THE EFFECT OF USING TOP-DOWN PROCESSING APPROACH ON READING COMPREHENSION ABILITY OF THE SECOND YEAR STUDENTS OF SMPN 40 PEKANBARU

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Abstract: *This study is aimed at finding out if there is any effect of using Top-Down Processing approach on reading comprehension ability of the second year students of SMPN 40 Pekanbaru. This study was a pre-experimental research. The researcher used one group pre-test post-test design to distinguish the effect of using top-down processing approach between the pre-test and the post-test results. The total population in this study was 165 students from four classes. To choose the sample the researcher used cluster random sampling technique. Class VIII.C with 40 students was chosen as the sample. The instrument used to get the data is an objective test. The form of text in the test is narrative text. The test consists of 4 narrative texts with 20 objective questions. Each text has 5 multiple choice type of questions. The researcher used t-test by employing SPSS (Statistical Product and Service Solutions) statistics version 17.0 to measure and compare the students' scores in reading comprehension between the pre-test and the post-test results. The post-test result (79.75) was higher than the pre-test result (61.12). The correlation coefficient between the pre-test and post-test results is 0.868 which indicates that it has a strong correlation. The result indicates that using top-down processing approach is effective to improve the students' reading comprehension ability.*

Key Words: *Effects, top-down processing approach, reading comprehension*

PENGARUH PENGGUNAAN PROSES MEMBACA TOP-DOWN TERHADAP KEMAMPUAN MEMBACA SISWA TINGKAT DUA SMPN 40 PEKANBARU

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Abstrak: Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan proses membaca Top-Down terhadap kemampuan membaca siswa tingkat dua Sekolah Menengah Pertama (SMPN) 40 Pekanbaru. Desain penelitian ini adalah *pre-experimental*. Peneliti menggunakan *one group pre-test posttest* dari desain *pre-experimental* untuk membedakan pengaruh penggunaan proses membaca *top-down* dari hasil *pre-test* dan *post-test*. Jumlah populasi pada penelitian ini sebanyak 165 siswa dari empat kelas. Peneliti menggunakan teknik *cluster random sampling* untuk memilih sampel penelitian. Dari hasil pemilihan sampel, kelas VIIIC terpilih sebagai sampel penelitian. Perangkat penelitian yang digunakan untuk memperoleh data ialah tes kemampuan objektif. Bentuk dari teks pada tes kemampuan objektif adalah teks naratif. Jumlah soal pada tes kemampuan objektif adalah 20 soal dengan 4 teks naratif. Setiap teks terdiri dari 5 soal pilihan berganda. Peneliti menggunakan *t-test* dihitung melalui *SPSS statistics version 17.0* untuk mengukur dan membandingkan nilai kemampuan membaca siswa dari hasil *pre-test* dan *post-test*. Dari pengukuran tersebut diperoleh bahwa hasil *post-test* lebih tinggi dari hasil *pre-test,* dengan nilai rata-rata siswa pada hasil *pre-test* 61.12 meningkat menjadi 79.75 pada hasil *post-test* . Hubungan koefisien yang diperoleh ialah 0.868. Hasil tersebut menyatakan bahwa hubungan koefisien dari hasil *pre-test* dan *post-test* adalah *strong*. Berdasarkan hasil yang diperoleh, penggunaan proses *top-down* dapat dinyatakan efektif untuk meningkatkan kemampuan membaca siswa.

Kata Kunci: Pengaruh, proses membaca top-down, pemahaman membaca

INTRODUCTION

English is one of the subjects that should be learned by Indonesian students. For Junior High School students, English is considered as a difficult subject. Indonesian people use English as a foreign language (EFL), which people do not use this language for daily conversation. This has made students difficult in learning English. When students learn English in school, they are taught English skills: listening, speaking, reading and writing. Each skill is taught with different methods that need a deep understanding, especially in learning reading. When students learn reading in English, they are usually given a text that should be read and understood. It is not easy for Junior High School students to read an English text, because they are expected to comprehend the meaning of the text.

It is a common problem that many Indonesian students get a difficulty in understanding an English text, because they are not familiar with how to learn English by reading a text. This issue is supported by Syatriana (2013) who also stated that most of Indonesian students got difficulty to understand a text in English even though they have learnt English, because reading is a complex process involves not only the reader ability to read a text but also the ability to comprehend the text. They need to learn more about reading by comprehending the meaning of every words and sentences in English that make up the text.

Problems in learning reading material also occurred in students of SMPN 40 Pekanbaru. Based on the researcher's experience as a practicing teacher in this school, students were confused to understand what they read in English. The students preferred listening to the teacher for reading a text for them to trying to read the text for themselves. Whereas reading is a very important lesson that should be learned by students. If people want to know about something, they need to search some theories and information by reading books, articles, or other references that can help them to understand. Therefore, students should be able to read, because by reading, it will be easier for them to understand about what they want to know because reading is a skill which the readers can interact with a text they read. As Urquhart & Weir (in Liu, 2010) stated that readers are able to interact with texts because they have a reading skill which can be described as their cognitive ability.

Moreover, learning reading in English can help Indonesian students get any information from any references which are written in English. If students comprehend to read some information in English, they will be more interested in finding new information that eventually increases their knowledge.

In order to find out the strategy of reading for students in SMPN 40 Pekanbaru, the researcher decided to search some references about what strategy that can improve students' reading comprehension. Then, the researcher is interested in investigating how Top-Down Processing (TDP) can improve students' reading comprehension ability. TDP is a strategy that makes the readers understand easily about a text they read without reading the whole text first, which they will be interested to read the text completely if they understand about the text based on their knowledge.

According to Carrell (as cited in Nagao, 2002) TDP is a technique the readers can use in reading and comprehending a text by using some parts of text to predict the meaning of the text and then they try to confirm the predicted meanings based on their previously acquired knowledge. This strategy can be applied when readers comprehend a knowledge which is related to a text they read.

When readers try to read a text, they can predict what the text is about, so they are motivated to find out the detail of the text after knowing what the text is about. Nagao (2002) assumed that this process should be learned by English readers so that it will not be neglected as a strategy for reading comprehension, then top-down processing will enable the students to read actively like they can interact with text. That is why the researcher thinks that top-down processing approach is very useful to be a strategy to improve students' reading comprehension for Junior High School students in Indonesia.

RESEARCH METHODOLOGY

The total population in this study was 165 students from four classes. To choose the sample the researcher used cluster random sampling technique. Class VIII.C with 40 students was chosen as the sample. The research design of this study was pre-experimental research. According to Campbell and Stanley (1963) there are three kinds of pre-experimental research, they are one-shot case study, one group pre-test post-test design, and intact group comparison. The researcher used one group pre-test post-test design to distinguish the effect of using top-down processing approach between pre-test result before doing the treatment and post-test result after doing the treatment in teaching reading comprehension. To identify the effect of this strategy, the researcher divided the experiment into three steps which were pre-test, treatment and post-test to second year students' reading comprehension in using top-down processing of SMPN 40 Pekanbaru.

There is no control group in this study. The design of this research is formulated as O1 (pre-test), X (treatment) and O2 (post-test) (Campbell and Stanley, 1963). Pre-test (O1) is used to find out students reading comprehension before using top-down processing. Treatment (X) is used to teach students by using top-down processing. Post-test (O2) is used to find out students reading comprehension after learning top-down processing.

RESULTS AND DISCUSSIONS

Results

The data in this study were collected by giving a written test to measure the students' reading comprehension. Before doing the treatment, students were given a pre-test to find out their reading comprehension. Then, students were given a post-test to find out their comprehension after learning reading by using top-down processing approach.

The result of pre-test and post-test were analyzed after doing the research for 6 times meeting with 4 meetings for treatment and 2 meetings for pre-test before doing the treatment and post-test after doing the treatment.

The Results of the Pre-Test

As the researcher mentioned before that pre-test was conducted to assess the students' reading comprehension before learning reading by using top-down processing approach. Based on the result, there were still low scores that students achieved on the test because they were still confused in learning reading comprehension. The students' comprehension in reading was also measured by assessing each aspect of reading in the pre-test. The students' result of each aspect of reading in the pre-test can be seen on Table 1 below:

Table 1 The Students' Result of Each Aspect of Reading in the Pre-Test

No.	Aspect of Reading	Correct Answer	Percentage in %
1	Generic Structures	89	55.63%
2	References	106	66.25%
3	Inferences	105	65.63%
4	Main Idea	92	57.50%
5	Vocabulary	97	60.63%

Based on Table 1, the highest result of each aspect that students reached in the pre-test is references. The total of correct answers in references is 106 with percentage 66.25%, while the second higher score is inferences. Students could achieve 105 correct answers with percentage is 65.63%. Vocabulary is on the third level that students more comprehended in the pre-test, they achieved 60.63% with total of correct answers is 97. Main idea is the difficult one the other three aspects. Students achieved 92 correct answers with percentage is 57.50%. Generic structure is the most difficult aspect for students in the pre-test which the students only reached 55.63% with total of correct answers are 89. It can be concluded that references is the easiest aspect for students to be comprehended before doing the treatment. While generic structure is the most difficult aspect for them that need to be improved to increase students' reading comprehension.

Based on the pre-test, the students' level of ability was classified into five categories which are adapted from Harris (1974) to measure their reading comprehension before learning top-down processing approach. The percentage of the five categories can be seen on Table 2.

Table 2 The Students' Level of Ability in Pre-Test

Test Score	Level of Ability	Frequency	Percentage
81-100	Excellent	0	0%
61-80	Good	24	60%
41-60	Mediocre	9	22.50%
21-40	Poor	7	17.50%
0-20	Very Poor	0	0%
Mean Score		61.12	

Based on Table 2, it showed that there are no students that achieved excellent level in the pre-test with percentage 0% for this level. While, there are 24 students that achieved good level with percentage 60% and 9 students got mediocre with percentage 22.5%. Even though there are no students who got very poor level, but there are 7 students who still got poor level with percentage 17.5%. The table showed the mean score that students achieved in the pre-test section is 61.12. It concluded that students need to improve their comprehension in reading to achieve the higher scores and increase the percentage of their level of ability in reading comprehension.

The Results of the Post-Test

After doing the treatment for 4 times meeting, students were given post-test to measure their comprehension in reading and compared it with the result of pre-test. The result of each aspect of reading can be seen on Table 3 below:

Table 3 The Students' Result of Each Aspect of Reading in the Post-Test

No.	Aspects of Reading	Correct Answer	Percentage %
1	Generic Structures	122	76.25%
2	Reference	130	81.25%
3	Inference	129	80.63%
4	Main Idea	123	76.88%
5	Vocabulary	129	80.63%

Based on Table 3, it showed that there is a significant result that students achieved on each aspect in the pos-test. The lowest percentage in the post-test result is generic

structure which is 76.25% with total of correct answers is 122. While the higher percentage than generic structure is main idea. Students achieved 123 correct answers with percentage is 76.88%. Students achieved same percentage on aspects inferences and vocabulary. The percentage and the total of correct answers of both aspects are 80.63% and 129. Then, students achieved the highest percentage on aspect references with the total of correct answers is 130 and the percentage is 81.25%.

After doing the post-test, the students' level abilities were classified on Table 4 below:

Table 4 The Students' Level of Ability in Post-Test

Test Score	Level of Ability	Frequency	Percentage
81-100	Excellent	22	55%
61-80	Good	13	32.50%
41-60	Mediocre	5	12.50%
21-40	Poor	0	0%
0-20	Very Poor	0	0%
Mean Score		79.75	

Based on Table 4, 22 students achieved excellent level (55%). 13 students achieved good level (32.5%) and 5 students where in mediocre level (12.5%). There were no students in the poor and very poor level. The students' mean score in the post-test result increase from 61.12 to 79.75.

The Results of T-test Table

In this study, t-test formula was used to compare the pre-test and the post-test results. It is used to determine whether the hypothesis could be accepted or not. As the researcher used pre-experimental research, the hypothesis was required to see if there is a significant difference after finishing the research.

The mean score of the pre-test result (O1) was 61.12 and 79.75 in the post-test result. It means there is an improvement that students achieved from the pre-test to the post-test results. In order to make sure that the hypothesis could be accepted, the result of the t-test formula was also required. The formula can be seen as follows:

$$t \text{ table} = n - 1 \ (\alpha 5\%)$$
$$= 40 - 1 \ (\alpha 5\%)$$
$$= 39 \ (\alpha 5\%)$$
$$= 2.023$$

Table 5 T-Test Table Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VAR00002	79.7500	40	11.65476	1.84278
	VAR00001	61.1250	40	15.54512	2.45790

According to Table 5, the mean score of pre-test and post-test are 61.12 and 79.75. The difference between the mean scores of pre-test and pos-test is 18.63. The standard deviation in the sample pre-test is 15.54, and the standard deviation in the sample post-test is 11.16. The standard error mean in the sample pre-test and post-test are 2.45 and 1.84.

Table 6 Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	VAR00002 & VAR00001	40	.868	.000

Based on table 6, it pointed out that the correlation coefficient between the pre-test and post-test results is 0.868. The classification of the correlation can be seen on Table 7 below:

Table 7 Classification of Correlation Coefficient

No.	The Value of "r" Product Moment (r_{xy})	Interpretation
1	0.00 – 0.20	There is such a correlation between variable x and y. However, the correlation is *very weak* and therefore that correlation can be ignored
2	0.20 – 0.40	The correlation between variable x and y is *weak*
3	0.40 – 0.70	The correlation between variable x and y is *mediocre*
4	0.70 – 0.90	The correlation between variable x and y is *strong*
5	0.90 – 1.00	The correlation between variable x and y is *very strong*

(Adopted from Anas Sudijono, 2009)

According to the classification of correlation coefficient which is adopted from Sudijono (2009), it showed that the correlation coefficient of 0.868 is strong. This means, using top-down processing approach in reading comprehension is effective to improve the students' comprehension in reading skill.

Table 8 Paired Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1 VAR00002 - VAR00001	18.62500	7.92493	1.25304	16.09048	21.15952	14.864	39	.000

       Based on Table 8, the result of the t-test is higher than the t-table. It can be seen from table that the results of t-test is 14.86, while the t-table is 2.023. This means, there is a significant difference between the pre-test and the post-test results. As the table showed the result of paired samples test, there is a significant effect of using top-down processing approach on improving the second year students' reading comprehension at SMPN 40 Pekanbaru. The hypothesis of this study is accepted.

Discussion

       There were two most interesting things that the researcher found out in this study. The first one was the gain scores of the difficult aspects that the students achieved in the pre-test and post-test. Based on the results of pre-test and post-test sections, generic structures and main idea were the difficult aspects the students learned on reading comprehension. They achieved the lower scores for these two aspects than the other three aspects. As the researcher showed on a table before, the percentage of score that students achieved for generic structures in the pre-test was only 55.63%, but they achieved 76.25% in the post-test.

       Even though it was still the lowest score of the other aspects, but the gain score of generic structures was the highest one. The percentage increased 20.62%. While main idea which was the second most difficult aspect had percentage 57.50% in the pre-test, but increased 19.38% becomes 76.88%.

       The second interesting thing to be discussed was the number of students which increased on each level of ability. In the pre-test section, there were no students who on the excellent level, while good level had the highest number of students. 24 students could achieve this level with percentage 60%. On the mediocre level, there were 9 students with percentage 22.5%. Then, 7 students were on poor level with percentage 17.5%.

       In the post-test section, there were no students on the poor level. While there were 5 students with percentage 12.5% on the mediocre level. It showed that the number of students on this level was lower than in the pre-test section. The same thing also happened on the good level, which the number of students on this level was also lower

than in the pre-test. There were only 13 students on the good level with percentage 32.5%. Based on these results, the researcher found out 22 of 40 students could achieve the excellent level with percentage 55%. After they learned reading comprehension in the treatment, they could achieve the higher score in the post-test section. It was proved by the number of students and the percentage of level of ability that increased significantly.

These results showed that students could increase their ability in learning reading comprehension effectively. Even though there were no students could be on the excellent level in the pre-test section, but after learning reading which was in the treatment process, all students could improved their comprehension so that each student could achieved the higher level of ability. It also made the percentage of students for each aspect changed based on the scores that they achieved in the pos-test.

This improvement proved that there is a significant effect of teaching reading by using top-down processing approach, knowing that students have been familiar about narrative text since they were introduced the material in the first year of junior high school. It made the researcher easier to reintroduce about narrative text to the students but with difference strategy of learning which could make them more interested to learn reading comprehension.

Indonesian students have learnt English in Junior High School. It could be suitable for them to improve their ability in English by learning some strategies to make them more comprehend to read any kind of texts that contents an English text. It makes the researcher sure that using TDP approach could be applied to the students in SMPN 40 Pekanbaru. As the related study which was conducted by Angosto *et.al* (2013) used children in Primary International School to apply this strategy. Angosto *et.al* (2013) stated that top-down processing appears in very young children it is almost since they come into contact with reading which developed them in a quick process and in parallel to bottom-up processing.

According to Angosto et.al (2013), there should be no problem to use TDP in teaching reading comprehension to junior high school students. Even though they are quite young to comprehend reading text in English, but this strategy can help them to improve their reading comprehension and easier for them to increase their reading skill in understanding English text, as English is a foreign language that should be learned by Indonesia students.

CONCLUSIONS AND SUGGESTIONS

Conclusions

Based on the result of this study, it can be concluded that top-down processing approach has a significant effect on improving the second year students of SMPN 40 Pekanbaru in reading comprehension.

The significant results can be seen from the score of the t-test which was 14.86 higher than the t-table which was 2.023. The paired samples test also showed the high result which was 0.868. This explained that the correlation between the strategy of learning reading comprehension by using top-down processing approach and the students' reading comprehension was strong. As the correlation result was strong, it meant that the alternative hypothesis was accepted. This is also indicated for the increase of the students' pre-test results (61.12) compared to their post-test results (79.75).

In conclusion, top-down processing approach gives a significant effect on improving the second year students' reading comprehension at SMPN 40 Pekanbaru.

Suggestions

It is recommended to the other English teachers and the following researchers to:
1. Try to be more creative in explaining the material to the students. It is important because they will not be interested to follow the learning process if they can't understand what they should learn in the class.
2. Schedule the time allocation for learning the material and doing the test. Students will lose their focus to read the questions of the test when they are running of time to finish the test or the assignment.
3. Include some pictures to help the students easier applying this strategy and make them more interested to read the text by using top-down processing as the strategy to learn reading comprehension for junior high school.
4. Make some games which relative to what students are learning is recommended to avoid them by feeling bored while learning English especially in reading comprehension.

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