**CHAPTER III METHODOLOGY**

### Research design

The type of research used in this research is research and development, or what is known as "research and development" (R & D). According to Sugiyono (2016: 30), research and development methods can be interpreted as a scientific way to research, design, produce, and test the validity of the products produced.

### Subject, Object and Research Time

The subjects in this research and development were students in grade X - 1, a total of 30 students at MAN 1 MANDAILING NATAL Aand research time Research and development will be carried out at MAN 1 MANDAILING NATAL.. The implementation of the research is from the beginning of February - April 2023.

### The Procedure Research Development

The steps in this study used 13 (thirteen) level 4 research and development steps proposed by Sugiyono (2016: 47), namely research and testing, to create products that do not yet exist. According to Sugiyono (2016: 48), these steps include: (1) potential and problems; (2) literature study and information gathering;

(3) product design; (4) design validation; (5) design revisions; (6) limited trials;

(7) design revisions; (8) product revision 1; (9) main field trials; (10) product

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revision 2; (11) operational field trials; (12) product revision 3; and (14) dissemination and implementation. Given the relatively short and limited research time, the research and development steps carried out in this study were limited to the eighth step, namely the limited trial stage, as shown in Figure 3.1 below:

Product Design

Literature Study and Information Gathering

potentials and problems

Design Revisions

Limited Trials

Design Validation

Design Revisions

### Figure 3.1. Research and Development Steps (Source: Sugiyono, 2016)

### Potentials and Problems

This research begins with a potential problem. According to Sugiyono (2016: 55), potential is everything that has the ability or capacity to be developed. While the problem, according to Sugiyono (2016: 79), is an area that is of concern to researchers, a condition that you want to improve, or a difficulty that you want to eliminate, the potentials and problems found atMAN 1 MANDAILING NATAL, were studied using the seven elements of the learning mix used as material for preparing strategic plans. Potentials can also be identified based on

strengths and opportunities, while the problems experienced by MAN 1 MANDAILING NATAL can be identified based on weaknesses and threats.

Based on the results of the analysis. These potentials and problems were identified based on the results of observations, interviews, questionnaires and documentation studies.

### Literature Study and Information Gathering

Following the identification of potentials and problems, the next step is to gather various related information that can be used as material for planning the development of a school teaching strategy plan that is expected to overcome these problems. A literature study was conducted to find theories about the strategy to be used. While the collection of information is done through internal and external school factors that have been identified based on the results of observations, questionnaires, interviews, and documentation studies.

### Product Design

The product design in this study was in the form of a draft strategic plan for school marketing at MAN 1 MANDAILING NATAL, which was compiled by researchers based on the results of a literature review and information gathering. Because the draft strategic plan has not yet been tested by experts, its flaws are unknown; however, expert testing will be required at a later stage.

Researchers tested the draft strategic plan that had been prepared with experts who mastered the fields of product development and making strategic plans.

### Design Validation

The strategic plan product design that has been developed is then assessed by the validator using an assessment sheet in the form of a questionnaire. The purpose of product design validation is to assess the feasibility of the developed strategic plan product. The validator, who is an expert in this study, can be seen in Table 3.1 below:

### Table 3.1: Product Design Validators

|  |  |  |
| --- | --- | --- |
| **No.** | **Name validators** | **Description** |
| 1 | Prof. Dr. Ahmad Laut Hasibuan, M.Pd | Lecturer in the Masters of English Education Study Program in Muslim Nusantara Al-Washliyah Medan  University |
| 2 | Sutikno. S.Pd, M.Pd, Ph.d | Lecturer in the Masters of English Education Study Program in Muslim Nusantara  Al-Washliyah Medan |

|  |  |  |
| --- | --- | --- |
|  |  | University |

The results of the assessment of all statements are measured with reference to the Likert scale. According to Wagiran (2013: 284), a Likert scale is a number of positive or negative statements regarding an attitude object. The main principle of the Likert scale is to determine the location of a person's position on a continuum of attitudes toward attitude objects ranging from very negative to very positive. The questionnaire compiled in this study contained 20 statements in which the validator was asked to provide a checklist (√) in the available rating scale column.

The validator's answer to each statement item is given a scale score of 1 to 5, namely: 5 (very valid), 4 (valid), 3 (quite valid), 2 (less valid), and 1 (very less valid). To find out the feasibility of a product, it can be done in two steps: by calculating the percentage score of the assessment results for each statement and by calculating the average score from the results of the expert or expert assessment. Each of these steps is calculated using the two formulas below, adapted from Ernawati and Sukardiyono (2017: 207).

### Design Revisions

Design revision is a step taken to correct weaknesses found based on the results of product design validation. In this study, suggestions and input provided by experts (validators) were used as material for product design revisions. The

product design in the form of a marketing mix strategy plan for increasing the quantity of students at MAN 1 MANDAILING NATAL, will be further developed according to suggestions and input from the validator for limited trials in the next step.

### Limited Trial

The initial product of the school marketing strategic plan (renstra) that has been made based on the results of expert validation and subsequent design revisions can be tested on a limited basis. Sugiyono (2016: 49) states that based on this limited trial, it will be possible to identify weaknesses or products that do not meet the established product specifications. The limited testing carried out in this study was carried out to find out the shape of the product, the work process, and the possibility of the subject's response being exposed to the product. To obtain the data, we used qualitative methods. Data from qualitative research were analyzed qualitatively (Sugiyono, 2016: 477–478).

### Revised Design

Design revision is a step taken to correct weaknesses found based on the results of activity learning. In this study, suggestions and input provided by students were used as material for product design revisions. The product design in the form of a marketing mix strategy plan for increasing the quantity of students atMAN 1 MANDAILING NATAL, will be further developed according to suggestions and input from students.

### Data Collection Instruments and Techniques

In research using the right development model, it is also necessary to determine appropriate and relevant data collection techniques. The data collection technique is a very appropriate step in conducting research because researchers use data collection techniques based on variables such as the following to collect accurate data, which is basically the most important thing from a research (Sugiyono, 51, 2015: 224).

1. Observation

Observation is a technique for collecting data that will later be used to explore and collect research. Observations were made by observing data sources, such as data collection in the form of information relating to English lessons at school.

1. Interview

Interviews are a data collection technique used by researchers during preliminary studies to learn more about more complete and in-depth respondents, and they can reveal problems that exist during learning. The interview was shown to the resource person, namely the English teacher. Researchers ask various questions regarding how to learn English.

1. Questionnaire

The questionnaire was used to find out and collect data about responses from the English material expert validation questionnaire and student response questionnaires.

1. Documentation

Documentation is a critical technique for capturing research in class and serving as authentic evidence of research so that the research can be trusted and was actually carried out by the researcher. Here the researcher uses the tools used for documentation, such as SLR cameras and mobile phone cameras, to record video and sound in research.

### Data Analysis

The data analysis used in this research and development is as follows:

1. Qualitative Data Analysis

The qualitative descriptive analysis technique is used to analyze qualitative data. This technique is used to process data from interviews, observations, and comments from validators and students. The aim is to classify information from qualitative data in the form of comments, suggestions, and responses. This analysis is used as a reference to improve or revise the development model for Reading Comprehension using the SQ4R Technique.

1. Quantitative Data Analysis

Quantitative data analysis was used to process assessment questionnaire data from validators and student responses. The following is an analysis of quantitative data for the development of Reading Comprehension using the SQ4R Technique.

* 1. Validity data analysis

to find out the effectiveness of developing Reading Comprehension using the SQ4R Technique. Development validation was carried out

by material expert validators and movement of expert validators using the questionnaires provided, and then the results of the validation were converted into intervals using a Likert scale (Sugiyono 2017).According to Sugiyono (2017) the Likert scale is used with a gradation from very positive to very negative, which is used with the following words:

* + 1. very good; good; not good; very bad.
    2. agree, agree, undecided, disagree, disagree, strongly disagree
    3. Always, often, sometimes, never
    4. Very positive, positive, negative, very negative

For quantitative analysis guidelines according to Sugiyono 2017, the answers are scored as follows:

### Table 3.2. Likert Scale

|  |  |  |
| --- | --- | --- |
| **No** | **Score** | **Description** |
| 1 | Score 4 | Very Good |
| 2 | Score 3 | Good |
| 3 | Score 2 | not good |
| 4 | Score 1 | very bad |

(adapted from Sugiyono, 2015: 141)

Obtaining data from validation results using a Likert scale is obtained by the following formula:

𝑃𝑆 = ∑ 𝑥

𝑆𝑀𝐼

× 100%

Information:

PS :Score Percentage

∑x : Total Score

SMI : Ideal Maximum Score

### Table 3.3. Likert Scale Interpretation Formulas

|  |  |  |
| --- | --- | --- |
| **Achievement Level** | **Qualification** | **Decision** |
| 80% - 100% | Very feasible | It is very feasible to use the learning model without  revision. |
| 60%–79% | Feasible | Feasible to use the revised  learning model |
| 40% - 59% | Less Eligible | Less suitable for learning  models with revisions |
| 20%–39% | Not Feasible | Not suitable for learning  models with revisions |

(Akbar 2014:81)

The development of Reading Comprehension using SQ4R Technique in learning English for grade X senior high schools can be

said to be effective and feasible if the validation results obtained by expert validators obtain a percentage of ≥ 61% through revision or without revision according to the strong to very strong criteria in the table above.

* 1. Student response

The development of Reading Comprehension using the SQ4R Technique is said to be effective if it gets a positive response from students; if it gets a less positive response from students, with many scoring below the criteria, then a student response questionnaire needs to be carried out to make improvements to the deficiencies found in the model's development. Student response data was converted into intervals using the Guttman scale. The Guttman scale is used with positive or negative gradations and the following words:

1. Yes/no
2. True/false
3. Good/bad

For quantitative analysis guidelines, answer scores should be as follows:

### Table 3.4 Guttman Scale

|  |  |  |
| --- | --- | --- |
| No | Score | Description |
| 1 | Score 1 | Yes, True, or Fine |
| 2 | Score 0 | No, wrong, or bad |

(adapted from Sugiyono, 2017)

Obtaining data from validation results using the Guttman scale is obtained by the following formula:

𝑃𝑆 = ∑ 𝑥

𝑆𝑀𝐼

× 100%

Information:

PS :Score Percentage

∑x : Total Score

SMI : Ideal Maximum Score

The formula for the interpretation of teacher and student response questionnaire scores with the Guttman scale according to Arikunto (2010) is written in the following table:

### Table 3.5 Guttman Scale Interpretation Formula

|  |  |  |
| --- | --- | --- |
| **Achievements** | **Categories** | **Description** |
| 81–100 | A | Very Positive |
| 61–80 | B | Positive |
| 41–60 | C | Less Positive |
| 21–40 | D | Not positive |
| <20 | E | Not Very Positive |

(Arikunto, 2010) The development ofReading Comprehension using SQ4R Techniquein teaching English education in grade X senior high schools can be said to have received a positive response from teachers and students if the results obtained were ≥ 61 and ≥ 81 through revision or without revision

according to very positive to very negative criteria.