

# Development of Interactive Learning Media Based on Teaching Multimedia Scouting Faculty of Sports Science

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**Abstract:** *Technological developments and changes in globalization towards the digitalist era are challenges that must be balanced with the learning process to strengthen the commitment of universities to emphasize character education and increase productivity especially in learning. The research objective of developing learning media is to produce products in the form of multimedia-based learning media on Scouting courses. Media development will facilitate lecturers and students in lecture interactions to achieve planned competencies. The research method used is research and development (RnD) with the Instructional design approach with the ADDIE approach, which is an extension of analysis, design, development, implementation, and evaluation. The instrument used to collect data is a questionnaire in the form of a questionnaire and supported by the acquisition of data based on interviews, observation (observation), documentation, and Forum Group Discussion (FGD). Conclusions based on the results of testing using questionnaires obtained a percentage of 94% in the "Very Good" category. The media is then applied in the learning process in Scout courses to achieve lecture competencies, instill Scout values, and support the development of technology as a culture of culture and must lead to good things in accordance with the KKNi curriculum implemented.*

**Keywords:** Development, Media, Scouting

## 1. Background

The Indonesian National Qualifications Framework (KKNi) is a decree of the Presidential Regulation of the Republic of Indonesia Number 8 of 2012 and is a provision of the curriculum applied in Higher Education. KKNi is a framework for qualifying human resources as a manifestation of quality related to the system of education, training, and assessment of equality of national learning outcomes to produce quality and productive national human resources. Descriptions of each level of qualification are adjusted to the development of science, art, technology, and developments in the supporting sectors of the economy and people's welfare.

Supporting national goals through KKNi is carried out at the lecture stage as the basic goal of realizing productive and quality resources. The conditions faced in the present are technological developments leading to the digitalist era that are used by all groups without limits, and this situation is an opportunity to include positive interests in an effort to direct the use of technology towards a better direction. Technological developments in creating superior and productive resources are needed especially in the lecture process as an initial stage of character building and training in using technology fundamentally.

Medan State University as a university in North Sumatra has a responsibility in producing productive and knowledgeable human resources in answering all challenges and changes that occur in the midst of society. Technological developments and changes in globalization towards the digitalist era are challenges that must be balanced with the learning process towards developments that occur to strengthen the commitment of universities to emphasize character education and increase productivity especially in lectures.

The effectiveness of giving lectures needs to be done as a new transformation that is towards the modern era. Ali et al 2006 (in Asyhar, 2012: 17) reveal that traditional learning is characterized by a meeting between educators and students in the teaching and learning process. This method faces many obstacles when faced with the limitations of place and time of implementation, as it relates to the increasing number of students and activities of students and learners in the global era, it is necessary for students to be given learning experiences with varied sources and learning media. Such learning paradigms begin to shift from face to face courses directly to web-based learning such as video conferencing and e-learning.

Scouting is one of the compulsory subjects for the Department of Physical Health and Recreation at the Faculty of Sport Sciences of Medan State University. The existence of Scouting is the basis for the creation of experienced and potential teachers in developing and creating scouting environments that are in accordance with the provisions of the Scout Movement. Educated students as coaches are the main goal of Scouting as a compulsory subject to be professionally prepared for teachers of Physical and Health Education whose essence is a field teacher.

The change in globalization currently towards the global era of digitalization makes the lecture process better develop the learning system, one of which is to utilize multimedia application technology as an innovation in the development of Scouting lectures that have an important role for students in improving lecture competencies.

The development of multimedia-based lecture media needs to be developed because of the rapid and sophisticated development of technology and its use for all ages, especially in education that is packaged in multimedia

applications. Multimedia-based media in Scouting courses will provide strength to the eyes of themselves as learning that is able to balance global digitalization and avoid falling competency in lectures at Faculty of Sports and Science Medan State University as an independent university and create character students especially in Scout courses. This multimedia-based learning media also provides space to increase the positive use of technology so that the direction in using it is right for good goals.

The development of technological innovations in the education process is generally very much needed by educators in improving the quality of education specifically Scouting courses, so that new findings in the field of education are highly expected considering there are not many developments in technological innovation at this time.

## 2. Literature Review

### 2.1 Instructional Media

Media is a very important component in a communication process. The communication process involves three main components, namely the sender or message source, intermediary (media), and the receiver. Media has an important role as a means or device that functions as an intermediary or channel in a process of communication between communicators and communicants.

Learning is a term used for teaching and learning activities between teachers and students. Learning is used in education as an expression to carry out activities that take place in the classroom. Activities that occur in the classroom are interactions between teachers or educators with students or students to communicate about science and knowledge. Such expressions are described by Munadi, 2008 (in Arsyhar, 2012: 7) that is learning is the process of communication in education occurs because there are plans and desired goals.

Media in learning is referred to as learning media that can be packaged with various modifications according to the needs needed. Media learning is done so as to provide convenience in the learning process in order to achieve the intended learning goals and objectives. To achieve the aims and objectives in learning, the main thing needed is communication. The virtue in communication is the achievement of the intent and purpose of the intended destination. Such virtues can be supported by the use of media as an intermediary tool for achieving information and communication.

Learning media helps the learning process carried out to achieve competence. According to the Big Indonesian Dictionary, etymologically learning means "trying to get intelligence or knowledge". This definition has the understanding that learning is a person's activity to achieve intelligence or knowledge that was not possessed before. By learning humans become aware, understand, understand, and can carry out and have "something" (Rahyubi, 2014: 2).

According to Hergengan and Olson in Rahyubi (2014: 3), "learning is a relatively permanent change in behavior or potential behavior that is the result of experience and is not

characterized by temporary self-conditions such as those caused by illness, fatigue, or drugs." In addition, according to Mayer in Rahyubi (2014: 3) "learning is a relatively permanent change in one's knowledge and behavior caused by experience". Likewise according to Singer in Rahyubi (2014: 3) "learning is indicated by a change that is relatively permanent in appearance or potential due to training or past experience in a particular situation".

Conclusions that can be drawn from the opinions of experts about learning above are the processes experienced by a person to gain knowledge and find self potential based on experience experienced in certain situations. Learning is related to experience and experience related to events experienced. The events experienced are identical to all objects that are seen and used so that it is easy to remember every event experienced. Objects can be interpreted as a medium to stimulate memory and stimulate understanding to act and do something desired.

### 2.2 Multimedia-Based Interactive Media

Multimedia is the joining of two words, namely "multi" which means a lot and "media" which means medium. Vaughan, 2004 (in Asyhar, 2012: 75) explains that multimedia is any combination consisting of text, graphic art, sound, animation, and video that is received by users through computer hardware.

Multimedia or the use of computer media gets enormous attention in instructional or computer assisted intuction learning activities with the speed of mastery of the material that can be set by the user. The use of computers as a media can be developed as an instructional tool that can be directly used in the learning process, can be a substitute for books according to the CIA application used (Purwanto and Riadi, 2013: 201)

Multimedia is divided into two categories, namely multimedia content production and multimedia communication. Multimedia content production is the use and processing of different media (text, audio, graphics, animation, video, and interactivity) to convey information or produce multimedia products (music, videos, movies, games, entertainment, etc.). Multimedia communication is using media (time) such as television, radio, print, and the internet to publish, broadcast, or communicate material advertising, publicity, entertainment, news, education.

Interactive multimedia in learning is a series of props (media) that are compiled or made to achieve educational goals. Interactive multimedia facilitates the process of transferring knowledge from educators to students with various displays and demonstrations. The type of interactive multimedia is very effective applied to the learning process as an effort to increase the potential of students in the field of technology and facilitate the achievement of the material objectives being taught.

### 2.3 Scouting Course

Scouting is all aspects related to scouting, defined as non-formal education organized in out-of-school education and

has a goal towards the education of students. Scouting does not repeat or reproduce what has been given by schools, families, religious institutions, clubs, or other youth organizations to young people. Scouting seeks to complement what has been done by filling in gaps in education that may not be carried out by other parties. (Irfan and Usman, 2018: 7).

The Scout Movement as an organizer of non-formal education outside of school is a very strategic educational institution that aims to increase the resources of Indonesian youth and realize an increase in the sense of nationalism which in the era of globalization has begun to fade (Nainggolan, 2016: 88).

Scouting is part of a course in the Faculty of Sports Sciences majoring in Physical Health and Recreation Education. Scouting courses are applied to shape the personality of students as prospective teachers to be able to develop Scout education in Schools. Scouting as a scouting activity in general is education that spends a lot of time outside the classroom and is more dominant in the process of skills education, therefore Faculty of Sports Science students are highly demanded to be skilled in developing scouting in schools.

Scouting Education is aimed at developing all one's abilities that are recreational to achieve goals. Scout coaches in conducting training for students must have the principle of educating rather than instructing, not teaching but educating the ability of the child to educate himself, according to his own desires, to things that will shape his character.

Discussions in Scouting courses include the nature of scouts, organizational structures, front groups, work units, community units, adult scout education, deliberation, methods of exposure, uniforms, ceremonies, basic skills, wandering, and camp. All components of Scouting material are the basis that must be mastered by all students as a guideline to become a competent coach.

### 3. Research Methods

#### 3.1 Research design

Development of scouting education learning media using research and development (RnD) research designs. The research activity in question is developing learning products in the form of multimedia-based interactive media. Product development is carried out with validation efforts to provide proof of the product to be generalized. Sugiyono (2016: 28) explains that Research and development functions to validate and develop products.

#### 3.2 Research procedure

Robert Maribe Brach, 2009 (in Sugiyono, 2016: 38) explains that developing Instructional design (ADD design) with the ADDIE approach, which is an extension of analysis, design, development, implementation, and evaluation. The development procedure for the development of interactive multimedia-based scouting education learning media research is carried out by:

#### 3.2.1. Analysis

Analyze the product to be developed

- 1) Survey of scouting education activities in student learning environments.
- 2) Assessment of the problem at hand.
- 3) Developing initial products in the form of multimedia learning media.
- 4) Analysis of the purpose and character of the product.
- 5) Look for sources of content from the product design to be made.
- 6) Arrange the stages of making the product.

#### 3.2.2. Design: Product Design

The product of the development of interactive multimedia-based learning media was designed by researchers with media experts namely Zupri Harahap. Material simulation is made into multimedia-based interactive media using the Adobe Flash application. Scouting media consists of: Front View (Cover), Table of Contents Material (consisting of 14 lecture material), and Evaluation (consisting of Formatives 1, 2, 3, and 4).

Design activities are activities to compile the form of media that will be developed by media experts, using lecture teaching materials. Teaching materials developed, namely Scouting with Scout material. Making starts from opening the adobe flash application, then the initial application will appear. Adobe Flash application will show several menus including file, edit, view, insert, modify, text, commands, control, windows, and help.

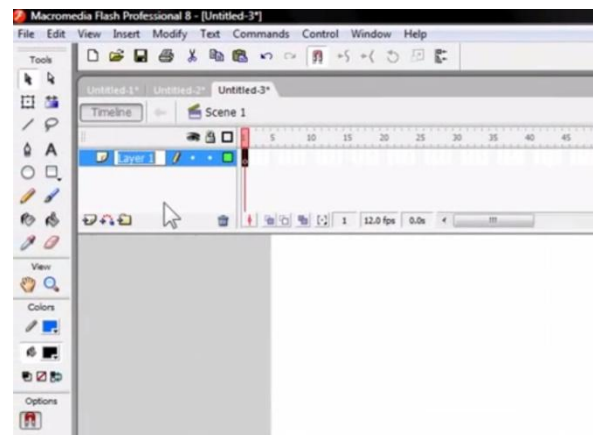


Figure 4.1: Adobe Flash Initial View

The initial working system is to make the background a multimedia display with color or drawing techniques to support the material made. The form of writing entered is made by clicking on the text icon on the left side of adobe flash display, but there are also several menu options in that section to make other parts such as tools, view, color, and options.

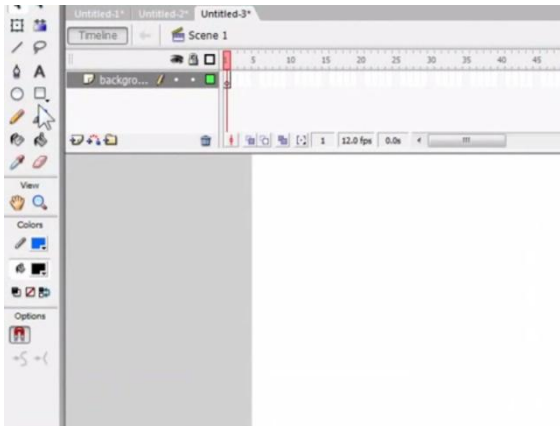


Figure 4.2: Display of Making Background and Material

The material loaded in multimedia is done using scene, frame, variable, filters, parameters, properties, and action functions. Posts with buttons so as to bring up other material parts, will use several menus to unify their functions so that the material display is in accordance with what is designed such as combining properties and action menus.

Evaluation is the last part added in improving the media by displaying the score at the end of the material (formative) to explain the results of the student's work in answering the question. The menu used is control, properties, and global functions with the combination will give the effect of a practical problem to find out the formative score in the evaluation.

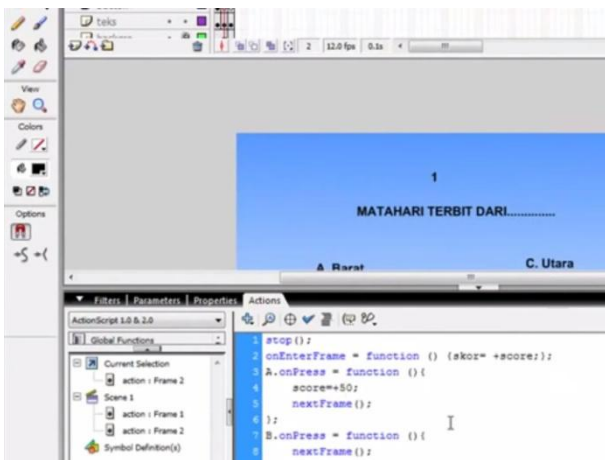


Figure 4.3: Display of Question Making

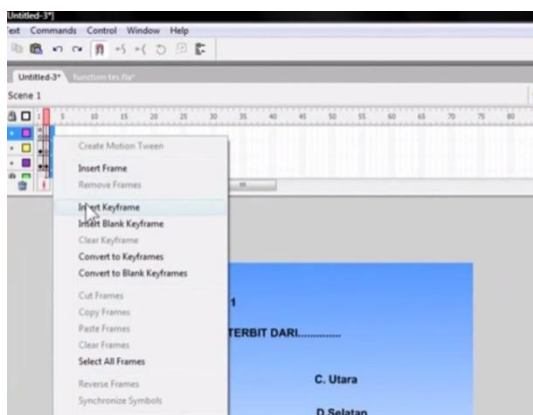


Figure 4.4: Editing Question

### 3.2.3. Development and Implication: Making and Using (Product Testing)

Product manufacturing is carried out after the submission of this development research design is accepted and can be continued. The stages after making, the researcher will do the testing by:

#### 1) Expert validation

Validation of product research is carried out by experts in accordance with the field of expertise. Expert validation will be revised to the initial product made. This stage is carried out in 2 stages and 2 revisions. Validation of experts in this study were media experts and material experts.

#### 2) Field Trials

Field trials were conducted to get responses and product revisions, so that the final product will be produced in the form of modification of children's athletic equipment in scouting learning. The trials were carried out in small scale trials and large-scale trials or field trials on Faculty of Sports and Sciences students. After a small-scale trial, product analysis and revision were carried out before a large-scale trial was conducted. After conducting a large-scale trial the next stage is the final analysis and final revision so that the final product is ready for use.

### 3.2.4. Evaluation: Assessing and Revising Products

After getting improvements from experts, small-scale trials and large-scale trials to improve products before the final product is used in the field.

## 3.3 Techniques and Data Collection Instruments

### 3.3.1. Data collection technique

Data collection techniques carried out with 4 levels, namely: 1) Data "analysis" to find out the problems that occur in Scouting learning, 2) data "design" to design a product as a problem-solving effort, 3) data "development and implementation" is making and product use for product testing, 4) data "evaluation" is product assessment data and will provide information about the feasibility of the Product to use.

### 3.3.2. Data Collection Instrument

The instrument used to collect data is a questionnaire in the form of a questionnaire and added with special notes from observations, documentation, Forum Group Discussion (FGD). The questionnaire instrument (questionnaire) in the form of a Likert scale consisting of four parts namely "very appropriate" has a score of 4, "right" has a score of 3, "incorrect" has a score of 2, and "very inappropriate" has a score of 1. Set score is a reference for making the calculation process easier, so that the questionnaire can be obtained by filling out the results in numerical form and generalized in the form of sentences.

The instrument is arranged in the form of a questionnaire or questionnaire with a Likert Scale. The results of data acquisition through questionnaires are processed by the formula:

$$P = \frac{f}{n} \times 100$$

Information :

P = Percentage sought (%)

f = Number of scores obtained

n = Total score should be

and included in the category of assessment results, namely:

a. 80% - 100%: Very good

b. 66% - 79%: OK

c. 56% - 65%: Good enough

d. 46% - 55%: Not good

e. <45%: Very Less

Sudijono (2009: 35).

### 3.4 Data validity

The validity of this research data is done through data checking. Data checking is done by triangulating data collection techniques. Triangulation on data collection techniques is done through questionnaires, observation and interviews. The hope of triangulation is that researchers get the right and appropriate data so that they can reveal the facts that occur from the purpose of the research conducted.

### 3.5 Data analysis technique

The data analysis technique used in this study is to reduce data from data sources collected in writing and in detail. Data reduction results are then presented in the form of tables, graphs, so that the data is organized and arranged in a pattern of relationships that are easily understood. After the data is arranged and understood, the next step is drawing conclusions and verification.

## 4. Description of Research and Results Achieved

Research on the development of multimedia-based learning media Scouting courses was carried out with the stages of Semester Learning Plans preparation during lectures as guidelines for making media development. The design of the development was carried out by a research team namely Dr. M.Irfan., M.Or., Drs. Suryadi Damanik, M.Kes., And Zen Fadli, M.Pd., then made by Zupri Harahap (Student) as a media expert. The results of the creation of learning media by media experts were then discussed in a discussion forum namely Forum Group Discussion (FGD) by the research team and media experts namely Abdul Latif, S.Kom. and Muklish, S.Kom, and Scouting Trustees namely Khairul Usman, S.Si., M.Pd. and Indri Prima Dewi, S.Pd. which will then be referred to as media validator experts.

The material mix was then made into multimedia-based interactive media using the Adobe Flash application which was assisted by media expert, Zupri Harahap. The media developed has information:

1) Initial View

2) Selection Menu of Lecture Material (Scouting)

Scouting media that had been made by media experts was then discussed in discussion forums, namely Forum Group Discussion by the research team and validation by media experts and scouting. The results of the validation are improved, which is referred to as the stage of revising I. The following improvements are intended:

- 1) The media must have complete information in the form of a lecture contract or Semester Learning Plan.
- 2) the content of the media must have complete content, because it will be made as a reference material for students in conducting deepening outside of lectures.
- 3) Image resolution is adjusted to the actual image conditions.

The results of the revision I of media development were completed by media experts (media makers) and then small-scale tests were conducted, namely 1 class of students (respondents) totaling 22 people. Small-scale test activities are supported by instruments in the form of questionnaires filled out by respondents to obtain information about the description of the media developed in Scouting courses.

Instruments for media development through small-scale tests obtained results based on calculations, namely 47% in the very inappropriate category, 26% in the incorrect category, 21% in the right category, and 6% in the very inappropriate category. The conclusions obtained based on the results of the small-scale test percentage, namely the developed media has a percentage of 46%, namely the category "Poor". The "Less Good" category means that the media developed on Scouting courses have not been able to improve the scouting learning process.

The categories obtained by the small-scale test results are also accompanied by records of respondents giving information about the media, including:

- 1) Colors with writing should be reviewed again evenly because there are some parts that still have colors that are not suitable so that it is difficult to read or write obscured.
- 2) Need to be equipped with pictures on each chapter and material, so as to provide interest in opening every material in the learning media.

A summary of the results of a small scale test and then a revision of phase II is guided by the research team and validator to complete the revision of learning media in order to achieve optimal results in accordance with the needs of the media and media material to be completed. The validator added and then agreed together that the evaluation section should be adjusted to the lecture situation, namely using a formative system, so that it would be easier for the instructor / lecturer to provide an assessment in accordance with the assessment columns contained in the learning / lecture results sheet. The revision resolution II conducted by media experts will then be re-tested with large scale respondents consisting of three (3) classes totaling 66 people.

Large-scale test results obtained data, namely 78% in the category of "Very Right", 19% in the category "Right", 2% in the category "Not Right", and 0% in the category "Very Inappropriate". Conclusions obtained based on the results of a large-scale percentage test, namely the media developed has a percentage of 94% in the category "Very Good" and without special notes. The "Very Good" category means that the media developed on Scouting courses can have an influence on improving the scouting learning process. The information obtained provides an explanation that the media developed in the category is feasible and can be used by

respondents or FIK students Unimed in the application of Scouting courses.

## 5. Conclusions

Temporary conclusions obtained based on the research process carried out are:

- 1) Multimedia-based interactive learning media are arranged in a complex and systematic manner and the design is done by media experts based on the conceptual framework of Scouting courses.
- 2) Multimedia-based interactive learning media will be presented with the adobe flash application that must be owned by all students.

## 6. Suggestions

Suggestions compiled based on the research conducted are:

- 1) Work on multimedia-based interactive learning media arranged based on RPS and scouting subject competencies.
- 2) Products in the form of multimedia-based interactive learning media Scouting courses are designed based on the results of the FGD conducted strictly by the research team and experts.

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