CHAPTER III

RESEARCH METHOD

In this chapter, it provides some explanations about the research methodology. It is consist of research design, population and sample, research instrument, validity and reliability testing, normality and homogeneity testing, collecting data and data analysis.

A. Research Design

Research may define as the application of the scientific approach to study of the proplem. According to Ary et al (2006 : 21) research is an attempt to solve the problems by using scientific approach in a systematic way.

Creswell (2009: 143) defines experimental studies as " the basic intent of an experimental design to test the impact of a treatment (or an intervention) on an outcome controlling for all other factors that might influence the outcome." In this study the researcher intended to find out wether Time Token Arends Strategy which were given to the experimental group was effective and contributed to the students speaking ability.

In this experimental study, the researcher manipulates one or more independent variables, control any other relevant variables, and observed the effect of the manipulations on the dependent variables. They were independent variable (X) that refers to the use of Time Token Arends Strategy and (Y) refers to students' speaking ability as dependent variable. The goal of experimental

research is to determine whether a casual relationship between two or more variables.

In this research, The researcher used quasi experimental because at school it was not possible to hold random subjects from all populations because the subjects (students) naturally formed in one group (one class). So, in this study the researcher would not take subjects randomly from the population but use all subjects in the intact group to be given treatment. In quasi experimental, The researcher take two classes. The first class was used as experimental class (X) which was treated by Time Token Arends Strategy and another class as a control class (Y) was treated without Time Token Arends Strategy. Both of two classes were given pre-test and post-test, but only the experimental class was treated by using Time Token Arends Strategy. According to Ary et al. (2010:316) non randomized control group pre-test, post-test design was one of the most widely used quasi-experimental design in educatioanal research.

Table 3.1 Two group pre-test and post-test design

Group	Pre-test	Independent variable	Post-test
E	y1	X	y2
C	y1	-	y2

Experimental Group   y1 —— x—— y2

Control Group   y1 ——————— y2

Y1   = Pre-test

Y2   = Post - test

X   = Treatment by using Time Token Arends Strategy

B. Population and Sample

1. Population

   A population is a group of individuals who have the same characteristic. In this quantitative research, sample takes from list and students attendance. A target population (or the sampling frame) is a group of individuals (or a group of organizations) with some common defining characteristic that the researcher can identify and study. Population is all members of any well-defined class of people, events of objects (Creswell, 2008). The population used to conduct this study was the eleventh graders of MA MA Ma'arif NU Blitar in the academic year of 2018/2019. There were seven classes in the eleventh grade. Two classes are religion class, three class other are social class, and two class again are science class. Each class consist of about 17 until 35 students. The total of population is 177.

Class	Number of Students
XI A (Religion class)	23
XI B (Religion class)	35
XI C (Social class)	23
XI D (Social class)	24
XI E (Social class)	23

XI F (Science class)	17
XI G (Science class)	32

2. Sample

In this study the researcher used purposive sampling technique to take the sample. Purposive sampling was based on the judgement of the researcher as to who will provide the best information to succeed the objectives of study. According to J.W Creswell (2009: 146), purposive sampling techniques that have also been referred to as nonprobability sampling techniques, involved selecting certain units or cases "based on specific purpose rather than randomly."

The sample was taken two classes from eleventh graders of MA Ma'arif Nu Blitar. They were XI-G as the experimental group that taught by Time Token Arends Strategy and XI-F as the control group that Taught without using Time Token Arends Strategy. The number of students was 32 for XI G and 17 for XI-F. The researcher used this purposive sampling due to suggestion from the English teacher that both classes are science class and they have equal of English ability.

C. **Research Instrument**

In this study the researcher used test as instrument. According to Ary *et al* (2010: 201), "Test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned". The type

of a test that was used in this study is oral test. Oral test was used to collect the data about students' speaking ability. The researcher applied pre-test and post-test. The test was given before and after teaching by using Time Token Arends Strategy.

1. Pre-test

    Pre-test was used to collect the data about students' speaking ability before getting treatment for experimental class and without treatment for control class. The test was admistered to the students at the eleventh grade of MA Ma'arif NU Blitar. In the pre-test activity.

    The pre-test instrument uses an oral test. The researcher will provide a paper containing several commands and pictures. The topic in the pre-test is about popular persons. Students are asked to choose one from 6 pictures provided. Then they are asked to make opinion about the picture that have been chosen and then convey their opinion in front of the class.

2. Post-test

    Post-test was used to collect the data about students' speaking ability after getting treatment for experimental class and without treatment for control class. The test was admistered to the students at the eleventh grade of MA Ma'arif NU Blitar. Post-test was given after all treatment were conducted

    The post-test instrument same with pre-test which in form of oral test. The differences just in the topic. The topic in post-test is about some

issues are still pros and cons, and the students are asked to make opinion about that then they deliver their opinion in front of class.

D. Validity and Realibility Testing

The best instrument had to fulfill two importance requirements, these were validity and reliability. Validity and reliability were used to test the legality of data. These were the explanations of validity and reliability below:

1. Validity

According to Ary, et al (2002: 242) validity is the most important consideration in developing and evaluating measuring instruments. The researcher used validity to know whether the research instrument was valid or not. The measure whether the test has a good validity, the researcher analyzed the test from content validity, construct validity and face validity.

a. Content Validity

Lodico et al (2006: 93) state the content validity is composed of two items of validity, sampling validity. Both sampling validity and item validity involve having expert examine items that make up the instrument.

A test was said have content validity if its constitute a representative sample of language skills, structures, etc, being tested beside that the content of instrument has also to relevant with purpose of the test. In this case, the content of the test should refer to the "School Based Curriculum (SBC)".

The researcher made this test based on the course objective in the syllabus of second semester of MA Ma'arif Blitar. Therefore, this is valid in term of content validity.

Main Competence	Basic Competence	Material	Indicator
4. Mengolah, menalar, dan menyaji dalam ranah konkret dan ranah abstrak terkait dengan pengembangan dari yang dipelajarinya di sekolah secara mandiri, bertindak secara efektif dan kreatif, serta mampu menggunakan metode sesuai kaidah keilmuan	4.2 Menyusun teks tulis untuk menyatakan pendapat dan pikiran sesuai konteks	*Ungkapan* Menyatakan pendapat/ pikiran *I think...* *I suppose..* *In my opinion ..* *Unsur kebahasaan* Ucapan, tekanan kata, intonasi	- siswa mampu mengungkapkan/ menyatakan pendapat secara lisan.

b. Construct Validity

Brown (2004:25) mentioned that a construct validity was any theory, hypothesis, or model that attempts to explain observed phenomena in our universe of perception. It means that it was a instrument to measure just the ability which supposed to measure. In this study, to know the students' speaking ability, the researcher tested students' speaking ability by asked the students to express opinion orally. Meanwhile, the technique of scoring

the speaking ability based on the five components of speaking; they are grammar, vocabulary, content of idea, fluency, and pronunciation.

No	Elements of Speaking	Score	Criteria
1	Grammar	1	Errors in grammar are frequent, but speaker can be understood by a native speaker used to dealing with foreigners attempting to speak his language.
		2	Can usually handle elementary constructions quite accurately but does not have thorough or confident control of the grammar.
		3	Control of grammar is good. Able to speak the language with sufficient structural accuracy to participate effectively in most formal and informal conversations on practical, social, and professional topic.
		4	Able top use the language accurately on all levels normally pertinent to professional needs. Errors in grammar are quite rare.
		5	Equivalent to that of an educated native speaker.
2	Vocabulary	1	Speaking vocabulary inadequate to express anything but the most elementary needs.
		2	Has speaking vocabulary sufficient to express himself simply with some circumlocutions.
		3	Able to speak the language with sufficient vocabulary to participate effectively in most formal and informal conversations on practical, social, and professional topics. Vocabulary is broad enough that he rarely has to grope for a

			word.
		4	Can understand and participate in any conversation within the range of his experience with a high degree of precision of vocabulary.
		5	Speech on all levels is fully accepted by educated native speakers in all its features including breadth of vocabulary and idioms, colloquialisms, and pertinent cultural references.
3	Content of idea	1	The students is able to speak using inappropriate statements, related ideas, consistent focus
		2	The students is able to speak using little bit appropriate statements, related ideas, consistent focus
		3	The students is able to speak using almost appropriate statements, related ideas, consistent focus
		4	The students is able to speak using appropriate statements, related ideas, consistent focus
		5	The students is able to speak using very appropriate statements, related ideas, consistent focus
4	Fluency	1	No specific fluency description. Refer to other four language areas for implied level of fluency.
		2	Can handle with confidence but not with facility most social situation, including introductions and casual conversations about current events, as well as work, family, and autobiographical information.
		3	Can discuss particular interests of competence with reasonable ease. Rarely

			has to grope for words.
		4	Able to use the language fluently on all levels normally pertinent to professional needs. Can participate in any conversation within the range of this experience with a high degree of fluency.
		5	Has complete fluency in the language such that his speech is fully accepted by educated native speaker.
5	Pronunciation	1	Errors in pronunciation are frequent but can be understood by a native speaker used to dealing with foreigners attempting to speak his language.
		2	Accent is intelligible though often quite faulty.
		3	Errors never interfere with understanding and rarely disturb the native speaker. Accent may be obviously foreign.
		4	Errors in pronunciation are quite rare.
		5	Equivalent to and fully accepted native speakers.

c. Face Validity

Face validity becomes one of the validity types that can be established. Validity was measurement that showed the level of the instrument (Arikunto; 1998:160). Face validity is very important. A test which does not have face validity may not be acceptable by test-takers, teachers, education authorities, and employers. The researcher used face validity by consulting with the advisor and teacher to validate the test.

2. Reliability

According Lodico et.al (2006:87), reliability refers to the consistency of score, that is an instrument's ability to produce "approximately" the same score for individual over repeated testing or across different ratters.

Furthemore, Ary et. al (2010: 236) stated that reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring. This quality is essential in any kind of measurement. On a theoritical level, reliability is concerned with the effect of error on the consistency of scores.

Reliability is the consistency of the instrument in producing the same score on different testing occasions or with different ratters. To know the reliability of test instruments, the researcher used SPSS 16.00. The criteria of reliability instrument can be devided into 5 classes as follows (Ridwan:2004), those are:

- If the cronbach alpha score 0.00 – 0.20 : less reliable

- If the cronbach alpha score 0.21 – 0.40 : rather reliable

- If the cronbach alpha score 0.41 – 0.60 : enough reliable

- If the cronbach alpha score 0.61 – 0.80 : reliable

- If the cronbach alpha score 0.81 – 1.00 : very reliable

The result of reliability testing by using SPSS 16.0 can be seen from the table :

Table 3.2 Result of Reliability

Cronbach's Alpha	N of Items
.987	2

Based on the table above, the test can be said reliable or not can be seen from cronbach's alpha. The score of cronbach alpha 0.987. It means that the test is very reliable.

E. Normality and Homogenity Testing

1. Normality Testing

Normality testing is used to determine whether the data is normal distributed or not. The writer used SPSS.16 one sample kolmogrov-smirnov Test by the value of significance (α) = 0.050.

Basic decisions in normality testing are as follows:

1. If the significance value > 0.050, then the data has normal distribution

2. If the significance value < 0.050, then the data does not have normal distribution

The result can be seen below

- **Normality Testing of Control class**

One-Sample Kolmogorov-Smirnov Test

		pretest_control	posttest_control
N		17	17
Normal Parameters[a]	Mean	60.94	63.06
	Std. Deviation	8.310	8.778
Most Extreme Differences	Absolute	.195	.166
	Positive	.195	.166
	Negative	-.155	-.125
Kolmogorov-Smirnov Z		.802	.683
Asymp. Sig. (2-tailed)		.541	.739
a. Test distribution is Normal.			

Based on the table above is known that the significant value from pre-test is 0,541 and it is bigger than 0.05 (0.541 > 0.05). It means that the data is normal distribution. Then, for post-test score, the value of sig/p is also 0.739 and it is bigger than 0.05 (0.739 > 0.05). It means that the data is normal distribution.

One-Sample Kolmogorov-Smirnov Test

		pretest_experimental	posttest_experimental
N		32	32
Normal Parameters[a]	Mean	61.88	71.50
	Std. Deviation	7.183	7.379
Most Extreme Differences	Absolute	.168	.160
	Positive	.168	.160

Negative	-.139	-.157
Kolmogorov-Smirnov Z	.952	.908
Asymp. Sig. (2-tailed)	.325	.382
a. Test distribution is Normal.		
m		

ality Testing of Experimental Class

Based on the table above is known that the significant value from pre-test is 0,325 and it is bigger than 0.05 (0.325 > 0.05). It means that the data is normal distribution. Then, for post-test score, the value of sig/p is also 0.382 and it is bigger than 0.05 (0.382 > 0.05). It means that the data is normal distribution.

2. **Homogenity Testing**

Homogeneity testing is conducted to know whether the data has a homogeneous variance or not. To know the homogeneity, the writer used Homogeneity of Variances Test by using SPSS.16. The value of significance (α) = 0.050.

Basic decisions in homogeneity testing are as follows:

a. If the significance value > 0.050, then the data distribution is homogeneous

b. If the significance value < 0.050, then the data distribution is not homogeneous

The researcher conducted homogenity testing from post-test score of experimental class and control class. The calculating result of homogenety testing is as follows :

Test of Homogeneity of Variances

Score

Levene Statistic	df1	df2	Sig.
1.307	1	47	.259

Based on the table above, it was known that the sig/p value was 0.259. Because the significant value was higher than significant 0,05 (0.259 > 0.05), it means that H_0 was accepted and H_a was rejected. So, it can be interpreted that the data is homogeneous.

F. Data Colletcting Method

In this study, the researcher used test as the data collection. The test would be in the form of speaking test to see the different result of students' speaking ability who being taught by Time Token Arends Strategy and without using Time Token Arends Strategy. The researcher would give pre-test and post-test to both of experimental and control group.

a. Pre-test

Pretest is a test which is conducted before teaching both of experimental and control class. The pre-test is used to know the students' score before the researcher teaching the control class and give treatment using Time Token Arends Strategy to the experimental class.

The researcher administered test in control class or XI F IPA on Monday 16th July 2018 at 07.00-08.20. While pre-test in experimental class or XI G IPA hold on Tuesday 17th July 2018 at 13.00-14.20. In pre-test the researcher asked the students to express their opinion about famous persons and heroes. The researcher gave some pictures of famous persons and heroes and the students were asked to choose one picture. Then they have to make opinion based on picture and deliver it in front of class orally. After administering the test, the researcher scored the students' speaking based on the scoring rubric of speaking skill.

b. Treatment

After having pre-test to both of control class and experimental class, the researcher gave treatment to the experimental class using Time Token Arends Strategy. It purposed to know the students' ability in speaking skill after giving treatment.

The researcher conducted treatment on experimental group exactly at XI G class for three meetings. The first meeting was conducted on Friday, 20th July 2018 at 07.00-08.20. Then for the second treatment was conducted on Tuesday, 23th July 2018 at 07.00-08.20. And the last meeting was conducted on Friday 26th July 2018 at 07.00-08.20. at the first meeting in giving

treatment, the researcher explained about activities and the rules in Time Token Arends Strategy. Time Token Arends Strategy is cooperative learning, so the students were devided in 5 groups. Each students got cupon to speak. Then, they were given a topic to be discussed. After that, they have to give their opinion about the topic that has been discussed while gave their cupon to the researcher. They have about 30 seconds to convey their opinion. The students who don't have cupon is forbidden to speak again. When apply this strategy, the students looked enthusiastic.

While for the control class, the researcher did not apply Time Token Arends Strategy, but teached them using conventional method for three times. The first meeting conducted on Friday, 20th July 2018 at 10.00-11.20, then for second meeting conducted on Monday, 23th July 2018 at 07.00-08.40, and the third meeting conducted on Friday, 27th July 2018 at 10.00-11.20. In control class, the researcher explained material about giving opinion, then students were asked to make opinion based on topic then convey their opinion orally.

c. Post test

The last method used to collect the data was administering post-test. The purpose of administering post-test was to measure the students' speaking ability after they received the treatment. By analyzing the students' post-test scores, the writer could measure the significant difference in students' achievement in speaking ability between the experimental and control groups.

In this research, the researcher gave post-test in control class or XI F IPA on Monday, 30 July 2018 at 07.00-08.20. While in experimental class or XI G IPA, post-test was conducted on Friday 4 July 2018 at 07.00-08.20. Post-test was administered to know the students' speaking score after being taught by using Time Token Arends Strategy. In conducting post-test, the researcher gave some topics to the students and asked them to choose one topic. Then they were asked to make opinion based on topic and delivered it orally.

G. Data Analysis

In this research the researcher uses a quantitative data analysis technique. The quantitative data of this research is analyzed by using statistical method. The data collected will be processed by comparing the data from pre-test and post test. The researcher conducted test to students being taught by using Time Token Arends Strategy and without taught using Time Token Arends Strategy. The test was done to know whether there was significanct different score between students taught by using Time Token Arend Stratrgy .and those taught without using Time Token Arends Strategy in speaking ability To know the significant differences, researcher used SPSS 16.0 with independent t-test.