

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter discusses the research methodology used in this study. It presents research method, research design, population and sample, research variables, research instrument, data collection technique, and data analysis technique.

#### **3.1 Research Method**

The research was conducted in a quantitative research method. The researcher used quantitative research method because the researcher wanted to collect numerical data on the effect of POSSE strategy assisted with QR Codes by using two classes. In the words of (Creswell, 2012:13), in quantitative research the major characteristics are analyzing trends, comparing groups, or relating variables using statistical analysis, and interpreting results by comparing them with prior predictions and past research.

#### **3.2 Research Design**

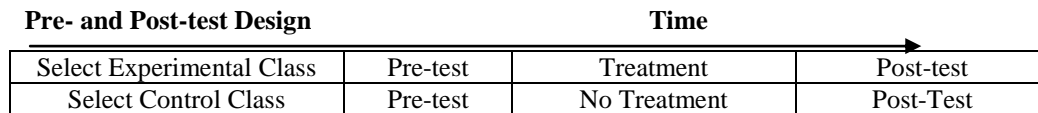
Since the research was conducted in school which has been formed initially as a class, therefore the quasi-experimental study was used. “Quasi-experiments include assignment, but not random assignment of participants to groups. This is because the experimenter cannot artificially create groups for the experiment” (Creswell, 2012:309). (Lodico, et al., 2006:185) state that

*“if in true experimental study the researcher selects random samples and conduct a control technique called matching to ensure that the sample are similar, in a quasi-experimental study; the researcher can administered a pre-test to both group to ensure the similarity between them”.*

The researcher gave treatment to the experimental class and then analyzed the changes of the students’ achievement compare to the control class. In the experiment class there was a treatment with POSSE strategy assisted with QR Codes. On the other hand, in the control class there was no treatment and only conventional teaching activity.

In brief, the Quasi-Experimental Designs is as the following figures:

**Figure 3.1 The process of experimental and control class**



### 3.3 Population and Sample

#### 3.3.1 Population

The population of the research was the seventh grade of SMP Muhammadiyah 15 Surabaya in the academic year 2017/2018. There were four classes of seventh grade. They were 7A, 7B, 7C and 7D. The total of the population was 100 students.

#### 3.3.2 Sample

The researcher used purposive sampling technique because this research took the samples with any consideration based on the knowledge and information of the mean score each of class and also suggestion from the English teacher. Kerlinger cited by (Cohen, et al., 2005:215) suggest that in quasi-experimental study the researcher can select the samples from the same population that are as alike as possible if matching is not possible to do. After the researcher consulted with the English teacher to select the classes that have similar proficiency, the researcher selected two classes to be the experimental and control class. The 7C class became experimental class and the 7D became the control class. Each class consists of 25 students. The distribution of the sample is presented below:

**Table 3.1 The Distribution of the Sample**

Class	Group	Number of Students
7C	Experimental Group	25
7D	Control Group	25
Total		50

### **3.4 Research Variables**

#### **3.4.1 Independent Variable**

An independent variable is an attribute or characteristic that influences or affects an outcome or dependent variable (Creswell, 2012:116). In this research the independent variable is the strategy given to the students that is POSSE strategy assisted with QR Codes.

#### **3.4.2 Dependent Variable**

Dependent variable is an attribute or characteristic that is dependent on or influenced by the independent variable (Creswell, 2012:115). The dependent variable in this research is students' reading comprehension achievement.

### **3.5 Research Instrument**

In this research, the researcher used some instruments to collect the data:

#### **3.5.1 Tryout**

Tryout was conducted by the researcher before the pre-test and post-test was administered to accomplish the validity and reliability of the test instrument. The researcher developed the reading test achievement in the form of multiple choice questions. There were 20 items of questions in the tryout of pre-test and post-test. There were 4 text provided, following by 5 questions in each text. The texts belong to descriptive text. The researcher conducted the tryout outside the sample but still in the same population which was 7B class.

#### **3.5.2 Pre-test**

The researcher gave pre-test before the treatment process to ensure the similarity between the control and experimental class because the sample of this research was not randomly selected, to know the students' ability and their beginning score before the researcher gives treatment to the students. The researcher conducted a pre-test both in two classes in order to know students' basic knowledge especially their reading comprehension achievement.

### **3.5.3 Post-test**

Post-test was administered after treatment, the researcher conducted a post-test to measure the students' reading comprehension achievements and looking at the effectiveness of the strategy after being taught and given treatment. The researcher conducted the post-test both at the experimental and control class. The result of the post-test that was conducted in both of experimental and control class was used to compare the students reading comprehension achievement whether the result of the post-test after the treatment in the experimental class was more higher than the result of the post-test in control class which was not given the treatment.

### **3.5.4 Questionnaire**

Questionnaire was used to describe the students' response toward the use of reading comprehension strategy which was POSSE strategy assisted with QR Codes. The researcher gave some questions to students as respondent to give their opinion about the reading strategy. The questionnaire was conducted in experimental class or 7C because that class was given the treatment.

### **3.6 Data Collection Technique**

The data of this research was collected from pre-test and post-test. After the pre-test and post-test were validating by the researcher after doing tryout and they were valid and reliable. They were applied with the view to recognize students' significance different between experimental and control class in their reading comprehension of descriptive text by using POSSE strategy assisted with QR Codes.

In first, the researcher conducted the tryout to check the validity and reliability of reading comprehension test. The result of tryout was analyzed if the question items were valid, then it was used as the question items for pretest and posttest. Tryout was conducted in 7B class which was in the same population but outside the sample.

Second, the researcher conducted pretest in both of experimental and control class. The experimental and control class was given the pre-test that supposed to find out the student's basic ability of their reading comprehension of

descriptive text. The pre-test was conducted in class 7C (the experimental class) and 7D (the control class).

Third, the following step after the pre-test done was the treatment. The treatment was started to implement in the experimental class. The teacher applied POSSE strategy assisted with QR Codes in their teaching and learning process in the experimental class. Conversely with the controlled class that conventional teaching and process was used.

Fourth, after the implementation of treatment was post-test. Post-test was conducted in both experimental and controlled class concerning to discover the effectiveness of POSSE strategy assisted with QR Codes on students' reading comprehension of descriptive text. The post-test was conducted in 7C and 7D classes.

The last, after all the test was given, the writer gave the questionnaire. Questionnaire was beneficial to recognize students' respond after the treatment of POSSE strategy assisted with QR Codes. The questionnaire was given only to the experimental class because the class that given the treatment was only experimental class which was 7C class.

### 3.6.1 Research Schedule

**Table 3.2 The research schedule to collect the data**

No.	Activities			Date
	Experimental Class	Control Class	Tryout Class	
1.	The researcher comes to SMP Muhammadiyah 15 Surabaya to meet the headmaster and ask permission for doing research in that school.			13 <sup>th</sup> April 2018
2.	The researcher meets the English teacher of SMP Muhammadiyah 15 Surabaya to offer the research and discuss about the class.			18 <sup>th</sup> April 2018
3.			The researcher does tryout test to another class in the same level	2 <sup>nd</sup> May 2018
4.	The researcher gives pre-test			9 <sup>th</sup> May 2018
5.	The English teacher implements the treatment using POSSE strategy assisted with QR Codes in their reading comprehension of descriptive text	The English teacher does conventional teaching using lecturing method		17 <sup>th</sup> May 2018 18 <sup>th</sup> May 2018  24 <sup>th</sup> May 2018 25 <sup>th</sup> May 2018
7.	The researcher gives post-test			28 <sup>th</sup> May 2018
8.	The researcher gives questionnaire			29 <sup>th</sup> May 2018

### **3.7 Validity and Reliability**

#### **3.7.1 Validity**

Validity is an important key to effective research. If a piece of research is invalid then it is worth-less. (Cohen, et al., 2005:105). In the view of (Sarwono, 2006:99) validity is based on the view that it is essentially a demonstration that a particular instrument in fact measures what it purports to measure. There are several different kinds of validity, for example content validity, criterion validity and construct validity (Cohen, et al., 2005:105). This research used content validity and expert judgments which the test and the material arranged based on the Indonesian Curriculum of K-13.

The instrument of validity was taken from English syllabus of Curriculum of K-13. The instrument were also developed in reference to the core competences and the basic competences of the reading skill for VII grade students of junior high school, especially for the second semester because of the research was conducted in the second semester. The researcher focused on the text rather than the language function considering that the researcher's research focused on reading skill. The researcher also applied the expert judgment which the researcher asked the lecturer and the English teacher who expert in reading comprehension test to measure the validity of the instrument. Here, is the table showing the core competences and the basic competences in relation to the content validity and the expert judgments validity of the instrument.

Furthermore, the researcher applied the item validity to the instrument. The items of test also need to be measured for the validity by using item validity. It can be analyzed using SPSS computer program with two method; Pearson Product Moment or Corrected Item-Total Correlation. The researcher employed Corrected Item-Total Correlation in the SPSS computer program version 17.00 to analyze the item validity of the test items.

**Table 3.3 The core competences and the basic competences for the research instruments**

<b>Kompetensi Inti</b>	<b>Kompetensi Dasar</b>
KI 1 Menghargai dan menghayati ajaran agama yang dianutnya.	1.1 Mensyukuri kesempatan dapat mempelajari bahasa Inggris sebagai bahasa pengantar komunikasi Internasional yang diwujudkan dalam semangat belajar
KI 2 Menunjukkan perilaku jujur, disiplin, tanggungjawab, peduli (toleransi, gotong royong), santun, percaya diri, dalam berinteraksi secara efektif dengan lingkungan social dan alam dalam jangkauan pergaulan dan keberadaanya.	2.3 Menunjukkan perilaku tanggung jawab, peduli, kerjasama, dan cinta damai, dalam melaksanakan komunikasi fungsional.
KI 3 Memahami pengetahuan (factual, konseptual, dan procedural) berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya terkait fenomena dan kejadian tampak mata.	3.7 Membandingkan fungsi social, struktur teks, dan unsure kebahasaan beberapa teks deskriptif lisan dan tulis dengan member dan meminta informasi terkait dengan deskripsi orang, binatang, dan benda sangat pendek dan sederhana, sesuai dengan konteks penggunaannya
KI 4 Mencoba, mengolah, dan menyaji dalam ranah konkret (menggunakan, mengurai, merangkai, memodifikasi, dan membuat) dan ranah abstrak (menulis, membaca, menghitung, menggambar, dan mengarang) sesuai dengan yang dipelajari di sekolah dan sumber lain yang sama dalam sudut pandang/teori.	4.7 Teks Deskriptif 4.7.1 Menangkap makna secara kontekstual terkait fungsi social, struktur teks, dan unsure kebahasaan teks deskriptif lisan dan tulis, sangat pendek dan sederhana terkait orang, binatang, dan benda.

### 3.7.2 Reliability

Reliability is essentially a synonym for consistency and replicability over time, over instruments and over groups of respondents. It is concerned with precision and accuracy (Cohen, et al., 2005:117). In this research, the researcher adopted one of the three principal types of reliability which was reliability as internal consistency. The researcher employed the SPSS computer program version 17.00 to measure the reliability of the test items. The analysis was based on the Cronbach's Alpha in the Reliability Statistics table.

**Table 3.4 The Cronbach's Alpha Categorization of Reliability**

<b>Cronbach's Alpha</b>	<b>Internal consistency</b>
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

### **3.8 Data Analysis Technique**

After collected all the data, the data was analyzed by using SPSS computer program version 17.00. It was used to test the normality, homogeneity and the hypotheses.

#### **3.8.1 Normality Test**

The normality test is aim to know whether the data distribution of the responses in the population meet the normal distribution requirement or not. In this research, the test was measured using the Kolmogorov-Smirnov and Saphiro-Wilk test. Theoretically, if the level of significance is higher than 0.05, the score have a normal distribution.

#### **3.8.2 Homogeneity Test**

Homogeneity is another important assumption to apply the parametric statistics to the data group. It is used to analyze whether the samples of variance are homogenous or not. The test used in this research is Levene's test. The sample is considered homogenous if the level of significance is more than 0.05.

#### **3.8.3 T- Test**

The test of hypotheses is applied to find out whether the hypotheses is accepted or rejected. In order to test the hypotheses, the researcher employed the independent-sample t-test. The independent-sample t-test is used to find out the difference mean of two samples which have no relation, e.g. the difference of an experimental and control group pre-test or post-test. Theoretically, the hypothesis is accepted if the level of significance is lower than 0.05 or if t-observe is higher than t-table.