

# DESIGN AND DEVELOPMENT OF INTERACTIVE LEARNING MEDIA BASED ON CONTEXTUAL TEACHING LEARNING (CTL) IN THE SUBJECT OF EVALUATION AND SUPERVISION OF GUIDANCE AND COUNSELING

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## Abstract

*The background of this study is based on the needs analysis of interactive media on Guidance and Counseling department in Universitas Negeri Medan which is equal to 98.1% of lecturers and students stating that they have not used interactive learning media in the classroom, 100% of lecturers and students stated that they need interactive media in the learning process and as many as 28% of lecturers and students recognize interactive media with macromedia flash and 72% of lecturers and students do not know the macromedia flash. The purpose of this study is to find out the needs and develop the initial product, carry out and know the expert and field testing, and carry out product effectiveness tests. The research method used is Research and Development method proposed by Borg and Gall, adapting the research procedure into three stages, namely: 1<sup>st</sup> stage introduction, 2<sup>nd</sup> stage product trial, and 3<sup>rd</sup> stage test thie effectiveness of the product. The average value of the experimental class pre-test is 52.20 with the highest value and the lowest value 37.5 and the standard deviation 8.09 while for the average post-test value is 85.15 with the highest value 100 and the lowest value 75, 00 and standard deviation of 6.30. The average value of the control class pre test is 51.62 with the highest value of 87.50 and the lowest value of 65.00 and the standard deviation of 10.28 whereas for the average post-test value is 76.91 with the highest value of 98 and the value lowest 75 and standard deviation 6.30.*

**Keywords:** Learning Media, Macromedia Flash, Evaluation and Supervision of Guidance and Counseling, Contextual Teaching Learning (CTL).

## 1. INTRODUCTION

In order for communication between lecturers and students to take place well and the information submitted can be received, lecturers need to use learning media. The learning process activities using media can improve communication between lecturers and students when the learning process takes place. Surna and Olga (2014: 4) state that the learning objectives designed must be clearly communicated and expected and truly understood. Learning material that has been developed must be written and well designed.

Interactive multimedia in learning can provide answers to a form of learning that uses traditional approaches where the approach tends to be teacher-centered and less interactive. Sardiman (2003: 7) defines learning media as a set of tools or equipment used by teachers or educators in order to communicate with students. The usefulness according to Arief (2012: 17) is to clarify the presentation, overcome the limitations of space and time, and overcome the passive attitude of learning participants.

For Guidance and Counseling department in Universitas Negeri Medan, interactive multimedia can help lecturers in realizing quality learning. The application of interactive multimedia can condition learning activities better planned, independent, complete and with clear results. Based on the needs analysis, it is known that in department of Guidance and Counseling in Universitas Negeri Medan the use of interactive media in learning has never existed before, this can be seen from the results of observations and interviews with several students and lecturers.

Based on the needs analysis of interactive media on Guidance and Counseling department in Universitas Negeri Medan which is equal to 98.1% of lecturers and students stating that they have not used interactive learning media in the classroom, 100% of lecturers and students stated that they need interactive media in the learning process and as many as 28% of lecturers and students recognize interactive media with macromedia flash and 72% of lecturers and students do not know the macromedia flash.

In Evaluation and Supervision of guidance and counseling subject for all lecture material it is very appropriate to use interactive media, because this subject in addition provides a large contribution in improving the cognitive power of

students about guidance and counseling in the work world, also in terms of material suitable and interesting to display with interactive multimedia, featuring attractive and elegant features if displayed with macromedia flash.

Rapid progress in the field of science and technology, requires lecturers to be more creative and innovative in conducting learning, especially when giving lecture material to students. The success of education depends on the human element. Lecturers as educators must be able to generate interest and deliver lecture material more interestingly. This is an implication of learning that requires maximum creativity and effort of the lecturer.

Some of the reason's lecturers do not use media are because they think using media is a hassle, requires preparation, and high skills in operating computer equipment and other multimedia. In addition, there are still lecturers who feel foreign to technology. This is in line with research developed by Arsyad (2007: 13)

In its application, the CTL-based interactive media macromedia flash in the evaluation and supervision of guidance and counseling subject is planned to present several different views by accommodating all the facilities of macromedia flash itself such as animation, elegant features, audio and video that will be packaged attractively, so that learning will be more interesting to be presented to students.

The advantages of macromedia flash CS 6 in this learning are, 1) can be filled with audio, video, power point applications, two-dimensional display, import from various types of applications. (2) produce an attractive appearance that provokes inspiration for those who see, (3) students become more proactive in learning.

There are several problems that can be identified as the source of the problem in this study, there are: there has been no learning using interactive media on guidance and counseling department in Universitas Negeri Medan, the learning process is limited on group discussions, and student learning outcomes in evaluation and supervision of guidance and counseling subject tend to be low.

It is hoped that through the development of interactive multimedia can provide answers to the problems that have been identified. Interactive multimedia development is limited to the scope of the development of interactive learning media based on CTL on the learning outcomes of evaluation and supervision of guidance and counseling subject for students.

## **2. RESEARCH METHODS**

This research was conducted in the Department of Guidance and Counseling, Universitas Negeri Medan which began with the collection of initial data related to student learning outcomes, the use of learning media by lecturers and the difficulties of students in evaluation and supervision of guidance and counseling subject. The research subject was the development of interactive multimedia-based CTL on evaluation and supervision of guidance and counseling subject. The subjects of the trial in this study were 25 students of Guidance and Counseling Department, Universitas Negeri Medan, with consideration in the class that they had never used interactive media in all subjects, and low learning outcomes. There were also product validations by two person media experts, two person material experts and two person learning design experts, than field trials to see the effectiveness of the learning media for 25 students.

The development model used in this study is the development model of Borg and Gall (1983) combined with the learning development model of Dick and Carey (2005) which has the following stages of development: 1) conducting preliminary research, 2) making software design, 3) making materials, which include making and collecting images and animation, recording and collecting audio, 4) developing and creating interactive learning media, 5) product review and testing, and 6) testing the effectiveness of products.

The development procedure carried out in the research development of interactive multimedia learning media aims to obtain appropriate products, therefore it is necessary to carry out the stages in conducting this research namely, 1<sup>st</sup> phase conducts preliminary research, 2<sup>nd</sup> phase makes software, 3<sup>rd</sup> phase collects the material to be studied, 4<sup>th</sup> phase creates and manufactures interactive multimedia, 5<sup>th</sup> phase reviews or conducts field trials in the framework of formative evaluations and product revisions.

The instrument of data collection used in this development research is an instrument of assessment of the products developed. The instruments used to collect data are: (1) questionnaire sheets for material experts, (2) questionnaire sheets for learning design experts (3) questionnaire sheets for media experts, (4) questionnaire sheets for students, (5) lecturer perception sheets towards the use of interactive multimedia, (6) student perceptions sheet on the use of interactive multimedia.

Data analysis was carried out in the steps of validation and trial by calculating the scores obtained to assess the quality of the product in the form of learning software media developed. The data collected in this study is quantitative data, namely scores with a scale of 1-5 (score 1 for very poor, score 2 for less, score 3 for moderate, score 4 for good and score 5 for very good).

To ensure product feasibility and effectiveness standards are tested the effectiveness of the products developed in the t-test. Data analysis in this study used quantitative analysis techniques. To see the effectiveness of interactive multimedia that was experimented with, the formula for calculating effectiveness was used (Sugiyono 2008: 305).

### 3. RESULTS

The first product of interactive media developed is a CD, containing three things:

a) Material

The material presented in this interactive media is lecture material in the Evaluation and Supervision of Counseling Guidance subject which contains concepts and explanations that can be used for self-study or classical learning activities.

b) Presentation component

The components presented in this learning CD are (a) the main menu (opening) consisting of navigation buttons, chapters 1-8 (b) navigation buttons for each chapter, from chapters 1-8 (c) learning evaluation in the form of quizzes for each discussion. The material is presented in a coherent manner according to the direction of experts in macromedia flash, along with quiz questions as a test of understanding of the lecture material that has been given. The question model is an essay and is accompanied by a right or wrong button.

The trial of the first product of the study in the form of macromedia flash interactive media was carried out with the following stages: (a) validation by graphic design media experts, (b) validation by learning design, (c) validation by the Counseling Guidance Supervision material expert, ( d) conduct a validation analysis from the graphic expert, learning design, and expert learning material, (e) revision I, (f) the final product, which will be followed by testing the effectiveness of the product.

#### 3.1 Results of Evaluation by Material Experts

From the total assessment results given by material experts on the aspects assessed, the average score obtained in each category then the results of the assessment were analyzed to determine whether or not an improvement was made to the interactive learning media in the Evaluation and Supervision of Guidance and Counseling subject. The percentage of material expert assessment can be seen from the following table.

**Table 1.** Average Percentage of Assessment Results for Interactive Media by Material Experts.

<b>Categorization</b>	<b>Average Percentage</b>	<b>Criteria</b>
Aspect of Feasibility Fill	95,0%	Very good
Presentation Aspects	91,6%	Very good
Language and Integrity Aspects	94,0%	Very good
Average	93,5%	Very good

#### 3.2 Results of Evaluation by Learning Design Experts

The results of the assessment of learning design experts on aspects of learning design obtained an average score in each category. The results of the assessment were analyzed to determine the feasibility of developing an interactive media in the Evaluation and Supervision of Guidance and Counseling subject. The average percentage of the results of the assessment of learning design experts can be seen in the following table.

**Table 2.** Average Percentage of Assessment Results for Interactive Media by Learning Design Experts.

<b>Categorization</b>	<b>Average Percentage</b>	<b>Criteria</b>
Quality of Learning Design	87.5%	Very good
Quality of Information Design	85.0%	Very good
Quality of Interaction Design	85.0%	Very good
Quality of Presentation Design	83.0%	Very good
Average	85,12%	Very good

#### 3.3 Results of Evaluation by Media and Graphic Design Experts

The overall results of the research given by median experts and graphic design in each aspect are determined by the average score in each category. The results of the assessment were analyzed to determine the feasibility of developing an interactive media for Evaluation and Supervision of Guidance and Counseling subjects. The average percentage of the results of media and graphic design expert assessment can be seen in the following Table.

**Table 3.** Average Percentage of Results of Assessment of Interactive Media by Media and Graphic Design Experts.

Categorization	Average Percentage	Criteria
Programming	88.7%	Very good
Display Quality	88.5%	Very good
Average	88,6%	Very good

### 3.4 Product Effectiveness Test

Based on the research, the results of the initial test (pre-test) and the end of the test (post-test) were obtained for the two sample groups, namely the experimental and control groups. each group consists of 25 students. After that, the calculation is done so that the average pre-test, post-test and standard deviation are obtained as in the following table.

**Table 4.** Average and Standard Deviation.

Eksperimen Group				Control Group			
Pre-test		Post-test		Pre-test		Post-test	
X	S	X	S	X	S	X	S
52,2	8,0	85,1	6,3	51,6	10,2	76,9	5,4

## 4. DISCUSSION

Interactive media development products in evaluation and supervision of guidance and counseling subject are teaching materials that have been developed with regard to learning aspects and the media as the design principles of learning giving messages. This product development research is directed to produce an interactive media product for students that is used to improve the process of providing learning and student competence.

Therefore, the research process is carried out and begins with, (1) a preliminary study, (2) then designs learning media, (3) conducts product validation revisions and improvements based on analysis of validation data from material experts, (4) learning design experts and software engineers. This is in line with the opinion of Borg and Gall (1983: 772) which suggests that research development is research oriented to develop and validate product products used for education.

The revised aspect was refined based on data analysis and trials and input from material experts, service design experts, media experts and students as users of interactive media, aimed at exploring some aspects that are common in the process of developing a product. The variable learning media has an average value of "very good". There are also service media variables that are assessed including content eligibility, presentation, language, programming, and graphics.

To obtain effective and attractive learning media, researchers use the principles of learning design and media design in developing interactive learning media. A media can be said to be feasible after showing satisfactory results in achieving its intended goals. In this case a product trial is carried out in the learning process to determine the effectiveness of the service. The effectiveness of the media is derived from the value of student learning outcomes (Miarso, 2011: 536). The results of data processing research conducted, there are differences in learning outcomes in the BK evaluation and supervision courses between students who are taught using interactive learning media and students who are taught with interactive services is 85.15 higher than students taught by conventional services that is equal to 76.91.

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