mean Square	F	Sig.
Between Classes	907,987	2	453,993	5,415	,006
Within Classes	7545,229	90	83,836		
Total	8453,215	92			

Based on the table above, it could be seen that $F_{calculated}$ was 5.415, while F_{table} (df 2, 90) for sig 5% was 3.10 and for sig 1% was 4.85. In other word $F_{calculated} > F_{table}$ ($3.10 < 5.415 > 4.85$), $F_{calculated}$ is larger than F_{table} , so Ho was rejected and Ha is accepted. It meant that there was difference effect on students reading comprehension skill among those who are taught by using Student-generated Question,

Semantic Mapping and Guided Reading Strategies.

After knowing that there was difference effect, the further analysis was done, which was called *Post Hoc Test of Tukey* to know which classes were different or not. The result of Post Hoc of Tukey could be seen in the following table:

Table 5 Result of Post Hoc Testing

(I) Class	(J) Class	Mean Difference
Student-Generated Question	Semantic Mapping	4,84395
	Guided Reading	7,60812*
Semantic Mapping	Student-Generated Question	-4,84395
	Guided Reading	2,76417
Guided Reading	Student-Generated Question	-7,60812*
	Semantic Mapping	-2,76417

Based on the table shown, the researcher looked at mean difference in multiple comparison

tests. The mean difference of Student-Generated Questions to Semantic Mapping strategies was 4.84 which meant that Student-Generated Question class got 4.84 point more than Semantic Mapping class. While the mean difference of Student-Generated Question class to Guided Reading class was 7.61 which meant that Student-Generated Question class got 7.61 point more than Guided Reading class. The mean difference of Semantic Mapping class to Student-Generated Question class was -4.84 which meant that Semantic Mapping class got 4.84 point less than Student-Generated Question class. While the mean difference of Semantic Mapping class to Guided Reading class was 2.76 which meant that Semantic Mapping class got 2.76 point more than Guided Reading class. The mean difference of Guided Reading class to Student-Generated Question class was -7.61 which meant that Guided Reading class got 7.61 point less than Student-Generated Question class. While the mean difference of Guided Reading class to Semantic Mapping class was -2.76 which meant that Guided Reading class got 2.76 point less than Semantic Mapping class.

Based on the finding, the students who were taught by using student-generated question strategy applied in experimental class got higher score than those who were taught by using Guided Reading and semantic mapping strategies. It was proved by the scores gained by using ANOVA. The advantages of using students-generated question were also stated by Chin (2006:113) that the ability to ask oneself

questions can elicit and promote self-regulated, reflective thinking. The teacher can encourage students to ask the questions themselves and practice using them when they are engaged on task. The statement above was supported by Grabe W. (2009: 209) has proved that there is strong evidence that question generation improves memory for text information, the identification of main ideas, and accuracy in answering question in the other research. Student-generated question strategy required students how to generate appropriate questions in relation to a text.

Furthermore, the use of student-generated questions strategy gave significant effect to the students because by applying this strategy, the students predicted and anticipated what was going to read so that they would easily activate their background knowledge. By doing so during reading, they could understand deeply on what they were reading through the content and process-based.

The next finding got based on the research was that semantic mapping strategy also gave better effect on students' reading comprehension of report text. It was suitable with what stated by Schmidh in O'Malley (1996: 175) that stated semantic mapping enables students to represent the concepts and relationships in texts with geometric shapes. Semantic mapping might be very useful for the students to take notes and to represent the information from the text as a visual representation of knowledge, a picture of conceptual relationship between students' knowledge and text. It helped

students to show the main idea and the relationship between ideas. Besides, it also explored students' background knowledge to new knowledge and developed the conceptualization of the text.

Meanwhile, semantic mapping strategy didn't give significant effect on students reading comprehension skill compared with student-generated questions strategy. It could be because of the learning style of the students that most of them were not have visual learning style. They preferred to use audio learning style. While for Guided Reading strategy, it resulted in the lowest scores compared with the two other strategies. It applied the usual strategy used by the teacher.

Conclusion

In conclusion, there is difference effect on students' reading comprehension skill among those who are taught by using Student-generated Questions, Semantic Mapping and Guided Reading Strategies. For further analysis, Student-generated questions strategy gives better effect to student' reading comprehension skill than Guided Reading strategy; semantic mapping strategy gives better effect to student' reading comprehension skill than Guided Reading strategy; student-generated questions strategy gives better effect to student' reading comprehension skill than semantic mapping strategy.

Based on the finding and conclusion above, the researcher would like to propose suggestion to English teachers to apply student-

generated question strategy that gives better effect on the students' reading comprehension skill.

Suggestion

Based on the conclusion above, the English teachers are suggested to apply animated films in teaching speaking skill of narrative text.

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Reference

- Brown, H. Douglas. 2001. *Teaching by Principles; an Interactive Approach to Language Pedagogy*. New York: Addison Wesley Longman, Inc.
- Chin, Christine. 2002. *Student-Generated Questions: Encouraging Inquisitive Minds in Learning Science*. Singapore: Nanyang Technological University & National Institute of Education. Teaching and Learning Vol. 23, No 1, pp. 59-67.
- Chin, Christine. 2006. *Using Self-questioning to Promote Pupils' Process Skills Thinking*. Singapore: The Association for Science Education, pp. 113-119.
- Duffy, Gerald G. 2009. *Explaining Reading: a Resource for Teaching Concepts, Skills and Strategies*. New York: the Guilford Press.
- Dunlap, J.A. ____ .*The Effects of Self Questioning on Comprehension of Expository Text and Development of Content Writing with Second Grade Students*. Kansas: Wichita State University.
- Gay, L.R, G. E. Mills, P. Airasian. 2011. *Educational Research: Competencies for Analysis and Application*. New York: Pearson Education Inc.
- Grabe, William. 2009. *Reading in a Second Language: Moving from Theory to Practice*. Cambridge: Cambridge University Press.
- Gunning, T. G. 2004. *Creating Literacy Instruction for All Children*. Boston: Allyn& Bacon.
- Joan, H.E and Susan D. P. 1986. *Semantic Mapping: Classroom Application. Reading Aids Series*. New York: International Reading Association.
- Kester, D. Philips. 2008. *Guided Reading: Consctuctivism in Action*. Niagara: Institute for Learning Centered Education.
- Lapp, Diane at all. 2004. *Content Area Reading and Learning: Instructional Strategies*. New Jersey:

Lawrence Erlbaum
Associates, Inc.

Nuttal, Christine. 1989. *Teaching Reading Skills in a Foreign Language*. London. Heinemann Educational Books Limited.

O'Malley, J. Michael and L. Valdes Pierce. 1996. *Authentic Assessment for English Language Learners; Practical Approaches for Teachers*. United States of America: Addison-Wesley Publishing Company.

Oxford, Rebecca L. 1990. *Language Learning Strategies: What Every Teacher Should Know*. New York: Newburry House Publishers.

Stone, Randi. 2009. *Best Practices for Teaching Reading. What Award-Winning Classroom Teachers Do*. New York: Corwin Press.

Weir, Cyril J. 1993. *Understanding and Developing Language Tests*. New York: Prentice Hall International.