# DEVELOPING WEB-BASED LEARNING MEDIA USING DREAMWEAVER CS4 APPLICATIONS ON THE SUBJECT OF SET FOR STUDENTS CLASS VII OF SMP

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## ABSTRACT

Developments of technology, communications, and information are growing very fast to get easy to looking for and get the information in all sectors. One of the sectors that get a good impact is aducation. By using learning media can help the students to understand math. This research is the development that has a purpose to produce the products of Developing web-based learning media using Dreamweaver CS4 application on the subject of the set for students class VII of SMP that can be used in the teaching-learning process of math. The model development of learning media using ADDIE, are analysis, design, development, implementation, and evaluation. The subjects of the study include subject matter experts, media experts, and the seventh-grade students of SMP Muhammadiyah Magelang Tempuran. Techniques of data collection was done by questionnaire. Technical analysis of the data in this study conducted quantitatively converted into qualitative values Likert scale. The results of this development research is a learning website that address in mathscience .web.id. To know the results of the test in the subject of media can be a score of 91.5 with very good categories, from media test score of 88.5 in very good categories, and from the students respond a score of 78.8 in the very good category. However, the web-based learning media development on the subject of compilation include in the good category, so it can be used as learning media in math.

Keywords: *Media Education, Dreamweaver CS4, ADDIE, Sets.*

## INTRODUCTION

Education is the process of forming a human mindset to be more mature wherewith human education will be trained to solve problems related to life. With human education, it is expected to seek knowledge as widely as possible regardless of age, status, and gender to improve their dignity and value and be useful for themselves, society, nation, and state. The teaching and learning process is essentially a process of delivering messages from the source of the message to the recipient of the message through certain media. The teaching and learning process is said to be good if the process can generate effective learning activities. According to Hamalik (Arsyad, Azhar, 2014: 19), the use of instructional media in the teaching and learning process can arouse new desires and interests, arouse learning motivation.

Based on observations with Mrs. Wiwik Zulaekah S.Pd as a teacher at Muhammadiyah Tempuran Magelang Middle School, in the teaching and learning process using classical media in the form of books and workshops, it is necessary to have innovations in mathematics learning media so that students are not bored in the teaching and learning process. Innovation in mathematics learning media needs to be done in abstract mathematics learning.

Based on the explanation above, it can be concluded that there is a need for innovation in mathematics learning media that can arouse student learning motivation, so that researchers are interested in conducting research with the Development of Web-Based Mathematics Learning Media With Dreamweaver CS4 Applications At the Top of the Association for Middle School Students Class VII.

Based on the background, the problem can be formulated as follows:

1. How is the development of web-based mathematics learning media using the Dreamweaver CS4 application on the Material for Junior High School Class VII students?
2. What is the score for the feasibility of web media created to be used as a medium for learning mathematics?

Based on the formulation of the problem, the following research objectives are obtained:

1. Producing web-based mathematics learning media on the subject of the set using the Dreamweaver CS4 application on the set material for Class VII Middle School students.
2. To find out the feasibility score of instructional media from the assessment of lecturers, teachers, and students on mathematics learning media using web media.

**METHODS**

This research is a research development using the ADDIE research method. Furthermore, Lee & Owens in winarto (2009: 28) ADDIE development model consists of 5 phases, namely:

1. Analysis
   There are several things analyzed in this stage, namely:
   a. Requirements analysis is the stage to determine the subject matter and software needed in the development of instructional media.
   b. Analysis of the work program, is the stage of technology, objectives, media, existing data.
2. Design
   Compilation of program content structures, composing lines of media program content.
3. Development
   The process of taking pictures, recording, making animations, composing text, etc. Followed by the process of programming, packaging, and assessment.
4. Implementation
   Trial utilization and improvement or revision and duplication.
5. Evaluation
   The assessment process includes assessing its benefits or effects, developing instruments, collecting and analyzing data.

The subjects in this research and development consisted of material experts, media experts and VII graders of the Muhammadiyah Tempuran Magelang Middle School. The instruments used to collect data in this study included the feasibility test instrument for learning media, the material feasibility test instrument, and the test instrument for students.

After the data is collected, in Sukarjo (2006: 55) the average is calculated, using the formula:

$$\bar{x} = \frac{\sum_{i=1}^{k} x_i}{n}$$

Information :

$\bar{x}$ : average score
$x_i$ : statement score
$n$ : number of respondents
$k$ : number of statements on the questionnaire

Furthermore, after all, data has been converted into qualitative using the ideal assessment criteria guideline table. According to Sukarjo (2006: 53), ideal evaluation criteria are determined as follows.

**Table 1.** Criteria for ideal rating categories

| No | Qualitative Score Range | Qualitative Category |
|---|---|---|
| 1. | $\bar{X} > M_i + 1{,}8\,SB_i$ | Very good |
| 2. | $M_i + 0{,}6\,SB_i < \bar{X} \leq M_i + 1{,}8\,SB_i$ | Well |
| 3. | $M_i - 0{,}6\,SB_i < \bar{X} \leq M_i + 0{,}6\,SB_i$ | Enough |
| 4. | $M_i - 1{,}8\,SB_i < \bar{X} \leq M_i - 0{,}6\,SB_i$ | Less |
| 5 | $\bar{X} > M_i - 1{,}8\,SB_i$ | Very bad |

**RESULTS AND DISCUSSION**

This learning media was developed using the ADDIE research method with the following steps.

1. Analysis

   Based on observations and results of interviews with mathematics teachers in grade VII Muhammadiyah Tempuran Magelang Middle School. The analysis that has been carried out is as follows:

   a. Performance Analysis

      In this analysis, researchers have analyzed the situation which includes: observation of school computer laboratories, interviews with mathematics educators and ICT teachers concerned. The results obtained are as follows:

      1) The use of computer laboratories in the process of learning mathematics is not optimal.
      2) Educators have not yet developed web-based mathematics learning media on the subject matter of the set.
      3) Lack of training of educators about the development of web-based learning media.
      4) There are learning difficulties experienced by students on the set material.

   b. Requirements Analysis

      This analysis includes the analysis of the curriculum used is the 2006 curriculum. With the material set for junior high school students Class VII.

2. Design (Planning)

   a. Preparation of flowcharts

      Flowcharts are useful for showing a sequence of learning media.

   b. Make a storyboard

      After making a flowchart the next step is to create a storyboard design including the start page, material, evaluation, students.

   c. Develop assessment instruments

      The assessment instruments in this web-based learning media research include researchers using questionnaires, including media expert evaluation questionnaires, material expert assessment questionnaires, student response assessment questionnaires, which were previously validated by relevant experts.

3. Development

   a. Making learning media

      Here previously the researcher collected many references to the set material that was included in the learning media, then made. Making this web-based learning media researchers used the Dreamweaver CS4 application with the addition of Notepad ++, CorelDraw x5, Macromedia Flash, XAMPP, and FileZilla applications.

   b. Learning media validation

      This web-based learning media is validated by media experts and material experts who were previously validated by the validator. Each expert filled out a questionnaire that had been prepared based on the grid. Comments and suggestions for improvement from media experts and material experts are used as a reference to make improvements to the media made. After being corrected, the researchers asked for an assessment of the media experts and material experts by filling out the questionnaire sheets.

   c. Trial small classes

      This trial was conducted on September 19, 2016, in the computer laboratory of SMP Muhammadiyah Tempuran Magelang in the VIA class. This trial was given to 7 random students who were assisted in the selection by mathematics educators. This is done so that the responses and input provided can represent all aspects of the class.

4. Implementation

   Implementation of product use test was carried out on September 24, 2016, in the computer laboratory of SMP Muhammadiyah Tempuran Magelang. At the time of implementation, students

operate the media using computers and study the material independently from beginning to end. After finishing observing and implementing online learning, students fill out an evaluation questionnaire.

5. Evaluation

After the implementation process above, the data obtained from filling out the questionnaire conducted by students who are then analyzed. This analysis aims to determine the feasibility of the web-based learning media, from the results of the questionnaire obtained suggestions and comments from students, overall the students gave good comments on the web-based learning media.

**Data analysis**

1. Feasibility Learning Media

The feasibility of instructional media is assessed by two media experts, with the results of the feasibility questionnaire calculation can be seen in the following table:

**Table 2**. Table Scores for the Feasibility Test of Learning Media by Material Experts

| No | Evaluator | Score | Quantitative Criteria |
|---|---|---|---|
| 1 | Expert Material 1 | 93 | Very good |
| 2 | Expert Material 2 | 90 | Very good |
| Average | | 91,5 | Very good |

Based on the table above, it can be seen that the average score of the material expert assessment is 91.5. These results indicate that the learning media developed are included in the Very Good category.

2. The feasibility of the media on learning media

The feasibility of the material in multimedia learning is assessed by two material experts, with the results of the feasibility questionnaire calculation can be seen in the following table:

**Table 3.** Table Scores of Media Feasibility Test in Learning Media by Material Experts

| No | Evaluator | Score | Quantitative Criteria |
|---|---|---|---|
| 1 | Media expert 1 | 93 | Very good |
| 2 | Media expert 2 | 84 | Good |
| Average | | 88,5 | Very good |

Based on the table above, it can be seen that the average score of the results of the assessment of media experts is 88.5. These results indicate that the media in the learning media developed are included in the Very Good category.

3. Student Response

Student responses to the learning media developed, are known from the results of student assessments through a questionnaire given during product trials and usage trials. Following are the results of the calculation of student response questionnaire on the trial of learning media products:

**Table 4**. Trial Score Table for Learning Media Products by Student Response

| No | Evaluator | Score | Quantitative Criteria |
|---|---|---|---|
| 1 | Trial of Small Class Muhammadiyah Combat Middle School Magelang | 75,9 | Very good |
| 2 | Trial Product Usage of Muhammadiyah Combat Magelang Middle School | 81,7 | Very good |
| Average | | 78,8 | Very good |

Based on the table it can be seen that the average score of the results of the assessment of student responses in the product trial is 78.8, so based on the guideline table the criteria for learning media assessment of aspects of student responses are included in the Very Good category.

**Product Revision**

The product revision aims to produce learning media that are in line with the expected criteria. Mathematics learning media that have been assessed by material experts, media experts, and students are then revised according to the input and suggestions that have been given.

**Final Product Review**

From the research and development carried out it has succeeded in designing mathematics learning media in the form of web learning using online internet facilities consisting of:

1. Home
   The homepage menu consists of header, body, and footer.
2. Display student menus
   The student menu contains a login page, a student page consisting of student self-data, a list of student grades, and a logout.
3. Display material menu
   This view is presented in a dropdown display containing sub-material.
4. Display evaluation
   This evaluation menu presents an online exam that can be directly seen in the results.

## CONCLUSION

After the learning media developed is revised according to input and suggestions from media experts and material experts, then product trials and student use tests are conducted to determine student responses to the instructional media. Based on this assessment, it can be concluded that in general the learning media developed are included in the excellent category. Thus, web-based learning media with the Dreamweaver CS4 application on the subject matter of the set for seventh grade students of SMP Muhammadiyah Tempuran Magelang is suitable as a medium of learning mathematics with very good criteria with a score of 91.5 from the material test, very good criteria with a score of 88, 5 from the media test, and a good category from the student response test with a score of 78.8.

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