

CHAPTER III

RESEARCH METHODOLOGY

In this chapter, the writer presents some points related to this research. These points cover definition of research design, place and time of research, population, sampling, sample, variable of the study, method to collect data, instrument, test, validity, reliability, technique of data collection and data analysis.

3.1. Research Design

Research design is the way to collect the data and to show the result of the study. This study uses quantitative research with the Pre-Experimental research design. According to Ary (2010), “Quantitative research is inquiry employing operational definition to generate numeric data to answer predetermined hypotheses or questions”.

A quantitative approach is one in which the investigatory primarily uses postpositive claim for developing knowledge (i.e., cause and effect thinking, reduction to specific variables and hypotheses and question, use of measurement and observation, and the test of theories) employs strategies of inquiry such as experiment and survey and collect data on predetermined instrument that yield statistics data.

In this study the writer uses Pre experimental research design with the one group Pre-test and Post-test. There are three steps in this design:

1. Administering Pre-test (Y1) with a purpose of measuring students’

grammar achievement especially in Irregular verb before applying JohnnyGrammar Word Challenge Application.

2. Applying the experimental treatment teaching grammar by using Johnny Grammar Achievement.
3. Administering a post-test (Y2) with a purpose of measuring students' grammar achievement after applying Johnny Grammar Word Challenge Application.

The students received the pretest before the treatments and after the treatments they received posttest. The treatments were given to the students by using Johnny's Grammar Word Challenge. The pretest was used to find out the students' achievement in Irregular verb before using Johnny Grammar's Word Challenge and the treatment and the posttest was used to see the effect of the students' grammar achievement after giving a treatment.

In this research design, the writer will compare the Pretest and Posttest to know the result of this study. The reason why the writer use Pre-Experimental research design with one group Pretest and Posttest because the writer has limited time to finish this research and the school only give the English teacher gives one class to the researcher. .

Table 3.1. Design of Pre-Test and Post-Test

Pre-Test	Treatment	Post-test
Y1	X	Y2

- X : Johnny Grammar Word Challenge Application
- Y1 : Students' grammar achievement before taught by
using Johnny Grammar Word Challenge
- Y2 : Students' grammar achievement after taught by
using Johnny Grammar Word Challenge

In this research, the researcher conducted five meetings but in the fourth meeting (the last treatment) and the fifth meeting (post-test) the researcher can't apply directly in the classroom because there is Corona Virus pandemic so teaching learning activities are carried out at home by using online system. All of teacher in SMAN Tulungagung uses Whatsapp Group to do the online class because this application is easy to use and it is commonly used by students and teacher. So, hopefully using Whatsapp group the online class will successfully. The teacher can deliver the material easily and the students can understand the material that has been delivered by the teacher. In this case the researcher uses WA group to do the online class.

1. Pre-Test

The first meeting conducted Pre-Test. The researcher gave a pretest in order to know the students' grammar achievement before taught by using Johnny Grammar Word Challenge Application.

2. Treatment

The second meeting, the researcher conducted about simple past tense, Irregular verb and also Johnny Grammar Word Challenge Application in the classroom. After that, the researcher asked the students' to make 8 groups consist of 3-4 students. The researcher asked one of student in a group to takeout her handphone. Then, the researcher asked every group to do the exercises in Johnny Grammar Word Challenge 10 times as the first duty but before it the researcher explains the role of the game. Second duty, the researcher asked the students to write all of the verbs that they found in Johnny Grammar Word Challenge in a paper that have been given by the researcher. After that the researcher asked the student to find the meaning, Verb 1, Verb 2, and Verb 3 of the verb that they have found in Johnny Grammar Word Challenge. Every score that they got when they do the exercise in Johnny Grammar Word Challenge, the researcher asked them to screen shoot it. The researcher asked the students to come forward and read the Irregular that they found in Johnny Grammar Word Challenge. The students who don't come forward, they should write the Irregular verb that their friend read forward. In the last time, the researcher asked them to total their score.

The third meeting, the researcher asked the students to make 12 groups, one group consist of 2-3 students. The researcher asks one of

student in a group to takeout her handphone. Then, the researcher asked every group to do the exercises in Johnny Grammar Word Challenge in shift. The researcher asked the students to collect a score as much as possible. The students have 60 minutes to finish it. The five groups who had a better score will get 10 point. The researcher asked the students to write all of the verbs that they found in Johnny Grammar Word Challenge in a paper that have been given by the researcher. After that the researcher asked the student to find the meaning, Verb 1, Verb 2, and Verb 3 of the verb that they have found in Johnny Grammar Word Challenge. Every score that they got when they do the exercise in Johnny Grammar Word Challenge, the researcher asked them to screen shoot it. The researcher gave a question one by one in the slide. The students who want to answer the question they raise their hand and answer the question. The students who can answer the question truly and faster they will get 2 points.

The forth meeting, the researcher did an online class. The researcher asked every student to do the exercises in Johnny Grammar Word Challenge and she gave 50 minutes to finish it. After that, the researcher asked the students to screen shoot every scores that they got and arranged it in Microsoft word. Next, the researcher gave a file and asked the students to write all of the verbs that they

found in Johnny Grammar Word Challenge. After that the researcher asked the student to find the meaning, Verb 1, Verb 2, and Verb 3 of the verb that they found in Johnny Grammar Word Challenge. The researcher gave 20 minutes to finish that duty. Before the researcher closed the online class the researcher gave a quiz to the students. The researcher sent a question one by one to the WA group. The students who want to answer the question, they can send a message by using private chat via WA to the researcher. The two students who can answer the question truly and faster they will get 2 points.

3. Post-Test

The last meeting the researcher gave the post-test. The researcher gave the test to know the students' achievement after the researcher do the treatment by using WA group. The researcher sent a test and after 45 minutes the students must sent their answer to the researcher by private chat.

Table 3.2. Schedule of Researcher's Activities

NO	Date	Activities
1.	March, 03 rd 2020	Pre-Test
2.	March, 10 th 2020	The first Treatment based on lesson plan 1
3.	March, 17 th 2020	The second treatment based on lesson plan 2

4.	March, 24 th 2020	The third Treatment based on lesson plan 3
5.	March, 31 st 2020	Post-Test

3.2. Place and Time of The Research

This research conducted at SMAN 1 Tulungagung which is located at Fatahilah street, Panggungrejo, Kec. Tulungagung, Kabupaten Tulungagung, Jawa Timur.

3.3. Population, Sampling and Sample

3.3.1. Population

According to Sugiono (2018), A population is a generalization area consisting of objects/ subjects that have certain qualities and characteristics determined by researcher to be studied and then conclusions drawn. So, the population is not only people but also objects and other natural objects. Population is not only the amount that exists on the object/subject studied but includes all the characteristics/properties possessed by the subject or object.

The population of this study was the tenth grade students of SMAN 1 Tulungagung. The number of population was 192. They were divided into six classes. X IPA 1, X IPA 2, X IPA 3, X IPA 4, X IPS 1, X IPS 2, and X IPS 3.

Table 3.3. Population

XI IPA 1	32
XI IPA 2	33
XI IPA 3	34
XI IPS 1	30
XI IPS 2	31
XI IPS 3	32
Total	192

3.3.2. Sampling

According to Ary (2006) , Purposive sampling also referred to as judgment sampling-sample elements judges to be typical, or representative, are chosen from the population. According to Maxwell (1996) Purposive or judgmental sampling is a strategy in which particular settings persons or events are selected deliberately in order to provide important information that cannot be obtained from other choices.

In this research, the researcher uses nonrandomized sampling with purposive sampling to take sample from population and it represents the entire population. The researcher uses it because the researcher can not choose a person who is suitable with his criterion. But in this case, the researcher can choose the class that has appropriate criterion. The researcher consults with the English teacher in SMAN 1 Tulungagung to choose the suitable class.

3.3.3. Sample

According to Sugiono (2018), Sample is a part of the

number and characteristic possessed by the population. As sample of the study, the writer took one class (X IPA 1) from 7 classes of tenth grade students. The student in X IPA 1 was 32. The English teacher who handled in class ten gave a suggestion to choose X IPA 1 because almost the students in X IPA 1 were communicative and active in teaching learning process. So, they will learn seriously about the material that will be delivered.

3.4. Variable of The Study

Variable is key term of research. Every research involves to be measured. When the variables are not clear, it is difficult for the researcher to conduct research. Variable is the focus in any research. According Charles (1995:29) variable is characteristic that tend to differ from individual to individual, though any two or more individuals may have the same variable trait or measure.

In this study consist of two variable, those are independent variable and dependent variable. Independent variable is the variable that affects the dependent variable. In this study, the independent variable is Johnny's Grammar Word Challenge and the dependent variable is students' grammar achievement.

3.5. Method to Collect The Data

The researcher has tried out the instrument of the test before do the test.

The purpose of this tryout is to know the validity and reliability of the test. There are 25 five questions in the test. The writer asked the students to change the verb base into the correct one according to which irregular verb in form Past Tense that the verb belonged to. The writer gave 25 minutes to answer 25 questions. The students had 1 minute to answer each question.

The researcher used SPSS 16.0 to calculate the validity and reliability of the test. After SPSS 16.0 stated that the test is valid and reliable, next the researcher did a test in a group of treatment. The reason why the researcher do a try out because to make sure if the test proper to be tested. The test is not too difficult or too easy.

In this research, the researcher does a treatment twice. They are Pre-test and Post-test. The reason of doing pre-test is to know the students' achievement before treatment and the reason of doing post-test is to know the students' achievement after treatment. If the result of the post-test is good than pre-test, so we can conclude that Johnny Gammar Word Challenge is effective to enhance the students' grammar achievement.

3.6. Instrument

According to Arikunto, there are several kinds of instrument; they are test, questionnaire, interview, observation, rating, scale and documentation. In this study, the writer gives a test to the students to collect the data. The students were instructed to complete the sentences in the right form. According Johnson & Christensen (2008 : 176) defined a test as a procedure

used to collect data on subjects' ability or knowledge of certain disciplines.

The total questions were 25 questions consist of two types of question that are completing the sentences correct form Irregular Verb/past tense. The writer asked the students to change the verb base into the correct one according to which irregular verb in form Past Tense that the verb belonged to. The writer gave 25 minutes to answer 25 questions. The students had 1minute to answer each question.

Pre-Test and Post-Test were done to obtain the students' score in achieving grammar especially Irregular Verb.

Table 3.4. The score's criteria

NO	Criteria	Range of Score
1.	Excellent	21-25
2.	Good	16-20
3.	Average	11-15
4.	Poor	6-10
5.	Very Poor	1-5

3.6.1. Test

In this study, the writer gave the tests to get data about the students' achievement in Irregular Verb in simple past tense as the material in the tenth grade in the senior high school.

The writer took the question from Betty Schramper Azar's book.

The total questions was 25 questions consist of two types of question that are completing the sentences correct form Irregular Verb/past tense, multiple choice and short answer. The writer gives 25 minutes to do the test (try out). It means one question one minute. It is consider enough for the participant to answer the questions that has already prepared by the writer.

There are some steps is taking in planning stage. They are ; (1) Surveying the total of college students who wants to be participants inthe research, (2) Preparing the test for the participant. The question is taking adapted from the students test items. The forms of the test arein the form of multiple choices and essay. (3) Analyze the data of the result the test.

Table 3.5. Table Specification

Rules	Number of Item	Total Item
V1 = V2 = V3	3, 9, 10, 14, 17, 21, 23, 25.	8
V1 = V2 & V3	6, 7, 11, 12, 13, 20, 22, 24.	8
V1 = V2 = V3	1, 2, 4, 5, 8, 15, 16, 18, 19.	9

Total	25
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In this study the test was used as the instrument. This is the test tried out. There are three specifications of the test, all three verbs parts are the same, two verb parts are the same and all three verb form are the different. For the first sub variable are 8 , there are number 3, 9, 10, 14, 17, 21, 23, 25. For the second sub variable there are 8, there are 6, 7, 11, 12, 13, 20, 22, 24. And the last sub variable, there are 9 numbers there are 1, 2, 4, 5, 8, 15, 16, 18, 19.

3.7. Validity

The validity of the test is the extent to which it measures what it is supposed to measure and nothing else (Heaton, 1991:159). To measure whether the test has good validity, researcher analyzed the test from content and construct validity. To fulfill this validity, the researcher saw all the indicators of the instrument that represented the material measured or not.

3.7.1. Content Validity

Hughes (2003: 26) stated that test is considered to have content validity if their content constitutes a representative sample of language skills, structures, etc. it meant to be concerned. According to Mousavi (2002) as cited by Brown (2003: 22) explained that a test is valid if it

requires the students to perform the behavior that is being measured.

Table 3.6. Core Competence and Basic Competence

Core Competence	Basic Competence
<p>3. Memahami, menerapkan, menganalisis pengetahuan faktual, konseptual, prosedural berdasarkan rasa ingin tahunya tentang ilmu pengetahuan, teknologi, seni, budaya, dan</p>	<p>3.6.Menganalisis fungsi sosial, struktur teks, dan unsur kebahasaan pada pernyataan dan pertanyaan tindakan/kejadian yang dilakukan/terjadi di waktu lampau yang merujuk waktu terjadinya dengan</p>
<p>humaniora dengan wawasan kemanusiaan, kebangsaan, kenegaraan, dan peradaban terkait penyebab fenomena dan kejadian, serta menerapkan pengetahuan prosedural pada bidang kajian yang spesifik sesuai dengan bakat dan minatnya untuk memecahkan masalah.</p>	<p>yang merujuk pada kesudahannya, sesuai dengan konteks penggunaannya.</p>

<p>4. Mengolah, menalar, dan menyaji dalam ranah konkret dan ranah abstrak terkait dengan pengembangan dari yang dipelajarinya di sekolah secara mandiri, dan mampu menggunakan metoda sesuai kaidah keilmuan</p>	<p>4.6. Menyusun teks lisan dan tulis untuk menyatakan dan menanyakan tentang tindakan/kejadian yang dilakukan/terjadi di waktu lampau yang merujuk waktu terjadinya dengan yang merujuk pada kesudahannya, dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan, yang benar dan sesuai konteks.</p>
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3.7.2. Construct Validity

According Brown (2004) Construct is any theory, hypothesis or model that attempts to explain observed phenomena in our universe perception. In other word, construct validity can be fulfill if a test can measure what we are supposed to measure. In this test the researcher ask the student to do the test. The writer took the question from Betty Schramper Azar's book. The total questions was 25 questions consistof two types of question that are completing the sentences correctform Irregular Verb/past tense, multiple choice and short answers. The writer gives 25 minutes to do the test (try out). It means one question one minute. It is consider enough for the

participant to answer the questions that has already prepared by the writer.

3.7.3. Face Validity

Face validity is defined as the degree to which a test seems to measure what it reports to measure. Face Validity can affect a person's mentality in doing the test. The researcher consults with her advisor when she makes the face validity.

In the instruments' paper (Pre-Test and Post-Test), there are some instruction how to do the test in every part of exercises. Not only it, but also there are time allocation, types of exercises, total of question and material. They do the test in the worksheet that have available.

3.8. Reliability

Johnson and Christensen (2008,p.144), “ Reliability refers to the consistency or stability of a set of test scores”. To know the reliability of the test item, the writer gives the test to the students taken from out of the research sample. The reliability of the test can be seen by using Cronbachs Alpha Formula for the consistency of the test. Cronbachs Alpha is a measure of correlation between observed scores and true scores. The writer used SPSS (Statistics Package for Social Sciences) to search Cronbachs Alpha to know the reliability of the test. It seems fairly common to describe Cronbach's alpha values as follows:

- 0.9 and greater = Excellent reliability
- Between 0.9 and 0.8 = Good Reliability
- Between 0.8 and 0.7 = Acceptable Reliability
- Between 0.7 and 0.6 = Acceptable Reliability
- Between 0.6 and 0.5 = Poor Reliability
- Less than 0.5 = Unacceptable Reliability

Johnson and Christensen (2008)

Before the researcher share the Instrument's Test (Pre-Test), the researcher doing Tryout, to make sure that the test is reliable. The try outis doing in the same school but in different class. It is X IPA 3 and it consists of 34 students.

Table 3.7. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.734	.752	25

Table 3.8. Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Item_1	18.6765	12.832	.618	.	.709
Item_2	18.7059	13.123	.405	.	.718
Item_3	18.9118	12.022	.589	.	.699
Item_4	18.7353	14.443	-.140	.	.750

Item_5	18.7059	12.699	.593	.707
Item_6	18.7059	13.608	.197	.730
Item_7	18.7353	12.928	.438	.715
Item_8	18.8235	13.362	.204	.730
Item_9	18.8529	12.311	.534	.705
Item_10	18.8824	13.683	.085	.740
Item_11	18.8235	13.422	.184	.732
Item_12	18.8824	13.743	.068	.741
Item_13	18.9118	14.386	-.117	.755
Item_14	18.8529	13.705	.085	.739
Item_15	18.7353	13.473	.222	.729
Item_16	18.7353	13.291	.293	.724
Item_17	18.9118	12.931	.302	.723
Item_18	18.7353	12.382	.663	.701
Item_19	18.6765	13.680	.200	.730
Item_20	18.9118	13.174	.229	.729
Item_21	18.7941	13.805	.071	.739
Item_22	18.7941	13.381	.213	.729
Item_23	18.9118	12.689	.377	.717
Item_24	18.8235	12.271	.574	.702
Item_25	18.8824	13.198	.231	.729

From the table 3.7 and 3.8 above, we can see the result of the reliability is 0.752 (close with 1). The item total statistic is Reliable because the reliable in every item > 0.05 like we seen in table 3.8. It means that the Instrument of the test is reliable to be tested.

3.9. Technique of Data Collection

According to Johnson and Christensen (2008) “ There are several ways to collect the data such as questionnaire, observation, interview and

test". In this study, the writer gave a test to the students. The time allocation for the students was around 25 minutes for all students. The writer gave one minute for one question is because the writer was also considering the time the students have for one question is because the writer was also considering the time the students have for participating in this study.

There are some steps will be taken in the planning stage as follows:

1. Surveying the total of students who wants to be participantin this research.
2. Preparing the test for the participant.
3. Give the test of question tags to get data.
4. Analyze the data of the result test

3.10. Data Analysis

In order to know the students' significant difference achievement of Irregular verb after and before taught by using Johnny Grammar Challenge Application, the researcher conducted normality testing that purpose to know the data computation were normal distribution by using SPSS to measure it. After the data stated normal, the researcher testing T-Test. The use of T test is order to know is there any significance achievement different after and before the students taught by using Johnny Grammar Word Challenge.

3.10.1. Normality Testing

Normality testing is used to know the distribution of the

testis normal or not. If the data of test is normal distribution, the data could be considered to represent the population. The researcher used SPSS 16.0 to measure the normality of the test. The researcher uses One Sample Kolmogrov method. If the significance value > 0.05 the data had normality distribution but if the significance value < 0.05 the data did not have normal distribution.

3.10.2. Paired Sample T-Test

The researcher used a test (Pre-Test and Post-Test) to collect the data. After the researcher gets the data, she analyzed and identified the data to know the result of this study. The Pre- Test gives before the researcher giving the treatment. It purposes to know the students' grammar achievement before they get a treatment. And the Post-Test gives after the researcher giving a treatment. It purposes to know the students' grammar achievement after they get a treatment.

To analyze the data, the researcher needs to count the mean and try out to find the mean and standard deviation. After that the researcher calculate the standard deviation and she will find out the significance difference of students' grammar achievement after and before taught by using Johnny Grammar Word Challenge. So, the researcher will get result score of this

study. The researcher use SPSS measure all of the data.

There are some steps how to analyze the data in SPSS 16.0. Firstly, the researcher input the data in SPSS to know frequency of Pre-test and Post-test. The researcher finds the mean, median, mode, and standard deviation by using SPSS. Then, from comparing the data, the researcher knows the pair simple statistics and finally the researcher find pairs sample correlation from two-tail. After knowing the result of two-tail, the researcher divides it with 2 because the researcher uses one-tail. The researcher gives the result whether or not the treatment by using Johnny Grammar Word Challenge Application on enhance students' grammar achievement is effective.