

## CHAPTER III

### METHODOLOGY

In this chapter, the researcher would like to explain the methodology of this study as she has already mentioned it in the previous chapter, that is Research and Development (R&D). This chapter discusses the design of the study, the data gathering technique, the instrument, and the process of finishing the thesis.

#### 3.1 Research Design

The design of this study is Research and Development and it was chosen by the researcher and it is aimed to develop English instructional materials based on the K13 Curriculum for XI grade students of Industrial Electronic Engineering.

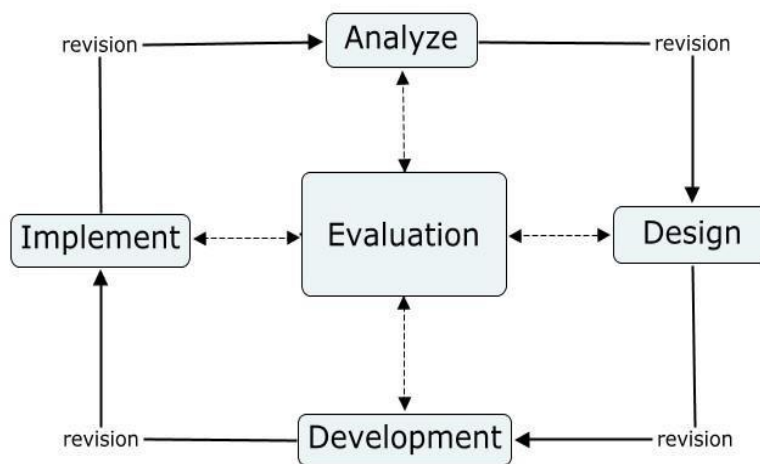
Kenton (2019) described that Research and Development concerned to the inquiring activities in education conducts to improve current products and procedures or to contribute to the development of new products and procedures.

Nana (2007) stated that research and development were to develop a new product or to repair the existing product according to the steps and process to make it better.

In developing English module for vocational school's students, the researcher does some steps in order to complete this product. The researcher attempts to use a model in developing the module which is adapted from the ADDIE model and Instructional Design.

In developing English module for students, the researcher needs to do many steps in order to complete the development of module. In the case of development model, the researcher tries to adopt a model in developing the

module. The adaptation model of research and developmental is from ADDIE model and Instructional Design. According to Forest (2014) ADDIE stand for Analyze, Design, Develop, Implement, and Evaluate and it existed since the early 1950s. The goal of ADDIE was to finish every step in the development of a certain product before delivering to the next. There were five steps in ADDIE model and they were analyze, design, development, implement, and evaluation.



### **ADDIE Model**

Based on Forest (2014) analyze step was the process of determining goals used tools kinds of test material, planning, and resources. Design step was determining all the goals, tools that will be used, kinds of test, material, planning, and resources. Development step were the researcher start the production and test the methodology which was being used in research. The implementation step was about how the product was used after being developed. The evaluation step was part of doing revision if it was needed based on the result of try out.

Based on Noviana (2016) study, there were two additional steps in ADDIE model which she adopted from Forest's model. The first additional step was expert validation which done after developing the modul and the next step was

final product after evaluation from the entire steps above. So, she conducted the developing modul by seven steps, those were: analyze, design, development, expert validation, implementation, evaluation, and final product. Analyze step were to get the information what the students' need by doing the interview with the students and expert. Design step was done by making a syllabus. Development step were the researcher making the module by guidelines from the draft. Validate step was given to teacher to checking the validity of the module. Implementation step was doing the tryout and questionnaire to students to get the feedback toward the modul. Evaluate step were the researcher did the evaluation and revision based on the result of implementation. The last was final product where the researcher was doing after the evaluation was done.

In this research, the researcher attempts to adopt the ADDIE model by Forest with some changings from Noviana's study, which is matching with the condition of the participants. Here is the step of developing module in this research:

1. Analyze
2. Design
3. Development
4. Expert validation
5. Implementation (Try Out)
6. Evaluation
7. Final product

## **3.2 Source of Data**

### **3.2.1 Participants**

The participants are from the English teacher and the students of Industrial Electronic Engineering at 11th grade of SMK Muhammadiyah 1 Gresik. There are 17 students who join the class. The researcher chooses this class because the researcher wants to know what they need in learning English related to the English material which is given by the English teacher for specific purpose aspect. The requirement for being expert validate is having a well experience in teaching learning. The researcher is also doing interview with the major teacher and the English teacher.

### **3.2.2 Setting**

The setting of this research is in SMK Muhammadiyah 1 Gresik which has many majors, one of them is Industrial Electronic Engineering which is rarely found in other vocational schools. The researcher chooses 11th grade in this major because the English teacher in this class wants to make a change on the English materials in order to be suitable for students need.

## **3.3 Instrument of the Study**

In collecting the data the researcher uses some instrument with a different purpose.

1. Interview: one of the instrument to collect the data the researcher uses an interview with the purpose is to get the deeper information as for what their target need, learning need, and other factors which are suitable to the English subject of Industrial Electronic Engineering in SMK Muhammadiyah 1 Gresik. The researcher conduct this interview

with the teacher which involves in English material subject itself. Also, the researcher does the interview with major teacher to know the needs of students based on the perspective of teacher.

2. Checklist Validity: the checklist validity is used to check the validity of this study. The researcher gives this checklist to the expert and they are asked to give comment and scores toward the module that they have been checked.
3. Questionnaire: the researcher gives the questionnaire to all of the students in the class, with the quantity is 17 students. The purpose from giving the first questionnaire is to know what the students' need, the researcher can design the course book which suitable for the students' prospect. From the questionnaire after conducting try out, the researcher can know the feedback about the English module. The result of this questionnaire can be helpful in knowing whether the module is satisfying or not.

#### **3.4 The Process of Developing English Material for Industrial Electronic Engineering at SMK Muhammadiyah 1 Gresik**

In this part, the researcher explains about the procedure of developing English material for Industrial Electronic Engineering which is consist of analysis that includes: an interview with the experts, and questionnaire for the students. In this part also the researcher explains the design, development, expert validation, try out of the material, revision, and final project.

### **3.4.1 Analyze**

The analysis is really important for the students to make a better material. In this phase, the researcher should do some identification and evaluations to know the students' need or their problem. In need analysis, the researcher will get some information and ideas for developing material and also the researcher conducts an observation to know the problem which is faced by the student.

The observation will be done by interviewing the teacher. The interview content is about finding the general activity of the second grade students in SMK Muhammadiyah 1 Gresik, the material that is used, the problem of the teacher, and the teacher ways to improve their students' English skill.

Need analysis was important to set the question and purposes as soon as possible then use these as the guide in choosing the methods and tools for data collections (Diyah, 2013). According to Nation and Macalister (2010), good need analysis involved asking the right questions and finding the answers in the most effective way. To conclude, need analysis useful and helpful in providing a scope of information that is used as a guide for the course design, syllabus or curriculum development.

It is needed for the researcher give questionnaire for students, and interview with the two experts in order to know the target and learning need.

#### **1. Questionnaire for the Students**

In this study, the researcher gives two questionnaires for students, those are questionnaire before conducting try out and after conducting try out. In order to know the students need, the researcher gives 20 questions of questionnaire which include 2 questions about learning need and target need of learning English

for 17 students of Industrial Electronic Engineering at the second grade of SMK Muhammadiyah 1 Gresik.

## **2. Interview with the Experts**

The researcher conducts the interview with the two experts. The first experts is English teacher of the second grade in the school. The purpose of this interview is to know about what the level that used in students of 11 grade of this major, what is the curriculum that used in this school, what the appropriate media that used to teach, what kind of material that students' need in this major, what is the students' difficulties and the factors caused, what model that is appropriate to students. The process of this interview is done with English teacher.

The second experts is the teacher major of Industrial Electronic Engineering. The purpose of this interview is to know about what kinds of the students' need in developing module that appropriate with their major.

### **3.4.2 Design**

The researcher designs the English module by making the syllabus first based on need analysis which is done before. The instructional design process consist of deciding the students' need, determining the final goal and objectives of instruction, designing and planning assessment tasks, and designing teaching and learning process to check the instructions' quality (Educational Technology, 2018). Based on Amanda (2018) to design and develop content, experiences, and other solutions, the instructional designer applied this systematic methodology. It means that the researcher should begin by conducting a needs assessment to determine the needs of the learning event, including: what the learner should

know and be able to do as a result of the training or learning solution, and what the learners already know and can do. The researcher attract the students' interest by giving many vocabularies in design modul to make it easy for the students to understand in learning English.

### **3.4.3 Development**

After making a draft module design, the researcher begin to develop English module by the guidelines from the draft. For the first, the researcher makes syllabus which consists of standard competence, basic competence and the indicators of English material, the purpose of learning, and the activity of learning.

The researcher is going to create English module. This module has 3 chapters which has explanation and some excercises about the material in every chapter. The module also has many vocabularies because the material is about machines, so the researcher give many vocabularies rather than the theory. In the last module, the researcher makes a consultation with the expert for every chapter to make a correction of the content in the chapter.

The researcher uses the approach of content based instruction and strategy which has more excercise in order to make better practice. It means that the module will have more part on excercise instead of explanation. This module improves their reading skill according to the students' need which has four aspects, those are theme, topic, excercise, and theory.

The further of CBI (Content Based Intruction) explanation and how the researcher uses CBI will be explained in the following explanation.



### **3.4.3.1 Content Based Instruction in this Study**

In this section, the researcher will explain the definition of CBI and how the researcher uses CBI in this study. CBI is the approach that is used to acquire knowledge and learns a great deal of language as a natural byproduct of such use. In this study, CBI is used to guide the researcher in developing the material in this module. The reason why the researcher uses CBI is based on the need of this study and the appropriateness of the participants. The following explanation is about how the researcher uses CBI in this study.

The researcher uses CBI approach in the development of material. It means in chapter 1 there will be 3 points (A, B, C). Part A is about the warming up for the students to get ready in getting the material. There will be several easy questions for the students to be answered that are appropriate to the next material. In part B is about the explanation of whole material and it is explained as detail as possible using the easy language and way for the students. The last is part C and that is about the questions to check the understanding of the students after getting the material in part B. In every part of the chapter the researcher give emphasizes on learning vocabulary.

### **3.4.4 Expert Validation**

The product of developing English module should be evaluated and validated by the experts which would give the scores by giving the checklist to the courseware, comment, and suggestions. The checklist is consist of 5 components, those are; attractiveness, requirement, mechanics, content, and originally. There

are two expert validators and they are the English teacher and the teacher major of industrial electronic engineering in SMK Muhammadiyah 1 Gresik.

The English teacher began to teach from 2013 until now, and the teacher major of industrial electronic engineering has magister in this major. In this study, both of the teachers are mean to check the content language and material major which is suitable or not for the students.

#### **3.4.5 Implementation (Try Out)**

After the module has been checked its validity by the experts, the researcher will conduct the try out for the students in this major. Then, the researcher will give the questionnaire to students in order to know their comment and suggestion about the English module. The researcher will conduct revision if needed.

#### **3.4.6 Evaluation**

In this study, the researcher will explain about the comment and suggestion from the students in order to revise her product to be better. The process of evaluation is divided into evaluation row and final product.

After the researcher conducting try out, the researcher is going to revise all of the parts that need a revision to know if it is appropriate or not for students which is considered from the comment and suggestion of the expert about the content of the English module.

#### **3.4.7 Final Product**

The last step is final product. The researcher is going to revise the material and try out the English module which implemented at SMK Muhammadiyah 1 Gresik. This material will be ready to be taught to students. There are three

chapters in this module there will be exercise in order to know the students' understanding after learning the material. The module also consists of key answer toward the exercise which is done by the students.



