**CHAPTER III RESEARCH METHOD**

* 1. **Research Models**

This research model is experiment. An experiment is a research situation in which at least one independent variable, called the experimental variable, is deliberately manipulated or varied by the researcher (Wiersma (1991: 99).

According to Sugiyono (2019: 111), the experimental research method is a research method conducted through experimentation, which is a quantitative method. It is used to determine the influence of independent variables (treatment) on dependent variables (results) under controlled conditions.

## Research Location and Time

This research was conducted at SMPN2 Aek Ledong, located at Dusun III Aek Bange, Kecamatan Aek Ledong, Kabupaten Asahan, North Sumatra Province. The research took place from January to March 2024 during the odd semester of the 2023/2024 academic year. The specific schedule could see at the Table 5below:

30

**Tabel 3.1 Research Schedule**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No | Activity | Time | | | | | | | | | | | | | | | | | | | |
| Agustus 2023 | | | | November 2023 | | | | Desember 2023 | | | | January 2024 | | | | February 2024 | | | |
| I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV |
| 1 | Find title of research |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Proposal mentoring |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | Proposal Seminar |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | Research preparation, Study plan ,  and data collection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | Research analysis data |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | Research mentoring |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | Result Seminar |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Population and Sample

* + 1. Population of this research is SMPN 2 Aek Ledong 8th grade Students
    2. Sample of this research is the class between 8-1 and 8-2 that have lower listening score after pre-test

**Table 3.2: Sampel of this Research**

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **Pretest** | **Treatment** | **Posttest** |
| Experimental | O1 | By Modified GWG Method | O2 |
| Control | O3 | By using conventional GWG method | O4 |

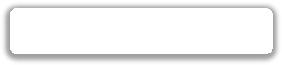
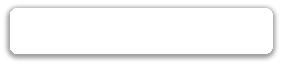
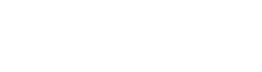
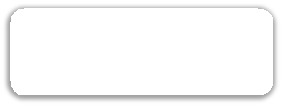
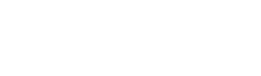
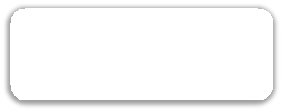
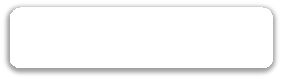
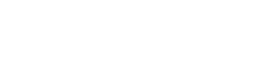
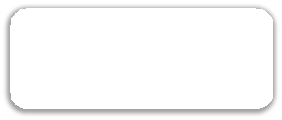
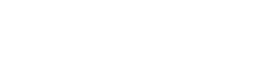
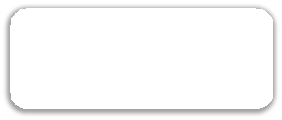
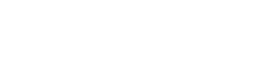
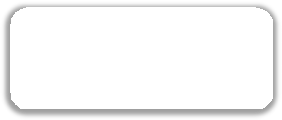
According to Suharsimi Arikunto the sample is part or representative of the research. The research sample is part of the population taken as a source of data and can represent the entire population (Arikunto, 2013:273).

**Table 3.3: The Sample of the Study**

|  |  |  |
| --- | --- | --- |
| **No** | **Class** | **Sample** |
| 1 | VIII-1 | 21 |
| 2 | VIII-2 | 20 |
| Total Number of Students | | 41 |

## Research Design

The design of this research as follows:



**Pre Phase**

**Pre-test**

**Treatment**

**(Lower score)**

**Control**

**Higher Score**

**Learning Design**

**Planning, Action,**

**observation, evaluation**

**Do as Common**

**Final Test**

**Result**

**Figure 3.1**

**Flowchart of Learning Activities With GWG Method**

According to the step in this research, there are four cycle that researcher must to

do

1. Pre-Phase

To conduct the experiment research, the researcher first initiated the pre-phase of learning. This served as an initial survey to identify the issues within the teaching process, forming the basis for designing the implementation procedure for improving the teaching in the next meet.

During this phase, the researcher will conduct a test on students (Pre- test score). The students who will take the test are those in classes 8-1 and 8-

2. The class between 8-1 and 8-2 that have lower listening score after pre-test will be the experiment class..

1. Learning Design

Here, the researcher, collaborator, and peers engaged in discussions to identify problems. The step that the researcher did was planning, action, observation, and evaluation, encountered during teaching and find solutions. Learning design using the GWG method was implemented to students for 4 week.

1. Final test

After conducting learning using the GWG method, the next step is to carry out a preliminary test. This test is conducted to see the progress of the learning that has been done and to see if learning using the GWG method is better compared to the usual learning methods, especially in students' listening abilities.

* 1. **Research Instrument**

The instrument that used in this research as follows:

* + 1. Interview Questionnaires: Questionnaires were prepared for conducting interviews with relevant individuals, such as teachers, school staff, or experts.
    2. Student Assessment test: A test was designed to gather feedback and assessments from students participating in the study.
    3. Teacher Assessment Questionnaire: A questionnaire was intended to collect feedback and assessments from teachers involved in the research.
    4. Student Assessment Guidelines: Guidelines or rubrics were used for assessing and evaluating students' performance or progress.
    5. Teacher Assessment Guidelines: Guidelines or rubrics were used for assessing and evaluating the performance of teachers or instructors.
    6. Material Quality Questionnaire: A questionnaire was specifically focused on assessing the quality of educational materials used in the research.
    7. Language Quality Questionnaire: A questionnaire was dedicated to evaluating the quality of language used in the educational materials or presentations.
    8. Method Quality Questionnaire: A questionnaire was designed to assess the quality of the teaching methods employed in the research.
    9. Smartphone Camera: A mobile phone camera was used for recording and capturing various activities or events during the research.

## Data Collection Techniques

The data collection techniques in this research were as follows:

1. **Observation** This activity was conducted by the researcher to assess whether students' English speaking abilities were categorized as good or not. It was also aimed to evaluate whether the 'time token' method applied at SMPN 2 AEK Ledong was appropriate or not. (Observation sheets could be found in the appendix).
2. **The Interview Method:** Involved posing questions to teachers, such as inquiring about the efforts they had made so far to enhance students' English language proficiency, whether they had been using the GWG method for teaching language skills, whether the application of the GWG method by teachers had been effective, inquiring about students' progress in listening skills, and seeking the school's opinion regarding the utilization of this method in education.
3. **Student Assessment Rubric (Pre-test and Post-test):** This sheet contained assessments of students' English language listening abilities. The assessment criteria on this rubric can be found in the appendix.
4. **Teacher Assessment Rubric (Pre-test and Post-test):** This sheet pertained to the assessment of teachers regarding the suitability of the methods and steps in implementing the GWG teaching method. The assessment criteria on this rubric could be found in the appendix..

## Data Analysis Techniques

1. Analysis of Instrument
   1. Validity test

According to Arikunto (2013:211) stated validity is a measurement that indicates the level of validity instrument. In this reseach, the researcher used content validity. To test the content validity, the researcher used Pearson Moment Products with the formula adopted from Arikunto (2013) as followed:

𝒓𝒙𝒚

𝑵 ∑ 𝑿𝒀 − (∑ 𝑿)(∑ 𝒀)

√{𝑵 ∑ 𝑿𝟐 − (∑ 𝑿)𝟐}{𝑵 ∑ 𝒀𝟐 − (∑ 𝒀)𝟐}

Note:

rxy = The product of the total amount variable X and Y N = The number of data pairs X and Y

ΣX = The total of variable Y ΣY = The total of variable X

ΣX² = The squared total amount of variable X ΣY² = The squared total amount of variable Y

* 1. Reliability test

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 (Hatch and Farhady, 1982: 244). The concept of reliability comes from the ideas that no measurements is perfect even if we use the same scale, there will always be differences. Inter-rater reliability was applied in this study in order to ensure the reliability of the score and to avoid the subjectively of the researcher. To achieve the reliability in assessing

the students’ speaking performance, the researcher uses a speaking criteria based on Harris (1974), where the focus of speaking abilities assessed are; pronunciation, grammar, vocabulary, fluency, and comprehension. The second rater is the English teacher who has experience in assessing students’ speaking, with the aim of getting a consistent and fair assessment.

After finding the inter-rater coeficient, the researcher will then analyze the coeficient of reliability with the standard of reliability according to Slameto (1998: 147) in Hayanti (2010: 38) as follow:

A very low reliability (range from 0.00 – 0.19), A low reliability (range from 0.20 – 0.39), An average reliability (range from 0.40 – 0.59), A high reliability (range from 0.60 – 0.79), A very high reliability (range from 0.80 –0.100).

1. Classic Assumption Test

Prior to conducting the T-test, the data underwent normality and homogeneity tests. These tests were performed to determine whether the obtained data distribution was normal and homogeneous.

* 1. Normality test
  2. Homogeneity test

1. Quantitative Data, conducted to determine the success or failure of the actions taken in the research. This can be observed through the percentage of the success level achieved by the children. This classroom intervention is considered successful if at least 75% of the children demonstrate increased

responsibility through the implemented project method. The formula for quantitative data is as follows.

*P*  *F x*100%

*n*

Note:

P : Percentage figure

F : Number of students who have shown improvement n : Total number of children (Sugiono, 2008:127).

1. The Student passing score is considered successful if the total score show at least at 23 points or at 75% of student maximum score. This point reverse to the formula for quantitative data is as follows.

*P*  *F x*100%

*n*

Note: *P=* Percentage figure F =Students total score n = maksimum score

1. Qualitative Data, in this research, qualitative data describe the efforts made to enhance changes in children's abilities during the course of the learning process. The stages in qualitative data are as follows:
2. Analyzing the achievements obtained by the student in the Classroom Action Research (CAR), then categorizing them into verypoor, poor, good, verygoood and excellent classifications. This is done to understand

the children's habits related to Vocabulary ablities Skills (Wardhani, I.G.A.K, and Kuswaya, W, 2009:2.12).

1. The researcher used Statistical Package for the Social Science (SPSS) for analyzing the data. Alan Bryan and Duncan Cramer (2005:21) stated SPSS is a manipulating, analyzing, and presenting data program which used in the social and behavior science. After the data was collected from the pre-test and post-test, the researcher analyzed the data with the T-test formulation. The analysis of the data using the T-test formulation is in the following:

𝒎𝒂 − 𝒎𝒃

𝒕 = 𝒅𝒂𝟐 + 𝒅𝒃𝟐 𝟏 𝟏

(𝒏𝒂 + 𝒏𝒃 − 𝟐) (𝒏𝒂 + 𝒏𝒃)

t = Total

Ma = The mean of experiment group Mb = The mean of control group

da = The standart deviation of experiment group db = The standart deviation of control group

Na = The total number sample of experiment group Nb = The total number sample of control group

1. To answer the hypothesis of this research, which is related to the effectiveness of the teaching method used, the researcher uses the N-Gain formula to obtain accurate results. The formula for N-Gain itself is as follows:

N-Gain = 𝑝𝑜𝑠𝑡 𝑡𝑒𝑠𝑡−𝑝𝑟𝑒𝑡𝑒𝑠𝑡

𝐼𝑑𝑒𝑎𝑙 𝑣𝑎𝑙𝑢𝑒−𝑝𝑟𝑒𝑡𝑒𝑠𝑡

Note:

N-Gain = Value of gain-normality Post-test= sudent post-test score Pre-test= student pre-test score Ideal value = maksimum score

The results obtained from the test will be categorized based on the interpretation table of N-Gain effectiveness.

**Table 3.4 Status Category of N-Gain Effectivity**

|  |  |
| --- | --- |
| **Percentage (%)** | **Status** |
| < 40 | Not Effective |
| 40-55 | Less Effective |
| 56-75 | Effective enough |
| >75 | Effective |

Reference: Jariyah *et al* (2022:113)