

# Development of Game Learning Media E-Learning Basketball Based on Students Class X of SMA Negeri 3 Medan

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**Submission date:** 07-Oct-2022 06:20PM (UTC+0700)

**Submission ID:** 1919104640

**File name:** 6\_UniCCos\_Vol.\_23\_Cek.pdf (165.48K)

**Word count:** 2641

**Character count:** 14901

# Development of Game Learning Media E-Learning Basketball Based on Students Class X of SMA Negeri 3 Medan

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**Abstract**— This research aims to determine learning media products based on e-learning in basketball game material. Development of e-learning based learning media uses a website-based electronic circuit. Through e-learning students can simplify the learning process with digital concepts that make it easy for students to access the content that is on the website and students learn wherever and whenever. In this study the researchers used the research and development (R&D) method steps. the research will be divided into three stages, namely analysis, design, evaluation and product trials. The study population was 12th grade students consist of 12 classes. The sampling technique was used by random sampling. Researchers took samples of class X Mia VIII of SMA Negeri 3 Medan totaling 34 students and 2 physical education teachers. Validity test is conducted by 1 material expert and 1 media expert. Product feasibility tests carried out 3 times the trials, namely individual group trials, small group trials and limited trials. The results of this study are learning media in the form of websites containing material, pictures, and videos about basketball games in accordance with the curriculum for class X students, which are able to do passing, dribbling, and shooting. From the data it can be concluded that this media is appropriate to be used, able to attract students interest in learning the material so that it can improve students understanding of basketball subjects.

**Keywords:** e-learning, websites, basketball games

## 2 I. INTRODUCTION

Changes in the world are now entering the era of the industrial revolution 4.0 or the fourth world industrial revolution where information technology has become the basis in human life. Indonesia is one of the countries that will be affected by the current of industrial revolution era 4.0 which is characterized by increasingly sophisticated technological developments. The development of technology is currently influencing the learning process and also influencing the learning material and the way of delivering the

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material in the process of teaching and learning activities especially in high school education.

The current communication technology has changed its role not only as a communication medium but also can be used as a learning media, video player, audio player and so on. With the development of information and communication technology teachers can provide learning without having to deal directly with students, so students can obtain information in a broad scope from various sources through electronic learning media using the internet [1].

The development of science and technology is increasingly pushing for renewal efforts in the use of technological outcomes in the learning process. Quality education is education that is able to answer various challenges and problems faced now and in the future. Learning media are all things that can be used to convey messages or information in the learning process so that it can stimulate student attention.

One of the challenges is in the form of learning innovation using information technology. One example of the application of information technology in education is e-learning. This information technology is an answer to some of the weaknesses of conventional learning methods such as the limited space and time for learning in schools, the lack of teacher and student communication, and the limited reference of teaching materials provided by teachers. Furthermore, e-learning based learning is one of the innovations to improve the quality of physical education learning in the classroom.

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Utilization of technology in the learning process gave birth to new concepts in IT-based learning or better known as e-learning. In e-learning, many online learning media can be chosen by teachers as learning media, one of which is a website. The development of instructional media is an effort that must be made by educators to improve the quality of education, especially physical education subjects in the material of basketball games. Through the development of

learning media, it is hoped that learning will be more interesting, creative, and innovative.

## II. METHOD

This study uses research and development methods (research and development) because this is adjusted to the research objectives of developing learning media. In this research, it will produce a product in the form of e-learning based learning media on basketball game material.

[2] Research and development is research and development aimed at producing new products through the development process. In general, research and development is research that aims to produce products and test the effectiveness of these products. Understanding Research Development or Research and Development (R&D) is often interpreted as a process or steps to develop a new product or improve existing products.

The media development in this research will be used by Brog & Gall's research and development steps into 3 stages, namely the analysis, design, evaluation and trial of the product. The study population was students of class X consisting of 12 classes. The sampling technique is by random sampling. Researchers took samples of class X Mia VIII of SMA Negeri 3 Medan totaling 34 students and 2 physical education teachers. Validity test is conducted by 1 material expert and 1 media expert. Product feasibility tests carried out 3 times the trials, namely individual group trials, small group trials and limited trials.

## III. RESULTS AND DISCUSSION

The challenges faced by Physical Education as a result of technological developments are very real. The improvement of 21st century skills in the world of education is related to issues such as innovation, research, and the use of technology. According to [3] teachers today are faced with challenges big enough to meet the needs of new generation students who have never known life without computers, video game consoles, androids, or internet access. This is a challenge that dramatically changes the scope of education. Furthermore [4] say that in the field of education, ICT's cause infinite movement of information that can be done quickly.

This Cause led to fundamental changes and adjustments in terms of the way teachers are taught, student learning, and school management than they were before.

Fundamental changes in the character of society as happened in the 21st century have implications for the characteristics of teachers. In a progressive view, changes in community characteristics need to be followed by a cultural transformation (culture) of the teacher in the learning process. So if the community has changed to a digital society, the teacher also immediately transforms himself, both technically and socially-technically. In the 21st century, teachers must be able to utilize digital technology to design creative and innovative learning. The ability of teachers to educate in the era of digital learning needs to be prepared by strengthening cyber pedagogy (digital era) in the teacher. Teachers who have

more role as facilitators must be able to utilize existing digital technology to design creative and innovative learning that makes students active and think critically

Characteristics of teachers in the 21st century, namely: (1) Teachers besides being a facilitator must also be a motivator and ispirator. (2) Teachers are able to transform themselves in the era of cyber pedagogy (digital era). (3) The teacher must have the ability to write. (4) Teachers must be creative and innovative in developing learning media / methods / models or finding solutions to learning problems, thereby increasing the quality of ICT-based learning. (5) Teachers must be able to make a cultural transformation.

In the 21st century, education is in the age of knowledge (knowledge age) with the acceleration of an extraordinary increase in knowledge that is supported by the application of media and information technology. At this time, education is becoming increasingly important to ensure students have the skills to learn and innovate, the skills to use information technology. The 21st century learning paradigm emphasizes the ability of students to think critically, be able to connect science with the real world, master information technology, communicate and collaborate.

Through active learning students are expected to enable them to be responsible for their own understanding, the most important thing is to learn how to learn and develop awareness in individual students at learning strategies and effective thinking processes [5]. Students as active learners currently have the appropriate means to be implemented in the education system in Indonesia with the existence of Information and Communication Technology (ICT).

ICT can play a role in producing a variety of learning media products that are far more interesting to learn, have a high interactive element, and are easily understood by students. All these advantages can accelerate their learning process. More than that ICT is also able to deliver a variety of learning materials in front of students without the limitations of distance and time with the internet as a medium. So the statement above emphasizes that the existence of technology is very helpful in the process of learning and even helps in the development of an education.

With the development of technology, as a professional physical and health education teacher must: a) have competence in their duties (pedagogic, personality, professional, and social), b) be able to design good learning strategies and in accordance with the times, c) master information technology, d) has a commitment in advancing education, e) has academic qualifications and professional educational background in accordance with the task field, f) has responsibility for professional tasks, g) is able to take advantage of ICT as a means of learning, h) has achievement motivation in it works.

Learning media is a tool that helps teachers in teaching and as an intermediary or introduction so that learning becomes effective and learning objectives can be achieved. Learning media is one of the determinants of success in learning because the use of instructional media makes learning more interesting than just using textbooks / texts.



Learning media that are increasingly developing towards technological advances must be put to good use by teachers and teachers must master the advancement of internet / web-based technology which is also called e-learning. Teachers are also required to have the ability in technological literacy. The goal of the 21st century education is to be able to create people who understand and are able to use technology as students' experiences and needs.

E-learning is an educational system or concept that utilizes information technology in the teaching and learning process, so that it can facilitate students or students in obtaining the information needed, because it is rarely encountered by students who do not use smart phones, either based on Android or IOS.

[6] Says that e-learning is a combination of two words electronic and learning which means electronic learning. E-learning according to [7] is the delivery of learning programs, training, or education using electronic facilities, such as computers or electronic devices, such as mobile phones in various ways to provide training, education, or teaching materials. Meanwhile according to Law No. RI 20 of 2003 states, E-learning (distance education) is education where students are separate from educators and learning uses various learning resources through communication technology, information, and other media.

With technological advancements, a teacher is required to have the ability and ability to use computer informatics technology to obtain various information, in line with the opinions expressed by [7] E-learning system is a form of technology implementation aimed at helping the learning process that is packaged in electronic / digital form and its implementation requires web-based computer facilities on internet sites. In addition, the same thing also expressed by [8] e-learning is a type of teaching and learning that allows the delivery of teaching materials to students / students using internet media, or other computer network media.

This information technology is an answer to some of the weaknesses of conventional learning methods such as the limited space and time to do learning in schools, as well as the limited reference of teaching materials provided by teachers. E-Learning encourages various parties, educators, educators, educational organization organizers, and students themselves to adapt to innovation at the global era.

According to [9] e-learning is learning that uses electronic circuits (LAN, WAN, or internet) to convey learning content, interactions, or guidance. While [10] explains the term e-learning is also often considered learning through the internet. Someone learning and accessing information related to teaching material has been called e-learning. [11] Essentially, e-learning is a learning process that uses electronic, digital media such as multimedia. This is in line with [12] emphasizing that e-learning refers to the use of internet technology to send a series of solutions that can enhance knowledge and skills. [7] explains that the term e or the abbreviation of electronics in e-learning is used as a term for all technologies used to support learning endeavors through internet electronic technology. Internet, satellite, audio / video

tape, interactive TV and CD-ROM are some of the electronic media used Learning can be delivered synchronously (at the same time) or asynchronously (at different times). Learning and learning materials delivered through this media have text, images, simulations, audio and video.

The use of e-learning in a learning process teaches students to search for and learn extensive knowledge in the internet world so as to bring out students' creativity in searching for knowledge. E-learning has become a necessity in teaching and learning activities, the nature of e-learning that is easily accessible can improve student competencies in the field of ICT and academic achievement. Innovation of learning through technology will make student learning interest increase compared to conventional methods such as lecture and instruction methods.

In this study creating a learning product based on e-learning as a medium for physical education learning. E-learning based learning certainly has a better advantage than other learning media, in addition to having a more attractive appearance this learning media also has easy access to learning material in the form of audio visual with a more complete explanation.

#### IV. CONCLUSIONS AND SUGGESTIONS

The results of this study are learning media in the form of websites containing material, pictures, and videos about basketball games in accordance with the curriculum for class X students, which are able to do passing, dribbling, and shooting. From the data it can be concluded that this media is appropriate to be used, able to attract students' interest to study the material so that it can improve students' understanding of the subject of basketball games.

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