

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

In this chapter, the researcher would present the method of study, this is important as a guideline to achieve the objectivity of study, it is provided with research design, instrument of data collection, and procedure of developing English materials. In proceeding of developing English materials would explain need analysis, design instruction, developing materials, expert validation, try out materials, revision of materials, and final product. It will be presented as follows:

#### **3.1. Research Design**

The research design of this study is belonged to research and development, or commonly abbreviated as R & D. Research and development can be defined as a process or steps to develop a new product or to complete an available product and it can be accountable (Sujadi, 2003:164). According to Sugiono (2010:407), research and development is research method which is used to produce a certain product and examine the effectiveness of the product. Brog and Gall (1983:772) define research and development method as a process which is used to develop and validate educational products.

These process steps are commonly known as R&D cycle, which consists of studying research finding which is related to the product, developing the products based on the findings, trying out the product in the place where it will be used, and revising it to correct the lack of the product which has found in the field-testing

stage. In more meticulous programs of R&D, this cycle is repeated until the field-test data shows that the product meets the goals.

Borg and Gall (1983) also mention four basic characteristics in the research and development:

1. Studying research finding which is related to the product,
2. Developing the products based on the findings,
3. Trying out the product in the place where it will be used
4. Revising the product to correct the lack of it which has found in the field-testing stage.

According Van Den Aker and Plom (1994:462), the purpose research and development:

1. A better understanding of teacher implementation problems.
2. Prototype project interventions Development consisting of material, training, support, including empirical evidence of its quality.
3. Produce methodological directions for product design and evaluation or intervention.
4. Improving expertise both individually and collectively from various participants.

Based on the previous explanation, some steps have been conducted in order to develop a product. In this case the researcher develops English materials in the form of digital comic book which can be uploaded/imported on to Schoology where the application is used as a media in blended learning method to overcome students' boredom and lack of motivation in learning English and time limit in the classroom.

There are numerous research and development models, such as Sugiyono's model consists of studying problem and potential, collecting data, designing product, validating product, revising product, testing product, revising product, and producing product. Four-D model consists of defining problem, designing product, developing product and disseminating product.

Brog and Gall model has ten phases consist of researching and collecting data, planning, developing preliminary form, testing of preliminary field, revising main product, testing main product, revising operational product, testing of operational field, revising final product, and disseminating and implementing final product.

Steven J. McGriff states that ADDIE model is process of interactive instructional design, where the results of the formative evaluation of each phase lead the instructional designer back to any previous phase. The product result of one phase is the initial product of the next phase. ADDIE model consists of analysis, design, development, implementation, and evaluation. The researcher chooses ADDIE model as the model of this research because ADDIE model is quite simple and appropriate with educational research and development.

The five of ADDIE's steps will be explained below based on website instructional design central:

*a. Analysis*

Allison Rossett & Kendra Sheldon, (2001:67), state "analysis is a study we do in order to figure out what to do." Analysis is the first step of developing material. In this step, the researcher clarified the problem, established the goals and objectives, and identified the learning environment

and learner's existing knowledge and skills. This step commonly known as need analysis which is done to gather information in the field and find what the subject wants.

*b. Design*

The design step contains objectives of learning, instruments of assessment, exercises, content, analysis of subject matter, lesson planning and selection of media. This step should be specific and systematic. The purpose of this step is to prepare instructional prototype.

*c. Development*

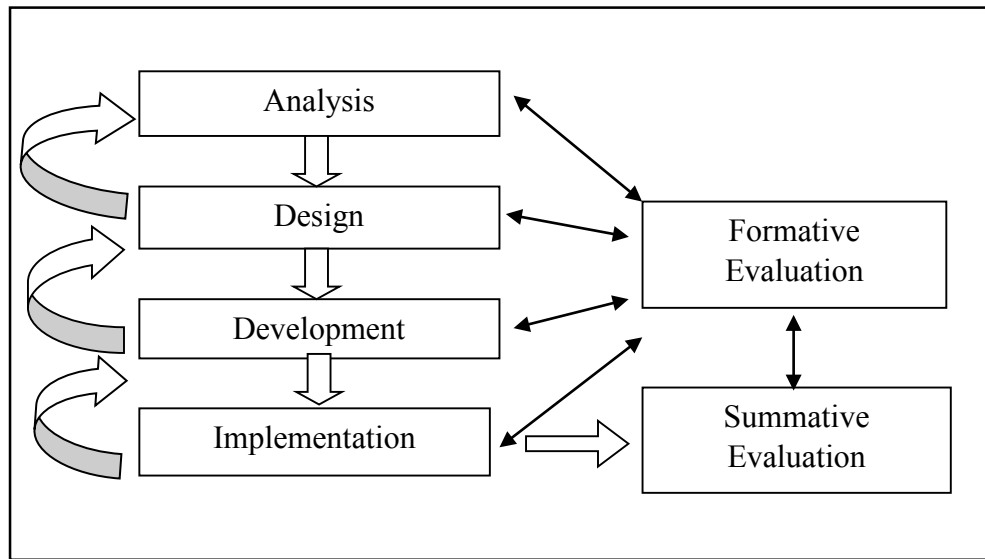
The development step deals with creating and assembling the content assets that are designed in the design phase. In this step, the researcher created storyboards, wrote content and designed graphics.

*d. Implementation*

The implementation step deals with developing procedures for training facilitators and students. Facilitator training must cover learning outcomes, course curriculum delivery methods, and testing procedures.

*e. Evaluation*

The evaluation step is divided into two parts: formative and summative evaluations. The researcher did formative evaluation in each stage, and summative evaluation in the final stage of the ADDIE process. Summative evaluation focuses on obtaining student's learning outcomes. It determines students' success or failure in learning and gives opportunity to gather students' feedback.



**Figure 2:** Steven J. McGriff's ADDIE model instructional system.

College of education, Penn State university.

In this study, ADDIE research model is used to develop materials, it would be presented further in the procedures of developing English materials in the digital comic form using Schoology for seventh-grade students at SMP Islamic Qon.

### 3.2. Instrument of the Study

The researcher used two instruments to collect the data. The first instrument was interview. The interview aims to complete the information needed related to the curriculum, materials, strategy of teaching, and students' weaknesses. The second instrument was questionnaire. The researcher used questionnaires in order to find out target needs and learning needs. The questionnaire organization is presented in table 1:

**Table 1:** Questionnaire organization.

<b>No</b>	<b>Aspects</b>	<b>The Purpose of the Questions</b>	<b>Item Number</b>	<b>References</b>
<b>1.</b>	The Student's Profile	To find the information about students' profile	A	Hutchinson and Waters (1987: 63)
<b>2.</b>	Necessities	To find out the students' expectation of learning	1 & 2	Brown (2001: 142) Nunan (2004: 174)
		To find out the students' needs in terms of target situation		
<b>3.</b>	lack	To find the learners' lack	3	Hutchinson and Waters (2006: 62)
<b>4.</b>	Wants	To find out students' want related to the materials	4 & 5	Hutchinson (1987: 55)
<b>5.</b>	Inputs	To find the information about the students' opinion of the learning aids	6	Nunan (2004: 47)
<b>6.</b>	Setting	To find out learners' preferred learning mode	7	Nunan (2004: 70-73)
<b>7</b>	Procedures	To find the information about students' opinion of learning activities in the classroom	8	Nunan (2004: 53-63)
<b>9</b>	Student Role	To find out the student's roles in the classroom	9	Nunan (2004: 47)
<b>8</b>	Teacher Role	To find out the teacher's roles in the classroom	10	Nunan (2004: 64-70)

In table 1, there are several aspects which are important to be considered in order to make questionnaires to gather information of target and learning needs.

They are students, profiles, necessities, lack, wants, inputs, setting, procedures, students' roles, and teacher's role.

After the needs were collected, the materials were designed, developed, and implemented, the students were given second questionnaires after they accessed the materials on Schoology. It was done to know their feedback and comments about the developed materials.

Lastly, the researcher provided checklists of course wares for experts. Here, the experts duties were giving scores, comment and suggestion toward the English materials which were developed by the researcher.

### **3.3. Procedure of Developing English Materials**

The researcher was necessary analyzing need analysis, designing instruction, developing materials and validating the materials to expert validation. Furthermore, after finishing try out materials, the researcher conducted revision of the materials. More details, we can see as follow:

#### **3.3.1. Need Analysis.**

In this stage, the researcher conducted needs analysis to gather target needs and learning needs information. It was done by interviewing the English teacher and distributing questionnaires to the seventh-grade students.

##### **3.3.1.1. Target Needs**

According to Hutchinson and Waters: 1987 p.55-58, the purpose of investigating target needs is to gather information of what students need to do in target situation. Target needs analysis covers identifying the linguistic features of target situation, included necessities, lack and wants.

Based on the statement above, conducting an interview toward seventh grade English teacher needs to be done. The researcher asked several questions regarding teacher's teaching strategy for seventh grade students, the curriculum which is used in the school, the students' response of the teaching strategy, teacher's perspective of teaching English in seventh grade, and students' weaknesses in learning English.

#### **3.3.1.2. Learning Needs**

By conducting interview toward seventh grade English teacher, the researcher was not only gathered information of target needs but also learning needs. The researcher asked some questions toward the teacher in order to gather information of the best teaching strategy for the students. The questions related to what kind of media which was used in the classroom, the most common problem which the teacher faced in the teaching learning process, what kind of teaching technique which was used in the classroom, what kind of text book which was used in the classroom, whether the English textbook provided enough materials for student needs, teacher suggestion & opinion about



materials could interest and motivated student, teachers' perspective about learning English in school, teacher's perspective about learning English by using smartphone application as media, whether students were allowed to use smartphone in the classroom, whether m-learning ever been used in the school, and teacher's opinion about Schoology. The researcher needed to know syllabus, students' textbooks and the materials which were used in the classroom by the English teacher.

The researcher distributed first questionnaires to find out the best method/strategies in teaching English for the students. The researcher listed materials that were taught in first semester. After the researcher gained all of the information, the researcher found the materials would be appropriate for the students in the teaching learning process, then the researcher started to make a draft.

The second questionnaires were also distributed toward students in order to evaluate the first material draft. The questionnaires evaluated the digital comic appropriateness, included what difficulties students faced when they learned English digital comic on Schoology, and which parts students liked. From the questionnaires and interview's results, the researcher found the learning needs. After the data results of needs analysis were gathered, the results were analyzed for designing learning materials.

### **3.3.2. Design Instruction**

After identifying the students' needs, the researcher designed the materials. In this stage, a prototype and a course grid were created as guidelines to develop the materials. The prototype aimed to adjust materials with the result of need analysis, in other hand, the course grid aimed to design materials based on curriculum, syllabus and student' activities.

### **3.3.3. Developing Materials**

The researcher looks the curriculum of the school, standard competences and basic competences in order to develop the materials. Besides, the materials were also adjusted with the result of need analysis. The researcher could know the materials which were needed by the students from the result of need analysis.

Next, the researcher made a developmental syllabus based on the curriculum. The developmental syllabus consisted of materials, lesson activity, indicators, and etc.

### **3.3.4. Expert Validation**

Once English materials have developed, it should be validated by experts. There were two expert validations. The English teacher of the school and the information and technology specialist. The first expert validation checked how the materials in the form of digital comic were presented on Schoology platform. Whereas, the second expert validated the materials with

the syllabus and curriculum. Here, the experts would be given a checklist of courseware in order to evaluate the material's appropriateness.

The first of checklist of courseware followed the standard of Instrument Penilaian Buku Bahasa Inggris created by Badan Standar Nasional Pendidikan (BSNP) and taken from McCloud (2006). The organization of checklist of courseware is presented in table 2.

**Table 2:** Evaluation instruments.

No.	Components of Evaluation	Reference
1.	The appropriateness of content	BSNP
2.	The appropriateness of language	BSNP
3.	The appropriateness presentation	BSNP
4.	The appropriateness of lay out	BSNP
5.	The appropriateness of content and language of comic	McCloud (2006: 128-132)
6.	The appropriateness of comic illustration	McCloud (2006: 39-44, 140-145, 178-179)

The second checklist of courseware was taken from Romi Satria Wahono (2006). The organization of checklist of courseware is presented in table 3.

**Table 3:** The organization of checklist of courseware of media.

No.	Aspect	Components of evaluation	Reference
1.	Software	Effectiveness and efficiency of resource use	Romi Satria Wahono (2006).
		Media reliability	
		Media compatibility	
		Completeness of documentation	

		Media reusability	
2	Visual communication	Communicative	
		Creative	
		Audio	
		Visual	
		Animation	
		Navigation Icons	

This checklist of courseware is grouped into 2 aspects: software and visual communication aspects. The first aspect which contains effectiveness and efficiency of resource use, media reliability, media compatibility, completeness of documentation, and media reusability was not used because the Schoology application has already developed and maintained by its own expert developer. The second aspect which contains communicative, creative, audio, visual, animation, navigation icons was used to validate how the materials worked and implemented in the application.

### **3.3.5. Data Analysis Technique**

As mentioned before in the previous section, there were two kinds of questionnaires which were distributed to the students. The first questionnaires used for needs analysis was analyzed through calculating percentage of each answers. The percentage was calculated by dividing the number of frequency and total participants and then it was multiplied by 100 % (Sudijono, 2003: 129). Then, the highest percentage was considered representing the needs of

students. The second questionnaire which was used for processing the materials evaluation was analyzed using descriptive statistics.

**Table 4:** The categories of expert judgment.

No	Categories	Score
1.	Strongly Agree	4
2.	Agree	3
3.	Disagree	2
4.	Strongly Disagree	1

Then, the results of the data gathered from the second questionnaires were calculated by using formula proposed by Suharto (2005: 58 - 59) to find the range or the data interval.

The data were converted into descriptive statistics. It aimed to summarize a given data set which could not be represented entirely. The researcher used the mean ( $\bar{x}$ ) as the indicator of measurement. The means were calculated using the formula proposed by Suharto (2005:58). Then, the result of the data was converted to descriptive statistics in terms of its goodness as the formula proposed by Suharto (2005:58).

**Table 5:** Scale of descriptive categories interval.

Scale	Interval	Descriptive Categories
1.	$1 \leq x \leq 1.74$	Poor
2.	$1.73 \leq x \leq 2.48$	Fair
3.	$2.49 \leq x \leq 3.24$	Good
4.	$3.25 \leq x \leq 4$	Very Good

### **3.3.6. Try Out Materials**

In the implementation of classroom procedure, the try out was held toward seventh grade students at SMP Islamic Qon. The researcher invited seventh grade students to join in the try out. The application was installed on their smartphones in a day before doing the try out. In the meeting, the researcher explained how to operate the application. Then they started accessing and learning the materials. In the last activity, try out was conducted in order to test the materials after students learned the topics. At the end of the try out, the next step was handing out the second questionnaires to students. It was done to know whether the materials were interesting or not. In addition, the feedback from students through the second questionnaires were also used to improve the English materials.

### **3.3.7. Revisions of the Material**

After conducting try out, there were some revisions which needed to be revised in order to fix the deficiencies that had been found in field testing. The revisions were done in accordance with the experts' suggestions and students' feedback.

### **3.3.8. Final Product**

After completing revision, the final product are PDF and wav files which can be imported, accessed and presented on Schoology. The materials come with digital comic contains of colorful cartoon pictures, texts, which

are supported by audio contain of English conversation. The materials in the form of digital comic provides continuous story of students' daily life. In the story, the main character is a smart student who explains English lessons to readers. The English lessons are in line with curriculum and syllabus. Beside explanation, there are many various tasks can improve students' comprehension. Some conversations in the digital comic are supported by audio to support teaching listening. In order to access the materials, additional applications are needed. pdf reader and audio player. They can be downloaded in Play store.

The product is expected to overcome students' boredom, to enhance their motivation and enthusiasm and to make students more interested in learning English. The use of Schoology as a media is expected to give students more opportunities and times to learn English, and to stay interacted with classmates and teachers.