

III. RESEARCH METHODOLOGY

3.1 Research Design

This research was intended to find out whether STAD technique can be used to improve students' speaking ability significantly. A quantitative design was employed and the researcher used *one-group pretest-posttest* design. In this research the students were given pre-test before treatment, and after four times treatments the students were given post-test. The pre-test was used to find out the students preliminary ability and the post-test was used to look how far the increase is after the treatments. The design can be presented as follows:

T1 X T2

Note:

T1 = Pré-test

X = Treatment

T2 = Post test

(Setiyadi, 2006:131)

3.2 Subject

This quantitative research was conducted at the first grade of SMK Yadika Natar, Lampung Selatan. There were six classes of grade IX students in the year

2013/2014. One class has been chosen to conduct the research which was class IX C there was consisted of 24 students. The sample was chosen by using simple probability sampling through lottery drawing. Therefore from the six classes, each class has the same opportunity to be chosen as a subject.

3.3 Data

The research aimed at gaining the data that is the students' speaking performance score before the treatment (pretest) and after treatment (posttest) is performing in terms of interpersonal dialogue focuses on five aspects of speaking namely fluency, accuracy (pronunciation and grammar), comprehensibility based on rating scale by Harris (1978: 84). The score was ranged from 20-100.

3.4 Variables

The research consists of the following variables:

1. Students' speaking ability as dependent variable (Y). It means that the performance of students in speaking depends on their ability in using aspects of speaking namely fluency, accuracy (pronunciation and grammar), and comprehensibility.
2. STAD (Student Teams Achievement Divisions) as independent variable(X). It means that STAD do not depend on anything, but it is to motivate the subjects learn.

3.5 Steps of Collecting Data

In order to know the ability of the students in speaking and the effectiveness of STAD in developing student performance in speaking, the researcher conducted pre and post-test to collect the data.

In order to collect the data, the researcher followed the following steps;

1. *Selecting speaking materials*

In selecting the speaking material, the researcher used the syllabus of the first year of SMK student based on school based curriculum or KTSP (an English operational curriculum which is arranged and applied by each education unit) which the newest curriculum used by the School.

The topics chosen are Invitation, Meeting, and Parting.

2. *Determining instrument of the research*

The instrument in this research was *speaking test*. The writer conducted the speaking test for the pretest and posttest, these tests aimed at gaining the data that is the students' speaking performance score before the treatment and after the treatment in performing a speaking before and after the treatment concern on aspects of speaking namely fluency, accuracy (pronunciation and grammar), and comprehensibility.

3. *Determining subject*

The population of this research was the first year of the SMK YADIKA NATAR, Lampung Selatan, consists of six classes, and one class was taken as the subject of this research. In determining the sample class, the researcher used simple random probability sampling. The random

sampling technique is lottery. So that those all classes of the first year class get the same chance to be the sample.

4. *Conducting pretest*

Pretest was given before the researcher applied the treatment (teaching speaking through STAD). The test was speaking test in the forms of interpersonal dialogue. The material tested was related to the School Based Curriculum or KTSP which was suitable with their level. Pretest was given to know how far the competence of the students in speaking skill before the treatment. The test was held for 90 minutes. The teacher provided the materials, and made group of two. The students were, then, called to perform their interpersonal dialogue in front of the class. In performing the dialogue the students were asked to speak clearly since the students' voice would be recorded. The researcher himself and another English teacher judged the students' performance.

5. *Giving treatment (STAD) technique*

The researcher presented the material for treatment through STAD Technique. There were four times treatments in this research. Each treatment was held for 90 minutes. In selecting the speaking material the researcher used the syllabus of the first year of SMK student based on School Based Curriculum or KTSP (an English operational curriculum which is arranged and applied by each education unit). And the procedure of teaching speaking through STAD technique adapted from three main steps of Arends (1997: 122) they are Pre-activities, While-activities, and Post-activities.

6. *Conducting posttest*

The researcher administered posttest after treatment, which last 90 minutes. It aimed to know the progress of the students' speaking ability after being given the treatment using STAD Technique. The scoring system based on the rating scale by Harris.

In conducting the posttest the researcher provided some topics and let them make a short dialogue of 2-3 students based on the topic provided. The test was done orally and directly, the teacher calls each pair of students one by one to come in front of the class to perform their dialogue. The researcher asked the students to speak clearly since the students' voice would be recorded during the test. The material for pretest and posttest was taken from the students' handbook. The form of the test was subjective test since there was no exact answer.

7. *Analyzing, interpreting, and concluding the data gained*

After collecting the data referring the rating scale namely fluency, accuracy, (pronunciation and grammar) and comprehensibility, than, analyzing, interpreting, and concluding the data gained were done. First, the data, in form of speaking score, gained from pretest and posttest were tabulated and calculated inter-rater reliability. Then, calculate minimal score, maximal score, and mean of the pretest and the posttest and its standard deviation. Repeated Measures T-Test or paired sample T-test was used to draw the conclusion. The comparison of two means counted using Repeated Measures T-Test will tell us whether students' speaking ability can improve significantly. The data were computed through SPSS 13.0.

3.6 Instrument of the Research

The instrument in this research was *speaking test*. The writer conducted speaking test for the pretest and posttest, these tests aimed at gaining the data that was the students' speaking ability score before the treatment and after the treatment in performing a short dialogue in forms of interpersonal dialogue before and after the treatment concern on five aspects of speaking namely pronunciation, vocabulary, fluency, comprehension and grammar.

In achieving the reliability of pretest and posttest of speaking, *inter rater reliability* was used in this study. The first rater was the researcher himself and the second rather was the English class teacher. Both of them discussed and put mind of the speaking criteria in order to obtain the reliable result of the test.

Extend validity of the pretest and posttest in this research related to the face and the construct validity. The face validity or superficial inspection of the speaking test had been previously examined by both advisors and colleagues, until the test which is in form of instruction looked right and understandable to other.

Construct validity, in this research the writer focused on speaking ability in forms of interpersonal dialogue. The topics chosen were *accepting and refusing an invitation and meeting and parting*. Thos topics were the representative of speaking material of School Based Curriculum or KTSP as a matter of tailoring the lesson to students' need.

3.6.1 Validity of the Test

A test can be considered valid if the test measure the object to be measured and suitable with the criteria (Hatch and Farhady, 1982: 250). According to the Hatch and Farhady (1982: 281) there are two basic types of validity; content validity and construct validity.

1. Content Validity

Content validity was concerned with whether the test is sufficiently representative and comprehensive for the test. In the content validity, the material was given suitable with the curriculum. Content validity is the extent to which a test measures a representative sample of the subject matter content, the focus of content validity is adequacy of the sample and simply on the appearance of the test (Hatch and Farhady, 1982: 251).

2. Construct Validity

Construct Validity was concerned with whether the test is actually in line with the theory of what it means to know the language that was being measured, it would be examined whether the test question actually reflect what it means to know a language. In this research the researcher focused on speaking ability in forms of interpersonal dialogue with the topics; Invitation, Meeting, and Parting based on School based Curriculum or KTSP.

3.6.2 Reliability of the Test

In measuring the reliability of this test, the researcher used the formula of Shohamy (1985:70) because in measuring the reliability of speaking test inter-rater reliability is the most appropriate way. The researchers choose this formula

because Shohamy provided the inter-rater reliability while Hatch and Farhady did not. Reliability refers to extend to which the test is consistent in its score and gives us an indication of how accurate the test score are (Shohamy, 1985:70). In achieving the reliability of the pretest and posttest of speaking, *inter-rater reliability* was used in this study. The first rater was the researcher himself and the second rater was the English teacher. All of them discussed and put mind of the speaking criteria in order to obtain the reliable result of the test.

The Statistical Formula for Counting the Reliability Is As Follow:

$$R = 1 - \frac{6.(d^2)}{N.(n^2 - 1)}$$

Notes:

R = Reliability

N = number of students

d = the different of rank correlation

1-6 = constant number

(Shohamy, 1985)

The Standard of Reliability

A very low reliability	ranges from 0.00 to 0.19
A low reliability	ranges from 0.20 to 0.39
An average reliability	ranges from 0.40 to 0.59
A high reliability	ranges from 0.60 to 0.79
A very high reliability	ranges from 0.80 to 0.100

Slameto (1988:147) in Susan (2001: 10)

3.6.3 Criteria of Scoring the Students' Speaking Ability

The consideration of criteria for scoring students' speaking ability based on the oral rating sheet from Harris (1974: 48) were based on the oral rating from Harris there were five aspect to be tested namely pronunciation, vocabulary, fluency, comprehension, and grammar and these aspect could be improved by the students through steps in implementing the STAD Technique task.

First, pronunciation was implemented by listening to the teacher first when the teacher told the students a short dialogue about the topic and then in their group they practiced the dialogue and gave response to reply their friend, if they did not know how to pronounce a word they asked their friend or their teacher and there was a peer correction in this case.

Second, vocabulary, the teacher gave some new vocabularies and the equal meaning related to the topic. The teacher asked the students to find out the synonym or the antonym of some vocabularies that is considered difficult to be understood in the dialogue. When the teacher gave the equal meaning of the dialogue it means that the teacher used different vocabularies from the dialogue, so the students can acquire many new vocabularies and their vocabulary would increase.

Third, fluency, there were more chance for students to practice their speaking because the students discussed the topic in group. So it would practice and develop their fluency.

Fourth, comprehension, since the teacher explained the topic clearly by using expression and asked the students to practice in group so it could make the students more and easily comprehend about the topic, and in this case the teacher acted as advisor and the students were not afraid and shy to ask the teacher or their friends if there was difficulty related to the topic. So it would increase their comprehension about the topic.

Fifth, grammar, since they studied in learning group and cooperative situation there was a peer correction, the smarter students would help their friend in grammar and discussed in their group about some mistakes or in grammatical sentences. If it was difficult enough they asked the teacher to help them. So in this technique their grammar would be better than before.

In evaluating the students' speaking scores, the researcher and another rater, that was the class teacher, listen to the students' record and use the oral English. The researcher recorded the students' utterances since it could help the raters to evaluate more objectively. Based on the oral rating sheet from Harris (1974: 84), there were five aspects to be tested namely, pronunciation, vocabulary, fluency, comprehension, and grammar (Appendix 3).

3.7 Data Analysis

To analyze the data, the students' score in the pretest and posttest the writer computed them by using the formula as follows:

$$M = \frac{\sum x}{N}$$

Notes:

M = Mean (the average score)

$\sum x$ = Students score
 N = Total number of students

(Arikunto, 1997: 68)

Then the mean of pretest was compared to the mean of posttest to see whether STAD Technique had a positive effect toward students speaking ability or not.

3.7.1 Data treatment

According to Setiyadi (2006:168-169), using T-Test for hypothesis testing has 3 basic assumptions, namely:

1. The data is interval or ratio
2. The data is taken from random sample in population
3. The data is distributed normally

Therefore, the writer used the following procedures:

3.7.2 Random test

This was to make sure that the data is random. The writer used SPSS version 13 to help him. The writer used mean as the cut point. The hypothesis is formulated as follows:

Ho: the data is random

H 1: the data is not random

In this script the criterion for the hypothesis is that:

H is accepted if $sign > @$. In this case, the writer uses the level of significance 0.05. If $p > 0.05$ in all test (pretest and posttest). It proves that the H0 was accepted and all the data were random.

3.7.3 Normality test

The researcher used normality test to know whether the data is distributed normally or not. The hypothesis is formulated as follows:

Ho: The data is distributed normally

H1: the data is not distributed normally

In this script the criterion for the hypothesis is that: H is accepted if $\text{sig} > \alpha$ in this case. The researcher uses the level of significance 0.05. If $p > 0.05$ in all test (pretest and posttest). It proves that the Ho was accepted and all the data were distributed normally.

3.8 Hypothesis Testing

The hypothesis testing was used to prove whether the hypothesis proposed in this research is accepted or not. The data were statistically analyzed using statistically repeated measures t-test. To check whether the value is statistically significant to support the writer's hypothesis or not the t-distributor table is used which include the list of critical t-value that should be reached at certain degree of freedom and significant level. In which t-value will support the writer's hypothesis if the t-value reached is higher or the same to the critical value stated in the table. The hypothesis was analyzed by using statistical computerization i.e repeated measures t-test of SPSS version 13.0 in which the significance was determined by $p, 0.05$. In other words, H was approved if $\text{sig} < p$.