Learning in School Based on Multimedia

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Abstract—**Teaching and learning in schools today almost find a saturation point, where teachers always carry out teaching the same way every day, regardless of course, style and learning strategy is always the same. Students who are getting more and more tired with a myriad of schoolwork and other loads of learning so as to experience high levels of saturation. If continuously allowed, it can be fatal to the goal of learning. This article was written with the aim to solve the problem, namely how the teacher can implement the teaching and learning process by using multimedia so that learning can take place with more fun and of course also the students can better understand the material described by the teacher. In this article also discusses how to choose a good multimedia and how to implement it so that learning in school using multimedia can give maximum results.**

Keywords— Learning in School, Multimedia

I. INTRODUCTION

Learning media is one element that plays an important role in the learning process. Learning media as a learning resource can help teachers enrich students' insights. The various forms and types of instructional media used by teachers will be a source of knowledge for students [3].

The use of learning media in the teaching and learning process can generate new desires and interests, and stimulate learning activities and even bring psychological influences on students [3]. The use of instructional media at the learning orientation stage will greatly help the effectiveness of the learning process and the delivery of messages and the content of the lesson.

Teaching and learning in schools often seem monotonous, resulting in students becoming bored, drowsy, and less than the maximum in understanding the material presented by teachers [2]. A challenge that teachers must face today is how to create a fun learning atmosphere and be able to motivate students in school [4].

It is so motivating teachers to be able to do something in the process of teaching and learning, how students can be passionate and interested so that it can motivate students in following the learning so that they can understand the material given and directly practice it [1].

One of the things that teachers can do is to use instructional media. By using the right media, then the process of teaching and learning can take place with more interesting and lively so that students do not feel bored and can absorb the subject matter provided by the teacher with the maximum. One medium that is currently the trend is multi media

Learning plan is the whole process of needs analysis and learning objectives and the development of delivery systems to meet the needs and achieve learning objectives, including the development of learning packages, learning activities, trial and revision of learning packages, evaluating program activities and learning outcomes [2]. Learning design is also one component of technology activities in education, because the design of education is defined as "the entire planning process necessary to deliver the teaching, including the use of both" hardware "and" software "[1]. Meanwhile, it is identifies several factors that influence the growth of system development concepts and the learning design as follows [5]:

1. Educational psychology that pays attention to individual differences between students.
2. Learning theory based on behavioral psychology behavior (Behavioral psychology) which emphasizes the importance of reinforcement (reinforcement) to improve student learning behavior.
3. The result of machining technology that allows the creation of equipment that can be used to apply learning theories such as learning machines, computers, and so forth.
4. The development of audiovisual equipment (radio, film, slides, videotapes) used for learning and teaching purposes.

The design of learning can be interpreted from various angles, for example as a discipline, as a science, as a system, and as a process. As a discipline, the design of learning discusses various researches and theories about strategy and learning development process and its implementation. As a science, instructional design is the science to create specifications of development, implementation, assessment, and management of situations that provide learning service facilities in macro and micro scales for various subjects at various levels of complexity. As a system, instructional design is the development of learning systems and implementation systems including facilities and procedures to improve the quality of learning. While the design of learning as a process is the development of systematic teaching that is used in particular theories of learning to ensure the quality of learning [13]. The statement implies that the preparation of the lesson plan must be in accordance with the concept of education and learning embraced in the curriculum used.

In general, the benefits of learning planning using the media is to facilitate the interaction between teachers and students so that learning activities are more effective and efficient [9]. While more specifically the benefits of learning planning using the media are [3]:

1. Submission of learning materials can be uniformed.
2. The learning process becomes more clear and interesting.
3. The learning process becomes more interactive.
4. Efficiency in time and effort.
5. Improve the quality of student learning outcomes.
6. Change the role of teachers in a more positive and productive direction.

During the 1980s and 1990s, multimedia emerged as a new concept that took over various aspects of human life. As satellite capabilities, computers, audio and video convergence create new media with enormous potential [14]. This technology is capable of providing enhanced learning with facilities and with regard to the specific needs of individual users. One form of implementation is the main application of interactive multimedia for instructional instruction, where the learner is given control so that he can review the material according to his or her ability, interests, needs, and personal desires through the cognitive process. The basic purpose of using interactive multimedia in learning is not to replace the teacher's position, but to become an extension of the teacher represents the role of the teacher for several aspects, such as the provision of remote materials, as well as the completion of student tasks and exercises. Thus, multimedia must be very well designed and sophisticated enough to 'mimic' the best teachers, combining the design of the various elements of cognitive processes and the best quality of technology. With the current technological development various multimedia has been designed and built in accordance with the interests of its users. Multimedia design should be flexible and enable changes to suit the needs of the user.

Multimedia is a term often heard and discussed among educators today. If not clearly defined, the term can be understood ambiguously, because it can be interpreted as a mixture of mass media such as print, audio and video or perhaps it can be interpreted as a concept of developing computer-based hardware and software produced on a mass scale and has not allowed its use and learning individually. Its core multimedia combines several levels of learning into educational tools that allow diversity in learning [3]. Multimedia as an exciting combination of computer hardware and software that allows us to integrate video, animation, audio, graphics and test resources to be developed as an effective presentation medium on affordable desktop computers [6].

Created and designed multimedia can be used in accordance with the concept of need analysis. For more details Figure 1. below can be a reference in identifying learners in realizing multimedia-based learning need analysis design [6].

In learning, the selection of instructional media is very important this is related to the material to be delivered as well as the purpose of the learning [5]. Media selection is based on the results of a sharp analysis of various factors such as objectives, learners, learning methods and available technology capabilities. The purpose of media selection is that the media used on target and in accordance with the needs, so as to enable the occurrence of good interaction between learners with the media used. Selection of instructional media is intended for teachers to determine the appropriate media and in accordance with the conditions of learners. In general the selection of instructional media is based on two important factors namely practicality and instructional [7].

Multimedia is an integrated single media that consists of media such as text, audio, video, graphics, animation and others. We should consider the various components that are instructional designs for multimedia learning systems such as objectives, content, media options, and evaluation options.

- *Objectives:* the first challenge is to define the purpose of multimedia learning. Objectives must be expressed in terms of behavior and measurable. They can range from simple to complex, ranging from lower levels to higher levels. The goals are included in the domain of cognition, psychomotor and compassion.
- *Content:* the contents of each instructional design should be informed in accordance with the learning objectives. Depending on the destination, the content will also range from simple to high complexity. The choice of content must also ensure that provisions are adequate and correct for achievement of the objectives.
- *Media Options:* As mentioned above multimedia basically incorporates several media such as text (as in printed text), audio, video, graphics, animation etc. then it is important to match the learning objectives and decide which media is selected to synchronize design and learning materials. Each medium may offer wholly or part of the content with or without reference to each other. For example, frog surgery can be displayed through animation and also through a video program. But as multimedia interactivity, learners can really feel if animations and multimedia programs run like actual surgery (simulation). Similarly for language learning through multimedia, audio is very important.

The model of learning media selection is divided into two: closed selection model and open selection model.

The criteria in the selection of instructional media are:
- In accordance with the goals to be achieved.
- Right to support the content of the lesson that contains the facts, concepts, and principles.
- Practical, easy to create or obtain and can be used anywhere and anytime.
- Teachers can be skilled at using it.
- Technical qualities, namely the visual development of both images and photography must meet certain technic requirements.
- Grouping of targets, ie effective media for large groups, is not necessarily equally effective if used in small groups or individuals. Therefore there are various media used for large, small, and individual groups.

Various theoretical and empirical studies show the uses of media in learning are as follows [6]:

- Media capable of providing various stimuli.
- Media can overcome the limited experience possessed by learners.
- Media can overcome the physical limitations and learning environment.
- Media allows for direct interaction between learners and their environment.
- Media produces uniformity of observation (uniting responses).
- Media give raise to new desire and interest.
- The media generate motivation and stimulate to learn.
- The media provides an integral / comprehensive experience of something concrete or abstract.
- Media provides an opportunity for learners to learn independently, at a place and time and speed determined by it.

The use of instructional media according to the taxonomy can be divided into [10]:

- Human-based media such as teachers, instructors, tutors, role-playing, group activities.
- Printed media such as guidebooks, workbooks or exercises, and loose sheets
- Visual-based media such as books, charts, graphics, maps, figures or images, transparencies, frame films or slides
- Audio-based visual media such as videos, movies, slides with tape, television.
- Computer-based media such as computer-assisted teaching and interactive video.

II. METHOD

This paper is a literature review that discusses the use of media in learning. which literature review is taken from various sources of books related to the use of media in learning at school.

III. DISCUSSION

Nowday, is very important for teachers to make some creativity in learning because it will have a big impact on learning outcomes. Everything that the teacher will do in the learning will make students interesting or boring, it depands on the teacher teaching models.

Here, multimedia is one of the model that used by the teacher in the new era. The multimedia usage, is believed to be able to give a new face in every learning, in class and outdoor. Teacher must creative so they can use many kinds of media as the tool of learning [3].

Multimedia technology is increasingly popular in education. Interactive multimedia in particular, developed by adding new and exciting dimensions to teaching and learning process [6]. This approach effectively complements the conventional methods of learning and teaching. The important multimedia aspect in education is related to multimedia development, as a form of computing that allows students and teachers to build knowledge and discover a world that is not present in conventional learning or teaching methods. That is, multimedia learning today is a combination of educational and entertainment concepts.

The use of modern media or tools in the lecture is not intended to change the way of good teaching, but to equip and assist the lecturers in delivering the material or information. By using the media is expected to occur interaction between lecturers with students to the maximum so as to achieve learning outcomes in accordance with the objectives.

In choosing the media for learning, the actual teacher not only knows enough about the usefulness, value, and foundation, but also knows how to use the media.

There are some steps in using media, all must be followed as well as doing. First, before using media the teacher must do the preparing. Learn about media usage instructions to use or may require special books on how to use the media to be used. All equipment to be used should be prepared beforehand, so that in the implementation of learning will not be disturbed by things that are technical. Pay attention to the space settings and learners, when the media will be used in groups, media placement is arranged in such a way as to enable all learners to follow the learning activities well.

Second, the teacher implement the media usage. At the time of learning activities using the media take place, should be kept so that the atmosphere is maintained. If you want to use a projector plane that requires darkness of space, keep the learners still able to write, so it is still possible to make the necessary notes. If for example in the learning process of teachers still need to add explanations that must be written on the blackboard or in transparency, try to keep the learners are not hindered by the standing position of the teacher. In addition, the teacher should not be too far behind the learners, so the class is chaotic because the teacher's attention is reduced. If the media will be used in groups, keep each group in turn monitored.

The last is doing the follow up. The purpose of follow-up activities is to explore whether the learning objectives have been achieved. In addition to consolidate the understanding of the material delivered through the media concerned. This can be done by assigning tasks to the learners such as forming discussion forums, making resumes and also by looking for references to the material that has been displayed on previous learning media [6].

It is usual in learning process to do the evaluation, no exception to multimedia usage. Evaluation is a gathering activity of the learning process in a systematic way to determine whether changes occur to learners and to what extent these changes affect the lives of learners. Evaluation is intended to know the value of an activity, product or system. Evaluating media usage means confronting the function and principle with the results achieved in learning. Evaluation plays a very important role in the determination of a policy or decision-making. With the evaluation we can see the effectiveness and efficiency of the programs we have and will do.

The evaluation doing to determine some usages, such us: is it effective to use? The media can be improved the learning or no, is it effective to view the result of learning? Is it appropriate to be used in the classroom? Is it appropriate to choose the content of lesson to presented? Is it really contribute into the learning outcomes?, and can it be used to knowing the attitude of students in media of learning?.

To make evaluation, there are two kinds of assessment that can be used in evaluating learning media, namely; formative evaluation and summative evaluation [3].

Formative evaluation is a process intended to collect data on the effectiveness and efficiency of media usage used in an effort to achieve the intended purpose. The data is intended to improve and refine the media concerned to be more effective and efficient. Formative evaluation is an integral part of the learning media development system.

While, summative evaluation is a continuation of formative evaluation that is media that has been improved and refined, then researched whether the media is feasible to use or not in certain situations. Summative evaluations are conducted by others outside the media development team to prove that the products we produce are truly effective and efficient. Summative evaluation is usually intended to obtain information in order to make decisions about a new product (media).

IV. CONCLUSIONS AND SUGGESTION.

A. Conclusions

From the discussion that has been described above it can be drawn a conclusion that is as follows:

The purpose of design planning or instructional design is the practice of media preparation of communication and content technology to help in order to effectively transfer knowledge between teachers and learners.

The selection of instructional media is a learning media selection activity based on the results of a sharp analysis of various factors that aims to the media used on target and in accordance with the needs, thus allowing a good interaction between learners with the media used.

Steps in media usage include:

- Implementation of media usage
- Follow-up activities

Evaluation of learning media is a process or activity to know whether media used in teaching-learning process can reach the purpose which have been determined or not.

B. Suggestion

The suggestions that can be suggested are for the future in order to be given special training for teachers who are in the interior in the use of multimedia, and that the government can pay attention to the schools left behind in terms of media and equipment to support the use of multimedia in schools.

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