

The Development Of Teaching Macromedia Flash For Plane Material In Class X SMKN 1 Langsa

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Abstract

This study aims to develop the learning media Macromedia Flash are valid, practical, and effective on the plane materials at SMKN 1 Langsa. In the development of learning media using Macromedia Flash that will be do by the researchers in this study is to use the model of ADDIE. Design model of ADDIE system includes several basic steps of learning system design that is simple and easy to learn. This model is according to its name, consists of five main phases or stages, namely (A) analysis, (D) design, (D) development, (I) implementation, and (E) valuation. Fifth phase or stage in the ADDIE Model needs to be done systemically and systematically. Researchers chose model of ADDIE because researchers considered that the model is consistent with the systems approach the problem that the background for this study. With the analysis phase, the design phase of learning to achieve learning objectives, development stage, stage of delivery of content, and the evaluation phase, the researchers hope that with this model can be developed using Macromedia Flash learning media on plane material appropriate, valid, practical and effective in improving students' mathematics learning outcomes. Stages in the development of this research consists of the analysis stage that consists of the stages of work and analysis needs analysis, instructional design stages, stages of development in this stage consists of a) Utilization and development of teaching materials. b) Selection of media learning and development, in this phase of testing are validities the learning macromedia flash media consisting of constructs validity and content validity. The next phase of implementation is contained in the practicalities of the stages of learning macromedia flash media to plane material in class X SMKN 1 Langsa. And last is the evaluation stage in which we can see from the effectiveness of learning macromedia flash media on the student' outcome.

Keywords: Development of instructional media, Macromedia Flash, Plane.

A. BACKGROUND

The process of learning is essentially a process of communication, which is a process of delivering a message from the message source through channel / media specific to the message recipient. Message, the source of the message, the channel / media and the recipient are the components of the communication process. The message to be communicated is the content of teaching or education in the curriculum. Source of the message can be a teacher, student, or other person author and media procedures. The line is the instructional media and the message recipient is a student or a teacher as well.

Instructional media as a communication tool to further streamline the learning process and also very helpful in achieving success in school learning process. The role of instructional media is one of the major factors that can affect the learning outcomes of students, because through learning is the media messages can be delivered according to the learning objectives. To realize the effectiveness of learning and teaching, the learning should pay attention to how the message is designed so that students were interested in learning. Differences in learning styles, interests, intelligence, sense of power limitations, disabilities or barriers to geographical distance, the distance of time and others can be helped solved by utilization of instructional media.¹

¹ Arief S. Sadiman, dkk. *Media Pendidikan Pengertian, Pengembangan Dan Pemanfaatannya*, (Jakarta: PT RajaGrafindo Persada, 2008) , hal: 14

Latest innovations in making or preparing instructional media are very useful for the learning process. Interesting learning media can also make the learning process more interested. Therefore, the progress of science and technology, particularly information technology, are expected to influence the formulation and manufacture of media that is more interesting.

Computing devices have become an important part of human life, and the computer has been used as a source of information and communication access to space a lot of people. So it is in the process of learning, today's computers are much needed instructional media.

Historically, in developed countries such as the United States, already use computers in elementary schools since the 1980s and is now in every school computers have become commonplace item. And in the use of computers as a learning medium known by the name of learning with the help of a computer (Computer-Assisted Instruction - CAI, or Computer-assisted Learning CAL). Judging from learning situations in which the computer is used for the purpose of presenting the content of the lesson, CAI can be shaped tutorials, drills and practice, simulations and games.²

Terms of hardware (hardware) and software (software) we often hear in the computer science study. And the media had learned these devices can be differentiated into two: the hardware (hardware) and software (software). Hardware is the tools which can deliver messages such as overload projectors, radio, television, and so on. While the software is a program that contains the contents of the message as the information contained in the transparency or books and other printed materials, the story contained in the film or material that is presented in the form of charts, graphs, diagrams, and so forth.³

By now the media that was developed through the software (software) that is usually in the form of applications, tutorials, games and others have very many and varied. It as the development of computer science is so rapid. Not limited for everyone to be able to use the learning media. By way of uploading or downloading the software via internet access so that these applications can be consumed by any person via personal computers or gadgets. This indicates that the advancement of information technology and has expanded the space for learning, facilitate access to knowledge, and the narrow limits of the study.

In mathematics education are familiar to us the existence of a variety of media-based multimedia learning. Various and diverse types of media such learning. All developed or designed in accordance with the requirements, conditions, time, and most importantly according to the material to be delivered. Some examples of multimedia-based mathematics instructional media that often we know include: Autograph, Cabri 3d, Animation Power Point, Google Sketch up, Hot Potatoes and others.

And one of the software designers of instructional media on learning activities in the primary and secondary schools is Macromedia Flash. Macromedia Flash is an animation program that has been widely used to produce the animation animator professional. Among the programs existing animation, Macromedia Flash is a flexible

² Azhar Arsyad. *Media Pembelajaran*. (Jakarta: Rajawali Pers, 2009), hal. 158

³ Wina Sanjaya. *Strategi Pembelajaran*. (Jakarta: Kencana, 2008), hal. 163

program in animation creation, such as interactive animations, games, Company Profile, Presentation, Movie and other animated display.⁴

In mathematics instructional media design, has many computer programmers using Macromedia Flash as a program designer and mathematics instructional media design program. The animated media have been very easy to obtain, can upload or download on the internet access. There have been many sites that have been empowered or provide the media for free and affordable. The advantages of media-based learning use Macromedia Flash is an easy, attractive appearance, can be a movie clip, the input can be in audio, video, distribution can be made easier as the program exe, and the most impressive is not much different operation like the operation of the Power Point Animation.

Learning difficulties and boredom that occurs at the time the student learn the material of plane also occur in students at SMK 1 Langsa is due to the monotony of learning. Learning feels normal and boring due to overuse of worksheets and textbooks as a learning medium. The use Macromedia Flash to design a math instructional media on a plane materials developed should also feasible, it is quite reasonable due to the material discussed in this geometry requires a concrete medium in its delivery, the discussion of the point, line, plane, wake up space, would have to be delivered by attracting and bringing learners in daily life or the reality around us. Besides feels easy and practical, learning media can save material costs or expenditures.

The statement above has mentioned that the media are designed using Macromedia Flash program can be audio-visual, animations, movie clips, graphics, and other learning programs can be presented in the form of tutorials with the help of a computer tutor system mimics made by the teacher or instructor. And it is clear that the media is a media that has many positive advantages and benefits. From the opinions on top of the advantages of this computer-based media, the researchers intend to develop instructional media using Macromedia Flash to Build Flat material in class X at SMK 1 Langsa.

In the development of instructional media using Macromedia Flash to be performed by the researchers in this study is the ADDIE model. ADDIE system design model includes some basic stages of learning system design that is simple and easy to learn. This model is as the name suggests, consists of five main phases or stages, namely Analysis, Design, Development, Implementation, and Evaluation. Five phases or stages in the ADDIE models need to be done systemically and systematically.⁵

Researchers chose ADDIE models because researchers considered that the model is consistent with the systems approach the problem that the background for this research. With the analysis phase, the design phase of learning in order to achieve the learning objectives, the development phase, the delivery phase of the material, as well as the evaluation phase, the researchers hope that this model can be developed using Macromedia Flash instructional media on the material of plane, valid, practical and effective in improving students' math learning outcomes.

B. LITERATURE

1. Learning Media

a) Definition of Learning Media

⁴ Dhewiberta H, dkk. *Mahir Dalam 7 Hari Macromedia Flash MX 2004*. (Yogyakarta:C.V.ANDI OFFSET, 2005), hal.1

⁵ Benny A. Pribadi. *Model Desain Sistem Pembelajaran*, (Jakarta: Dian Rakyat, 2011). hal. 125

The word comes from the Latin media medical which literally means 'middle', 'intermediate' or 'introduction'. Gerlach & Ely said that if the media is understood broadly human, material, or events that establish the conditions that enable the child to acquire the knowledge, skills, or attitudes. In this sense, teachers, textbooks, and school environment is the media. More specifically, the notion of media in teaching and learning tends to be interpreted as graphical tools, photographic, or electronically to capture, process, and reconstruct the visual or verbal information.⁶

Education and Communications Technology Association (Associations of Education and Communication Technology in / AECT) in the United States, limiting the media as everything and the channels used to distribute information. Gagne stated that the media are the various types of components in the environment that can stimulate students to learn. Meanwhile, Briggs argues that the media is all the physical tools that can present the message and stimulate students to learn. Books, films, tapes, audio-visual are examples.

The National Education Association (National Education Association / NEA) has a different sense. Media is a form of communication, both printed and audio-visual equipment as well. Media should be manipulated, can be seen, heard and read.

Whatever the given constraints, there are constraints that equation Siantar media is anything that can be used to deliver a message from the sender to the receiver so that it can stimulate the thoughts, feelings, concerns and interests as well as the students' attention in a way that learning occurs and learning objectives achieved.⁷

Instructional media is a tool / vehicle if not used properly can make the learning become verbal, misinterpretation, attention is not centered, and the absence of a good understanding of the students, so that the nature of the media is to deliver a message from the sender to the receiver actually fulfill its function.

Based defense, the researchers concluded that the instructional media (Macromedia Flash) is a tool / vehicle that can help students learn the subject matter. Instructional media used must be able to attract the attention of students in the teaching and learning activities and more stimulating learning activities of students.

b) Purpose of instructional media

There is some understanding of the media that have been studied, the implied purpose of the use of a medium that is to help teachers convey messages easily to the learners so that the learners can master these messages quickly, and accurately. Within the framework of the learning process that teachers, media usage meant that the students were engaged in learning activities that avoid the symptoms of verbal, knowing the words conveyed a teacher but do not understand the meaning and significance.

In particular, the medium of instruction is used with the following objectives:

1. Makes it easy for learners to better understand the concepts, principles, attitudes, and certain skills by using the most appropriate medium according to the characteristics of the material;
2. Provide a different learning experience more stimulating and varied so that learners interest in learning;
3. Growing certain attitudes and skills in technology because students are interested to use or operate certain media;

⁶ Azhar Arsyad. *Media Pembelajaran*. (Jakarta: Rajawali Pers, 2009), hal. 3

⁷ Arief S. Sadiman, dkk. *Media Pendidikan Pengertian, Pengembangan Dan Pemanfaatannya*, (Jakarta: PT RajaGrafindo Persada, 2008), hal. 7

4. Creating learning situations learners are not forgotten.⁸

The role of the media in the learning process according to Ely Gerlac and confirmed that there are three media privilege of teaching:

1. Media has the ability to capture, store and display the back of an object or event.
2. The media has the ability to display the returned objects or events in various ways adapted to the needs, and
3. Media has the ability to display objects or events something that implies.

Likewise, Abraham suggests the function or role of media in teaching and learning, among others:

1. Can avoid the occurrence of verbal,
2. Generating interest or motivation,
3. Attracting attention,
4. Overcoming the limitations of space, time and size
5. Enabling students to learn and
6. Making granting of stimulation to learn.

c) Steps Learning Media Usage

According Sungkono, instructional media that have been selected in order to be used effectively and efficiently need to take steps systematically. There are three basic steps to do the preparation, execution / presentation and follow-up.

1. Preparation

Preparation means the activities of a faculty member who will teach the use of instructional media. The activities can be done in steps preparatory faculty including: a) creates a lesson plan / lecture as if to teach as usual. In the lesson plan / lectures include the media to be used, b) study guide or accompanying materials that have been provided, c) prepare and organize the equipment used so that the implementation will not rush out and searched again and learners can see and hear well.

2. Implementation / Presentation

Lecturer during the learning process by using instructional media should consider instructional media such as: a) make sure that all media and equipment is complete and ready for use, b) explain the objectives to be achieved, c) explain in advance what should be done by learners during the learning process, d) avoid events that if it can interfere with attention / concentration, and serenity learners.

3. Follow-up

This activity needs to be done to strengthen the students understanding of the material discussed by using the media. Besides, this activity is intended to measure the effectiveness of the learning that has been done. The activities can be done such as discussion, experimentation, observation, practice and test.

Description of the use of instructional media in learning described by both experts still whole and still in general so not grouped about the activities and the implementation phase covers the initial activities, core activities, and the activities and the activities show was late in delivering course material. For the preparation stage it is clear from both the opinion that at this stage is the stage of selecting media that will be used in research must be in accordance with the material to be taught. During the implementation phase includes the skills of teachers in the use of

⁸ Mulyani Sumantri, dkk. *Strategi Belajar Mengajar*. (Bandung: CV Maulana, 2001), hal. 153

instructional media that show the way in the delivery of learning materials. And the last follow-up at this stage of course good evaluation phase evaluation of instructional media or student learning outcomes.

2. Macromedia Flash

a) Definition of Macromedia Flash

Macromedia Flash is an animation program that has been widely used to produce the animation animator professional. Among the programs existing animation, Macromedia Flash is a flexible program in animation creation, such as interactive animations, games, Company Profile, Presentation, Movie and other animated display.⁹

Wirawan Istiono explained that Macromedia Flash is a vector-based application program professional standard authoring tool used to create animations and bitmaps that are very interesting to create animated logos, movie, game, interacted menus, and the making of web applications.¹⁰

While Madcom Macromedia Flash is a graphics program that is intended for motion or motion and comes with a script for programming (action script) This program Allows the creation of interactive media animation, gaming. Arno Prasetyo also suggested that a Macromedia Flash is animation software that can be used to facilitate the submission of an abstract concept is the use of a computer application and media projector imager. This software has many advantages Compared with other animation software roommates are object-oriented program, capable of designing vector-based image, it produces animated motion and sound and can be used as software makers web site, as well as many other advantages Compared to other animation software. With its advantages and disadvantages as Macromedia Flash Professional Audiovisual technology, capable of generating new features that can be utilized in education.¹¹

Based on some understanding of the Macromedia Flash that has been presented by the experts, it can be concluded that in learning the Macromedia Flash is an animation software instructional media to assist teachers in delivering learning to be more interesting and easy to understand and practice Students using computer and imager projectors.

b) Macromedia Flash Function

Macromedia Flash is very useful in supporting the success of a presentation and the learning process (PBM). In Macromedia Flash, we can include elements such as images or movies, animations, presentations; games can be used as a tool for web design, and various other multimedia applications.

c) Advantages and Disadvantages of Macromedia Flash

1. Advantages

Among the advantages is Macromedia Flash is a program that can be used to create animations, games and teaching tools. Macromedia Flash is equipped with action script (command action) so as to make a presentation or teaching devices become more varied and certainly more interesting than the other presentation programs.

⁹ Dhewiberta H, dkk. *Mahir Dalam 7 Hari Macromedia Flash MX 2004*. (Yogyakarta:C.V.ANDI OFFSET, 2005), hal.1

¹⁰ Wirawan Istiono. *Education game with Flash 8.0*. (Jakarta : PT. Elex Media Komputindo, 2008) hal.13

¹¹ <http://kasingkabotan.blogspot.com/2014/02/macromedia-flash.html>, diakses pada tanggal 9 Februari 2014 pukul 21.30

The use of Macromedia Flash as the software used to develop media-based edutainment learning, based on some of its advantages. Yuda Anggra Ramadiano stating that Macromedia Flash has advantages compared to other similar programs, among other things, for example:

- a. A beginner who is new to the world of design and animation can learn and understand the Macromedia Flash easily without having equipped with a high knowledge base about that field.
- b. Macromedia Flash program users can easily and freely in creating create animations with free movement in accordance with the flow of the animation scene he wanted.
- c. Macromedia Flash is able to generate a file with small size. This is because of Flash, using animation with vector basis, and also a small Flash file size can be used on a web page without loading takes long to open it.
- d. Macromedia Flash generates a file type (extension). FLA flexible nature because, it can be converted into a file types swf, html, gif, jpg, png, exe, Mov. This allows users of the program Macromedia Flash for various purposes that we want.

2. Disadvantages

Based on the advantages of media use Macromedia Flash, there are limitations of the use of Macromedia Flash, namely:

- a. Long learning times especially those who have been using graphic design software before.
- b. The graphics are less complete.
- c. Slow login.
- d. Less Simple.
- e. The menu is not user friendly.
- f. It should be a lot of references tutorial.
- g. Lacking in 3D. Making 3D animation is quite difficult.
- h. The language is rather difficult programming.
- i. No templates in it.
- j. Large file sizes.¹²

d) Use of Macromedia Flash in learning

In the process of teaching and learning media presence has a significant role. In the event of obscurity submitted materials can be helped through a media as an intermediary complexity of material to be delivered.

Advancement of information and communication technologies affect many sectors of teachers who worked in the field of education and teaching is also not immune from such influence. Teachers are required to keep up with technology, once especially information and communication technology (ICT) is growing very rapidly in recent years. If teachers are not able to follow the pace of technological change, it is concerned that teachers will fail to function as teachers and educators.

Along with the advancement of technology, there are a lot of facilities and infrastructure make the learning process (PBM) is much more fun for learners. This resulted in a PBM that rely on chalk and blackboard seems to be more left crushed by technological advances.

¹² <http://elisafloida.wordpress.com/2013/07/29/flash/> diakses pada tanggal 9 Februari 2014 pukul 22.00

Teachers in teaching activities can utilize laptops (portable computers) and LCD projector in the member learning materials to the students. Through this technological sophistication PBM will certainly be much more interesting. And, the more creative teachers in using technology, it will better the absorption capacity of the student to the subject matter.

e) Model development of instructional media Macromedia Flash

There are several models - models of learning system design that can be used to improve the effectiveness of learning programs such as models of Systematic Design by Walter Dick and Lou Carey, ASSURE models developed by Sharon E. Smaldino, et al, Cycle models, the model ADDIE and others. Model development of instructional media Macromedia flash conducted by researchers in this development is the model ADDIE. This model was developed to create learning activities that effectively and efficiently, especially in the learning activities using media technology.

Important steps that need to be done in the ADDIE model of instructional systems design includes several activities, namely analysis phase, design phase of learning in order to achieve the learning objectives, the development phase, the delivery phase of the material, as well as the evaluation stage.

C. RESEARCH STEPS

1. Phase Analysis

a) Stage Performance Analysis

At this stage of the analysis of the performance of these researchers have discovered a problem in the plane material in class X flat at SMK 1 Langsa, namely the problem of learning difficulties in students, learning tends to be dull, and lack of use of instructional media or the latest innovative teachers of subject areas mathematics at SMK 1 Langsa.

b) Needs Analysis Phase

In the requirements analysis phase, the researcher stated that it needed to get up the learning plane material on the X student at SMK 1 Langsa is an interesting instructional media, innovative, and effective. And able to generate interested in learning and motivation to learn so that the learning outcomes will be maximized and appropriate learning objectives to be achieved.

2. Stage Design

In this stage, design lesson plans, designing learning scenarios, the establishment of methods and learning strategies, and to determine appropriate instructional media to be able to overcome the problems that have been analyzed.

3. Development Phase

Development steps that will be conducted by researchers is as follows:

a) Utilization and development of teaching materials.

At the stage of utilization of instructional materials researchers use learning resources from math books are of course referring to the curriculum relevant and applicable. In addition, the use of teaching materials can also be derived from Internet sources. So the combination of source books and internet sources can create broader teaching materials.

b) The selection and development of instructional media

At this stage the researchers chose Macromedia Flash learning media to be able to answer or resolve the problems that have research analysis. The advantages of this software are deemed able to develop an interesting instructional media,

innovative and effective. At this stage of development, instructional media Macromedia Flash will be designed in such a way, with animations and attractive appearance. This instructional media will be aligned with relevant teaching materials and refers to material that has been arranged in the applicable curriculum. And at this stage the media will be tested the validity of the learning media. The following will describe the validation of the stages of learning media Macromedia Flash:

✓ Validation stage

A data or information can be said to be valid if in accordance with the actual situation. The validation process is accompanied by discussions or interviews with experts regarding improvements to be made on teaching materials by way of instructional media design Macromedia Flash consulted prior to the expert or experts and mentors, then the design is judged by competent persons (validator) who have understood the principle of the development of Macromedia Flash, teachers of mathematics SMK 1 Langsa, peers. Validation of this module there are two kinds, namely;

- 1) Validate the contents of the Macromedia Flash learning whether the media has been designed in accordance with the selection of the material competence plane.
- 2) Validation of construct the suitability of the stages of learning Macromedia Flash media with elements of development that have been defined.

1. Phase Implementation

✓ Stage practicalities

Practicalities of teaching materials is the degree of applicability of learning by teachers and students, using teaching materials that have been revised based on the assessment by the validator or which is the result of the first stage. Macromedia Flash Media learning is said to have a high practicalities when practical, easily their administration. In a sense easy to use, easy examination and complete with clear instructions.

2. Evaluation phase

And evaluation stage of instructional media Macromedia Flash that has been designed to assess the activity is centered teaching materials (trial version) can be used in line with expectations and effectively to improve the quality and student learning outcomes. Aspects of the observed effectiveness in the learning process that uses Macromedia Flash learning media is the result of learning.

D. CONCLUSION

With the research in the development of instructional media materials Macromedia Flash on a plane material to develop a learning media valid, practical and effective course will be able to be more interesting learning activities and learning outcomes can automatically better. And by using the ADDIE model of the steps in the research will be able to run in a systemic and systematic. And of course the three main stages in this development is the validation stage, the practicalities stages, and the stages of the effectiveness of the instructional media developed by Macromedia Flash.

BIBLIOGRAPHY

- Arsyad, Azhar. 2009. *MEDIA PEMBELAJARAN*. Jakarta: Rajawali Pers.
- Dhewiberta H, dkk. 2005. *Mahir Dalam 7 Hari Macromedia Flash MX 2004*. Yogyakarta: C.V. ANDI OFFSET.
- Istiono, Wirawan. 2008. *Education game with Flash 8.0*. Jakarta : PT. Elex Media Komputindo.
- Pribadi, Benny A. 2011. *Model Desain Sistem Pembelajaran*, Jakarta: Dian Rakyat
- Sadiman, Arief S., dkk. 2008. *Media Pendidikan pengertian, pengembangan dan pemanfaatannya*, Jakarta: PT RajaGrafindo Persada.
- Sanjaya, Wina. 2008. *Strategi Pembelajaran*. Jakarta: Kencana.
- Sumantri, Mulyani., dkk. 2001. *Strategi Belajar Mengajar*. Bandung: CV Maulana, <http://kasingkabotan.blogspot.com/2014/02/macromedia-flash.html>, diakses pada tanggal 9 Februari 2014 pukul 21.30
- <http://elisafiorida.wordpress.com/2013/07/29/flash/> diakses pada tanggal 9 Februari 2014 pukul 22.00