

CHAPTER III

RESEARCH METHOD

In this chapter, the researcher describes the research methodology applied in the present. It covers research design, population and sample, instrument and instrumentation of the research, validity and reliability, normality and homogeneity, data collection, treatment, analyzing data and hypothesis testing.

A. Research Method

This research was conducted in pre-experimental design with one group pretest-posttest design because the Curriculum Deputy only give the researcher permission to conduct in one class." Therefore, this research does not have random assignment of subject to group or other strategy to control extraneous variable (Ary, 2010:203-204). Pre-experimental design has two variables is being conducted, are: independent and dependent variable. The independent variable (X) is a condition which influences other variable. While, the dependent variable (Y) is a condition which influenced by experimental. In the dependent variable before the manipulation of the independent variable X, it is usually a pretest (before the experimental group is given treatment) and after the manipulation of the independent variable X, it is usually a posttest (after the experimental group is given treatment), stated by (Donald : 2010). The two variables are:

1. Independent Variable (X): Team word-webbing
2. Dependent Variable (Y): Reading Comprehension

That is why in this study the researcher just take one group or class and uses pretest and posttest to see the result of the treatment.

There are three steps of this design, are:

1. Administering a pretest measuring the dependent variable.
2. Applying the treatment X to the experimental group.
3. Administering a posttest measuring the dependent variable.

The One Group Pretest- Posttest Design as follows:

Table 3.1. The One Group Pretest- Posttest Design

Pretest	experimental group	Posttest
Y_1	X	Y_2

Where :

Y_1 : Pretest

Y_2 : Posttest

X : Treatment on the experimental group

This research intended to investigate the effectiveness of using team word-webbing toward students' reading comprehension in news item text at the tenth grade of MA Terpadu Al-Anwar Trenggalek. The use of the treatment is aimed at proving whether the increase scores possibly got by the researcher. Thus, the effectiveness of that treatment is known the significant score when the students taught team word-webbing technique.

B. Population and Sample

1. Population

The population of this research is the whole students of the tenth grade students of MA Terpadu Al-Anwar Trenggalek in the academic year 2017-2018 that consist of six classes of tenth grade are 250 students inculed; X IPA 1,2,3; X IPS 1,2, and TIK 1. After determining the population, the researcher takes the sample to be the representative of the population.

2. Sampling

Sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the large group from which they were selected, L.R Gay (p: 123). The purpose of sampling is to gain information about a population; rarely is a study conducted that includes the total population of interest as subject (Gay, 1992:123). In this study, the researcher used purposive sampling technique because purposive sampling technique is a type of non probability sampling where the researcher consciously select particular elements or subjects for addition in a study so as to make sure that the elements will have certain characteristics pertinent to the study.

3. Sample

Sample is a group of subject or participant (students) is chosen from the populations to be a representative (Fraenkel and Wallen, 2009:90). It means that a good sample must be representative of the entire as possible, so that the generalization of the sample as true as population. To take a

sample the researcher use purposive sampling where the researcher choose X IPS2 to be a sample that consist of 37 studentsat MA Terpadu Al-Anwar Trenggalek in academic year 2017/2018 that believed that this class can give sufficient information.

C. ResearchInstrument

Instrument of research are the tools to measure something that we observe in order to obtain the data and answer the research problems (Sugiyono: 2011). The instrument of this research was a reading test. The reading test was administrated in the pre-test and post-test. The test consisted of 20 multiple choice tests. The researcher chose multiple choice test because the students can comprehend the material and to know the students' reading comprehension.

The instrument used in this research is a test which it is given beforeand after taught by using team word-webbingtechnique. The instrument will be developed through following steps (see table 3.2.)

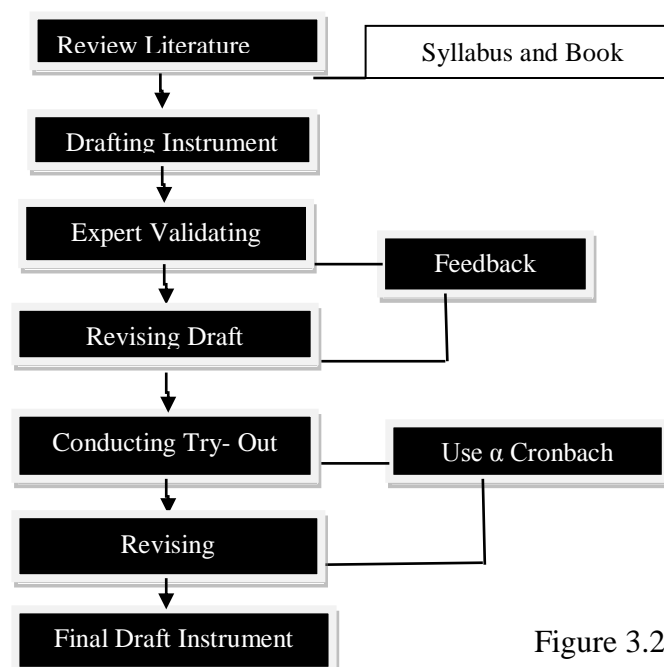


Figure 3.2. Instrument

The steps of instrument, are:

1. Review Literature

The first steps to get valid and reliable test is drafting the instrument. The researcher will review some literatures from syllabus and book to get some important informations as sources to drafting instrument that related with the materials of senior high school .

2. Drafting Instrument

After get some informations from reviewing literature, the researcher started to drafting instrument that suitable with the materials of senior high school.

3. Expert Validation

After finished the drafting instrument, the instrument should be asked to the expert that are English teacher and assessment course lecturer where they are mastering the materials. The purpose of the expert validating is to know how far the quality of the instrument. So, in this steps the researcher will get feedback and validation guide.

4. Revising Draft

In revising draft, the instrument will be repair where the instrument has some problems or errors.

5. Conducting Try- Out

After the instrument has done, the researcher will conduct try out the instrument to the tenth grade students of MA Terpadu Al-Anwar

Trenggalek to know how far the students are able to answer some questions that related with the materials to get feedback from students.

6. Revising

In revising, it part to revising the instrument again based on the feedback to get the final draft instrument. So, the researcher will revising the instrument to make the questions ideal or not easy or too easy, difficult or too difficult.

7. Final Draft Instrument

The last step is final instrument means that the instrument has good or best quality where the instrument is appropriate.

To know more the details of the test accomplished, the test is done through two steps, are:

1. Pre-Test

A pre-test provides a measure on some attribute or characteristic that you assess for participant in an experimental before they receive treatment (Creswell: 2003). This test can be called as the pre-test before the treatment of this research. The pretest is aimed is to know the students' reading comprehension before the treatment carried out. In this pre-test, students were given task during 45 minutes on September 3, 2017. In the testing process, the students have to answer the pre-test. There were 20 items of multiple choices questions. The score per item was 5.0 for correct answer. Students would get 100 point if they could answer correctly to all of the

question. This result of the test became the evaluation before using team word-webbing in teaching reading comprehension is applied in the class.

2. Post-Test

In this post-test the students given task by using team word-webbing during 45 minutes after the last meeting for giving treatment on September 10, 2017. As like pre-test, post-test also contained of 20 items of multiple choices questions. The score per item was 5.0 for correct answer. From the score of this test, the researcher is intended to find out the effectiveness of using team word-webbing technique in teaching reading comprehension. The result of the scoring then is compared with pre-test. In this case, the researcher knows how far is the effectiveness of using team word-webbing technique in teaching reading comprehension.

Table 3.3The Scores' Criteria

Grade	Interval Class	Criteria
A ⁺	90 – 100	Excellent
A	80 – 89	Very Good
B	70 – 79	Good
C	50 – 69	Fair
D	0 – 49	Poor

The scores' criteria above shows that A⁺ (90-100) means excellent score, A (80-89) means very good score, B (70-79) means good score, C (50-

69) means fair score, and D (0-49) means poor score. So, it help and make easy to the researcher classified the students' score based on the score's criteria.

D. Validity and Reliability

1. Validity

a. Content Validity

According to Hughes (2003: 11) a test is said to have content validity if its content constitutes a representative sample of language skill, stucture. In order to judge whether or not the test has content validity, we need a spesification of the skills or structure being tested. A comparison of test spesifiacton and test content is basis for judgment for content validity. The researcher made this test based on the course objective in the syllabus of tenth grade of MA Terpadu AL-Anwar Trenggalek. Therefore, this is valid in term of content validity.

StandarKompetensi	Kompetensi Dasar
Membaca 1 Memahami makna teks fungsional pendek dan esei sederhana berbentuk <i>narrative</i> , <i>descriptive</i> dan <i>news item</i> dalam konteks kehidupan sehari-hari dan untuk mengakses ilmu pengetahuan	1.1 Merespon makna dalam teks fungsional pendek (misalnya pengumuman, iklan, undangan dll.) resmi dan tak resmi secara akurat, lancar dan berterima yang menggunakan ragam bahasa tulis dalam konteks kehidupan sehari-hari. 1.2 Merespon makna dan langkah-langkah retorika dalam esei sederhana secara akurat, lancar dan berterima dalam konteks kehidupan sehari-hari dan untuk mengakses ilmu pengetahuan

	dalam teks berbentuk narrative, descriptive, dan news item
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b. Construct Validity

According to Freed and John (1996: 66-67) construct validity is probably the most difficult to understand and the least use for classroom-based evaluation although it can play an important role in judging the quality of standardized. Based on the theory above, in the test the researcher asked the students to answer the multiple choices based on narrative text to measure the student's comprehension in reading and this is fulfill the construct of reading test therefore, valid in term of construct validity.

c. Face validity

Face validity, concerns with the lay out of the test. According to Ary (2010:228), he stated that it is a term sometimes used in connection with a test's content. Face validity refers to the extent to which examiners believe the instrument is measuring what it is supposed to measure. It is not a technical form of validity. The researcher analyzed the students' level by consulting to the expert. The experts here were the advisor, the English teacher, and the material books of tenth grade level. The researcher also shows the test to the English teacher to get feedback. So, this test is valid in term of face validity.

The criteria of validity of the instrument can be divided into 5 classes as follows (Ridwan, 2004:110):

1. If the *item-total correlation* score 0.00 – 0.20: less valid
2. If the *item-total correlation* score 0.21 – 0.40: rather valid
3. If the *item-total correlation* score 0.41 – 0.60: enough valid
4. If the *item-total correlation* score 0.61 - 0.80: valid
5. If the *item-total correlation* score 0.81 – 1.00: very valid

In this test the researcher, give the multiple-choice test to measure students' ability in reading comprehension. The researcher made this test based on the course objectives in the syllabus of the first grade MA Terpadu Al-anwar Trenggalek. Therefore, this test is valid in term of content validity. The content validity in this research can be showed as below:

Table 3.4 Result of Content Validity

No	Competence	Test Item	Percentage
1	Students are able to do multiple choice test of news item texts	20	5%

2. Reliability

The reliability of the test is its consistency (Horizon, 1983: 10). Thus, reliability is a measure of accuracy, consistency, dependability or fairness of scores resulting from administration or particular examination. Reliability is necessary characteristic of any good test: for it to be valid all, a test must first be reliable as a measuring instrument (Heaton, 1989: 162).

Reliability is concerned with the effect of such random errors of measurement on the consistency of scores (Ary, 2002: 250).

Actually, the ideal test should be both reliable and valid. In this research, the researcher also used SPSS 16.0 for window to know the reliability of test instruments.

The criteria of reliability instrument can be divided into 5 classes as follows (Ridwan : 2004: 118), those are:

1. If the *alpha cronbach* score 0.00 – 0.20: less reliable
2. If the *alpha cronbach* score 0.21 – 0.40: rather reliable
3. If the *alpha cronbach* score 0.41 – 0.60: enough reliable
4. If the *alpha cronbach* score 0.61 - 0.80: reliable
5. If the *alpha cronbach* score 0.81 – 1.00: very reliable

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

Table 3.5 Result of reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.628	20

To know the items is reliable or not it can be seen from Alpha Cronbach's column. The Alpha Cronbach's score = 0,628 means that it is reliable.

E. Normality and Homogeneity Testing

1. Normality Testing

Normality testing is conducted to know whether the gotten data is normal or not. According to Usman and Akbar (2008: 140) stated that normality testing is useful to determine whether the data which have been collected have normal distribution or be taken from normal population. In this research, the computation of normality testing in this research using SPSS 16.0 that is non-parametric statistic One-Sample Kolmogorov-Smirnov test because the research without determine the specific qualifications about the population parameter which be a sample. The value of significance (α) = 0.05. Testing of data normality is conducted by the rules as follow:

- a. If the value of significance > 0.05 , so the distribution data is normal.
- b. If the value of significance < 0.05 , so the distribution data is not normal.

Table 3.6 Normality Testing

One-Sample Kolmogorov-Smirnov Test				
		Pretest	Posttest	Unstandardized Residual
N		37	37	37
Normal Parameters ^a	Mean	61.76	83.65	.0000000
	Std. Deviation	10.153	6.836	8.81929753
Most Extreme Differences	Absolute	.136	.151	.134
	Positive	.136	.151	.134
	Negative	-.123	-.146	-.105

Kolmogorov-Smirnov Z	.829	.921	.814
Asymp. Sig. (2-tailed)	.498	.365	.522
a. Test distribution is Normal.			

Based on the table above is known that the significance value from pre-test is 0.829 and from the post test is 0.921. Both value from pre-test and post-test are bigger than 0.05. The sig/p value on pre-test is 0.829 and it is lower 0.05 ($0.829 > 0.05$) means that the data is in normal distribution. Then, for post-test score the value of sig/p is 0.921 and that is bigger than 0.05 ($0.921 > 0.05$) means that the data is in normal distribution. It also means that H_0 is accepted and H_a is rejected. So, it can be interpreted that both of data (pre-test and post-test score) are in normal distribution.

2. Homogeneity Testing

Homogeneity test is used to compare variance in a group of three categories data or more and its categories can be compared fairly if the categories are homogeneity (Soegeng, 2006: 198). The computation of homogeneity testing using SPSS Statistics 16 is One-Sample Kolmogorov-Smirnov test by the value of significance (α) = 0.050. Homogeneity testing is intended to make sure that the collected manipulation data in analysis is truly taken from population which is too different each other. Especially in a correlative study which is predictive, the model which is used must be appropriate with the composition and its distribution. The step

before doing homogeneity testing the researcher decides hypothesis in this homogeneity as follow:

H_0 : 1 variance (Experimental group) are same.

H_a : 1 variance (Experimental group) are different.

There is also certainty in taking decision of homogeneity testing, as follow:

The value of significance > 0.050 , so H_0 is accepted means that the data of sample has same variance.

Table 3,7 Homogeneity Testing

Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
.626	4	30	.648

Based on the table above is known that the sig/p value is 0.648 higher than 0.05 means H_0 is accepted and H_a is rejected. So, it can be interpreted that the data is homogeny.

F. Data Collection

Data collection is all of process to collecting data in the research (Fraenkel and Wallen, 2009:293). Data Collection is done by observing a situation, setting or interaction using the constructed instrument (Muijs, 2004: 22). The data of this research were collected by administering reading comprehension test by answering some questions based on the text that they read previously. It was done twice : pre-test and post-test. Test is generally

prepared, administered, and scored by one teacher (Harris: 1969). To know more the details of the test accomplished, the test is done through two steps, are:

3. Pre-Test

A pre-test provides a measure on some attribute or characteristic that you assess for participant in an experimental before they receive treatment (Creswell: 2003). This test can be called as the pre-test before the treatment of this research. The pretest is aimed is to know the students' reading comprehension before the treatment carried out. In this pre-test, students were given task during 45 minutes on September 3, 2017. In the testing process, the students have to answer the pre-test. There were 20 items of multiple choices questions. The score per item was 5.0 for correct answer. Students would get 100 point if they could answer correctly to all of the question. This result of the test became the evaluation before using team word-webbing in teaching reading comprehension is applied in the class.

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intended to find out the effectiveness of using team word-webbing technique in teaching reading comprehension. The result of the scoring then is compared with pre-test. In this case, the researcher knows how far is the effectiveness of using team word-webbing technique in teaching reading comprehension.

G. Treatment

After conducting pretest, the researcher gave the treatment as much as three times to the students by using team word-webbing technique in teaching reading comprehension. In teaching reading comprehension by using team word-webbing technique are providing a topic, forming groups, providing text and students do prediction about the text, encouraging students to discuss in group, reporting group discussion result to the other group, explaining the materials that was learnt, and answering questions which was prepared. For the 45 minutes after pre test on September 3, 2017 for giving treatment to the students. The next treatment given the third meeting during 45 minutes on September 10, 2018.

H. Analyzing Data

Analyzing data is a process of analyzing the acquired from the result of the research. The data which is needed in this research is students' comprehending about the text of the tenth grade students of MA Terpadu Al-Anwar Trenggalek before and after taught by using team word-

webbing technique. To analyze the data, the writer will used statistically calculation of the test to determine the final calculation which it will be done to measure the last score of the research test.

Data analysis is a time - consuming and difficult process, because typically the researcher faces massive amounts of field notes, interview transcripts, reflections, and information from documents to examine and interpret (Ary , 2010: 465). The data obtained from research result is the results of student's test that were analyzed quantitatively. Quantitative analysis was done using statistics which is called statistical analysis or inferential statistics. The quantitative data of this research in analyzed using statistical computation. This technique was used to find the significant difference on the students' reading comprehension after being taught by using team word-webbingtechnique.

The researcher used T- test according to (Ary, 2010: 117) with the following formulation:

$$t = \frac{MD}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N(N-1)}}$$

Where:

t : the value of T_{count}

MD : average difference

$\sum D^2$: different score squared then summed

$(\sum D)^2$: different score summed then squared

N : number of samples

I. Hypothesis Testing

The last step was examining the hypothesis. The hypothesis of this study was as follow:

1. If T-Test score is bigger than T-table, the alternative hypothesis (H_a) is accepted. It means that there is different score to the second grade before using team word-webbing technique and after using team word-webbing technique. The difference is significant.
2. If T-Test score is smaller than T-table, the null hypothesis (H_o) is rejected. It means that there is no different score to the second grade before using team word-webbing technique and after using team word-webbing technique. The difference is not significant.