Article

Designing a Learning Media of English for Specific Purpose based on Interactive Multimedia (Macromedia flash 0.8) for Agro-Industry Students

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A B S T R A C T

The research objective is to design a learning media of ESP using Macromedia Flash 0.8, which can contribute comprehension in learning ESP and presenting the validation of the media. The Procedure development referred to development research that uses model 4D by Borg and Gall. The development consists of 4 steps. They are defined, design, develop, and disseminate. The data ware collected through validation by media experts, material experts, and practitioners using questionnaires and interviews. Then, the data are presented by using tables. The result of validation by media expert on the media developed obtained a total score of 87.5 % belonging to valid with no revision, the result of validation by material expert obtained a total score of 90 %belonging to valid with revision and validation by practitioners obtained a total score of 8.589 % belonging to valid with no revision. The result showed that the use of interactive multimedia by using a Macromedia flash 0.8 is recommended to be implemented because the students can relatively access to media which is operated with android. The result of this research will be used as a matrix for the next research, which is the development of ESP Module based on interactive multimedia.

I. INTRODUCTION

English language is one of the compulsory subjects to be taught in schools in Indonesia. In a higher level of education, teaching the English language is divided into two types, namely General English (GE) and English for Specific Purposes (ESP). GE usually contains basic English grammar and vocabulary, whereas ESP contains English based on the needs of a certain discipline. ESP course is also determined by the restriction of "basic skills" which are required by the learners' purpose (Richard, 2001). It means students who dealing with chemistry must learn English for Chemistry or if they are technical students, they also need to master English about Technical field, and etc.

Furthermore, Dudley-Evan and St. John (1998) state that ESP is a way of delivering materials and exercises which are appropriate to the students in a specific context. Students from the Agro-Industry department, for instance, should learn English for Agro-Industry. In this context, the learners learn English not because they want to know the language as a language and the culture in it

but also because it has a specific goal in the academic and professional fields (Robinson, 1991). Since the material of ESP is set based on students' needs, what students learn in college about English can be implemented in their fieldwork later.

In private institutions, especially in the Academy of Industrial Technology (ATI) Padang, English language is still taught in General English. Since ESP has a different approach and materials from general English, it can be concluded that the implementation of learning English in ATI Padang has not been implemented as what it should be.

There are also some other problems that researchers found in ATI Padang, such as: (1) the lecturers focus on textbooks, (2) media used are still limited to flashcards, powerpoint, and whiteboard, (3) the lecturers mostly use lecturing method which causes boredom during teaching and learning process, (4) the lecturers do not use interactive module which causes teaching and learning process become monotonous.

Furthermore, Students in Academy of Industrial Technology Padang have English lessons once in a week with two credit hours in their first semester. The number of the meeting is inadequate for them to practice their English. As a result, they need supplementary materials that will enable them to learn English at any time and anywhere. There was a significant difference in a student's test result that students who taught by using multimedia interactive had better scores than students who weren't taught by using multimedia interactive (Dick and Carey, 2015).

It is well-known that the education world has walked through very rapid science and technological development. Learning with digital media at university need to be improved in order to follow technological development. The improvement of technological development, after all, should be balanced with teachers' ability to teach

English. It means that the lecturers will not worry about the time limit in teaching hours because the students can also access and learn their lessons in any place (Tim de Jong et al. 2008). By using technology in English learning seems promising and bring improvement to the students' ability in English.

Many kinds of research have proved that students need interactive multimedia to study with a better result, and they can use it as a self-study. Students quickly get bored with the strategy of learning that they have now (Rafianti, 2018; Munir, 2012; Rusman, 2012). In the modern era, lecturers are required to use a computer as an interactive learning media for making the communicative learning environment as a sign of the development of human resources (Rusman, 2012). It is a challenge for teachers to be able to integrate computer technology into a learning system, so that learning can be more meaningful and fun.

Moreover, National Education Standard Agency (BNSP) in Arsyad (2014) mentioned that the quality of teaching materials (in this case learning media) must fulfill four elements of feasibility, namely: 1) content feasibility, 2) feasibility of presentation, 3) language feasibility, and 4) the feasibility of graphics. The four feasibility elements are elaborated in the form of indicators that have been adjusted to the assessment of the feasibility of the material and learning media in this research. Learning media can be defined as any resources that can be used to deliver and channel messages from a planned source to create a conducive learning environment where the recipient can carry out the learning process effectively and efficiently (Arsyad, 2014). It can be concluded that learning media are means or educational tools that can be used as an intermediary in the learning process to enhance the effectiveness of the learning process. For a learning process, teaching with media as a tool used will make communication and interaction between

lecturers and students more effective and efficient.

In recent years, the teaching and learning process have used Microsoft Word and PowerPoint platform on PCs and laptops to deliver teaching materials. However, today, there has been an increase in the use of non-windows based devices in education, such us mobile and tablet. Many people know android as a mobile operating system in the world. Android seems to be well suited to the classroom. It can be operated at anytime and anywhere. As stated by Aditya (2016), in his thesis, Android is one of the key advantages of android over other mobile operating systems is that it natively supports the Adobe Flash platform, which accounts for around 95% of the educational content currently used in schools. The students are provided access to open any sources such as digital books, journals, papers, and many educational sources from many publishers.

Furthermore, Macromedia flash 0.8 is one of the applications which can run on android System, Window, and PC. It is one of the popular software in creating animation applications with spectacular effects. Yudhiantoro (2006) argues that Macromedia flash 0.8 is a program devoted to the designers and programmers who intend to design an animation for web page creation, presentation for business purposes as well as learning to the creation of interactive games as well as other goals that are more specific. It is in line with Syahputra et al. (2015). They stated that Macromedia flash has characteristics such as (1) Software with animation design; (2) it can be operated with windows XP and windows 7, (3) It is easy to operate, (4) It can be used as one of interactive multimedia in learning; (5) It is one of the multimedia designs with attractive animation design.

Based on the previous research conducted on Need Analysis of ESP for Agro-Industry students ATI Padang, the students need instructional materials based on ESP, which is by wrapping the exercises into an interesting

learning media that is multimedia interactive (Macromedia flash 0.8) (Amna and Idriani, 2019). This media is designed to put the students in a flexible situation, increase their English test scores and automatically increase the students' motivation in learning English. It is relevant to researches that have been done by Mualdin (2015) and Wiji (2017). They found that multimedia interactive (Macromedia flash 0.8) which was used in learning physics and mathematics could increase the students' scores and the teaching-learning process became more active and fun.

In brief, this article aims at designing Learning Media of ESP based on interactive multimedia with Macromedia flash 0.8 for Agro-Industry students in ATI Padang and at presenting the result of the validation of the media based on Media Experts and the validation of designing Learning Media of ESP on Interactive Multimedia for Academy Industrial Technology Padang based on Material Experts. Furthermore, the researchers also describe the validation of designing Learning Media of ESP on Interactive Multimedia for Academy Industrial Technology Padang based on Education practitioners.

II. METHODS

The Procedure development in this research refers to development research that uses a 4D model (four D device) by S. Thiagarajan, Dorothy S. Semmel, dan Melvyn I. Semmel (1974: 5) combined with Borg and Gall model (2003). The development consists of 4 steps. They are defined, design, develop and disseminate. This research was only limited to validity on the interactive learning multimedia (Macromedia flash 08) at Agro-Industryy department ATI Padang. As stated by Sugiono (2013) research development produces a specification product that will be useful in many types of field studies which are still being detected low, therefore research development is designed.

The subject of the research was media experts, material experts, and practitioners (2

lecturers). The Instrument used to collect the data in this research consisted of an observation sheet, interview sheet, and a questionnaire sheet.

The data that are collected in this research was validation data from experts' judgment and questionnaires. They are related to instructional material and multimedia interactive by using Macromedia flash 0.8 The Procedure to conduct the research was based on 4D (define, design, develop, disseminate). The first step was to define the need analysis, the second was to design the instructional materials based on ESP and media using macro media flash 0.8 and third was to develop learning media based on validation of product by experts and practitioners.

1. The procedure of the research

    The procedure can be explained as follow;

    a. Define (Need Analysis)

    Need analysis is the early step before developing the media. It aims to obtain data and support information in developing media, as a result, the media produced will later suit the media users' needs. The objects of the research were 81 students. The instruments of the research were questionnaires designed by using 8 concepts of Dudley- Evans and St. Jhon (1998), interview with the English lecturer and the previous test result.

    The need for analysis research had been done before this research conducted. The result of need analysis can be seen in part of the result and discussion of this article.

    b. Designing

    Designing should be developed with a learning set and research Instrument. It can be explained as follow;
    1) Instructional material ESP based on Multimedia Interactive is created by using Macromedia flash 0.8 which can run on Android operation, window and PC.

2) The feature contained in this media included: basic Competency (general purpose and specific purpose), materials and evaluation question.
3) Needing desktop such as computer or laptop to operate this media
4) Android.

2. Learning Set

    Learning set consists of Syllabus, Learning implementation plan (RPP), Instructional material.

3. Research Instrument

    The Research Instrument developed consists of validation and Questionnaire sheets. The validation sheet is purposed to material experts, media experts, and practitioners (lecturers) while the questionnaire is purposed to the practitioners (lecturers) attending the learning using interactive multimedia products.

In this research, the researcher used two kinds of data analysis, qualitative and quantitative data.

To obtain the data of product validity, three experts completed validation checklists by scoring the content, language understanding, presentation, and writing mechanics. The scores are range from 1 – 4. 1 indicates invalid. 2 indicates fairly valid. 3 indicates valid. 4 indicates very valid. To obtain a final score of product validity, those scores are computed in the following formula proposed by Riduwan (2005):

$$final\ score\ \frac{gained\ score}{maximum\ score}\ ideal\ score\ (100)$$

Gained score = the range score from 1 to 4 given by each of expert
Maximum score = 4
Ideal score = 100

Since there were two experts who completed the validation checklist, the *final score* from the three experts was summed up and divided

by 2 to obtain an average score of product validity.

III. RESULT AND DISCUSSION

Based on the need analysis result, it can be concluded that the lecturers find difficulty in delivering several learning materials creatively. Furthermore, lecturers also find difficulty in preparing innovative learning media that can encourage learners' learning spirit and activity in English in and outside the classroom (Amna and Idriani, 2019). Brown (1995) states that when all the needs have been identified, they would become the goals of the basis to develop suitable materials, media, exercises, tests, and activities. Therefore, this research development of learning multimedia interactive is supported with adequate infrastructures such as LCD, laptop/ computer, projector screen, and android handphone. The media can be used by the students either with teachers in class or by themselves out of class. As a result, the media is expected to support the learning process. The students can learn the material more easily and more fun.

There are several steps in designing the learning media of English for Specific Purpose based on Interactive Multimedia (Macromedia flash 0.8) for Agro-Industry Students.

1. Preparing Prototype of Interactive Learning Multimedia

In this stage, the authors have designed interactive multimedia using application Macromedia flash 0.8 to be validated and tried out internally later by experts and practitioners. The format of interactive learning multimedia consisted of beginning welcoming slide and topic, main (General purpose and specific purpose, material listening, speaking, reading and writing) and end parts (exercises).

The product developed in electronic media using Macromedia flash 08 can be accessed using a computer, laptop, android handphone and the display of feature contained in learning media designed is as follows:

Fig. 1. Display of Interactive multimedia by Macromedia flash 0.8

2. Product Validation

Validation was conducted by media experts, material experts, and practitioners. The results of validation are described as follows:

a) Media Expert Validation

Validation made by media experts. It purposes to acquire information about the assessment of interactive learning multimedia in the Agro-Industry department ATI Padang. The result of the validation assessment by learning media expert is elaborated in Table 1.
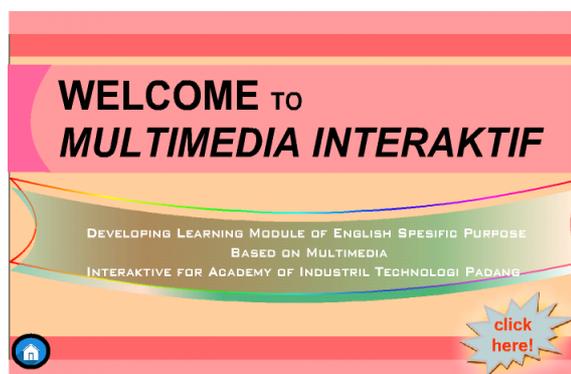
Table 1. Summary of interactive learning Multimedia by using Macromediaflash 08. Media Validation Result in Agro Industry ATI Padang.

No	Indicator of media Assesment	Assessment Scale				
		$\sum ni$	$\sum N$	%	Score	Criteria
1	Content	33	38	100 %	86,84%	Very good
2	Objective and benefit	26	30	100 %	86,66 %	Very good
3	Characteristics of Learning media	40	46	100 %	86, 95 %	Very good
	Total Score	99	114	100 %	86,84	Very good

The result of media assessment on the interactive learning multimedia using Macromedia flash 0.8 get 34 from the highest score of 40 for the content of the media by media expert. The result of the assessment on the objective and benefit of interactive learning multimedia by media experts is 34 points from the highest score of 40 points. The result of the content on the characteristics of interactive learning multimedia by media experts is 58 points from the highest score of 64. The total score is 126 points from the highest one of 114 points. Thus, the score of expert validation is 87,5 %.

The scores above show that the product of multimedia interactive (Macromedia flash 0.8) based on media expert validation is valid. It can be implemented in the teaching-learning process. However, there were some points that needed to be revised based on the experts' recommendations in the suggestion's column. The recommendation given by media experts is that the media has been developed attractively, but the performance and display still very simple. It suggests that the researcher should revise the media with a better display.

Fig..2 Display of media before revision

Fig.3 Display of media after revision

Table 2. Summary of interactive learning Multimedia by using Macromedia Flash 0.8. Media Validation Result in Agro-Industry ATI Padang.

No	Indicator of media Assessment	Assessment Scale				
		$\sum ni$	$\sum N$	%	Score	Criteria
1	Content	34	40	100 %	85 %	Valid
2	Language Aspects	34	40	100 %	85 %	Valid
3	Characteristics of Learning media	58	64	100 %	90,6 %	Valid
	Total Score	99	144	100 %	87,5 %	Valid

Table 3. Summary of interactive learning Multimedia by using Macromedia flash 08 Material Expert Validation Result in Agro-Industry ATI Padang.

No	Indicator of media Assessment	Assessment Scale				
		$\sum ni$	$\sum N$	%	Score	Criteria
1	Content	65	72	100 %	90 %	valid
2	Language understanding	38	40	100 %	95 %	valid
3	Presentation feasibility	44	48	100%	91%	valid
4	Writing system	26	32	100%	81%	Valid with revision
	Total Score	173	192	100%	90%	valid

b) Learning Material Expert Validation

Validation by material experts aims to obtain the assessment on instructional material. It purposes to find out whether or not the content of the material in the media developed reflects on the suitability and the appropriateness of material content. The result of learning media validation is presented Table 3.

The result of the assessment on the feasibility of interactive learning multimedia content by a material expert is 65 from the highest score of 72. The result of the language understanding of interactive learning multimedia using Macromedia flash 0.8 by the material expert is 38 points from the highest score of 40. The result on presentation feasibility of interactive learning multimedia using macro media flash 08 by the material expert is 44 points from the highest score of 48. The result of writing mechanics of interactive learning multimedia using macro media flash 0.8 by material experts is 26 points from the highest score of 32. The total score is 173 points from the highest one of 192 points. Thus, the score of expert validation is 90 %. It means valid.

The score above means that the product of multimedia interactive (Macromedia flash 0.8) based on instructional material expert validation is valid. It can be implemented in the teaching-learning process. But there were some points that need to be revised based on the experts' recommendation. The recommendation given by instructional material is that the content, language understanding, presentation feasibility were valid and appropriately good. But the writing system of the media is valid with some suggestions that it should be well organized, reading comprehension questions instruction should have clear instruction and grammar corner should have more examples for each explanation of the materials related to the topic discussed.

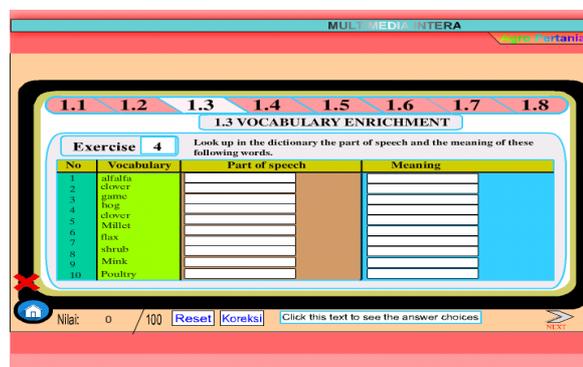**Fig. 4. Display of media before revision**

Fig. 5. Display of media after revision

c) Education Practitioners validation

Validation conducted by education practitioners aims to explore information about input to find out and analyze the feasibilities of content, presentation, and language used in the media.

Table 4. Summary of Interactive Multimedia by using Macromedia flash 0.8 Validation result in Agro-Industryy class ATI Padang Subject by practitioners (lecturers)

No	Aspect	Assessment Scale				
		$\sum ni$	$\sum N$	%	Score	Criteria
1	Content	38	40	100%	95%	Valid
2	Presentation	37	40	100%	92 %	Valid
3	Language Feasibility	54	64	100%	84 %	Valid
	Total Score	109	144	100%	89,58%	Valid

From Table 4, it can be seen that the result of validation on the interactive multimedia by using Macromedia flash 0.8 in Agro-Industry department ATI Padang by practitioners (lecturers) shows that the score of content feasibility aspect is 95 %, the presentation feasibility is 92 %, the language learning score is 84. the total score is 89.58 %. All of the results of multimedia interactive by using Macromedia flash 0.8 based on practitioner's validation are valid so it implies that the media can be implemented in teaching-learning process without revision.

By having the validity of the media, it is hoped to obtain an appropriate interactive multimedia design by using Macromedia flash 0.8 in the teaching and learning process. This research was only limited to the developed step. The result of the validation by media expert on the media developed obtained a total score of 87.5 % belonging to valid with no revision, the result of validation by material expert obtained a total score of 90 % belonging to valid with revision and validation by practitioners obtained total the score of 85.89 % belonging to valid with no revision. It can be concluded that the development of a learning Media of ESP based on Interactive Multimedia by using Macromedia flash 0.8 for Agro-Industry Students ATI Padang is valid with revision in instructional material such as: writing academic, reading a passage and for grammar corner.

IV. CONCLUSION

The implementation of interactive multimedia by using Macromedia flash 0.8 is considered as a breakthrough in engaging students to be active in English in and outside of the classroom. It needs to be done as a learning media in the classroom. This media now need to be applied by students to see real improvement in students' scores and learning motivation. This research will be continued discussing the response of students after using the media and the comparison of students' test results before and after learning with the media. Moreover, the development of learning media development should also be developed for other materials.

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