

III. RESEARCH METHOD

This chapter discusses the methods used in this study. They are: (1) Research design, (2) population and sample, (3) Instrument of the research, (4) Research procedure, (5) Validity of the research, (6) Reliability of the research, (7) Scoring system, (8) Data analysis, and (9) Hypothesis testing.

3.1 Research Design

The design of this research was a quantitative one. Hatch and Farhady (1982: 22) stated that quantitative research is a kind of research in which the data tend to use statistics as a measurement in deciding the conclusion. The research was intended to find out whether picture series were effective to be used in teaching analytical exposition text.

The variables were independent variable and dependent variable. The independent variable in this research was the picture series while the dependent variable in this research was the students' writing in form of analytical exposition text.

This research used *one group pre-test post-test design*. The teacher gave the pre-test before the treatment and the post test after the treatment.

The design can be presented as follows:

T1 X T2

(Setiyadi, 2006: 132)

Where:

T1 = Pre-test, which was administered before the students received the
treatment

X = Treatment, that was, teaching writing by using picture series

T2 = Post-test, which was administered after the students receive the
treatment.

3.2 Population and Sample

The population of this research was the sophomore of SMA Muhammadiyah 2 Bandar Lampung. One class participated in this research and it was XI IPA 1. It consisted of 34 students.

In selecting representative students from the population for the research, the writer took sampling technique that was suggested by Gay (1987: 104). He points out that random sampling is the process of selecting a sample in such a way that all individuals in the defined population have an equal and independent chance of being selected for sample. In other words, every student has the same probability of being selected and selection of one individual is no way effects selection of another individual. To do random sampling, the writer did what Gay suggested:

In general, random sampling involves defining the population, identifying each member of the population, and selecting individuals for the sample on completely chance basis. One way to do this is to write each individual's name on separate slip of paper, place all slips from the container until the desired number of individuals is selected (Gay, 1987).

3.3 Instruments of The Research

The instrument of this research was writing test. Writing test was used to gain the data regarding the effectiveness of picture series. It required the students to express their own idea in the written form. One material in every meeting was given to students to be developed. Later, in the treatment, a picture series was given to help students develop their writing.

3.4 Research Procedures

After gaining the scores from pre-test, the researcher gave the treatment by applying picture series in the teaching learning process. Here are the procedures of this research:

1. Pointing out the population and sample

The sample was chosen by simple random technique. It was because all students had the same chance. The researcher took one class of the second grade of SMA Muhammadiyah 2 Bandar Lampung and it was XI IPA 1.

2. Determining the research instrument

The instrument in this research was writing test. In the writing test, the participants was asked to hand-write an analytical exposition text based on the topic of the given picture series.

3. Administering the pre-test

Pre-test was aimed to identify the ability of the students before getting the treatment.

4. Conducting the treatment

After giving the pre-test to the students, the researcher taught how to write analytical exposition text by using picture series.

5. Administering the post-test

Post test was aimed to evaluate the students' writing ability after getting the treatment.

6. Analyzing the data

The students' scores of the writing test both from the pre-test and the post-test were analyzed then the writer discussed and interpreted the result.

3.5 Validity of the Research

This research uses the content and the construct validity

1. Content Validity

This content validity was used to find out whether or not the content of the test was sufficiently representative and comprehensive for the test to be valid measure of what it was supposed to be measure. Content validity addressed the match between test and the content or subject area that was intended to assess.

The content validity was evaluated by curriculum. Curricular Validity is the extent to which the content of the test matches the objectives of a specific curriculum as it is formally described. The researcher judged whether the content of the test was

parallel to the curriculum objectives and whether the test and curricular emphases are in proper balance. Education in practice is a rigid hierarchy of authority in which objectives determine curriculum and curriculum determines test content (Bachelard, 1984: 30). The content validity in this research is based on current curriculum of senior high school (KTSP).

To guide the analysis of the products or processes of students' efforts the researcher used a scoring rubric. Here are three ways in creating a rubric:

1. Adapt an already-existing rubric
2. Analytic Method
3. Expert-Systems Method

In this study the researcher adapted an already-existing rubric. The rubric also has been used widely by the English teacher when grading international students' writing output. This single argumentative essay rubric consists of several degrees in order to get a good quality of writing. They are focus of statement, supporting sentences to strengthen the writer's position, transitions that play role in making the paragraph well organized, paragraph closing that restate the writer's position and the last is correct grammar and spelling.

2. Construct Validity

The Construct validity measured whether the construction had already referred to the theory, meaning that the test construction had already in line with the objective of the learning (Hatch and Farhady, 1982: 251). There were two parts to the evaluation of the construct validity of a test. First and most important, the theory underlying the construct to be measured must be considered. Second, the

adequacy of the test in measuring the construct is evaluated (Mason & Bramble, 1989).

The persuasive essay rubric presented as mentioned before consisted of several degrees in order to get a good quality of writing. They were focus of statement, supporting sentences to strengthen the writer's position, transitions that play role in making the paragraph well organized, paragraph closing that restate the writer's position and the last is correct grammar and spelling. Those elements were taken as reflections of good persuasive essay scoring rubrics. Here is the explanation:

1. Focus of the statements

Writer makes sure that the entire paragraph focus on one single *idea*.

Focus of the statement helps the writer avoid sentence which are extraneous stray from the paragraphs main idea and can destroy its unity

Butler (1978: 37) states that topic sentence should provide the reader with the complete idea of what a paragraph will say.

2. Support for position

According to Lorch (1984:22), supporting sentences provide explanation and evidence for the topic sentences. Supporting sentences give more information about the main idea so that the message and the content of a paragraph can be comprehended by the readers. In analytical exposition text, the supporting sentences are the arguments that strengthen the writer's position. Argumentative persuasive essay can be reached through logical reasoning.

3. Transition

Writer should use transitions or linking expression. Transitions are words or phrase that specify a relationship between sentences and between paragraphs. One way to achieve coherence is through the use of linking expression. Oshima and Hogue (1997: 100) stated that linking expressions are words and phrases that connect the idea in one sentence with the idea in another sentence.

4. Closing Paragraph

Oshima and Hogue (1997: 80) state that the concluding sentence is like the topic sentence because both are general statements. In closing the paragraph, the writer should make the conclusion strong and leave the reader solidly understanding about his/her position.

5. Grammar and spelling

Grammar is the way in which words are put together to form proper sentence while spelling is the forming of words with letters in an accepted order. Spelling is important for exactly the same reason that grammar and punctuation are important: poor spelling makes for poor communication. Academic writing requires a high degree of accuracy and it is reflected in the quality of the writing. According to Harris (1974: 68) in composition, it is the general term for matter of spelling, capitalization, hyphenation, abbreviation, and the like.

3.6 Reliability Of the Research

To which raters with different characteristics can make their agreement. In writing assessments that have high-stakes outcomes, essays are often scored by three trained raters, with the final score being an average of the two scores. Double-scoring result is a more reliable final score (Tashakkori and Teddlie (1998: 22). The inter rater in this research were two English teachers of SMA Muhammadiyah 2 Bandar Lampung and the researcher.

3.7 Scoring System

In gaining writing score this research used scoring rubrics (See appendix 4). Scoring rubrics are descriptive scoring schemes that are developed by teachers or other evaluators to guide the analysis of the products or processes of students' efforts (Brookhart, 1999). There were five components of text within the rubric. They were focus of statement, support for position, transition, closing paragraph, grammar and spelling. The final score of student's writing was the result of writing score that was divided by the total components then multiplied by 100. The formula is in the below and it was adapted from Arikunto (1989: 271):

$$S = \frac{R}{N} \times 100$$

Where:

S : The score of the students

R : Writing score

N : The total components

The scores gotten were then classified based on the standard performance put in the table below:

Table 3.1 Standard performance

Score	Criteria
80-100	Excellent
70-79	Good
60-69	Mediocre
0-59	Poor

3.8 Data Analysis

The data was analyzed with *Paired Sample t-test* by using statistical package for social science (SPSS). From the manually counted data and the computation, the researcher gained the difference of two sample scores, the mean difference, standard error, standard deviation, the degree of freedom and in the last, the researcher found and compared t-value and the t-table.

If the t-value was greater than t-table then alternative hypothesis was accepted and null hypothesis was rejected. Since the objective of the research was to find out what component of text which gained the highest improvement, the researcher then accumulated the score of each component from all raters and determined the average as well as the percentage.

3.9 Hypothesis Testing

Based on the theories and the assumptions, the hypothesis of this research was that using picture series was an effective strategy for teaching analytical exposition text because it helped students in developing their idea so that their writing ability was increased. There was also a component of analytical exposition that increased the most and it was “support for position”. The richer idea of students after being taught by using picture series was put within this component in form of better argument.

In gaining the t-observed, the researcher used this formula:

$$t \text{ (Observed)} = \frac{MD - 0}{S \overline{D}}$$

MD : The mean difference of students' score

$S \overline{D}$: The standard error of the difference.

Then the result of the t-observed or t-value was compared with the result of the t-table to determine whether the alternative hypothesis could be accepted or not.

The hypotheses were elucidated as follows:

H₀: There was no significant difference before and after being taught by using picture series.

H₁: There was a significant difference before and after being taught by using picture series.