

CHAPTER III

RESEARCH METHODOLOGY

1.1 Research Design

The type of the research was experimental research which concerned with two variables. In independent variable was Question-Answer Relationship (QAR), and dependent variable was reading comprehension. According to Gay et al (2012:250) experimental research is “the only type of the research that can test hypothesis to establish cause-and-effect relationship. Then, Cresswell (2008:299) states that experiment is you test an idea (or practice or procedure) to determine whether it influences an outcome or dependent variable. It was taken two groups as the sample of this research. They were experimental group and control group. The experimental group by Question-Answer Relationship (QAR) strategy. Therefore, the experimental group was provided with pre-test, treatment, and post-test while the control group was given pre-test, usual strategy, and post-test. The design of the research could be illustrated as follows:

Table 3.1

Research Design

Group	Pre-test	Treatment	Post-test
Experimental group	Reading Test	Question-Answer Relationship (QAR)	Reading Test
Control group	Reading Test	No treatment	Reading Test

1.2 Location and Time of the Research

This research was conducted at SMPN 25 Pekanbaru. The location was at Kartama Street, Pekanbaru. In addition, the time for collected the data of this research was started on March, 10th 2018 until April, 3rd 2018 in academic year 2017/2018. The researcher chose this school because the researcher interested students' problems in reading comprehension of narrative text.

1.3 Population and Sample of the Research

1.3.1 Population

The population of this research was the second year students at SMPN 25 Pekanbaru in academic year 2017/2018. The number of population was 341 students consisting of 9 classes. It is could be seen in the following table of population below:

Table 3.2 the Population of this Research

Class	Total of students
VIII-1	40
VIII-2	38
VIII-3	35
VIII-4	39
VIII-5	37
VIII-6	37
VIII-7	37
VIII-8	38
VIII-9	40
Total	341

3.3.2 Sample

In determined sample of this research, the researcher used random sampling. According to Sugiyono in Sanusi (2017:25) “random sampling technique was used to take sample if the object that researched was very wide to decide which one the population that took as sample, the sample was taken based on the population that specified”. The researcher took two classes as the sample of the research. Class VIII⁵ as the experimental class and Class VIII⁷ as the control class. This sample of this research could be seen in the following table:

Table 3.3 Sample of the Research

Class	Total of Students
VIII-5	37
VIII-7	37
Total	74

1.4 Instrument of the Research

The instrument of this research was reading test. The test was about narrative text. The test were given by the researcher to the students were pre-test and post-test. It relationed with the material. The researcher gave test to get data to measure the students reading comprehension before and after the treatment by using QAR strategy.

Table 3.4 Blue print of Instruments

Meeting	Topic	Indicator
I (Pre-test)	The Ant and the Dove	Orientation
	The Donkey and the Wolf	
	The Legend of Prambanan Temple	
	Malin Kundang	
II (Treatment)	The Crow and the Oyster	Complication
III (Treatment)	The Lion and the Mosquito	
IV (Treatment)	The Legend of Dumai	
V (Treatment)	Telaga Warna	Resolution
VI (Post-test)	The Grasshoper and the Ants	
	The Monkey and the Crocodile	
	The Legend of Lake Toba	
	Tangkuban Perahu	

1.4.1 Variable X (Question-Answer Relationship)

Question-Answer Relationship (QAR) Strategy was implemented in experimental class as the treatment in this research for four meetings. This strategy was implemented during class was explained as follows:

The teacher divided students into several groups and explained to the students that there are four types of questions they will encounter. Defined each type of question and gave an example. The four types of questions were examined in the QAR are: Right There question, Think and Search Questions, Author and You, and On My Own question. In cooperative groups, teacher asked students to read the text. The teacher gave instruction to the students how to answer the question based on its categories. The teacher asked students to answer each

question. Then, the teacher asked students to write one of the types QAR questions and share with other group. Finally, teacher assesses students' work and discusses together.

1.4.2 Variable Y (Reading Test)

Reading test was used as the instrument of this research. The test was multiple choice which consists of 20 questions of four reading topics. The researcher adopted test from English book with entitle: Mandiri Mengasah Kemampuan Diri: Practise Your English Competence for SMP/MTs Class VIII by Nur Zaida, LKS, and Internet. The researcher gave test to get data to measure the students reading comprehension before and after the treatment by using QAR strategy.

Table 3.5 The Blue Print of Reading Test

Topic		Indicator	Item Number	
Pre-test	Post-test		Pre-test	Post-test
The Ant and the Dove	The Grasshoper and the Ants	1. Orientation 2. Complication 3. Resolution	1, 2 3, 4 5	1, 2 3, 4 5
The Donkey and the Wolf	The Monkey and the Crocodile	1. Orientation 2. Complication 3. Resolution	6, 7 8, 9 10	6, 7 8, 9 10
The Legend of Prambanan Temple	The Legend of Lake Toba	1. Orientation 2. Complication 3. Resolution	11, 12 13, 14 15	11, 12 13, 14 15
Malin Kundang	Tangkuban Perahu	1. Orientation 2. Complication 3. Resolution	16, 17 18, 19 20	16, 17 18, 19 20
Total of Item			20	20

3.4.3 Validity of the Instrument

According to Siregar in Sismaria (2017:44), validity is a valid measure if it successfully measure the phenomenon. It is rare, if nearly impossible, that an instrument be 100% valid, so validity is generally measured in degrees. As a process, validation involves collecting and analyzing data to assess the accuracy of an instrument. There are numerous statistical tests and measures to assess the validity of quantitative instruments, which generally involves guide testing. Test validity that used in this research was test validity used formula the correlation of the product moment and it was analyzed by using software program SPSS version 22 with $\alpha = 5\%$. Which the criteria decision making in this test validity is:

If r calculation $>$ r table, the the statement is valid.

If r calculation $<$ r table, the the statement is invalid.

To know the validity of an item, the researcher was done the validity test. Then the result is:

Table 3.6 Validity of Pre-test

Items	(r-calculated) Pearson Correlation	r-table, N= 30 (Significance 5%)	Decision
Q1	0.071	0.361	invalid
Q2	0.567	0.361	valid
Q3	0.730	0.361	valid
Q4	0.745	0.361	valid
Q5	0.568	0.361	valid
Q6	0.257	0.361	invalid
Q7	0.755	0.361	valid
Q8	0.769	0.361	valid
Q9	0.634	0.361	valid
Q10	0.558	0.361	valid

Table 3.6 Validity of Pre-test

(continued)

Items	(r-calculated) Pearson Correlation	r-table, N= 30 (Significance 5%)	Decision
Q11	0.324	0.361	invalid
Q12	0.755	0.361	valid
Q13	0.573	0.361	valid
Q14	0.589	0.361	valid
Q15	0.611	0.361	valid
Q16	0.479	0.361	valid
Q17	0.377	0.361	valid
Q18	0.559	0.361	valid
Q19	0.673	0.361	valid
Q20	0.748	0.361	valid
Q21	0.415	0.361	valid
Q22	0.370	0.361	valid
Q23	0.475	0.361	valid
Q24	0.664	0.361	valid
Q25	0.532	0.361	valid

Based on the table 3.6, it can be seen that total of items to test validity was 25 items given to the 30 students. Then, the researcher found that r-table to significant 5% was 0,361. From the table above, it showed that r-calculated for items number 1, 6, and 11 were lower than r-table (0,361). Thus, there were 3 items were invalid and 22 items were valid. Therefore, twenty items were used an instrument of this research.

Table 3.7 Validity of Post-test

Items	(r-calculated) Pearson Correlation	r-table, N= 30 (Significance 5%)	Decision
Q1	0.071	0.361	invalid
Q2	0.423	0.361	valid
Q3	0.605	0.361	valid
Q4	0.730	0.361	valid
Q5	0.552	0.361	valid
Q6	0.094	0.361	invalid
Q7	0.736	0.361	valid
Q8	0.793	0.361	valid
Q9	0.639	0.361	valid
Q10	0.449	0.361	valid
Q11	0.397	0.361	valid
Q12	0.752	0.361	valid
Q13	0.504	0.361	valid
Q14	0.630	0.361	valid
Q15	0.499	0.361	valid
Q16	0.447	0.361	valid
Q17	0.391	0.361	valid
Q18	0.438	0.361	valid
Q19	0.662	0.361	valid
Q20	0.724	0.361	valid
Q21	0.154	0.361	invalid
Q22	0.335	0.361	invalid
Q23	0.472	0.361	valid
Q24	0.656	0.361	valid
Q25	0.178	0.361	invalid

Based on the table 3.7, showed that total items to test validity was 25 items given to the 30 students. Then, the researcher found that r-table to significant 5%

was 0,361. From the table above, it showed that r-calculated for items number 1, 6, 21, 22 and 25 were lower than r-table (0,361). There were 5 items were invalid. In other word r-calculated $< 0,361$. Thus, there were 20 items were valid because r-calculated high than r-table and can be used an instrument of this research.

3.4.4 Reliability of the Instrument

Reliability refers to understanding that an instrument is really accurated to be used as the instrument in collecting data, because that instrument has been good (Arikunto:2006). Instruments that have been reliable, it will be produced credible data. This research also used software SPSS version 22 with with $\alpha = 5\%$. To determine whether the test was reliable or unreliable. The researcher used criterion by Arikunto (2006) as follow:

1. 0,800 – 1,000 : Reliability degree is very high
2. 0, 600 – 0, 800 : Reliability degree is high
3. 0,400 – 0, 600 : Reliability degree is medium
4. 0,200 – 0, 400 : Reliability degree is low
5. 0,000 – 0, 200 : Reliability degree is very low

Table 3.8 Reliability of the Test

Test	Cronbach's Alpha	N of Items
Pre-test	,907	25
Post-test	,887	25

Based on the table 3.8, result of reliability test using SPSS version 22 showed that the value of Cronbach's Alpha in pre-test was 0,907 and post-test was 0,887 which is categorized into very high. It means that, the research instrument in this research was reliable.

3.5 Procedure of the Research

3.5.1 Procedure of Experimental Class

1. Pre-test

Meeting 1

The pre-test was done in the first meeting before the researcher give the treatment. Pre-teaching: The researcher gave greeting to the students and introduces herself. The researcher checked attendance list of students. Whilst-teaching: The researcher gave pre-test to the students to know the students' reading comprehension. The test was multiple choice which consisted of 20 questions of four texts. The researcher gave instructions to the students and explained what they should do with the pre-test which researcher given. After that, the students did the pre-test on their own sit. Post-teaching: The researcher asked to the students to submit their pre-test. The researcher gave close greeting to the students.

2. Treatment

Meeting 2

After pre-test, the researcher began doing treatment. There are four meetings for treatments. Each meeting, the researcher applied QAR strategy in different topic of narrative text. Pre-teaching : The researcher gave greeting, praying together, checked attendance list of the students, and gave apperception to the student based on learning material.

Whilst-teaching: The researcher divided students into several groups in which each group consists of 6 students. Next, researcher gave the narrative text entitled “The Crow and the Oyster”. Then, the researcher explained to the students that there are four types of questions they will encounter. Defined each type of question and gave an example four types of questions are examined in the QAR :

- Right there question: Literal questions whose answers can be found in the text. Example: who is the main character of the story?.
- Think and search questions: Answers are gathered from several parts of the text and put together to make meaning. Example: what did happened after Malin’s mother angry with Malin?.
- Author and you question: These questions are based on information provided in the text but the student is required to relate it to their own experience/background knowledge. Example: what do you think about character of Malin Kundang in the story?.
- On my own question: These questions do not require the students to have the passage but he/she must use their background or prior knowledge to answer the question. Example: what can we learn from the story?.

In cooperative groups, the researcher asked students to read narrative text. The researcher gave instruction to the students how to answer the question based on its categories. The researcher asked students to answer each question. Next, the researcher asked students to write one of the types QAR questions and share with other group. Post-teaching: Finally, the researcher assessed students’ work and discussed together. The researcher gave close greeting to the students.

Meeting 3

In the third meeting, the researcher was continued treatment. Pre-teaching: The researcher gave greeting, praying together, checked attendance list of the students, and reviewed the recent material briefly. Whilst-teaching: The researcher divided students into several groups in which each group consists of 6 students. Next, researcher gave the narrative text entitle “The Lion and the Mosquito”. The researcher defined four types of questions and gave examples of questions are examined in the QAR: Right there question, Think and search questions, Author and you, and on my own question. In cooperative groups, the researcher asked students to read narrative text. The researcher gave instruction to the students how to answer the question based on its categories. The researcher asked students to answer each question. Next, the researcher asked students to write one of the types QAR questions and share with other group. Post-teaching: Finally, the researcher assessed students’ work and discussed together. The researcher gave close greeting to the students.

Meeting 4

In the fourth meeting, the researcher also conducted treatment. Pre-teaching: The researcher gave greeting, praying together, checked attendance list of the students, and reviewed the recent material briefly. Whilst-teaching : The researcher divided students into several groups in which each group consists of 6 students. Next, researcher gave the narrative text entitle “The Legend of Dumai”. The researcher defined four types of questions and gave examples of questions are

examined in the QAR: Right there question, Think and search questions, Author and you, and On my own question. In cooperative groups, the researcher asked students to read narrative text. The researcher gave instruction to the students how to answer the question based on its categories. The researcher asked students to answer each question. Next, the researcher asked students to write one of the types QAR questions and share with other group. Post-teaching: Finally, the researcher assessed students' work and discussed together. The researcher gave close greeting to the students.

Meeting 5

In the fifth meeting, the researcher was continued treatment. Pre-teaching: The researcher gave greeting, praying together, checked attendance list of the students, and reviewed the recent material briefly. Whilst-teaching: The researcher divided students into several groups in which each group consists of 6 students. Next, researcher gave the narrative text entitle "Telaga Warna". The researcher defined four types questions and gave examples of questions are examined in the QAR: Right there question, Think and search questions, Author and you, and On my own question. In cooperative groups, the researcher asked students to read narrative text. The researcher gave instruction to the students how to answer the question based on its categories. The researcher asked students to answer each question. Next, the researcher asked students to write one of the types QAR questions and share with other group. Post-teaching: Finally, the researcher assessed students' work and discussed together. The researcher gave close greeting to the students.

3. Post-test

Meeting 6

After finish the treatment, the researcher gave post-test. The purpose is to find out the effect of Question-Answer Relationship (QAR) strategy toward reading comprehension of the second year students at SMPN 25 Pekanbaru.

Pre-teaching: The researcher gave greeting, praying together, checked attendance list of the students. Whilst-teaching : In the last meeting, the researcher gave post-test. The test was multiple choice which consisted of 20 questions of four texts. The researcher gave instructions to the students and explained what they should do with the post-test which researcher given. After that, the students did the post-test on their own sit. Post teaching: The researcher asked to the students to submit their post-test. The researcher gave close greeting to the students.

3.5.2 Procedure of Control Class

1. Pre-test

The researcher gave pre-test to VIII⁷ as control class. The researcher gave pre-test to students and asked student to answer the questions.

Pre-teaching: The researcher gave greeting, praying together, checked attendance list of the students. Whilst-teaching: The researcher gave pre-test to the students to know the students' reading comprehension. The test was multiple

choice which consisted of 20 questions of four texts. The researcher gave instructions to the students and explained what they should do with the pre-test which researcher given. After that, the students did the pre-test on their own sit. Post-teaching: The researcher asked to the students to submit their pre-test. The researcher gave close greeting to the students.

2. Post-test

In control class, the researcher also gave post-test. The procedure of post-test was same in pre-test. Then, the last result compared with the post-test result of experimental class.

Pre-teaching: The researcher gave greeting, praying together, checked attendance list of the students. Whilst-teaching: The researcher gave post-test to the students to know the students' reading comprehension. The test was multiple choice which consisted of 20 questions of four texts. The researcher gave instructions to the students and explained what they should do with the post-test which researcher given. After that, the students did the post-test on their own sit. Post-teaching: The researcher asked to the students to submit their pre-test. The researcher gave close greeting to the students.

3.6 Data Collection Technique

The researcher collected the data which needed to support this research by distribute reading test items to the class in the experimental class and control class. It was conducted in pre-test and post-test to students. The purpose was to know the students' reading comprehension before the researcher give treatment. Also, the treatment was applied by Question-Answer Relationship Strategy. Therefore, the researcher gave post-test to know the students' result of reading comprehension on narrative text after the researcher using QAR strategy during teaching and learning process.

After the students did the test, the researcher then took the total score from the result of reading test. The Classification of students's score could be shown below:

Table 3.9
The Classification of students's Score

Score	Categories
90-100	Excellent
80-89	Very Good
70-79	Good
60-69	Fair
<59	Poor

(Hughes, 2003 cited in Sismaria, 2017)

3.7 Data Analysis Technique

In analysis data, the researcher used score of pre-test and post-test of the students. After teaching Question-Answer Relationships (QAR) strategy in reading comprehension, the data was analyzed by using statistical analysis. To know the result whether it is statistically significant, it was analyzed by using t-test. Therefore, the researcher used t-test from SPSS 22 program to analyze the significant different of QAR Strategy toward reading comprehension of the second year students at SMPN 25 Pekanbaru.

The T-table was employed to know whether or not there was significant difference between mean score both experimental and control class. The obtained value of t-table at the degree of freedom $(df) = (N1+N2) - 2$.

Statistically Hypotheses are:

$$H_a = t_o > t\text{-table}$$

$$H_o = t_o < t\text{-table}$$

H_a is accepted if $t_o < t\text{-table}$ or there is significant effect of QAR Strategy toward reading comprehension of the second year students at SMPN 25 Pekanbaru.

H_o is accepted if $t_o > t\text{-table}$ or there is no significant effect of QAR Strategy toward reading comprehension of the second year students at SMPN 25 Pekanbaru.