#### **CHAPTER IV**

#### RESULTS OF DEVELOPMENT

#### A. Development Process

#### 1. Development Finding and Procedure

#### a. Development Procedure

The researcher begins the developing by choosing good software exercise, it is chosen based on the criteria of good software exercise by Chad R. Fisher, Cinoy Ravindran, and Richard. A. Demillo. Those are:

- It should be functionality for many people.
- It is part of technology that can be used for in future, and also suitable with other system in your house.
- It has an up to date version, so the software can make new enhancement to the product.
- It should be able to be implemented in education.
- It should be free of charge. It means, software can be used without spending money.
- It can be operated on and off line.
- It should have accrediting products by ISO.
- It should have configuration automatic system.

The researcher also creates vocabulary exercise software based on the criterion of good language software exercises by Philip Hubbard and Clayton R. Wright. There are some criterions that should be considered, those are:

- It should be needed by many people in education.
- It is completed with all aspects of the basic on screen, including fonts, color, controls, video and audio.
- It can help the learner in learning process.
- Good software language exercise should be free or low cost.
- It can be used by the learner continuously.
- It should be completed error message and feet back.
- It is easy to be used.
- It should be completed instruction, so it is be easy to be understood and learned.
- It should be able to be operated in every windows version.
- It can be saved both zip file and html file, so it may be used on and off line.

After researching some software exercise, the researcher chooses memory game maker as software that has criteria of good software exercise. There are five kinds of memory game maker Tetris, comprehension, sentence, matching, and portal maker. But in this study the researcher only uses four kinds Tetris,

Comprehension, Matching, and Portal maker. They are taken by the researcher with downloading from language online, after that they are installed to the computer or laptop one by one.

In developing the software, the researcher creates five example of vocabulary exercise in every activity. All of the questions are taken from the course book that is used by students at the school. The writer chooses chapter I in eight great of junior high school. The title of the book is "English in Focus" by Artono Wardiman, chapter I it is about my favorite animals and plants. This book is selected based on curriculum and study literature to some English book at the market. The writer does not do content validity because the questions are taken and created from type of question in the course book. The researcher creates three examples of activities in this study, such as follow:

## I. The first is Tetris game maker.

The researcher creates exercise, it is created for exercising vocabulary by answering question based on the picture. There are some criterions good software exercise that are used by the writer to creating Tetris game maker exercise.

Table 1.The efforts of researcher in developing Tetris game.

Eunationality	The seal of the se
Functionality	The good software should be
	functionality for many people, the
	writer creates vocabulary exercise that
	is used and needed by every student
	and every economic classes.
Technology	The writer creates vocabulary exercise
	software that is combined with the
	computer, it can be operated on and
	off line.
Software vendor	The writer creates the exercise
	software that can be enhancement, so
	the software is chosen chooses
	because it is easy to be gotten.
Implementation	To get implementation vendor the
vendor	writer creates vocabulary exercise that
	can be implemented in education.
Easy to use	The writer gives instruction or tutorial,
	so it is easy to be operated.
Total cost of	To be able to use for many years, the
ownership	researcher choose the freeware, so the

user can save money because it can be
used in the future.

## b. Development Process

Step 1



In the first step, there are two categorizes creating new task and change an existing task that has been made before. You can go to next step by clicking next step at the corner.

Step 2



The second step writes the name of task that want to create, and also your own name.

Step 3



The third step selects the number of pairs that you want to create. There are three number 6 pairs, 12 pairs, 16 pairs.

Step 4



The fourth step adds sound effects to your game. There are two categorizes of sound, first is a sound effect when the answer is correct, second is a sound effect when the answer is wrong. There are three kinds of sound effects in every categorizes.

Step 5



The fifth step select the type of clue for this task, there are four types of clue text, picture, voice recording and picture-text.

Step 6



The sixth step continuance from step before. After selecting the clue in step fifth, next you select a type of your own instruction then click on the folder or insert a picture. The last you type the answer and go to the next task.

Step 7



The last step selects how your game is be saved zip file or web page, then click 'save' in the button.

# II. The second is matching game maker

The researcher creates matching exercise between sound and text. There are five questions in this activities, it is created based on criteria good software exercise.

Table 2. The efforts of researcher in developing Matching Game.

Eumotionalita	
Functionality	The researcher saves the software
	in zip file, So it can be operated
	both of on and off line.
Management	The researcher selects the software
information	that is completed with report and
	feedback.
Efficient	The researcher uses the software
	that gives automatic system, the
	students know their score in the
	end of exercise.
Easy to learn	The researcher gives instructions,
	so the students know what they
	should do.
Supporting system for	The researcher designs testing
other windows	product using four kinds of
	windows. So the researcher knows

The product can be operated in all kind of windows or no.
To get the good output, the
researcher takes the questions
from the course book

Step 1



The first step in matching game maker, there are two categorizes creating new task and change an existing task that has been made before. You can select one of them, and you can go to the next step by clicking next step at the corner.

Step 2



The second step, you write the name of task and your own name.

Step 3



The third step, you select the type of information that want to appear in each column, you can select matching task between text and sound or sound and sound.

Step 4



The fourth step, you can selects the number of pairs in your game, there are three number 6 pairs, 12 pairs, 18 pairs.

Step 5



The fifth step, you can attach voice recording with your own voice. And also you can take the sound from folder with mp3 format in the left column, after that you can type a matching

phrase or sentence in the right column. On the top you can select instruction that you want to give to the students.

Step 6



In this step, you type a message to appear when the game has been completed.

Step 7



The last step, you save your game. There are two choices as zip file and web page, then click 'save' in the button

## III. The third is comprehension task maker:

The exercise is created by combining text and question. It is completed by multiple choices. The researcher makes five questions that are synonym and antonym. To get a good vocabulary exercise software, the researcher creates based on criterion good software exercise.

Table 3. The efforts of researcher in developing comprehension game.

Technology	The researcher combines his
	product between exercise and
	software.
Reliable	The researcher creates the
	vocabulary exercise by combining
	with other data such as text,
	picture and sound.
Robust	The researcher has done
	completing the product with some
	instructions to know the feedback
	or error message.
Friendly	The researcher selects the
	software that is completed with

	short cut, it very helps the user.
Portable	The researcher tests the product in
	to four kinds of windows. So the
	researcher knows that it can be
	operate in different windows or
	no.
Readable	The researcher gives simple
	instruction, so that it can be
	understood well.
Total cost of owner ship	The researcher chooses the
	software that can be downloaded
	free of charge.

Step 1



The first step in comprehension task maker, there are two kinds of categorizes creating new task and change an existing task that has been made before. After that you click next step at the corner.

Step 2



The second step, you write the name of task that want to create. And also you write your own name.

Step 3



The third step, you select categorize of questions for your task.

There are two types multiple choice and true-false

Step 4



The fourth step, you type the information or text for your task.

After that you add the comprehension questions. You can type your text and question including multiple choices, to go next step you can click next question or previous question to come

back to the question before. After that you can save your task by clicking make comprehension task.

#### IV. The fourth is portal maker

The researcher collects all of the activity in to a software namely portal maker, so it helps the researcher to share the exercise. And also the students can do the exercise what they want. There are some steps to create portal maker.

Step 1



The first step select what do you want to do, there are two activities creating new portal and edit existing portal

Step 2



In this step write your name and description portal, after that type your list name and add or edit resources, you can enter the file up to six lists.

Step 3



The third step add resources to the list, there are five types first link a file, second link a language online game, third link an internet page, fourth make new webpage and the fifth link to new sound recorder. You can select one of them and go to the next step.

Step 4



The fourth step, you write name of the exercise and the author.

Step 5



The fifth step you are shown how many list that has been entered. You can delete list, add links and edit links.

Step 6



The last step select a style for your portal saving, there are two portal designs black and brown colors. After saving the original resource files will leave a copy of the files in original location or remove the files from original location.

## c. Development Finding

Based on the development procedure, the writer creates three kinds of activity in vocabulary exercise.

The first is matching game maker, it is used by the researcher to create vocabulary exercise between sound and text. The sound can be taken from file as like music or you can create your own voice by recording, in this study the writer creates his own voice based on material in the course book chapter I. there are the following five examples of exercises:



#### Question number 2



## Question number 3







The second is Tetris game maker, the writer makes vocabulary exercise by combining between picture and text or sentence. The researcher takes some sentences from the course book after that combining with picture that is gotten by downloading from Google images. This is the following five examples of exercise:

#### Question number 1







## Question number 4



## Question number 5







The third is Comprehension Task Maker, in this section the writer creates vocabulary exercise that is made using text or short paragraph and text or sentence. The paragraph is taken from course book about descriptive text, the writer chooses a title "The Sea Eagle" as material in this section. This is the following five examples of vocabulary exercise:

#### Question number 1







## Question number 4



#### Question number 5



The fourth portal maker, the researcher creates a web portal to make easy when distribute to students, he links three kinds of activity Matching, Tetris and Comprehension in portal pages, so the vocabulary exercise has interesting design. By collecting in portal maker the students can choose which exercise they want to do.



#### d. Evalauation

Based on the result of developing procedure, this study produces three kinds of activities. First Tetris game maker is created by the researcher based on criterion good software exercise. It is saved in off line, so the product can be operated efficiently.

Second matching game maker is created by combining between sound and text. The researcher gives instruction, and also he takes questions from the course book. So the output is correctly.

Third comprehension task maker is created by combining text and question. The researcher creates reliable exercise between text, picture and sound. The product is also portable for other windows.

Those exercises have function for many people and any level, and also suitable with other system<sup>1</sup>. It can be used for a long

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<sup>&</sup>lt;sup>1</sup> Fisher . R. Chad "Software Evaluation Criteria" (http://EzineArticles.com, accessed on may 20, 2012)

time, because it is software vendor that can be implemented in education. It also includes some instruction error message<sup>2</sup>. The researcher takes the question from English course book, so it has validity and reliable with other data. In the end it is easy to be learned and used<sup>3</sup>. The exercise can be operated in and off line.

#### B. Trying Out The Product

#### 1. Trying procedure

Based on trying design in chapter III, the writer does trying out the product in C class of eight grade students SMPN 2 Tanggulangin. During testing the product the researcher involves two teachers and 36 students. There are 20 female and 16 male of students, totally there are 36 students in C class. But only 34 students join in testing product, because there are two students who were absent. The testing takes place at laboratory of computer, its' 36 computers in the laboratory.

The testing has done in 90 minutes, before doing the testing. The writer installs four different windows on those computers. So it is known that can be operated in different windows version. Because all the computers in this school use windows XP, so the writer only installs 27 computers with three kinds of windows those are windows 7, 2000 and

<sup>&</sup>lt;sup>2</sup> Richard. A. Demillo. A, Jefferso Cffutt. Constraint based automatic test data generation. Page 3

<sup>&</sup>lt;sup>3</sup> Ravindran. Cinoy. *Basic and criteria for good software programming*.(http:// ezinearticle.com, accessed on 15 august, 2012)

vista. By this situation can be concluded that the product able to be used in every windows version.

The product is tested in off line. The exercises are distributed by the researcher using central computer namely user, the file is installed in to user, after that it is distributed in to 36 clients in laboratory of computer. The students are given explanations what students should do to avoid miss understanding during testing product.

During testing there are three students ask about how to operate the software, other students used to operating computer so as long as there is no problem working with technology. Besides, there are four headphones that are broken, then the researcher changes with headphone that are taken from laboratory of language. The students are also very active and enthusiastic doing exercise, there is no student that is lazy and confused. Moreover, there are two computers that are no used by student, so they are used by the teachers.

After doing the exercise the students and teachers are given 10 questionnaires in a paper. Those questions are made based on criteria good software exercise. Based on criteria good software exercise by Richard A. Demillo and Jefferson, the researcher creates question number 3, it means that the product is needed by students. Question number 10 about reliable, it means that the product can be operated both in and off line.

Based on criteria of good software exercise by Fisher .R. Chad, the researcher creates question number 1 about functionality in education,

number 2 about implementation technology in education, number 4 about the total cost of ownership, number 5 about the software vendor. Based on criteria good software exercise by Cinoy Ravindran, the researcher creates question number 7 about the product is easy to be used, number 8 about the product is easy to be understood, number 9 about the portable of the product in different windows.

Based on criterion good software by Philip Hubbard, the researcher creates question number 6 about the feet back or error message. Students and teachers also give suggestion, advising and opinion to the product. The result of questionnaire students' response states in table 1 of appendix 2, and the result of students' response in the form of percentages states in table 3 of appendix 3.

#### 2. Evaluation

## a. Evaluation process of trying

Based on testing product, the writer evaluates the process of testing. Because the researcher tests only once in field testing, so the researcher prepares well before testing the product, the product can be operated well in four different windows versions. Based on teachers' statement after testing, they said that during testing process, the students are very active in doing the exercise. They also interests in doing exercise different with situation at the class, they give suggestion to the product, such as, the written of the text is too small, the text need modification to be more interesting. In

listening section the voice is not clear, question and answer are not correlated yet. The writer uses those suggestions to do revising the product.

## b. Evaluation finding of trying

In the research and development, trying out the product is very important thing. The results of questionnaire have calculated in percentages in Table 5 of appendix 3. The researcher explains the result of questionnaire, such as follow.

The first questions is about students' response to the software exercise in learning vocabulary, 47,05% of students stated that the software very help them in learning vocabulary,52,95% of students recognize that the software help them, it can be concluded that the software helps them in learning vocabulary. The second question is about students' response to technology in learning vocabulary, 52,95% of students are really agree, 44,11% of students are agree and 2,94% of students are quite agree, the researcher conclude that 55,95% of students are really agree that technology is applied in learning process.

The third question is about students' response to the software that is needed in learning vocabulary, 29,41% of students really need this software, 67, 65% of students need this software and only 2,94% of students do not need this software, the researcher

conclude that 67,65% of students recognize that this software is needed in learning vocabulary. The fourth question is about students' response that need cost in using this software, 14,71% of students stated that does no really need the cost, 55,88% of students recognized that does not need the cost and 2,94% of students needed the cost, it can be concluded that 55,88% of students stated does not need the cost in using this software.

The fifth question is about students' response to the software that can be used in continuously, 20,59% of students recognized that this software is really able to used continuously, 61,76% of students stated that it can be used and 17,65% of students stated that it can be quite used, the researcher conclude that it can be used continuously based on 61,76% of students' response. The sixth question is about students' response to the feet back and wrong message, 44,12% of students are very satisfied, 41,18% of students are satisfied and only 14,70% of students are less satisfied, the researcher concluded that students are very satisfied to the feet back and wrong message.

The seventh question is about students' response in using this software, 20,59% of students stated that is very easy, 55,89% of students recognized that is easy and 26,47% of students are quite easy, it can be concluded that this software is very easy in using based on 55,89% of students' response. The eight question is about

students' response in understanding the software, 23,53% of students are very easy, 58,82% of students are easy and 14, 70% of students are quite easy, the researcher concluded that this software is very easy to be understood and learned.

The ninth question is about students' response about application the software in all windows version, 8, 82% of students stated that it is really able to use, 58,82% of students recognized that it can be used and 32,52% of students recognized that it is quite able to use, the researcher concluded that this software is able to use in all windows version. The last question is about students' response about using in of line, 26, 47% of students recognized that it is really able to use, 61,76% of students said that it can be used and 5, 89% of students said it is quite able to use.

Based on the total of students' and teachers' answer, the researcher concludes. 32% of students say that the product is very good, 54% of students are agree that the product is good, 13% of students give response that the product is not good, and only 1% of students say that the product is not very good.

From those, it can be concluded that the software is very suitable and feasible to be applied in learning vocabulary, because vocabulary exercise software is applied in their activity. They can learn vocabulary that combining with technology as part of their live. Furthermore, the software is easy to be used and learned, it is

free of charge. The product also helps students in learning vocabulary, and it can be used in continuously. Based on teacher' statement after testing the product, the students are more active to do all the exercises. They are very interested in learning second language.

The researcher also evaluates teachers' and students' suggestion, opinion and advising after testing the products. There are some shortages that need to be revised. Those are, the written text is too small, it is need to modification to be more interesting, the listening section is be better using native speaker, the voice of software is not clear. Question and answer are not correlated yet.

#### C. Product Revision

Based on testing the researcher does evaluating the shortages of products from student's and teacher' suggestion. There are some shortage, those are:

- 1. The written text is too small.
- 2. The voice of software is not clear.
- 3. The question and answer are not correlated yet.
- 4. The color of text and background are not interested.
- 5. The text need to be modified.

From those shortage, he completes with some additional and adaptation to his products based on students' and teachers' suggestion, opinion and advised.

- 1. The text is written bigger than before.
- 2. The text is written more attractive font by using times new romance font for exercise.
- 3. The voice in listening section is changed by using native speaker.
- The materials of listening section are taken from authentic material of course book, so it is more correlation between question and answer.
- 5. The text is created more interested by giving color and arranged the layout to be more interested.

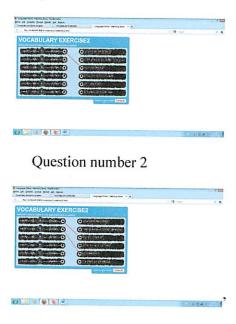
These are the screen short of the software after getting revision:

#### 1. Portal maker



## 2. Matching game maker

## Question number 1



## Question number 3





Question number 5



## 3. Tetris game maker

## Question number 1



## Question number 2





Question number 4





## Question number 6





# 4. Comprehension task maker

## Question number 1



## Question number 2



## Question number 3

